Employees' Retirement
System of Georgia

Comprehensive Annual Financial Report

Fiscal Year Ended June 30, 2019
A component unit of the State of Georgia

Finding the Hidden Gems in Georgia

Providence Canyon, Lumpkin

2019

ERSGA
Employees' Retirement System of Georgia
Serving those who serve Georgia

Our Mission

Our mission is to be the guardian of the State of Georgia's retirement plans and promote a dignified retirement for the members, retirees, and their beneficiaries.

Our vision is to demonstrate an unwavering commitment to delivering accurate and timely retirement benefits utilizing a knowledgeable staff and state-of-the-art technology to best serve the retirement needs of current and future members.

Our Values

Our Core Values are:

Integrity
Customer Service
Operational Excellence
Continuous Improvement and Innovation

ERSGA
Employees' Retirement System of Georgia
Serving those who serve Georgia

Employees' Retirement System of Georgia

Comprehensive Annual Financial Report

Fiscal Year Ended June 30, 2019

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Finding the Hidden Gems in Georgia

Goats on the Roof - Tiger (photo: Jerry Jaynes)

James A. Potvin
Executive Director

A component unit of the State of Georgia

ERSGA
Employees' Retirement System of Georgia
Serving those who serve Georgia

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ERSGA
Employees' Retirement System of Georgia
Serving those who serve Georgia

Boards of Trustees

Letter of Transmittal

Two Northside 75
Atlanta, GA 30318

November 27, 2019

I am pleased to present the Comprehensive Annual Financial Report of the retirement systems and programs administered by the Employees' Retirement System of Georgia (the System) for the fiscal year ended June 30, 2019. The management of the System is responsible for the accuracy, completeness, and fairness of the presentation, including all disclosures. It is to the best of our knowledge and belief that the enclosed data is accurate in all material respects and is reported in a manner designed to present fairly the financial position and results of operations of the System.

Profile of the System

The System was established in 1949 by an Act of the Georgia General Assembly to provide benefits for all State employees. Plans administered by the System include the Employees' Retirement System (ERS), the Legislative Retirement System (LRS) established in 1979, the Public School Employees Retirement System (PSERS) established in 1969, the Georgia Defined Contribution Plan (GDCP) established in 1992, the Georgia Judicial Retirement System (GJRS) established in 1998, and the Georgia Military Pension Fund (GMPF) established in 2002. In addition, the System is responsible for administering a Group Term Life Insurance Plan (SEAD), the 457 Plan established in 1974, and the 401(k) Plan established in 1994. A summary of each plan can be found on pages 30 through 40 of this report. The investments of all plans are pooled together into one fund except for the three defined contribution (DC) plans, which are maintained individually.

The ERS, LRS, GDCP, GMPF, 401(k), and 457 plans are governed by a 7-member Board of Trustees (Board) made up of 3 ex-officio members, 1 governor-appointed member, and 3 Board-appointed members. PSERS has the same Board as ERS with 2 additional governor- appointed members. GJRS has the same Board as ERS with 3 additional governor-appointed members.

As of June 30, 2019, the System's defined benefit (DB) plans served a total of 107,285 active members and 71,944 retirees/beneficiaries from 702 employers around the state. There were 69,662 participants in the 401(k) plan with a total investment balance of $1.1 billion. The 457 plan had 12,567 participants with a total investment balance of $639.0 million. There are 470 participating employers from around the state in the 457 and 401(k) plans.

Legislation

In the 2019 session, three Acts were passed by the General Assembly and signed by the Governor, which impact the System:

Act 244 requires trustees of public retirement systems to complete fiduciary training and educational courses in specified retirement areas beginning July 1, 2019.

Effective January 1, 2021, Act 256 will allow ERS members to use money from their Peach State Reserves 401(k) and 457 plan to purchase a Supplemental Guaranteed Lifetime Income amount to increase their monthly lifetime retirement income from the ERS pension plan.

Act 319 is the FY 2020 Appropriations Act and provides funding for an increase in the PSERS multiplier from $15.25 per year of service to $15.50 per year of service beginning July 1, 2019.

Summary of Financial Information

The management of the System is charged with the responsibility of maintaining a sound system of internal accounting controls. The objectives of such a system are to provide management with reasonable assurance that assets are safeguarded against loss from unauthorized use or disposition, that transactions are executed in accordance with management's authorizations, and that they are recorded properly to permit the preparation of financial statements in accordance with generally accepted accounting principles. The concept of reasonable assurance recognizes that first, the cost of a control should not exceed the benefits likely to be derived, and second, the evaluation of the cost and benefits requires estimates and judgments by management.

(continued)

Letter of Transmittal

Even though there are inherent limitations in any system of internal control, the management of the System makes every effort to ensure that through systematic reporting and internal reviews, error or fraud would be quickly detected and corrected.

Please refer to the Management's Discussion and Analysis starting on page 15 of this report for an overview of the financial status of the System, including a summary of the System's Fiduciary Net Position, Changes in Fiduciary Net Position, and Asset Allocations.

For fiscal year 2019, the pooled investment fund generated a return of 6.9%. The fund continues to invest in a mix of high-quality bonds and stocks which allows the System to participate in rising markets while controlling the downside risks. This has proven to be a successful strategy for other markets and for the System. For further information on investments of the pooled fund, please refer to the Investment Section on pages 89 through 95 of this report.

The objective of the System's pension trust funds is to meet long-term benefit promises through contributions that remain approximately level as a percent of member payroll over time while maintaining an actuarially sound system. Historical information relating to the progress in meeting this objective is presented on pages 126 and 127. The latest actuarial valuations as of June 30, 2018 showed the funded ratio of all of the defined benefit plans increasing. The following table shows the change in funding percentage for each of the pension systems:

	FY2017	FY2018
ERS	74.7%	75.3%
PSERS	83.6%	83.7%
LRS	128.2%	130.7%
GJRS	107.9%	108.7%
GMPF	50.6%	53.6%

Further information regarding the funding condition of the pension plans can be found in the Actuarial Section of this report, beginning on page 96.

Excellence in Financial Reporting

For the ninth consecutive year, the Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to the Employees' Retirement System of Georgia for its comprehensive annual financial report for the fiscal year ended June 30, 2018. In order to be awarded a Certificate of Achievement, a government must publish an easily readable and efficiently organized comprehensive annual financial report. This report must satisfy both generally accepted accounting principles and applicable legal requirements.

A Certificate of Achievement is valid for a period of one year only. We believe our current comprehensive annual financial report continues to meet the Certificate of Achievement Program's requirements, and we are submitting it to the GFOA to determine its eligibility for another certificate.

Initiatives

Member Self Service

In December of 2018, we launched our new Retirement Online Application (ROLA) process. The new process allows members to fully complete their application process on our secure member web portal (with the exception of a few signature-required items), and the member elections are automatically loaded to our PARIS pension application. This reduces processing time and effort, as well as the potential for keypunching errors by staff. For the months, of March, April, and May, slightly over 1/3 of our Employees' Retirement System retirement applications were completed online. We plan to open the process to the Public School Employees Retirement System next year.

Communications and Outreach

New outreach initiatives included targeting key agencies for educational presentations and organizing the first Presentation Tour, which was conducted in remote areas of state. The presentations were broken out to better reach the target audiences, and a Financial Literacy section was incorporated into each. In addition, a first full-day Webinar-a-thon was held during National Retirement Security Week, offering webinars on pension plans and other topics.

(continued)

Letter of Transmittal

Outreach to members, retirees, and employers was also conducted through the release of newsletters to each group. Aligned with best practices, the outdated long-form newsletter was reformatted with CEM recommendations where applicable to our organization. The new title of "Retirement Minute" empathizes the quick nature of the educational and informational e-communications. Email communications were sent to members, employers, and retirees, including a notice regarding the yearly benefit statements.

To enhance branding consistently throughout our organization, the new Brand Graphic Standards Manual was completed. The new standards were incorporated into the 2018 Comprehensive Annual Financial Report (CAFR), which was updated with a new theme concept of "Building a Bridge to a More Comfortable Retirement," and featured images of bridges located all over the state. Additionally, the interactive legislative maps were once again produced in an effort to visually highlight ERSGA's impact throughout the state.

Other Initiatives

In April of this year, we began a collaboration with the Carl Vinson Institute of Government at the University of Georgia to present a nine-month development course to our entire management team. The course will cover such areas as Essentials of Leadership, Communication Skills, Emotional Intelligence, Team Building, and Conflict Management. Those who complete the course will be recognized with certificates at a graduation-style ceremony in January.

The new website launched at the end of FY18 and has been an area of ongoing focus in FY19. A secure portal for the Board of Trustees was created, and a common term glossary was developed to help make the information on our website more accessible for our members and retirees.

Pursuant to the funding policies as amended last year, the assumed investment rate of return and discount rate for all of the defined benefit plans were changed. Effective with the June 30, 2018 valuations, the rates were reduced by 0.10% (10 basis points) to 7.3%. Since the actual investment return in FY 2019 (6.9%) was less than the assumed rate of return, the assumed rate is not expected to be changed for the FY 2019 actuarial valuations.

Other Information

Independent Audit

The Board of Trustees requires an annual audit of the financial statements of the System by independent, certified public accountants. The accounting firm of KPMG LLP was selected by the Board. The independent auditors' report on the statement of fiduciary net position and the related statement of changes in fiduciary net position is included in the Financial Section of this report.

Acknowledgements

This report reflects the combined effort of our staff under the Board's leadership. Copies of this report, along with other valuable plan information, can be downloaded from the System's website.

I would like to express my sincere thanks to the Boards of Trustees for their leadership and support. Many thanks are also extended to the offices of the Governor, Lieutenant Governor, members of the House and Senate Retirement Committees and their staff, members of the House and Senate, and the department officials whose support and assistance have helped ERS accomplish its mission over the years.

Respectfully submitted,

James A. Potvin, Executive Director
Employees' Retirement System of Georgia

Government Finance Officers Association

Certificate of Achievement for Excellence in Financial Reporting

Presented to

Employees' Retirement System of Georgia

For its Comprehensive Annual Financial Report for the Fiscal Year Ended

June 30, 2018

Christopher P. Morrill

Executive Director/CEO

Public Pension Coordinating Council

Recognition Award for Funding
2019

Presented to

Employees' Retirement System of Georgia

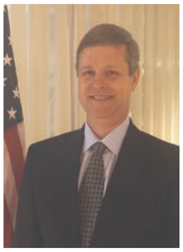
In recognition of meeting professional standards for plan funding as set forth in the Public Pension Standards.

Presented by the Public Pension Coordinating Council, a confederation of

National Association of State Retirement Administrators (NASRA)
National Conference on Public Employee Retirement Systems (NCPERS)
National Council on Teacher Retirement (NCTR)

Alan H. Winkle
Program Administrator

Administrative Staff and Organization



James A. Potvin
Executive Director

Angie Surface
Deputy Director

Charles W. Cary, Jr.
CIO - Investment Services

Laura L. Lanier
Controller

Chris Hackett
Director
Information Technology

Nicole Paisant
Director
Human Resources

Susan Anderson
Chief Operating Officer

Carolyn Kaplan
Director
Financial Mgmt Quality Assurance

Kelly Moody
Director
Legislative Affairs

Danielle Jordan
Director
Communications

Consulting Services

Cavanaugh Macdonald Consulting, LLC - Actuary
KPMG LLP - Auditor
Alight Solutions - Defined Contribution Consultant and Administrator

Investment Advisors*

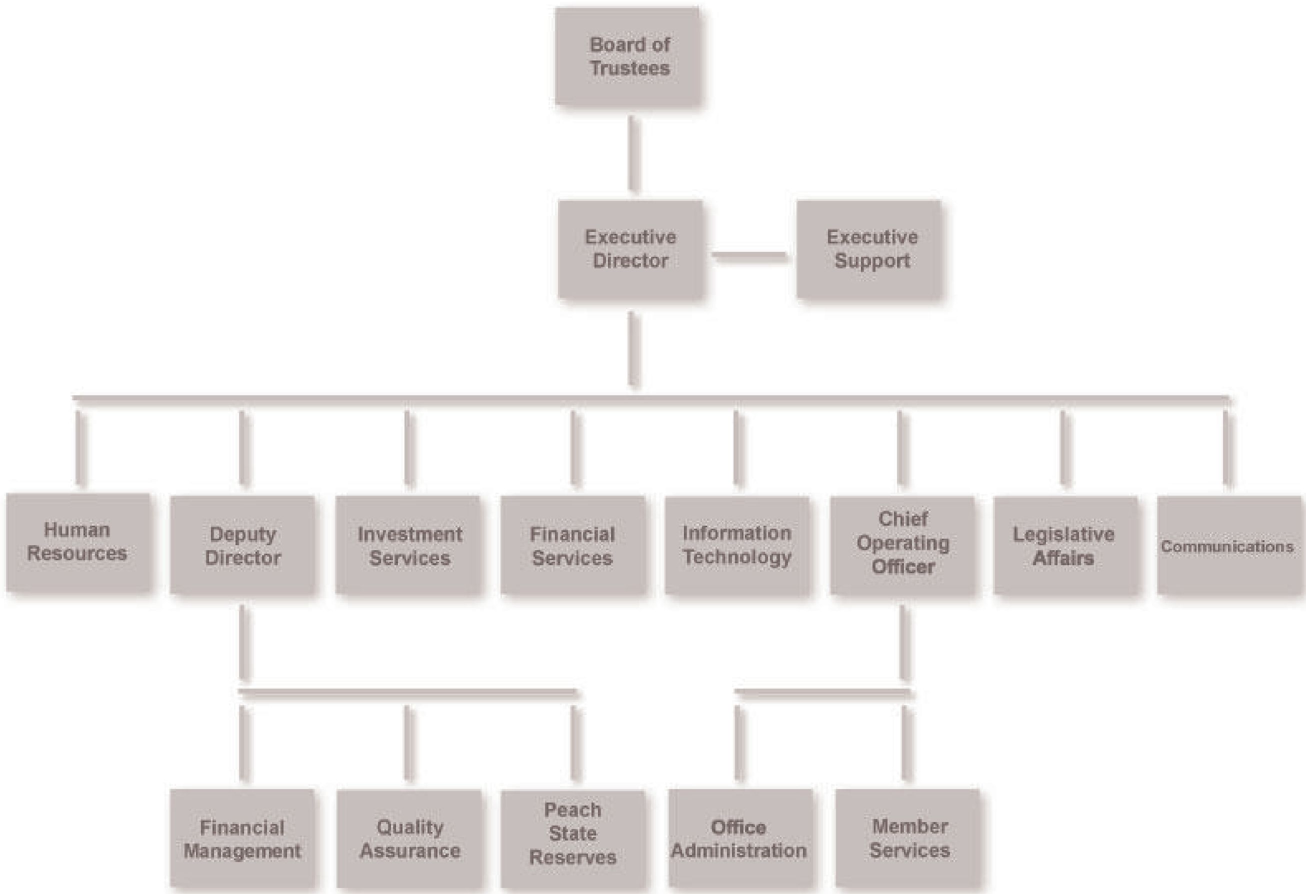
Albritton Capital Management
Baillie Gifford Overseas Limited
Barrow, Hanley, Mewhinney & Strauss
Cooke & Bieler
Fisher Investments
Mondrian Investment Partners Limited
Sands Capital Management
WCM Investment Management

Medical Advisors

Harold E. Sours, M.D., Atlanta, GA
G. Lee Cross, M.D., Atlanta, GA
William H. Biggers, M.D., Atlanta, GA
Pedro F. Garcia, M.D., Atlanta, GA
H. Rudolph Warren, M.D., Dunwoody, GA
Quinton Pirkle, M.D., Atlanta, GA
Marvin Bittinger, M.D., Gainesville, GA
Joseph S. Wilkes, M.D., Sandy Springs, GA
Howard A. McMahan, M.D., Marietta, GA

*See page 93 in the Investment Section for a summary of fees paid to investment Advisors

Organizational Chart



Financial Section

Finding the Hidden Gems in Georgia

The Rock Garden, Calhoun

ERSGA
Employees' Retirement System of Georgia
Serving those who serve Georgia

KPMG LLP
Suite 2000
303 Peachtree Street, NE
Atlanta, GA 30308-3210

Independent Auditors' Report

The Board of Trustees
Employees' Retirement System of Georgia:

Report on the Financial Statements

We have audited the accompanying financial statements of the fiduciary activities and the proprietary activity of the Employees' Retirement System of Georgia (the System), a component unit of the State of Georgia, as of and for the year ended June 30, 2019, and the related notes to the financial statements, which collectively comprise the System's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with U.S. generally accepted accounting principles; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express opinions on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Opinions

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the fiduciary activities and proprietary activity of the System as of June 30, 2019, and the respective changes in financial position and where applicable, cash flows thereof, for the year then ended in accordance with U.S. generally accepted accounting principles.

Other Matters

Required Supplementary Information

U.S. generally accepted accounting principles require that the management's discussion and analysis, schedules of employers' and nonemployers' contributions – defined benefit plans, schedules of employers' and nonemployers' net pension/OPEB liability and related ratios – defined benefit plans, schedules of changes in employers' and nonemployers' net pension/OPEB liability – defined benefit plans, schedule of investment returns, schedules of the System's proportionate share of the Net OPEB Liability, and schedules of the System's contributions to OPEB plans on pages 15-22 and 68-85, be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Supplementary and Other Information

Our audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise the System's basic financial statements. The Survivors Benefit Fund statement of changes in assets and liabilities, the schedules of administrative expenses-contributions and expense and investment expenses, and introductory, investment, actuarial and statistical sections are presented for purposes of additional analysis and are not a required part of the basic financial statements.

The Survivors Benefit Fund statement of changes in assets and liabilities and schedules of administrative expenses - contributions and expenses and investment expenses are the responsibility of management and were derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the Survivors Benefit Fund statement of changes in assets and liabilities and the schedules of administrative expenses - contributions and expenses and investment expenses are fairly stated in all material respects in relation to the basic financial statements as a whole.

The Introductory, Investment, Actuarial, and Statistical sections have not been subjected to the auditing procedures applied in the audit of the basic financial statements, and accordingly, we do not express an opinion or provide an assurance on them.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated September 30, 2019 on our consideration of the System's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the System's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the System's internal control over financial reporting and compliance.

KPMG LLP

Atlanta, Georgia

September 30, 2019 except for the Introductory, Investment, Actuarial, and Statistical sections and the Schedule of Investment Expenses, which are as of November 27, 2019.

(continued)

Management's Discussion and Analysis (Unaudited)

June 30, 2019

This section provides a discussion and analysis of the financial performance of the Employees' Retirement System of Georgia (the System) for the year ended June 30, 2019. The discussion and analysis of the System's financial performance is within the context of the accompanying basic financial statements, notes to the financial statements, required supplementary schedules, and additional information following this section.

The System is responsible for administering a cost-sharing, multiple-employer defined benefit pension plan for various employer agencies of Georgia, along with six other defined benefit pension plans, a defined benefit OPEB plan, three defined contribution plans, and an agency fund, all of which comprise the fiduciary funds. The System is also responsible for administering an enterprise fund, which comprises the proprietary fund.

The defined benefit pension plans include:

- Employees' Retirement System (ERS)
- Public School Employees Retirement System (PSERS)
- Legislative Retirement System (LRS)
- Georgia Judicial Retirement System (GJRS)
- Georgia Military Pension Fund (GMPF)
- Superior Court Judges Retirement Fund (SCJRF)
- District Attorneys Retirement Fund (DARF)

The defined benefit OPEB plan consists of the State Employees' Assurance Department Retired and Vested Inactive Members Trust Fund (SEAD-OPEB).

The defined contribution retirement plans include:

- Georgia Defined Contribution Plan (GDCP)
- State of Georgia Employees' Qualified Trust Deferred Compensation Plan (401(k) Plan)
- State of Georgia Employees' Deferred Compensation Plan (457 Plan)

The agency fund consists of the Survivors Benefit Fund (SBF).

The enterprise fund consists of the State Employees' Assurance Department Active Members Fund (SEAD-Active).

Overview of Financial Statements

A fund is a grouping of related accounts that is used to maintain control over resources that have been segregated for specific activities or objectives. The System administers two categories of funds: fiduciary funds and a proprietary fund. Information related to the financial statements of the funds is presented in the notes to the financial statements.

Fiduciary funds are used to account for resources held for the benefit of parties outside of the System. The primary focus of the System's fiduciary funds is the accumulation of resources for and the payment of pension and OPEB benefits. The System maintains four types of fiduciary funds: (1) defined benefit pension trust funds which are used to report resources held in trust for pensions for retirees and beneficiaries covered by ERS, PSERS, LRS, GJRS, GMPF, SCJRF, and DARF (2) a defined benefit OPEB trust fund, which is used to report resources held in trust for other postemployment benefits of retirees and beneficiaries covered by SEAD-OPEB (3) defined contribution pension trust funds, which are used to accumulate contributions and earnings in the accounts of participants covered by GDCP, the 401(k) Plan, and the 457 Plan, and (4) an agency fund, which is used to report resources held by the SBF in a custodial capacity for other plans.

Proprietary funds, which include enterprise and internal services funds, are used to account for the System's activities that are similar to private-sector businesses. The System maintains one proprietary fund, which is an enterprise fund, SEAD-Active. The primary focus of the System's enterprise fund is the accumulation of resources for,

(continued)

Management's Discussion and Analysis (Unaudited)

and payment of, group term life insurance benefits for active members of ERS, LRS, and GJRS covered by SEAD-Active.

The basic financial statements comprise statements for both fiduciary and proprietary funds. The fiduciary fund financial statements include (1) *Combining Statement of Fiduciary Net Position* (2) *Defined Benefit Plans – Combining Statement of Fiduciary Net Position* (3) *Combining Statement of Changes in Fiduciary Net Position*, and (4) *Defined Benefit Plans – Combining Statement of Changes in Fiduciary Net Position*. The proprietary fund financial statements include (1) *Statement of Net Position* (2) *Statement of Revenues, Expenses, and Changes in Net Position* and (3) *Statement of Cash Flows.*

In addition, the System presents six types of required supplementary schedules, which provide historical trend information about the plan. Four of the schedules are presented from the perspective of the System reporting as the plan and include (1) *Schedules of Employers' and Nonemployers' Contributions* (2) *Schedules of Employers' and Nonemployers' Net Pension/OPEB Liability and Related Ratios* (3) *Schedules of Changes in Employers' and Nonemployers' Net Pension/OPEB Liability* and (4) *Schedule of Investment Returns*. Two of the schedules are presented from the perspective of the System reporting as the employer for its employees who participate in the State Employees' Assurance Department Retired and Vested Inactive Members Trust Fund (SEAD-OPEB) and the Georgia State Employees Postemployment Benefit Fund (State OPEB Fund) and include the (5) *Schedules of the System's Proportionate Share of the Net OPEB Liability* and (6) S*chedules of the System's Contributions to OPEB Plans*. The System also includes in this report additional information to supplement the financial statements.

The System prepares its financial statements on the accrual basis of accounting in accordance with U.S. generally accepted accounting principles as promulgated by the Governmental Accounting Standards Board (GASB). These statements provide information about the System's overall financial status.

Financial Highlights

The highlights of the fiduciary funds of the System are as follows:

- The net position of the fiduciary funds increased by $361.2 million, or 2.0%, from $17.9 billion at June 30, 2018 to $18.3 billion at June 30, 2019. The increase in net position from 2018 to 2019 was primarily due to positive fixed income and equity market returns.

- For the year ended June 30, 2019, the total additions to net position were $2.1 billion compared to $2.4 billion for the year ended June 30, 2018. For the year ended June 30, 2019, the additions consisted of employer, nonemployer contributing entities (nonemployer), and member contributions totaling $934.0 million, insurance premiums of $3.3 million, net investment income of $1.2 billion, and participant fees of $0.6 million.

- Net investment income of $1.2 billion in 2019 (comprising interest and dividend income, the change in fair value of investments, and other, reduced by investment expenses) represents a decrease of $353.4 million, or 23.4%, compared to the net investment income of $1.5 billion for the year ended June 30, 2018. The change in net investment income was primarily due to more moderate equity gains in 2019 compared to 2018.

- The total deductions from net position were $1.7 billion for the years ended June 30, 2019 and 2018. For the year ended June 30, 2019, the deductions primarily consisted of benefit payments.

The highlights of the proprietary fund of the System are as follows:

- The net position of the proprietary fund increased by $16.7 million to $305.9 million at June 30, 2019 compared to $289.2 million at June 30, 2018. The increase in net position from 2018 to 2019 was primarily due to positive fixed income and equity market returns.
- For the year ended June 30, 2019, total operating loss was $3.0 million compared to $2.5 million for the year ended June 30, 2018. The increase relates primarily to an increase in the number of active members who received death benefits during the year.

(continued)

Management's Discussion and Analysis (Unaudited)

- Net investment income allocated from the pooled investment fund of $19.6 million in 2019 represents a decrease of $4.8 million, or 19.6%, compared to net investment income allocated from the pooled investment fund of $24.4 million for the year ended June 30, 2018. The change in investment income allocated from the pooled investment fund was primarily due to more moderate equity gains in 2019 compared to 2018.

Description of the Financial Statements

Fiduciary Funds

The *Combining Statement of Fiduciary Net Position* is the statement of financial position presenting information that includes the fiduciary funds' assets and liabilities, with the balance representing the Net Position Restricted for Pensions and OPEB. The investments of the funds in this statement are presented at fair value. This statement is presented on page 23.

The *Combining Statement of Changes in Fiduciary Net Position* reports how the fiduciary funds' net position changed during the fiscal year. The additions include contributions to the retirement plans from employers, nonemployers, and members; group term life insurance premiums; participant fees; and net investment income, which includes interest and dividends and the net increase in the fair value of investments, net of investment expenses. The deductions include benefit payments, life insurance death benefit payments, refunds of member contributions and interest, and administrative expenses. This statement is presented on page 25.

The *Defined Benefit Plans' Combining Statement of Fiduciary Net Position* and the *Combining Statement of Changes in Fiduciary Net Position* present the financial position and changes in financial position for each of the defined benefit plans administered by the System. These statements are on pages 24 and 26, respectively.

Proprietary Funds

The *Statement of Net Position* is the statement of financial position presenting information that includes the assets and liabilities, with the balance representing the net position. This statement is presented on page 27.

The *Statement of Revenues, Expenses, and Changes in Net Position* distinguishes operating revenues and expenses from nonoperating items. Principal operating revenues result from insurance premiums from members, while operating expenses result from death benefit payments and administrative expenses. All revenues and expenses not meeting this definition are reported as nonoperating revenues and expenses. This statement is presented on page 28.

The *Statement of Cash Flows* provides information about cash receipts and cash payments during the year. When used in conjunction with related disclosures and information in the other financial statements, the statement provides relevant information about the plan's ability to generate future net cash flows, the plan's ability to meet its obligations as they come due, and presents the reasons for differences between operating income and associated cash receipts and payments. This statement is presented on page 29.

Notes to Financial Statements are presented to provide the information necessary for a full understanding of the financial statements. The notes to the financial statements begin on page 30.

Required Supplementary Information begins on page 68. The required schedules are discussed as follows:

- The *Schedule of Employers' and Nonemployers' Contributions* presents historical trend information for the last 10 consecutive fiscal years about the required contributions and the percent of required contributions actually contributed.

- The *Schedule of Employers' and Nonemployers' Net Pension/OPEB Liability and Related Ratios* presents the components of the net pension/OPEB liability as of the fiscal year end and the fiduciary net position as a

(continued)

Management's Discussion and Analysis (Unaudited)

Required Supplementary Information (continued)

percentage of the total pension/OPEB liability as of that date. This trend information will be accumulated to display a 10-year presentation.

- The *Schedule of Changes in Employers' and Nonemployers' Net Pension/OPEB Liability* presents total net pension/OPEB liability and is measured as total pension/OPEB liability less the amount of the fiduciary net position. This trend information will be accumulated to display a 10-year presentation.

- The *Schedule of Investment Returns* presents historical trend information about the annual money-weighted rate of return on plan investments, net of plan investment expense. This trend information will be accumulated to display a 10-year presentation.

- The *Schedule of the System's Proportionate Share of the Net OPEB Liability* presents historical trend information about the System's proportionate share of the net OPEB liability (asset) for its employees who participate in the SEAD-OPEB plan and the State OPEB Fund. This trend information will be accumulated to display a 10-year presentation.

- The *Schedule of the System's Contributions to OPEB Plans* presents historical trend information about the System's contributions for its employees who participate in the SEAD-OPEB plan and the State OPEB Fund. This trend information will be accumulated to display a 10-year presentation.

Three of the required schedules above, the *Schedules of Employers' and Nonemployers' Contributions,* the *Schedules of Employers' and Nonemployers' Net Pension/OPEB Liability and Related Ratios*, and the *Schedules of Changes in Employers' and Nonemployers' Net Pension/OPEB Liability* are applicable to five of the defined benefit pension plans (ERS, PSERS, LRS, GJRS, and GMPF) and the defined benefit OPEB plan (SEAD-OPEB).

Notes to Required Supplementary Information are presented to provide the information necessary for a full understanding of the supplementary schedules. The notes to required supplementary information begin on page 81.

Additional information is presented, beginning on page 86, and includes the *Statement of Changes in Assets and Liabilities* for the Survivors Benefit Fund, which presents additions to and deductions from the fund and the *Schedule of Administrative Expenses – Contributions and Expenses* which presents the expenses incurred in the administration of the plans and funds, and the contributions from each plan and fund to provide for these expenses.

(continued)

Management's Discussion and Analysis (Unaudited)

Financial Analysis of the System

A summary of the System’s net position of the fiduciary funds at June 30, 2019 is as follows (dollars in thousands):

	Net position		Amount change	Percentage change
	2019	2018		
Assets:				
Cash, cash equivalents, and receivables	$ 533,422	366,532	166,890	45.5%
Investments	18,226,094	18,000,993	225,101	1.3
Capital assets, net	6,552	6,738	(186)	(2.8)
Net OPEB asset	541	501	40	8.0
Total assets	18,766,609	18,374,764	391,845	2.1
Deferred outflows of resources	1,156	938	218	23.2
Liabilities:				
Due to brokers, accounts payable, and insurance premiums payable	36,003	30,882	5,121	16.6
Due to other funds/plans and participating systems	464,539	437,628	26,911	6.1
Net OPEB liability	4,749	7,571	(2,822)	(37.3)
Total liabilities	505,291	476,081	29,210	6.1
Deferred inflows of resources	2,389	701	1,688	240.8
Net position	$ 18,260,085	17,898,920	361,165	2.0

A summary of the System’s net position of the proprietary fund at June 30, 2019 is as follows (dollars in thousands):

	Net position		Amount change	Percentage change
	2019	2018		
Assets:				
Cash, cash equivalents, and receivables	$ 124	162	(38)	(23.5)%
Investments	305,795	289,087	16,708	5.8
Total assets	305,919	289,249	16,670	5.8
Liabilities:				
Accounts payable and other	42	42	—	—
Net position	$ 305,877	289,207	16,670	5.8

(continued)

Management's Discussion and Analysis (Unaudited)

The following table presents the investment allocation at June 30, 2019, and 2018:

	2019	2018
Asset allocation at June 30 (in percentages):		
Equities:		
Domestic	45.8 %	46.3 %
International	15.3	15.6
Private equity	1.8	1.2
Domestic obligations:		
U.S. treasuries	20.8	18.8
Corporate and other bonds	6.1	8.2
International obligations:		
Corporates	0.5	1.1
Commingled funds	9.7	8.8
Asset allocation at June 30 (in thousands):		
Equities:		
Domestic	$ 8,350,863	$ 8,332,421
International	2,786,569	2,807,854
Private equity	335,306	221,904
Domestic obligations:		
U.S. treasuries	3,784,262	3,374,310
Corporate and other bonds	1,104,643	1,475,432
International obligations:		
Corporates	95,134	190,353
Mutual funds	8,114	7,228
Commingled funds	1,761,203	1,591,491
	$ 18,226,094	$ 18,000,993

The total investment portfolio increased by $225.1 million, or 1.3%, from 2018, which is due to positive fixed income and equity market returns.

Investment performance is calculated using a time-weighted rate of return using the Daily Valuation Method. The time-weighted rate of return for the fiscal year ended June 30, 2019, was 6.9% with a 6.5% return for equities, a 19.6% return for private equity, and a 7.1% return for fixed income. The five-year annualized rate of return at June 30, 2019, was 6.7% with an 8.4% return for equities, a 13.5% return for private equity, and a 2.6% return for fixed income.

(continued)

Management's Discussion and Analysis (Unaudited)

A money-weighted return is weighted by the amount of dollars in the fund at the beginning and end of the performance period. A money-weighted return is highly influenced by the timing of cash flows into and out of the fund and is a better measure of an entity or person who controls the cash flows into or out of the fund. The non-discretionary cash flows for the plan, primarily contributions and benefit payments, have a considerable impact on the money-weighted returns of the portfolio. The money-weighted rate of return for the fiscal year ended June 30, 2019, was (1.8)%, compared to 0.6% for the fiscal year ended June 30, 2018.

A summary of the changes in the System's net position of the fiduciary funds for the year ended June 30, 2019 is as follows (dollars in thousands):

	Changes in net position			
	2019	2018	Amount change	Percentage change
Additions:				
Employer contributions	$ 692,481	690,516	1,965	0.3 %
Nonemployer contributions	42,620	43,982	(1,362)	(3.1)
Member contributions	198,928	190,091	8,837	4.6
Participant fees	597	1,744	(1,147)	(65.8)
Insurance premiums	3,328	3,599	(271)	(7.5)
Net investment income	1,156,418	1,509,803	(353,385)	(23.4)
Other	13	15	(2)	(13.3)
Total additions	2,094,385	2,439,750	(345,365)	(14.2)
Deductions:				
Benefit payments	1,660,330	1,608,691	51,639	3.2
Refunds	19,854	18,538	1,316	7.1
Death benefits	37,416	36,249	1,167	3.2
Administrative expenses	15,620	16,308	(688)	(4.2)
Total deductions	1,733,220	1,679,786	53,434	3.2
Net increase in net position	$ 361,165	759,964	(398,799)	(52.5)

Additions – The System accumulates resources needed to fund benefit payments through contributions and returns on invested funds. In fiscal year 2019, total contributions increased $9.4 million, or 1.0%, primarily due to modest overall salary increases. Net investment income decreased by $353.4 million, or 23.4%, due primarily to equity returns moderating somewhat in fiscal year 2019 compared to 2018.

Deductions – For fiscal year 2019, total deductions increased $53.4 million, or 3.2%, primarily because of an increase of $51.6 million, or 3.2%, in benefit payments. Pension benefit payments increased due to an increase in the number of retirees and beneficiaries receiving benefits in 2019 in addition to cost of living adjustments of 2% for PSERS members and two one-time benefit payments of 2% for ERS, JRS, and LRS members. Refunds increased by $1.3 million, or 7.1%, which was primarily due to an increase in the number of refunds processed during 2019.

(continued)

Management's Discussion and Analysis (Unaudited)

A summary of the changes in the System's net position of the proprietary fund for the year ended June 30, 2019 is as follows (dollars in thousands):

	Changes in net position		Amount change	Percentage change
	2019	2018		
Operating revenue:				
Insurance premiums	$ 531	540	(9)	(1.7) %
Total operating revenue	531	540	(9)	(1.7)
Operating expenses:				
Death benefits	3,424	2,972	452	15.2
Administrative expenses	80	76	4	5.3
Total operating expenses	3,504	3,048	456	15.0
Total operating loss	(2,973)	(2,508)	(465)	(18.5)
Nonoperating revenue:				
Allocation of investment income from pooled investment fund, net	19,643	24,429	(4,786)	(19.6)
Change in net position	$ 16,670	21,921	(5,251)	(24.0)

Operating and nonoperating revenue – The proprietary fund accumulates resources needed to fund death benefit payments through premiums earned and returns on invested funds. In fiscal year 2019, total premiums earned decreased $9.0 thousand, or 1.7%, primarily due to a decrease in the number of participating members allowed in the plan. Effective January 1, 2009, the plan was closed to new members. Allocation of investment income from the pooled investment fund, net of related expenses, decreased by $4.8 million, or 19.6%, primarily due to equity returns moderating somewhat in fiscal year 2019 compared to 2018.

Operating expenses – For fiscal year 2019, death benefits increased by $0.5 million, or 15.2%, which was primarily due to an increase in the number of death claims processed during 2019. Administrative expenses increased by $4.0 thousand over the prior year, or 5.3%, primarily due to increased contractual services costs.

Requests for Information

This financial report is designed to provide a general overview of the System's finances for all those with interest in the System's finances. Questions concerning any of the information provided in this report or requests for additional information should be addressed to Employees' Retirement System of Georgia, Two Northside 75, Suite 300, Atlanta, GA 30318.

(continued)

Combining Statement of Fiduciary Net Position

June 30, 2019
(In thousands)

			Defined contribution plans			Agency fund		
Assets	**Defined benefit plans**	**Pooled Investment Fund**	**Georgia Defined Contribution Plan**	**401(k) Plan**	**457 Plan**	**Survivors Benefit Fund**	**Eliminations**	**Total**
Cash and cash equivalents	$ 28,021	381,322	16,425	11,633	1,549	86	—	439,036
Receivables:								
Contributions	38,124	—	1,051	3,946	492	—	—	43,613
Interest and dividends	—	46,236	454	20	13	—	—	46,723
Due from brokers for securities sold	—	1,374	—	—	—	—	—	1,374
Other	2,318	—	—	246	112	—	—	2,676
Unremitted insurance premiums	478	—	—	—	—	—	(478)	—
Total receivables	40,920	47,610	1,505	4,212	617	—	(478)	94,386
Investments - at fair value:								
Domestic obligations:								
U.S. treasuries	—	3,696,962	87,300	—	—	—	—	3,784,262
Corporate and other bonds	—	1,083,735	20,908	—	—	—	—	1,104,643
International obligations:								
Corporates	—	95,134	—	—	—	—	—	95,134
Equities:								
Domestic	—	8,334,829	—	9,133	6,901	—	—	8,350,863
International	—	2,784,803	—	740	1,026	—	—	2,786,569
Private equity	—	335,306	—	—	—	—	—	335,306
Mutual funds	—	—	—	3,821	4,293	—	—	8,114
Commingled funds	—	—	—	1,134,398	626,805	—	—	1,761,203
Equity in pooled investment fund	16,282,939	—	—	—	—	158,658	(16,441,597)	—
Total investments	16,282,939	16,330,769	108,208	1,148,092	639,025	158,658	(16,441,597)	18,226,094
Capital assets, net	6,552	—	—	—	—	—	—	6,552
Net OPEB asset	541	—	—	—	—	—	—	541
Total assets	16,358,973	16,759,701	126,138	1,163,937	641,191	158,744	(16,442,075)	18,766,609
Deferred outflows of resources	1,156	—	—	—	—	—	—	1,156
Liabilities								
Accounts payable and other	19,189	2,160	488	2,728	1,217	—	—	25,782
Due to brokers for securities purchased	—	10,149	—	—	—	—	—	10,149
Insurance premiums payable	550	—	—	—	—	—	(478)	72
Due to other funds/plans	—	—	—	—	—	158,744	—	158,744
Due to participating systems	—	16,747,392	—	—	—	—	(16,441,597)	305,795
Net OPEB liability	4,749	—	—	—	—	—	—	4,749
Total liabilities	24,488	16,759,701	488	2,728	1,217	158,744	(16,442,075)	505,291
Deferred inflows of resources	2,389	—	—	—	—	—	—	2,389
Net position restricted for pensions and OPEB	$ 16,333,252	—	125,650	1,161,209	639,974	—	—	18,260,085

See accompanying notes to financial statements.

Defined Benefit Plans - Combining Statement of Fiduciary Net Position

June 30, 2019
(In thousands)

	Defined benefit pension plans							Defined benefit OPEB plan	
Assets	**Employees' Retirement System**	**Public School Employees Retirement System**	**Legislative Retirement System**	**Georgia Judicial Retirement System**	**Georgia Military Pension Fund**	**Superior Court Judges Retirement Fund**	**District Attorneys Retirement Fund**	**State Employees' Assurance Department OPEB**	**Defined benefit plans total**
Cash and cash equivalents	$ 27,147	211	51	512	84	11	2	3	28,021
Receivables:									
Contributions	37,328	2	28	766	—	—	—	—	38,124
Interest and dividends	—	—	—	—	—	—	—	—	—
Due from brokers for securities sold	—	—	—	—	—	—	—	—	—
Other	2,059	259	—	—	—	—	—	—	2,318
Unremitted insurance premiums	—	—	—	—	—	—	—	478	478
Total receivables	39,387	261	28	766	—	—	—	478	40,920
Investments - at fair value:									
Domestic obligations:									
U.S. treasuries	—	—	—	—	—	—	—	—	—
Corporate and other bonds	—	—	—	—	—	—	—	—	—
International obligations:									
Corporates	—	—	—	—	—	—	—	—	—
Equities:									
Domestic	—	—	—	—	—	—	—	—	—
International	—	—	—	—	—	—	—	—	—
Private equity	—	—	—	—	—	—	—	—	—
Mutual funds	—	—	—	—	—	—	—	—	—
Commingled funds	—	—	—	—	—	—	—	—	—
Equity in pooled investment fund	13,567,302	942,101	34,559	478,823	26,404	—	—	1,233,750	16,282,939
Total investments	13,567,302	942,101	34,559	478,823	26,404	—	—	1,233,750	16,282,939
Capital assets, net	6,552	—	—	—	—	—	—	—	6,552
Net OPEB asset	541	—	—	—	—	—	—	—	541
Total assets	13,640,929	942,573	34,638	480,101	26,488	11	2	1,234,231	16,358,973
Deferred outflows of resources	1,156	—	—	—	—	—	—	—	1,156
Liabilities									
Accounts payable and other	16,936	986	97	719	71	5	—	375	19,189
Due to brokers for securities purchased	—	—	—	—	—	—	—	—	—
Insurance premiums payable	539	—	1	10	—	—	—	—	550
Due to other funds/plans	—	—	—	—	—	—	—	—	—
Due to participating systems	—	—	—	—	—	—	—	—	—
Net OPEB liability	4,749	—	—	—	—	—	—	—	4,749
Total liabilities	22,224	986	98	729	71	5	—	375	24,488
Deferred inflows of resources	2,389	—	—	—	—	—	—	—	2,389
Net position restricted for pensions and OPEB	$ 13,617,472	941,587	34,540	479,372	26,417	6	2	1,233,856	16,333,252

See accompanying notes to financial statements.

Combining Statement of Changes in Fiduciary Net Position

Year ended June 30, 2019
(In thousands)

			Defined contribution plans			
	Defined benefit plans	Pooled Investment Fund	Georgia Defined Contribution Plan	401(k) Plan	457 Plan	Total
Additions:						
Contributions:						
Employer	$ 645,311	—	—	47,170	—	692,481
Nonemployer	42,620	—	—	—	—	42,620
Member	44,316	—	14,578	119,770	20,264	198,928
Participant fees	—	—	—	544	53	597
Insurance premiums	3,328	—	—	—	—	3,328
Administrative expense allotment	13	—	—	—	—	13
Investment income:						
Net increase in fair value of investments	—	726,417	5,627	62,954	38,546	833,543
Interest and dividends	—	368,772	2,759	252	116	371,899
Other	—	—	—	(67)	1,216	1,149
Less investment expenses	(9,243)	(8,142)	(62)	(2,033)	(778)	(20,258)
Allocation of investment income	1,057,131	(1,087,047)	—	—	—	(29,916)
Net investment income	1,047,888	—	8,324	61,106	39,100	1,156,418
Total additions	1,783,476	—	22,902	228,590	59,417	2,094,385
Deductions:						
Benefit payments	1,538,595	—	10	79,644	42,081	1,660,330
Refunds of member contributions and interest	8,923	—	10,931	—	—	19,854
Death benefits	37,416	—	—	—	—	37,416
Administrative expenses	10,583	—	882	3,431	724	15,620
Total deductions	1,595,517	—	11,823	83,075	42,805	1,733,220
Net increase in net position	187,959	—	11,079	145,515	16,612	361,165
Net position restricted for pension and OPEB:						
Beginning of year	16,145,293	—	114,571	1,015,694	623,362	17,898,920
End of year	$ 16,333,252	—	125,650	1,161,209	639,974	18,260,085

See accompanying notes to financial statements.

Defined Benefit Plans - Combining Statement of Changes in Fiduciary Net Position

Year ended June 30, 2019
(In thousands)

	Defined benefit pension plans							Defined benefit OPEB plan	
	Employees' Retirement System	Public School Employees Retirement System	Legislative Retirement System	Georgia Judicial Retirement System	Georgia Military Pension Fund	Superior Court Judges Retirement Fund	District Attorneys Retirement Fund	State Employee's Assurance Department OPEB	Defined benefit plans total
Additions:									
Contributions:									
Employer	$ 638,989	—	—	3,117	2,537	626	37	5	645,311
Nonemployer	10,220	30,263	—	2,137	—	—	—	—	42,620
Member	36,252	2,256	339	5,469	—	—	—	—	44,316
Participant fees	—	—	—	—	—	—	—	—	—
Insurance premiums	—	—	—	—	—	—	—	3,328	3,328
Administrative expense allotment	10	—	—	—	—	2	1	—	13
Investment income:									
Net increase in fair value of investments	—	—	—	—	—	—	—	—	—
Interest and dividends	—	—	—	—	—	—	—	—	—
Other	—	—	—	—	—	—	—	—	—
Less investment expenses	(8,058)	(391)	(15)	(189)	(6)	—	—	(584)	(9,243)
Allocation of investment income	881,462	60,944	2,243	31,016	1,689	—	—	79,777	1,057,131
Net investment income	873,404	60,553	2,228	30,827	1,683	—	—	79,193	1,047,888
Total additions	1,558,875	93,072	2,567	41,550	4,220	628	38	82,526	1,783,476
Deductions:									
Benefit payments	1,443,756	63,637	1,856	27,462	1,221	626	37	—	1,538,595
Refunds of member contributions and interest	7,691	609	70	553	—	—	—	—	8,923
Death benefits	—	—	—	—	—	—	—	37,416	37,416
Administrative expenses	7,142	1,377	290	820	235	2	1	716	10,583
Total deductions	1,458,589	65,623	2,216	28,835	1,456	628	38	38,132	1,595,517
Net increase in net position	100,286	27,449	351	12,715	2,764	—	—	44,394	187,959
Net position restricted for pensions and OPEB:									
Beginning of year	13,517,186	914,138	34,189	466,657	23,653	6	2	1,189,462	16,145,293
End of year	$ 13,617,472	941,587	34,540	479,372	26,417	6	2	1,233,856	16,333,252

See accompanying notes to financial statements.

Statement of Net Position - State Employees' Assurance Department Active Members Fund

June 30, 2019
(In thousands)

Assets:		
Cash and cash equivalents	$	52
Receivables:		
Unremitted insurance premiums		72
Investments - at fair value:		
Equity share of pooled investment fund		305,795
Total assets		305,919
Liabilities:		
Accounts payable and other		42
Total liabilities		42
Total net position	$	305,877

See accompanying notes to financial statements.

Statement of Revenues, Expenses, and Changes in Net Position - State Employees' Assurance Department Active Members Fund

Year ended June 30, 2019
(In thousands)

Operating revenue:		
Insurance premiums	$	531
Total operating revenue		531
Operating expenses:		
Death benefits		3,424
Administrative expenses		80
Total operating expenses		3,504
Total operating loss		(2,973)
Nonoperating revenues (expenses):		
Allocation of investment income from pooled investment fund		19,708
Investment expenses		(65)
Total nonoperating revenues		19,643
Change in net position		16,670
Total net position:		
Beginning of year		289,207
End of year	$	305,877

See accompanying notes to financial statements.

Statement of Cash Flows -
State Employees' Assurance Department Active Members Fund

Year ended June 30, 2019
(In thousands)

Cash flows from operating activities:		
Insurance premiums received	$	531
Death benefits paid		(3,424)
Administrative fees paid		(80)
Net cash used in operating activities		(2,973)
Cash flows from investing activities:		
Withdrawals from pooled investment fund		3,000
Investment expenses paid		(65)
Net cash provided by investing activities		2,935
Net increase in cash and cash equivalents		(38)
Cash and cash equivalents, beginning of year		90
Cash and cash equivalents, end of year	$	52
Reconciliation of operating loss to net cash used in operating activities:		
Operating loss	$	(2,973)
Changes in assets and liabilities		—
Net cash used in operating activities	$	(2,973)

See accompanying notes to financial statements.

Notes to Financial Statements

June 30, 2019

(1) *General*

The accompanying basic financial statements of the Employees' Retirement System of Georgia, including all plans and funds administered by the Employees' Retirement System of Georgia (collectively, the System), comprises the Employees' Retirement System of Georgia (ERS), Public School Employees Retirement System (PSERS), Legislative Retirement System (LRS), Georgia Judicial Retirement System (GJRS), Georgia Military Pension Fund (GMPF), Superior Court Judges Retirement Fund (SCJRF), District Attorneys Retirement Fund (DARF), State Employees' Assurance Department Retired and Vested Inactive Members Trust Fund (SEAD-OPEB), Georgia Defined Contribution Plan (GDCP), State of Georgia Employees' Qualified Trust Deferred Compensation Plan (401 (k) Plan), State of Georgia Employees' Deferred Compensation Plan (457 Plan), Survivors Benefit Fund (SBF), and State Employees' Assurance Department Active Members Fund (SEAD-Active). All significant transactions among the various systems, departments, and funds have been eliminated. The Boards of Trustees, comprising active and retired members, ex officio state employees, and appointees by the Governor, are ultimately responsible for the administration of the System.

(2) *Authorizing Legislation and Plan Descriptions*

Each plan and fund, including benefit and contribution provisions, was established and can be amended by state law. The following summarizes authorizing legislation and the plan description of each retirement fund:

(a) ERS is a cost-sharing multiple-employer defined benefit pension plan established by the Georgia General Assembly during the 1949 Legislative Session for the purpose of providing retirement allowances for employees of the State of Georgia and its political subdivisions. ERS is directed by a Board of Trustees (ERS Board) and has the powers and privileges of a corporation. There were 420 employers and 1 nonemployer contributing entity participating in the plan during 2019. Total participation in ERS at June 30, 2019 was 172,056 as detailed in the following chart:

ERS Membership as of June 30, 2019

Benefits

The ERS Plan supports three benefit tiers: Old Plan, New Plan, and Georgia State Employees' Pension and Savings Plan (GSEPS). Employees under the Old Plan started membership prior to July 1, 1982 and are subject to plan provisions in effect prior to July 1, 1982. Members hired on or after July 1, 1982 but prior to January 1, 2009 are New Plan members subject to modified plan provisions. Effective January 1, 2009, new state employees and rehired state employees who did not retain membership rights under the Old or New Plans are members of GSEPS. ERS members hired prior to January 1, 2009 also have the option to irrevocably change their membership to GSEPS.

Under the Old Plan, the New Plan, and GSEPS, a member may retire and receive normal retirement benefits after completion of 10 years of creditable service and attainment of age 60 or 30 years of creditable service, regardless of age. Additionally, there are some provisions allowing for early retirement after 25 years of creditable service for members under age 60.

Retirement benefits paid to members are based upon the monthly average of the member's highest 24 consecutive calendar months, multiplied by the number of years of creditable service, multiplied by the

(continued)

applicable benefit factor. Annually, postretirement cost-of-living adjustments may also be made to members' benefits, provided the members were hired prior to July 1, 2009. The normal retirement pension is payable monthly for life; however, options are available for distribution of the member's monthly pension, at reduced rates, to a designated beneficiary upon the member's death. Death and disability benefits are also available through ERS.

Contributions and Vesting

Member contributions under the Old Plan are 4% of annual compensation, up to $4,200, plus 6% of annual compensation in excess of $4,200. Under the Old Plan, the state pays member contributions in excess of 1.25% of annual compensation. These state contributions are included in the members' accounts for refund purposes and are used in the computation of the members' earnable compensation for the purpose of computing retirement benefits. Member contributions under the New Plan and GSEPS are 1.25% of annual compensation. The state is required to contribute at a specified percentage of active member payrolls, determined annually by actuarial valuation. The state contributions are not at any time refundable to the member or his/her beneficiary.

Pursuant to The Official Code of Georgia Annotated (O.C.G.A.) 47-2-292, the employer contributions for local tax commissioners and their employees who took office or were employed prior to July 1, 2012 are funded by the State of Georgia on behalf of the local county employer. Pursuant to O.C.G.A. 47-2-290, the employer contribution for certain State Court employees is funded by the state on behalf of the local county employer.

Employer and nonemployer contributions as a percentage of covered payroll required for fiscal year 2019 were based on the June 30, 2016 actuarial valuation for the Old Plan, New Plan, and GSEPS, as follows:

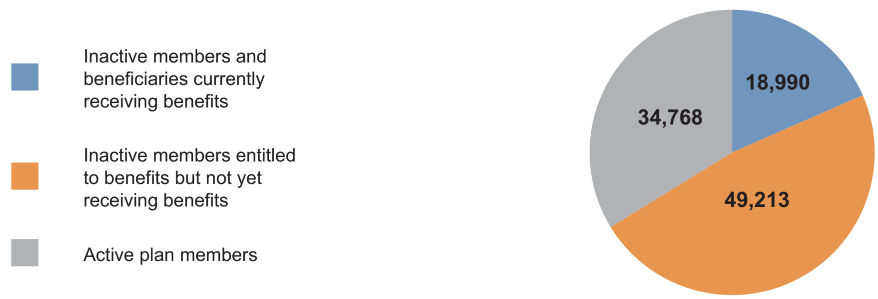
	Old Plan	New Plan	GSEPS
Employer and nonemployer:			
Normal	1.23 %	5.98 %	2.98 %
Employer paid for member	4.75 %	— %	— %
Accrued liability	18.68 %	18.68 %	18.68 %
Total	24.66 %	24.66 %	21.66 %

Members become vested after 10 years of membership service. Upon termination of employment, member contributions with accumulated interest are refundable upon request by the member. However, if an otherwise vested member terminates and withdraws his/her member contributions, the member forfeits all rights to retirement benefits.

(continued)

(b) PSERS is a cost-sharing multiple-employer defined benefit pension plan established by the Georgia General Assembly in 1969 for the purpose of providing retirement allowances for public school employees who are not eligible for membership in the Teachers Retirement System of Georgia. The ERS Board, plus two additional trustees, administers PSERS (PSERS Board). There were 187 employers and 1 nonemployer contributing entity participating in the plan during 2019. Total participation in PSERS at June 30, 2019 was 102,971 as detailed in the following chart:

PSERS Membership as of June 30, 2019



Benefits

A member may retire and elect to receive normal monthly retirement benefits after completion of 10 years of creditable service and attainment of age 65. A member may choose to receive reduced benefits after age 60 and upon completion of 10 years of service.

Upon retirement, the member will receive a monthly benefit of $15.25, multiplied by the number of years of creditable service. Death and disability benefits are also available through PSERS. Additionally, PSERS may make periodic cost-of-living adjustments to the monthly benefits.

Contributions and Vesting

Individuals who became members prior to July 1, 2012 contribute $4 per month for nine months each fiscal year. Individuals who became members on or after July 1, 2012 contribute $10 per month for nine months each fiscal year. The State of Georgia, although not the employer of PSERS members, is required by statute to make employer contributions actuarially determined and approved and certified by the PSERS Board.

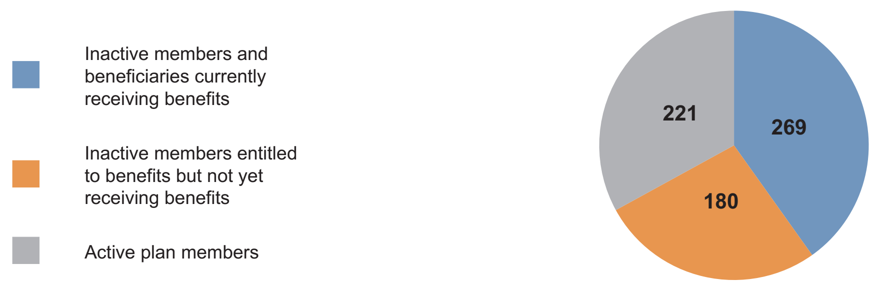
Employer contributions required for the year ended June 30, 2019 were $777.04 per active member and were based on the June 30, 2016 actuarial valuation.

Members become vested after 10 years of creditable service. Upon termination of employment, member contributions with accumulated interest are refundable upon request by the member. However, if an otherwise vested member terminates and withdraws his/her member contributions, the member forfeits all rights to retirement benefits.

(continued)

(c) LRS is a single-employer defined benefit pension plan established by the Georgia General Assembly from 1967–1971, and later reestablished in 1979, for the purpose of providing retirement allowances for all members of the Georgia General Assembly. LRS is administered by the ERS Board. There was one employer in the plan for 2019. Total participation in LRS at June 30, 2019 was 670 as detailed in the following chart:

LRS Membership as of June 30, 2019



Benefits

A member's normal retirement is after eight years of creditable service and attainment of age 65, or eight years of membership service (four legislative terms) and attainment of age 62. A member may retire early and elect to receive a monthly retirement benefit after completion of eight years of membership service and attainment of age 60; however, the retirement benefit is reduced by 5% for each year the member is under age 62.

Upon retirement, the member will receive a monthly service retirement allowance of $36, multiplied by the number of years of creditable service. Death benefits are also available through the plan.

Contributions and Vesting

Member contributions are 8.5% of annual salary. The state pays member contributions in excess of 4.75% of annual compensation. Employer contributions are actuarially determined and approved and certified by the ERS Board.

There were no employer contributions required for the year ended June 30, 2019 based on the June 30, 2016 actuarial valuation.

Members become vested after eight years of creditable service. Upon termination of employment, member contributions with accumulated interest are refundable upon request by the member.

However, if an otherwise vested member terminates and withdraws his/her member contributions, the member forfeits all rights to retirement benefits.

(d) GJRS is a cost-sharing multiple-employer defined benefit pension plan established by the Georgia General Assembly in 1998 for the purpose of providing retirement allowances for judges and solicitors generals of the state courts and juvenile court judges in Georgia, and their survivors and other beneficiaries, superior court judges of the State of Georgia, and district attorneys of the State of Georgia.

The GJRS was also created to serve the members and beneficiaries of the Trial Judges and Solicitors Retirement Fund, the Superior Court Judges Retirement System, and the District Attorneys Retirement System (collectively, the Predecessor Retirement Systems). As of June 30, 1998, any person who was an active, inactive, or retired member or beneficiary of the Predecessor Retirement Systems was transferred to GJRS in the same status effective July 1, 1998. All assets of the Predecessor Retirement Systems were transferred to GJRS as of July 1, 1998. The ERS Board and three additional trustees administer GJRS

(continued)

(GJRS Board). There were 93 employers and 1 nonemployer contributing entity participating in the plan during 2019. Total participation in GJRS at June 30, 2019 was 985 as detailed in the following chart:

GJRS Membership as of June 30, 2019

Benefits

The normal retirement for GJRS is age 60, with 16 years of creditable service; however, a member may retire at age 60 with a minimum of 10 years of creditable service.

Annual retirement benefits paid to members are computed as 66⅔% of state-paid salary at retirement for district attorneys and superior court judges and 66⅔% of the average over 24 consecutive months for trial judges and solicitors, plus 1% for each year of credited service over 16 years, not to exceed 24 years. Early retirement benefits paid to members are computed as the pro rata portion of the normal retirement benefit, based on service not to exceed 16 years. Death, disability, and spousal benefits are also available.

Contributions and Vesting

Members are required to contribute 7.5% of their annual salary. Those who became members prior to July 1, 2012 must also contribute an additional 2.5% of their annual salary if spousal benefit is elected. Employer contributions are actuarially determined and approved and certified by the GJRS Board.

Pursuant to O.C.G.A. 47-23-81, the employer contributions for state court judges and solicitors are funded by the State of Georgia on behalf of the local county employers and pursuant to O.C.G.A. 47-23-82, the employer contributions for juvenile court judges are funded by the state on behalf of local county employers. Employer and nonemployer contributions required for fiscal year 2019 were based on the June 30, 2016 actuarial valuation, as follows:

Employer and nonemployer:	
Normal	13.67%
Accrued liability	(5.84)
Total	7.83%

Members become vested after 10 years of creditable service. Upon termination of employment, member contributions with accumulated interest are refundable upon request by the member. However, if an otherwise vested member terminates and withdraws his/her member contributions, the member forfeits all rights to retirement benefits.

(e) GMPF is a single-employer defined benefit pension plan established on July 1, 2002 by the Georgia General Assembly for the purpose of providing retirement allowances and other benefits for members of the Georgia National Guard (the National Guard). The ERS Board administers the GMPF.

(continued)

Membership

As of June 30, 2019, GMPF had 1,148 retirees and beneficiaries currently receiving benefits. Active and inactive plan member information is maintained by one employer, the Georgia Department of Defense.

Benefits

A member becomes eligible for benefits upon attainment of age 60, with 20 or more years of creditable service (including at least 15 years of service as a member of the National Guard), having served at least 10 consecutive years as a member of the National Guard immediately prior to discharge, and having received an honorable discharge from the National Guard.

The retirement allowance is payable for life in the amount of $50 per month, plus $5 per month for each year of creditable service in excess of 20 years. The maximum benefit is $100 per month.

Contributions and Vesting

Employer contributions are actuarially determined and approved and certified by the ERS Board. There are no member contributions required.

Employer contributions required for the year ended June 30, 2019 were $183.20 per active member and were based on the June 30, 2016 actuarial valuation.

A member becomes vested after 20 years of creditable service (including at least 15 years of service as a member of the National Guard), having served at least 10 consecutive years as a member of the National Guard immediately prior to discharge, and having received an honorable discharge from the National Guard.

(f) SCJRF is a single-employer defined benefit pension plan established by the Georgia General Assembly in 1945 for the purpose of providing retirement benefits to the superior court judges of the State of Georgia. SCJRF is directed by its own Board of Trustees (SCJRF Board). The ERS Board and SCJRF Board entered into a contract for ERS to administer the plan effective July 1, 1995.

Membership

As of June 30, 2019, SCJRF had seven retirees and beneficiaries currently receiving benefits and no active members. No new members are allowed in SCJRF.

Benefits

The normal retirement for SCJRF is age 68, with 19 years of creditable service, with a benefit of two-thirds the salary paid to superior court judges. A member may also retire at age 65, with a minimum of 10 years of creditable service, with a benefit of one-half the salary paid to superior court judges. Death, disability, and spousal benefits are also available.

Contributions and Vesting

Employer contributions are not actuarially determined, but are provided on an as-needed basis to fund current benefits.

(g) DARF is a multiple-employer defined benefit pension plan established by the Georgia General Assembly in 1949 for the purpose of providing retirement benefits to the district attorneys of the state of Georgia. DARF is directed by its own Board of Trustees (DARF Board). The ERS Board and DARF Board entered into a contract for ERS to administer the plan effective July 1, 1995.

Membership

As of June 30, 2019, DARF had three retirees and beneficiaries currently receiving benefits and no active members. No new members are allowed into DARF.

(continued)

Benefits

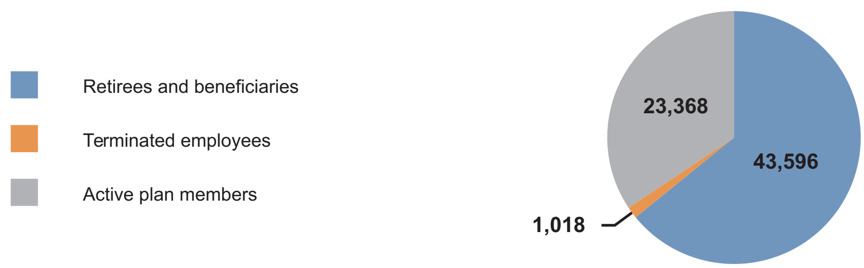
Persons appointed as district attorney emeritus shall receive an annual benefit of $15,000, or one-half of the state salary received by such person as a district attorney for the calendar year immediately prior to the person's retirement, whichever is greater.

Contributions and Vesting

Employer contributions are not actuarially determined, but are provided on an as-needed basis to fund current benefits.

(h) SEAD-OPEB is a cost-sharing multiple-employer defined benefit other postemployment benefit plan created in 2007 by the Georgia General Assembly to amend Title 47 of the O.C.G.A., relating to retirement, so as to establish a fund for the provision of term life insurance to retired and vested inactive members of ERS, LRS, and GJRS. Effective July 1, 2009, no newly hired members of any Georgia public retirement system are eligible for term life insurance under SEAD. The SEAD-OPEB trust fund accumulates the premiums received from the aforementioned retirement systems, including interest earned on deposits and investments of such payments from retired and vested inactive members. There were 456 employers and 1 nonemployer contributing entity participating in the plan during 2019. Total participation in SEAD-OPEB at June 30, 2019 was 67,982 as detailed in the following chart:

SEAD Membership as of June 30, 2019



Employee contribution rates as a percentage of member's salaries were appropriated for the fiscal year ended June 30, 2019 as follows: ERS Old Plan – 0.45% and ERS New Plan, LRS, and GJRS – 0.23%. ERS Old Plan members were hired prior to July 1, 1982 and New Plan members were hired on or after July 1, 1982, but prior to January 1, 2009.

Georgia law provides that employee contributions to the plan shall be in an amount established by the Board of Trustees (SEAD Board) not to exceed one-half of 1% of the member's earnable compensation. There were no employer contributions required for the fiscal year ended June 30, 2019.

According to the policy terms covering the lives of members, insurance coverage is provided on a monthly, renewable term basis, and no return premiums or cash value are earned. The net position represents the excess accumulation of investment income and premiums over benefit payments and expenses, and is held as a reserve for payment of death benefits under existing policies.

The amount of insurance for a retiree with creditable service prior to April 1, 1964 is the full amount of insurance under SEAD-Active in effect on the date of retirement. The amount of insurance for a service retiree with no creditable service prior to April 1, 1964 is 70% of the amount of insurance under SEAD-Active at age 60 or at termination, if earlier. Life insurance proceeds are paid in a lump sum to the beneficiary upon death of the retiree.

(continued)

Administrative costs for the plan are determined based on the plan's share of overhead costs to accumulate and invest funds, actuarial services, and to process benefit payments to beneficiaries. Administrative fees are financed from the assets of the plan.

(i) GDCP is a defined contribution plan established by the Georgia General Assembly in July 1992 for the purpose of providing retirement allowances for state employees who are not members of a public retirement or pension system and do not participate in Social Security. GDCP is administered by the ERS Board. There were 69 employers participating in the plan during 2019. There were 125,959 members as of June 30, 2019.

Benefits

A member may retire and elect to receive periodic payments after attainment of age 65. The payments will be based upon mortality tables and interest assumptions adopted by the ERS Board. If a terminated member has less than $5,000 credited to his/her account, the ERS Board has the option of requiring a lump-sum distribution to the member. Upon the death of a member, a lump-sum distribution equaling the amount credited to his/her account will be paid to the member's designated beneficiary.

Contributions and Vesting

Members are required to contribute 7.5% of their annual salary and vest immediately in the plan upon contribution. There are no employer contributions. Earnings will be credited to each member's account as adopted by the ERS Board. Upon termination of employment, the amount of the member's account is refundable upon request by the member.

(j) The 401(k) Plan was established by the State of Georgia Employee Benefit Plan Council in accordance with Georgia Law 1985, as amended, O.C.G.A, Sections 45-18-50 through 45-18-58, and Section 401(k) of the Internal Revenue Code (IRC). On October 1, 1994, activity commenced when the 401(k) Plan became available to employees of the State of Georgia Community Service Boards (CSBs). On December 1, 1998, the 401(k) Plan became available to employees of the Georgia Lottery Corporation (GLC). On July 1, 2005, the Plan became available to employees of Fayette County Board of Education; on July 1, 2006, the Plan became available to employees of Walton County Board of Education; on January 1, 2010, the Plan became available to employees of Henry County Board of Education; and on July 1, 2017, the Plan became available to employees of the Baldwin County Board of Education.

Effective July 1, 1998, the State of Georgia Employee's Deferred Compensation Group Trust (the Master Trust) was formed for the State of Georgia Deferred Compensation Program to serve as the funding medium for the 401(k) Plan. At that time, the 401(k) Plan began operating on an employee elective deferral basis for all state employees working at least 1,000 hours in a 12-month period. All assets of the 401(k) Plan are held in trust for the exclusive benefit of the participants and their beneficiaries. The assets of the 401(k) Plan and the 457 Plan are commingled in the Master Trust with the respective trusts owning units of the Master Trust. Participant contributions are invested according to the participant's investment election. If the participant does not make an election, investments are automatically defaulted to a Lifecycle Fund based on the participant's date of birth.

Effective July 1, 2005 (HB275), ERS became the trustee of the 401(k) Plan. Alight Solutions and JPMorgan Chase hold, administer, and invest the assets of the Master Trust.

Contributions and Vesting

Participating CSBs, the GLC, and Walton and Henry County Boards of Education offer employer contributions, some matching, some automatic, and some a combination of both, to eligible employees at various rates (limited to a maximum of $275,000 base salary in calendar year 2018 and $280,000 in calendar year 2019). As of January 1, 2009, individual participants may defer up to 80% of eligible compensation, or up to limits prescribed by the IRC (whichever is less).

Effective January 1, 2009, in accordance with O.C.G.A. 47-2-350 through 47-2-360, newly hired state employees, as well as rehired state employees who did not maintain eligibility for the ERS Old Plan or New Plan, are members of GSEPS. From January 1, 2009 to June 30, 2014, the GSEPS tier included

(continued)

automatic enrollment in the 401(k) Plan at a contribution rate of 1% of salary. Effective July 1, 2014, in accordance with HB764, the employee contribution rate for automatic enrollment increased from 1% to 5%. The state matches 100% of the employee's initial 1% contribution and 50% of contributions above 1% and up to 5%. Therefore, the state will match 3% of salary when an employee contributes at least 5% to the 401(k) Plan. Employee contributions greater than 5% of salary do not receive any additional matching funds. Plan participants who are not employees of the GLC, a CSB, Walton and Henry County Boards of Education, or who are not GSEPS eligible do not receive any employer contributions in their 401(k) Plan.

All employer contributions are subject to a vesting schedule, which determines eligibility to receive all or a portion of the employer contribution balance at the time of any distribution from the account after separation from all state service. Vesting is determined based on the following schedule:

Less than 1 year	—%
1	20
2	40
3	60
4	80
5 or more years	100

For CSB/GLC participants whose services terminated prior to January 1, 2010 but after December 31, 2001, the following vesting schedule applies:

Less than 2 years	—%
2	20
3	40
4	60
5	80
6 or more years	100

For CSB/GLC participants whose services terminated prior to January 1, 2002, the following vesting schedule applies:

Less than 3 years	—%
3	20
4	40
5	60
6	80
7 or more years	100

Employee contributions and earnings thereon are 100% vested at all times. The 401(k) Plan also allows participants to roll over amounts from other qualified plans to their respective account in the 401(k) Plan on approval by the 401(k) plan administrator. Such rollovers are 100% vested at the time of transfer.

Participation

As of June 30, 2019, the 401(k) Plan had 69,662 participants with a balance. A total of 468 employers transmitted contributions to the plan during 2019.

Distributions

The participant may receive the value of his or her vested accounts upon attaining age 59.5, qualifying financial hardship, or 30 days after retirement or other termination of service (employer contribution balances are only eligible for distribution upon separation from service). Upon the death of a participant, his or her beneficiary shall be entitled to the vested value of his or her accounts. Employees who die while actively

(continued)

employed and eligible for 401(k) Plan employer matching contributions become fully vested in employer contributions upon death. Distributions are made in installments or in a lump sum.

(k) The 457 Plan was established by the State Personnel Board in accordance with Georgia Law 1974, page 198 as amended, O.C.G.A., Sections 45-18-30 through 45-18-36, and Section 457 of the IRC. The 457 Plan is available to employees of the State of Georgia and county health departments and permits such employees to defer a portion of their annual salary until future years. Employee contributions and earnings thereon are 100% vested at all times.

Effective July 1, 1998, the Master Trust was formed for the State of Georgia Deferred Compensation Program to serve as the funding medium for the 457 Plan. All assets of the 457 Plan are held in trust for the exclusive benefit of the participants and their beneficiaries. The assets of the 457 Plan and the 401(k) Plan are commingled in the Master Trust with the respective trusts owning units of the Master Trust. Participant contributions are invested according to the participant's investment election. If the participant does not make an election, investments are automatically defaulted to a Lifecycle Fund based on the participant's date of birth.

Effective July 1, 2005 (HB275), ERS became the trustee of the 457 Plan. Alight Solutions and JPMorgan Chase hold, administer, and invest the assets of the Master Trust.

Participation
As of June 30, 2019, the 457 Plan had 12,567 participants with a balance. A total of 298 employers transmitted contributions to the plan during 2019.

Distributions
The balance in the employee's account in the 457 Plan is not available to the employee until age 70.5, termination, retirement, death, or unforeseeable emergency, as defined in the 457 Plan. Upon the death of a participant, his or her beneficiary shall be entitled to the vested value of his or her accounts. Distributions are made in installments or in a lump sum.

(l) SBF was established under O.C.G.A. 47-2-128(c)(3) within the ERS trust solely for maintaining group term life insurance coverage for members of the plan. All assets of SBF are therefore limited to the payment of benefits and expenses for such coverage and cannot be used to pay pension benefits of ERS. SBF is shown on the financial statements separately as an agency fund to reflect ERS's custodial responsibility and to account for assets held for distribution to SEAD-Active and SEAD-OPEB. SBF may only be used to pay benefits or expenses of SEAD-OPEB or SEAD-Active with authorization by the ERS Board. An actuarial valuation is not prepared, as there are no funding requirements.

(m) SEAD-Active is a cost-sharing multiple-employer life insurance plan created in 2007 by the Georgia General Assembly to amend Title 47 of the O.C.G.A., relating to retirement, so as to establish a fund for the provision of term life insurance to active members of ERS, LRS, and GJRS. Effective July 1, 2009, no newly hired members of any Georgia public retirement system are eligible for term life insurance under SEAD. The SEAD-Active fund accumulates the premiums received from the aforementioned retirement systems, including interest earned on deposits and investments of such payments from active members. There were 456 employers and 1 nonemployer contributing entity participating in the plan during 2019. As of June 30, 2019, there were 23,368 active plan members in SEAD-Active.

Employee contribution rates as a percentage of member's salaries were appropriated for the fiscal year ended June 30, 2019 as follows: ERS Old Plan – 0.05% and ERS New Plan, LRS, and GJRS – 0.02%. ERS Old Plan members were hired prior to July 1, 1982 and new plan members were hired on or after July 1, 1982, but prior to January 1, 2009.

(continued)

Georgia law provides that employee contributions to the plan shall be in an amount established by the SEAD Board not to exceed one-half of 1% of the member's earnable compensation. There were no employer contributions required for the fiscal year ended June 30, 2019.

According to the policy terms covering the lives of members, insurance coverage is provided on a monthly, renewable term basis, and no return premiums or cash value are earned. The net position represents the excess accumulation of investment income and premiums over benefit payments and expenses, and is held as a reserve for payment of death benefits under existing policies.

The amount of insurance coverage is equal to 18 times monthly earnable compensation frozen at age 60. For members with no creditable service prior to April 1, 1964, the amount decreases from age 60 by a half of 1% per month until age 65, at which point the member will be covered for 70% of the age 60 coverage. Life insurance proceeds are paid in lump sum to the beneficiary upon death of the member.

Administrative costs for the plan are determined based on the plan's share of overhead costs to accumulate and invest funds, actuarial services, and to process benefit payments to beneficiaries. Administrative fees are financed from the assets of the plan.

(3) *Significant Accounting Policies and System Asset Matters*

(a) Basis of Accounting

The System's financial statements are prepared in accordance with U.S. generally accepted accounting principles as applicable to governmental organizations. The System follows the reporting requirements established by GASB.

Fiduciary funds include the defined benefit plans and defined contribution plans, which are accounted for on the flow of economic resources measurement focus and the accrual basis of accounting. Contributions to the defined benefit pension plans and OPEB plan are recognized in the period in which the contributions are due. Benefits and refunds are recognized when due and payable in accordance with the terms of each plan. Contributions to the deferred compensation plans are recognized as received. The SBF is an agency fund and is custodial in nature and does not measure the results of operations. Assets and liabilities are recorded using the accrual basis of accounting. The proprietary fund comprises the SEAD-Active plan. This fund is accounted for on the flow of economic resources measurement focus and uses the accrual basis of accounting. The principal operating revenues are derived from insurance premiums. Operating expenses include the cost of claims and related expenses.

(continued)

(b) Reporting Entity

The System is a component unit of the State of Georgia; however, it is accountable for its own fiscal matters and presentation of its separate financial statements. The System has considered potential component units under GASB Statements No. 80, *Blending Requirements for Certain Component Units*, No. 61, *The Financial Reporting Entity's Omnibus – An Amendment of GASB Statement No. 14 and No. 34*, and No. 39, *Determining Whether Certain Organizations are Component Units*, and determined there were no component units of the System.

(c) Cash and Cash Equivalents

Cash and cash equivalents, reported at cost, include cash on deposit at banks and cash on deposit with the investment custodian.

(d) Investments

Investments are reported at fair value, and in some cases, net asset value (NAV) as a practical expedient to fair value. Equity securities traded on a national or international exchange are valued at the last reported sales price. Investments in private investment companies are valued utilizing the NAVs provided by the underlying private investment companies as a practical expedient. The Pooled Investment Fund (the Fund) applies the practical expedient to its investments in private investment companies on an investment by investment basis, consistent with the Fund's entire position in a particular investment, unless it is probable that the Fund will sell a portion of an investment at an amount different from the NAV of the investment. Private equity fair value is measured using the valuation of the underlying companies as reported by the general partner. These investments, in the form of limited partnerships, reflect values and related performance on a quarter-lag basis due to the nature of the investments and the time it takes to value them. The estimated fair value of investments without readily determinable market values could differ significantly if a ready market for these assets existed. Fixed income securities are valued based primarily on quoted market prices provided by independent pricing sources. Global foreign exchange holdings are translated using a third-party vendor. Investment income is recognized as earned by the System. There are no investments in, loans to, or leases with parties related to the System.

The System utilizes various investment instruments. Investment securities, in general, are exposed to various risks, such as interest rate, credit, foreign currency, and overall market volatility. Due to the level of risk associated with certain investment securities, it is reasonably possible that changes in the values of investment securities will occur in the near term and that such changes could materially affect the amounts reported in the financial statements.

The System's policy with regard to the allocation of invested assets is established on a cost basis in compliance with Georgia statute. Plan assets are managed on a total return basis with a long-term objective of achieving and maintaining a fully funded status for the benefits provided through the pension and OPEB plans. The following was the System's adopted asset allocation policy as of June 30, 2019:

Asset class	Target allocation
Fixed income	25%-45%
Equities	55%-75%
Alternative investments	0%-5%
Total	100%

Approximately 20.8% of the investments held in trust for pension and OPEB benefits are invested in debt securities of the U.S. government. The System has no investments in any one organization, other than those issued by the U.S. government and its instrumentalities, that represent 5% or more of the System's net position restricted for pensions and OPEB.

(continued)

For the year ended June 30, 2019, the annual money-weighted rate of return on pension plan investments, net of pension plan investment expense, was (1.8)%. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

(e) Capital Assets

Capital assets, including software development costs, are stated at cost less accumulated depreciation and reside in ERS. The capitalization thresholds are $100,000 for buildings and building improvements and $5,000 for equipment and vehicles. Depreciation on capital assets is computed using the straight-line method over estimated useful lives of 3 to 40 years. Depreciation expense is included in administrative expenses. Maintenance and repairs are charged to administrative expenses when incurred. When assets are retired or otherwise disposed of, the costs and related accumulated depreciation are removed from the accounts, and any resulting gain or loss is reflected in the combining statement of changes in fiduciary net position in the period of disposal.

(f) Use of Estimates

The preparation of financial statements in conformity with U.S. generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of net position and changes therein. Actual results could differ from those estimates.

(g) New Accounting Pronouncements

Pronouncements effective for the 2019 financial statements:

In November 2016, the GASB issued Statement No. 83, *Certain Asset Retirement Obligations*, effective for fiscal years beginning after June 15, 2018. This Statement addresses accounting and financial reporting for certain asset retirement obligations (AROs). An ARO is a legally enforceable liability associated with the retirement of a tangible capital asset. There are no applicable reporting requirements for the system related to this statement.

In April 2018, the GASB issued Statement No. 88, *Certain Disclosures Related to Debt*, including Direct Borrowing and Direct Placements effective for fiscal years beginning after June 15, 2018. The primary objective of this statement is to improve the information that is disclosed in notes to government financial statements related to debt, including direct borrowings and direct placements. It also clarifies which liabilities governments should include when disclosing information related to debt. There are no applicable reporting requirements for the system related to this statement.

Pronouncements issued, but not yet effective:

In January 2017, the GASB issued Statement No. 84, *Fiduciary Activities*, effective for fiscal years beginning after December 15, 2018. The objective of this Statement is to improve guidance regarding the identification of fiduciary activities for accounting and financial reporting purposes and how those activities should be reported. The System is in the process of evaluating the impact of this pronouncement on its financial statements.

In June 2017, the GASB issued Statement No. 87, *Leases,* effective for fiscal years beginning after December 15, 2019. The objective of this Statement is to better meet the information needs of financial statement users by improving accounting and financial reporting for leases by governments. The System is in the process of evaluating the impact of this pronouncement on its financial statements.

In June 2018, the GASB issued Statement No. 89, *Accounting for Interest Costs Incurred before the End of a Construction Period,* effective for fiscal years beginning after December 15, 2019, which establishes guidance designed to enhance the relevance and comparability of information about capital assets and the cost of borrowing for a reporting period. It also simplifies accounting for interest costs incurred before the

(continued)

end of a construction period. The System does not anticipate this pronouncement will impact its financial statements and related reporting.

In August 2018, the GASB issued Statement No. 90, *Majority Equity Interests-an amendment of GASB Statements No. 14 and No. 61* for fiscal years beginning after December 15, 2018. The objectives of this Statement are to improve the consistency and comparability of reporting a government's majority equity interest in a legally separate organization and to improve the relevance of financial statement information for certain component units. The System does not anticipate this statement will impact its financial statements and related reporting.

In May 2019, the GASB issued Statement No. 91, *Conduit Debt Obligations* effective for fiscal years beginning after December 15, 2020. The objectives of this Statement are to provide a single method of reporting conduit debt obligations by issuers and eliminate diversity in practice associated with commitments extended by issuers, arrangements associated with conduit debt obligations, and related note disclosures.The System does not anticipate this statement will impact its financial statements and related reporting.

(4) *Investment Program*

The System maintains sufficient cash to meet its immediate liquidity needs. Cash not immediately needed is invested as directed by the ERS Board. All investments are held by agent custodial banks in the name of the System. State statutes and the System's investment policy authorize the System to invest in a variety of short-term and long-term securities as follows:

(a) Cash and Cash Equivalents

Custodial credit risk is the risk that in the event a depository institution or counterparty fails, the System would not be able to recover the value of its deposits or investments. The System does not have a formal policy relating to custodial credit risk. The carrying amount of the System's deposits totaled $439.0 million at June 30, 2019, with actual bank balances of $341.9 million. The System's bank balances of $313.6 million are fully insured through the Federal Deposit Insurance Corporation, an independent agency of the U.S. government. The remaining bank deposits of $28.3 million are uninsured and uncollateralized. The System's noncash investments are held in the System's name and are not exposed to custodial credit risk.

Short-term securities authorized but not currently used are as follows:

- Repurchase and reverse repurchase agreements, whereby the System and a broker exchange cash for direct obligations of the U.S. government or obligations unconditionally guaranteed by agencies of the U.S. government or U.S. corporations. The System or broker promises to repay the cash received, plus interest, at a specific date in the future in exchange for the same securities.

- U.S. Treasury obligations

- Commercial paper, with a maturity of 180 days or less. Commercial paper is an unsecured promissory note issued primarily by corporations for a specific amount and maturing on a specific day. The System considers for investment only commercial paper of the highest quality, rated P-I and/or A-I by national credit rating agencies.

- Master notes, an overnight security administered by a custodian bank and an obligation of a corporation whose commercial paper is rated P-I and/or A-I by national credit rating agencies.

Investments in commercial paper or master notes are limited to no more than $500 million in any one name.

(continued)

(b) **Investments**

Fixed income investments, managed by the Division of Investment Services (the Division), are authorized in the following instruments:

- U.S. and foreign government obligations. At June 30, 2019, the System held U.S. Treasury bonds of approximately $3.8 billion.
- U.S. and foreign corporate obligations. At June 30, 2019, the System held U.S. corporate bonds of approximately $1.1 billion and international corporate bonds of approximately $95.1 million.
- Obligations unconditionally guaranteed by agencies of the U.S. government. At June 30, 2019, the System did not hold agency bonds.
- Private placements are authorized under the same general restrictions applicable to corporate bonds. At June 30, 2019, the System did not hold private placements.

Mortgage investments are authorized to the extent that they are secured by first mortgages on improved real property located in the state of Georgia.

Equity securities are also authorized (in statute) for investment as a complement to the System's fixed income portfolio and as a long-term inflation hedge. By statute, no more than 75% of the total invested assets on a historical cost basis may be placed in equities. Equity holdings in any one corporation may not exceed 5% of the outstanding equity of the issuing corporation. The equity portfolio is managed by the Division, in conjunction with independent advisers. Buy/sell decisions are based on securities meeting rating criteria established by the ERS Board, in-house research considering such matters as yield, growth, and sales statistics, and analysis of independent market research. Equity trades are approved and executed by the Division's staff. Common stocks eligible for investment are approved by the Investment Committee of the ERS Board before being placed on an approved list.

Equity investments are authorized in the following instruments:

- Domestic equities are those securities considered by O.C.G.A. to be domiciled in the United States. At June 30, 2019, the System held domestic equities of approximately $8.3 billion, excluding the 401(k) and 457 plans.
- International equities, including American Depository Receipts (ADR), are not considered by the O.C.G.A. to be domiciled in the United States. At June 30, 2019, the System held international equities of approximately $1.2 billion and ADRs of approximately $1.6 billion, excluding the 401(k) and 457 plans.
- Alternative investments are authorized (in statute) to provide portfolio diversification and to enhance the risk-adjusted rate of return for the retirement fund that benefits the members of the System. By statute, the allocation to alternative investments shall not, in the aggregate, exceed 5% of the System's plan assets at any time. Further, in any calendar year, new commitments to alternative investments shall not, in the aggregate exceed 1.0% of the System's plan assets until the first occurrence that 4.5% of the assets have been invested, at which time there shall be no limit on the percentage of commitments that may be made in any calendar year, subject to compliance with other provisions of the statute. At June 30, 2019, the System held private equity investments of approximately $335.3 million.

The Master Trust invests in various mutual funds, common collective trust funds, and separate accounts, as selected by participants. Each participant is allowed to select and invest contributions into investment options that own one or more commingled funds, as authorized by the ERS Board. Participants may also contribute to a self-directed brokerage account that offers investments in various mutual funds and equities. At June 30, 2019, the deferred compensation plans held commingled funds of approximately $1.8 billion, mutual funds of approximately $8.1 million, domestic equities of approximately $16.0 million, and international equities of approximately $1.8 million.

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Substantially all of the investments of ERS, PSERS, LRS, GJRS, GMPF, SEAD-OPEB, SBF, and SEAD-Active are pooled into one common investment fund. Units in the pooled common investment fund are allocated to the respective plans based upon the cost of assets contributed, and additional units are allocated to the participating plans based on the market value of the pooled common investment fund at the date of contribution. Net income of the pooled common investment fund is allocated monthly to the participating plans, based upon the number of units outstanding during the month.

The units and fair value of each plan's equity in the pooled common investment fund at June 30, 2019, were as follows (dollars in thousands):

	Fair value	Units
Employees' Retirement System	$ 13,567,302	2,566,020
Public School Employees Retirement System	942,101	178,182
Legislative Retirement System	34,559	6,536
Georgia Judicial Retirement System	478,823	90,561
Georgia Military Pension Fund	26,404	4,994
State Employees' Assurance Department - OPEB	1,233,750	233,342
Survivors Benefit Fund	158,658	30,007
Total defined benefit plans	16,441,597	3,109,642
State Employees' Assurance Department - Active	305,795	57,836
Total in pooled investment funds	$ 16,747,392	3,167,478

Fair Value Measurements. The System categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The hierarchy is based on the inputs used in valuation and gives the highest priority to unadjusted quoted prices in active markets and requires that observable inputs be used in the valuations when available. The disclosure of fair value estimates in the hierarchy is based on whether the significant inputs into the valuations are observable. In determining the level of the hierarchy in which the estimate is disclosed, the highest level, Level 1, is given to unadjusted quoted prices in active markets and the lowest level, Level 3, to unobservable inputs.

The three levels of the fair value hierarchy are as follows:

Level 1 – Valuations based on unadjusted quoted prices for identical instruments in active markets that the System has the ability to access.

Level 2 – Valuations based on quoted prices for similar instruments in active markets, quoted prices for identical or similar instruments in markets that are not active, and model-derived valuations in which all significant inputs are observable.

Level 3 – Valuations based on inputs that are unobservable and significant to the overall fair value measurement.

The System also has investments held through limited partnerships for which fair value is estimated using the NAV reported by the general partner as a practical expedient to fair value. Such investments have not been categorized within the fair value hierarchy.

In instances where inputs used to measure fair value fall into different levels in the fair value hierarchy, fair value measurements in their entirety are categorized based on the lowest level input that is significant to the

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valuation. The System's assessment of the significance of particular inputs to these fair value measurements requires judgment and considers factors specific to each investment. The table below shows the fair value leveling of the System's investments (in thousands):

	Fair value measures using			
Investments by fair value level	**Quoted prices in active markets for identical assets (Level 1)**	**Significant other observable inputs (Level 2)**	**Significant unobservable inputs (Level 3)**	**Total**
Equities:				
Domestic	$ 8,350,863	—	—	8,350,863
International	2,760,042	26,527	—	2,786,569
Obligations:				
Domestic:				
U.S. treasuries	3,784,262	—	—	3,784,262
Corporate bonds	—	1,104,643	—	1,104,643
International:				
Corporate bonds	—	95,134	—	95,134
Mutual funds	8,114	—	—	8,114
Commingled funds	79,080	1,682,123	—	1,761,203
Total investments by fair value level	$ 14,982,361	2,908,427	—	17,890,788
Investments measured at NAV*				
Private equity funds				335,306
Total investments				$ 18,226,094

*Certain investments that are measured at fair value using the NAV per share (or its equivalent) as a practical expedient have not been categorized in the fair value hierarchy. The fair value amounts presented in this table are intended to permit reconciliation of the fair value hierarchy to the amounts presented in the combining statement of fiduciary net position.

Equity securities classified in Level 1 are valued using prices quoted in active markets for those securities. Equity securities in Level 2 are valued using prices quoted for similar instruments in active markets. Equity securities classified in Level 3, if any, are valued using third-party valuations not currently observable in the market.

Debt securities classified in Level 1 are valued using prices quoted in active markets. Debt securities classified in Level 2 are valued using either a bid evaluation or a matrix pricing technique. Bid evaluations may include market quotations, yields, maturities, call features, and ratings. Matrix pricing is used to value securities based on the securities' relationship to benchmark quoted prices. These securities have nonproprietary information that was readily available to market participants, from multiple independent sources, which are known to be actively involved in the market.

Mutual funds and commingled funds classified in Level 1 are valued using prices quoted in active markets for those investment types. Commingled funds classified in Level 2 are valued using observable underlying inputs that are market corroborated.

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Unfunded commitments, redemption frequency, and redemption notice period relative to the System's alternative investments for which the System utilized NAV or its equivalent relative to the determination of fair value at June 30, 2019, are as follows (in thousands):

	Investments measured at NAV	Unfunded commitments	Redemption frequency (if currently eligible)	Redemption notice period
Private equity funds	$335,306	270,957	Not Eligible	N/A

Investments in privately held limited partnerships are valued using the NAV provided by the general partner as of March 31 of each fiscal year, adjusted by the System for cash flows through June 30. The quarterly values of the partnership investments provided from the general partner are reviewed by the System to determine if any adjustments are necessary. The types of partnership strategies held include growth equity, leveraged buyouts, and mezzanine debt. Two of the 21 partnerships held are secondary investments and are in or nearing the wind up phase of the fund. The remaining investments typically have an approximate life of 8–10 years. These investments are considered illiquid since the nature of these private investments prohibits redemption with the fund; instead, distributions are received from the general partner through liquidation of the underlying assets of the fund. The System currently has no plans to sell any of the investments prior to their liquidation resulting in these assets being carried at the NAV estimated by the general partner and adjusted for second quarter cash flows by the System.

Credit Risk: Credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligations to the System. O.C.G.A. 47-20-84 limits investments to investment grade securities. It is the System's investment policy to require that the bond portfolio be of high quality and chosen with respect to maturity ranges, coupon levels, refunding characteristics, and marketability. The System's policy is to require that new purchases of bonds be restricted to high-grade bonds rated no lower than “A” by any nationally recognized statistical rating organization. If a bond is subsequently downgraded to a rating below "A," it is placed on a watch list. The System holds two bonds that were downgraded to a rating below "A." Obligations of the U.S. government or obligations explicitly guaranteed by the U.S. government are not considered to have credit risk and do not require disclosure of credit quality. The quality ratings of investments in fixed income securities as described by Standard & Poor's and by Moody's Investors Service, which are nationally recognized statistical rating organizations, at June 30, 2019, are shown in the table on the following page (in thousands).

(continued)

Notes to Financial Statements

June 30, 2019

Quality Ratings of Fixed Income Investments Held at June 30, 2019		
Investment type	**Standard and Poor's/ Moody's quality rating**	**June 30, 2019 fair value**
Domestic obligations:		
U.S. treasuries		$ 3,784,262
Corporates	AAA/Aaa	170,770
	AA/Aaa	96,266
	AA/Aa	58,207
	AA/A	95,599
	A/A	448,956
	BBB/Baa	234,845
Total domestic corporates		1,104,643
International obligations:		
Corporates	A/A	95,134
Total international corporates		95,134
Total fixed income investments		$ 4,984,039

Mutual funds, commingled funds, and various equities of the deferred compensation plans are not considered to have credit risk and do not require disclosure of credit risk rating.

Concentration of Credit Risk: Concentration of credit risk is the risk of loss that may be attributed to the magnitude of a government's investment in a single issue. At June 30, 2019, the System did not have debt or equity investments in any one organization, other than those issued or guaranteed by the U.S. government or its agencies, which represented greater than 5% of total investments.

Interest Rate Risk: Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment. While the System has no formal interest rate risk policy, active management of the bond portfolio incorporates interest rate risk to generate improved returns. This risk is managed within the portfolio using the effective duration method. This method is widely used in the management of fixed income portfolios and quantifies to a much greater degree the sensitivity to interest rate changes when analyzing a bond portfolio with call options, prepayment provisions, and any other cash flows. Effective duration makes assumptions regarding the most likely timing and amounts of variable cash flows and is best utilized to gauge the effect of a change in interest rates on the fair value of a portfolio. It is believed that the reporting of effective duration found in the table on the following page quantifies to the fullest extent possible the interest rate risk of the System's fixed income assets (in thousands).

(continued)

Effective Duration of Fixed Income Assets			
Fixed income type	**Fair value June 30, 2019**	**Percent of all fixed income assets**	**Effective duration (years)**
Domestic obligations:			
U.S. treasuries	$ 3,784,262	75.9%	5.7
Corporates	1,104,643	22.2	3.9
International obligations:			
Corporates	95,134	1.9	0.5
Total	$ 4,984,039	100%	5.2

Foreign Currency Risk: Foreign currency risk is the risk that changes in exchange rates will adversely impact the fair value of an investment. The System's currency risk exposures, or exchange rate risks, primarily reside within the System's international equity investment holdings. The System's asset allocation and investment policies allow for active and passive investments in international securities. The System's Board-adopted foreign exchange risk management policy is to minimize risk and protect the investments from negative impact by hedging foreign currency exposures with foreign exchange instruments when market conditions and circumstances are deemed appropriate. Foreign exchange instruments are used to protect the value of noncash investments from currency movements. The System's foreign exchange risk management policy does not quantify limitations on foreign currency-denominated investments. As of June 30, 2019, the System's exposure to foreign currency risk in U.S. Dollars, excluding the 401(k) and 457 plans, is highlighted in the table on the following page (in thousands).

(continued)

International Investment Securities at Fair Value as of June 30, 2019					
Currency		Cash/cash equivalents	Equities	Fixed income	Total
Australian dollar	$	—	42,445	—	42,445
Brazilian real		—	26,253	—	26,253
British pound		—	103,475	—	103,475
Canadian dollar		—	34,070	—	34,070
Chilean peso		—	3,312	—	3,312
Chinese renminbi		19	8,000	—	8,019
Colombian peso		—	2,037	—	2,037
Czech krone		—	1,982	—	1,982
Danish krone		—	18,818	—	18,818
Euro		—	287,497	—	287,497
Hong Kong dollar		—	95,446	—	95,446
Indian rupee		47	69,506	—	69,553
Indonesian rupiah		—	6,098	—	6,098
Israeli shekel		—	2,288	—	2,288
Japanese yen		—	194,315	—	194,315
Malaysian ringgit		—	14,066	—	14,066
Mexican peso		—	9,801	—	9,801
New Taiwan dollar		—	35,607	—	35,607
Norwegian krone		—	2,074	—	2,074
Philippine peso		—	4,619	—	4,619
Polish zloty		—	2,997	—	2,997
Qatari riyal		—	3,771	—	3,771
Singapore dollar		—	22,411	—	22,411
South African rand		—	32,631	—	32,631
South Korean won		—	62,573	—	62,573
Swedish krona		—	31,653	—	31,653
Swiss franc		—	31,739	—	31,739
Thailand baht		—	26,527	—	26,527
UAE Dirham		—	4,006	—	4,006
Total holdings subject to foreign currency risk		66	1,180,017	—	1,180,083
Investment securities payable in U.S. dollars		—	1,604,785	95,134	1,699,919
Total international investment securities - at fair value	$	66	2,784,802	95,134	2,880,002

(5) Securities Lending Program

State statutes and ERS Board policies permit the System to lend its securities to broker/dealers with a simultaneous agreement to return the collateral for the same securities in the future. The System is presently involved in a securities lending program with major brokerage firms. The System lends equity and fixed income

(continued)

securities for varying terms and receives a fee based on the loaned securities' value. The System reports the gross loan fee income earned as investment income on the combining statement of changes in fiduciary net position. During a loan, the System continues to receive dividends and interest as the owner of the loaned securities. The brokerage firms pledge collateral securities consisting of U.S. government and agency securities, mortgage-backed securities issued by a U.S. government agency, corporate bonds, and equities. The collateral value must be equal to at least 102% to 109% of the loaned securities' value, depending on the type of collateral security.

Securities loaned totaled approximately $4.8 billion at fair value at June 30, 2019. The collateral value was equal to 104.4% of the loaned securities' value at June 30, 2019. The System's lending collateral was held in the System's name by the tri-party custodian.

Loaned securities are included in the accompanying combining statement of fiduciary net position since the System maintains ownership. The related collateral securities are not recorded as assets on the System's combining statement of fiduciary net position, and a corresponding liability is not recorded, since the System is deemed not to have the ability to pledge or trade the collateral securities. In accordance with the criteria set forth in GASB Statement No. 28, *Accounting and Financial Reporting for Securities Lending Transactions,* the System is deemed not to have the ability to pledge or sell the collateral securities, since the System's lending contracts do not address whether the lender can pledge or sell the collateral securities without a borrower default, the System has not previously demonstrated that ability, and there are no indications of the System's ability to pledge or sell the collateral securities.

(6) *Capital Assets*

The following is a summary of capital assets and depreciation information as of and for the year ended June 30, 2019 (dollars in thousands):

	Balance at June 30, 2018	Additions	Disposals	Balance at June 30, 2019
Capital assets:				
Land	$ 4,350	—	—	4,350
Building	2,800	—	—	2,800
Equipment	3,407	104	—	3,511
Vehicles	—	—	—	—
Computer software	14,345	—	—	14,345
	24,902	104	—	25,006
Accumulated depreciation for:				
Building	(980)	(70)	—	(1,050)
Equipment	(2,839)	(220)	—	(3,059)
Vehicles	—	—	—	—
Computer software	(14,345)	—	—	(14,345)
	(18,164)	(290)	—	(18,454)
Capital assets, net	$ 6,738	(186)	—	6,552

(continued)

(7) *Commitments*

As of June 30, 2019, the System had committed to fund certain private equity partnerships for a total capital commitment of approximately $577.8 million. Of this amount, approximately $271.0 million remained unfunded and is not recorded on the System's combining statement of fiduciary net position.

(8) *Net Pension Liability of Employers and Nonemployers - ERS*

The components of the net pension liability of the participating employers and nonemployers at June 30, 2019 were as follows (dollars in thousands):

Total pension liability	$ 17,744,003
Plan fiduciary net position	13,617,472
Employers' and nonemployers' net pension liability	$ 4,126,531
Plan fiduciary net position as a percentage of the total pension liability	76.74%

Actuarial assumptions: The total pension liability was determined by an actuarial valuation as of June 30, 2018, using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	2.75%
Salary increases	3.25 - 7.00%, including inflation
Investment rate of return	7.30%, net of pension plan investment expense, including inflation

Postretirement mortality rates were based on the RP-2000 Combined Mortality Table with future mortality improvement projected to 2025 with the Society of Actuaries' projection scale BB and set forward two years for both males and females for service retirements and dependent beneficiaries. The RP-2000 Disabled Mortality Table with future mortality improvement projected to 2025 with Society of Actuaries' projection scale BB and set back seven years for males and set forward three years for females was used for death after disability retirement. Rates of mortality in active service were based on the RP-2000 Employee Mortality Table projected to 2025 with projection scale BB. There is a margin for future mortality improvement in the tables used by the plan.

The actuarial assumptions used in the June 30, 2018 valuation were based on the results of an actuarial experience study for the period July 1, 2009 – June 30, 2014, with the exception of the investment rate of return. Subsequent to the June 30, 2017 measurement date, the ERS Board adopted a new funding policy. Because of this new funding policy, the assumed investment rate of return was reduced from 7.50% to 7.40% for the June 30, 2017 actuarial valuation. In addition, based on the ERS Board's new funding policy, the assumed investment rate of return was further reduced by 0.10% from 7.40% to 7.30% as of the June 30, 2018 measurement date.

The long-term expected rate of return on pension plan investments was determined using a log-normal distribution analysis in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. The target asset allocation and best estimates of arithmetic real rates of return for each major asset class are summarized in the table on the following page:

(continued)

Asset class	Target allocation	Long-term expected real rate of return*
Fixed income	30.00%	(0.10)%
Domestic large equities	46.20	8.90
Domestic small equities	1.30	13.20
International developed market equities	12.40	8.90
International emerging market equities	5.10	10.90
Alternatives	5.00	12.00
Total	100.00%	

* Rates shown are net of inflation

Discount rate: The discount rate used to measure the total pension liability was 7.30%. The projection of cash flows used to determine the discount rate assumed that plan member contributions will be made at the current contribution rate and that employer contributions will be made at rates equal to the difference between actuarially determined contribution rates and the member rate. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Sensitivity of the net pension liability to changes in the discount rate: The following presents the net pension liability, calculated using the discount rate of 7.30%, as well as what the net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.30%) or 1-percentage-point higher (8.30%) than the current rate (dollars in thousands):

	1% Decrease (6.30%)	Current discount rate (7.30%)	1% Increase (8.30%)
Employers' and nonemployers' net pension liability	$5,864,180	4,126,531	2,645,214

Actuarial valuation date: June 30, 2018 is the actuarial valuation date upon which the total pension liability is based. An expected total pension liability is determined as of June 30, 2019 using standard roll-forward techniques. The roll-forward calculation adds the annual normal cost (also called service cost), subtracts the actual benefit payments and refunds for the plan year, and then applies the expected investment rate of return for the year.

(9) *Net Pension Liability of Employers and Nonemployers – PSERS*

The components of the net pension liability of the participating employers and nonemployers at June 30, 2019 were as follows (dollars in thousands):

Total pension liability	$ 1,107,495
Plan fiduciary net position	941,587
Employers' and nonemployers' net pension liability	$ 165,908
Plan fiduciary net position as a percentage of the total pension liability	85.02%

(continued)

Actuarial assumptions: The total pension liability was determined by an actuarial valuation as of June 30, 2018, using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	2.75%
Salary increases	n/a
Investment rate of return	7.30%, net of pension plan investment expense, including inflation
Cost-of-living adjustment	1.5% semi-annually

Postretirement mortality rates were based on the RP-2000 Blue-Collar Mortality Table projected to 2025 with projection scale BB (set forward three years for males and two years for females) for the period after service retirement and for dependent beneficiaries. The RP-2000 Disabled Mortality projected to 2025 with projection scale BB (set forward five years for both males and females) was used for death after disability retirement. Rates of mortality in active service were based on the RP-2000 Employee Mortality Table projected to 2025 with projection scale BB. There is a margin for future mortality improvement in the tables used by the plan.

The actuarial assumptions used in the June 30, 2018 valuation were based on the results of an actuarial experience study for the period July 1, 2009 – June 30, 2014, with the exception of the investment rate of return. Subsequent to the June 30, 2017 measurement date, the PSERS Board adopted a new funding policy. Because of this new funding policy, the assumed investment rate of return was reduced from 7.50% to 7.40% for the June 30, 2017 actuarial valuation. In addition, based on the PSERS Board's new funding policy, the assumed investment rate of return was further reduced by 0.10% from 7.40% to 7.30% as of the June 30, 2018 measurement date.

The long-term expected rate of return on pension plan investments was determined using a log-normal distribution analysis in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. The target asset allocation and best estimates of arithmetic real rates of return for each major asset class are summarized in the following table:

Asset class	Target allocation	Long-term expected real rate of return*
Fixed income	30.00%	(0.10)%
Domestic large equities	46.20	8.90
Domestic small equities	1.30	13.20
International developed market equities	12.40	8.90
International emerging market equities	5.10	10.90
Alternatives	5.00	12.00
Total	100.00%	

* Rates shown are net of inflation.

Discount rate: The discount rate used to measure the total pension liability was 7.30%. The projection of cash flows used to determine the discount rate assumed that plan member contributions will be made at the current contribution rate and that employer and nonemployer contributions will be made at rates equal to the difference between actuarially determined contribution rates and the member rate. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

(continued)

Sensitivity of the net pension liability to changes in the discount rate: The following presents the net pension liability, calculated using the discount rate of 7.30%, as well as what the net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.30%) or 1-percentage-point higher (8.30%) than the current rate (dollars in thousands):

	1% Decrease (6.30%)	Current discount rate (7.30%)	1% Increase (8.30%)
Employers' and nonemployers' net pension liability	$287,322	165,908	63,677

Actuarial valuation date: June 30, 2018 is the actuarial valuation date upon which the total pension liability is based. An expected total pension liability is determined as of June 30, 2019 using standard roll-forward techniques for the actual total pension liability before and after any benefit changes, reflecting the increase in the monthly benefit accrual rate from $15.00 to $15.25 per year of creditable service. The roll-forward calculation adds the annual normal cost (also called service cost), subtracts the actual benefit payments and refunds for the plan year, and then applies the expected investment rate of return for the year.

(10) Net Pension Liability of Employer – LRS

The components of the net pension liability (asset) of the participating employer at June 30, 2019 were as follows (dollars in thousands):

Total pension liability	$	26,166
Plan fiduciary net position		34,540
Employer's net pension liability (asset)	$	(8,374)
Plan fiduciary net position as a percentage of the total pension liability		132.00%

Actuarial assumptions: The total pension liability was determined by an actuarial valuation as of June 30, 2018, using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	2.75%
Salary increases	n/a
Investment rate of return	7.30%, net of pension plan investment expense, including inflation
Cost-of-living adjustment	1.5% semi-annually

Postretirement mortality rates were based on the RP-2000 Combined Mortality Table projected to 2025 with projection scale BB (set forward two years for both males and females) for the period after service retirement. The RP-2000 Employee Mortality table projected to 2025 using projection scale BB was used for deaths in active service.

The actuarial assumptions used in the June 30, 2018 valuation were based on the results of an actuarial experience study for the period July 1, 2009 – June 30, 2014, with the exception of the investment rate of return. Subsequent to the June 30, 2017 measurement date, the ERS Board adopted a new funding policy. Because of this new funding policy, the assumed investment rate of return was reduced from 7.50% to 7.40% for the June 30, 2017 actuarial valuation. In addition, based on the ERS Board's new funding policy, the assumed investment rate of return was further reduced by 0.10% from 7.40% to 7.30% as of the June 30, 2018 measurement date.

(continued)

The long-term expected rate of return on pension plan investments was determined using a log-normal distribution analysis in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. The target asset allocation and best estimates of arithmetic real rates of return for each major asset class are summarized in the following table:

Asset class	Target allocation	Long-term expected real rate of return*
Fixed income	30.00%	(0.10)%
Domestic large equities	46.20	8.90
Domestic small equities	1.30	13.20
International developed market equities	12.40	8.90
International emerging market equities	5.10	10.90
Alternatives	5.00	12.00
Total	100.00%	

* Rates shown are net of inflation.

Discount rate: The discount rate used to measure the total pension liability was 7.30%. The projection of cash flows used to determine the discount rate assumed that plan member contributions will be made at the current contribution rate and that employer and nonemployer contributions will be made at rates equal to the difference between actuarially determined contribution rates and the member rate. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Sensitivity of the net pension liability to changes in the discount rate: The following table presents the net pension liability (asset), calculated using the discount rate of 7.30%, as well as what the net pension liability (asset) would be if it were calculated using a discount rate that is 1-percentage-point lower (6.30%) or 1-percentage-point higher (8.30%) than the current rate (dollars in thousands):

	1% Decrease (6.30%)	Current discount rate (7.30%)	1% Increase (8.30%)
Employers' and nonemployers' net pension liability (asset)	$(5,918)	(8,374)	(10,451)

Actuarial valuation date: June 30, 2018 is the actuarial valuation date upon which the total pension liability is based. An expected total pension liability is determined as of June 30, 2019 using standard roll-forward techniques. The roll-forward calculation adds the annual normal cost (also called service cost), subtracts the actual benefit payments and refunds for the plan year, and then applies the expected investment rate of return for the year.

(continued)

(11) *Net Pension Liability of Employers and Nonemployers – GJRS*

The components of the net pension liability (asset) of the participating employers and nonemployers at June 30, 2019 were as follows (dollars in thousands):

Total pension liability	$ 440,041
Plan fiduciary net position	479,372
Employer's net pension liability (asset)	$ (39,331)
Plan fiduciary net position as a percentage of the total pension liability	108.94%

Actuarial assumptions: The total pension liability was determined by an actuarial valuation as of June 30, 2018, using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	2.75%
Salary increases	4.50%, including inflation
Investment rate of return	7.30%, net of pension plan investment expense, including inflation

Mortality rates were based on the RP-2000 Combined Mortality Table projected to 2025 with projection scale BB and set forward two years for both males and females for the period after retirement and for dependent beneficiaries. For the period after disability retirement, the RP-2000 Disabled Mortality Table projected to 2025 with projection scale BB and set back seven years for males and set forward three years for females is used. Rates of mortality in active service were based on the RP-2000 Employee Mortality Table projected to 2025 with projection scale BB.

The actuarial assumptions used in the June 30, 2018 valuation were based on the results of an actuarial experience study for the period July 1, 2009 – June 30, 2014, with the exception of the investment rate of return. Subsequent to the June 30, 2017 measurement date, the GJRS Board adopted a new funding policy. Because of this new funding policy, the assumed investment rate of return was reduced from 7.50% to 7.40% for the June 30, 2017 actuarial valuation. In addition, based on the GJRS Board’s new funding policy, the assumed investment rate of return was further reduced by 0.10% from 7.40% to 7.30% as of the June 30, 2018 measurement date.

The long-term expected rate of return on pension plan investments was determined using a log-normal distribution analysis in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. The target asset allocation and best estimates of arithmetic real rates of return for each major asset class are summarized in the following table:

Asset class	Target allocation	Long-term expected real rate of return*
Fixed income	30.00%	(0.10)%
Domestic large equities	46.20	8.90
Domestic small equities	1.30	13.20
International developed market equities	12.40	8.90
International emerging market equities	5.10	10.90
Alternatives	5.00	12.00
Total	100.00%	

* Rates shown are net of inflation.

(continued)

Discount rate: The discount rate used to measure the total pension liability was 7.30%. The projection of cash flows used to determine the discount rate assumed that plan member contributions will be made at the current contribution rate and that employer and nonemployer contributions will be made at rates equal to the difference between actuarially determined contribution rates and the member rate. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Sensitivity of the net pension liability to changes in the discount rate: The following table presents the net pension liability (asset), calculated using the discount rate of 7.30%, as well as what the net pension liability (asset) would be if it were calculated using a discount rate that is 1-percentage-point lower (6.30%) or 1-percentage-point higher (8.30%) than the current rate (dollars in thousands):

	1% Decrease (6.30%)	Current discount rate (7.30%)	1% Increase (8.30%)
Employers' and nonemployers' net pension liability (asset)	$1,681	(39,331)	(75,029)

Actuarial valuation date: June 30, 2018 is the actuarial valuation date upon which the total pension liability is based. An expected total pension liability is determined as of June 30, 2019 using standard roll-forward techniques for the actual total pension liability both for and after reflecting the 2% cost-of-living adjustment granted to certain retired members and beneficiaries effective July 1, 2019. The roll-forward calculation adds the annual normal cost (also called service cost), subtracts the actual benefit payments and refunds for the plan year, and then applies the expected investment rate of return for the year.

(12) *Net Pension Liability of Employer – GMPF*

The components of the net pension liability of the participating employer at June 30, 2019 were as follows (dollars in thousands):

Total pension liability	$ 45,639
Plan fiduciary net position	26,417
Employer's net pension liability	$ 19,222
Plan fiduciary net position as a percentage of the total pension liability	57.88%

Actuarial assumptions: The total pension liability was determined by an actuarial valuation as of June 30, 2018, using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	2.75%
Salary increases	n/a
Investment rate of return	7.30%, net of pension plan investment expense, including inflation

Postretirement mortality rates were based on the RP-2000 Combined Mortality Table projected to 2025 with projection scale BB (set forward two years for both males and females) for the period after service retirement. The RP-2000 Employee Mortality Table projected to 2025 using projection scale BB was used for deaths in active service.

(continued)

Notes to Financial Statements

June 30, 2019

The actuarial assumptions used in the June 30, 2018 valuation were based on the results of an actuarial experience study for the period July 1, 2009 – June 30, 2014, with the exception of the investment rate of return. Subsequent to the June 30, 2017 measurement date, the ERS Board adopted a new funding policy. Because of this new funding policy, the assumed investment rate of return was reduced from 7.50% to 7.40% for the June 30, 2017 actuarial valuation. In addition, based on the ERS Board's new funding policy, the assumed investment rate of return was further reduced by 0.10% from 7.40% to 7.30% as of the June 30, 2018 measurement date.

The long-term expected rate of return on pension plan investments was determined using a log-normal distribution analysis in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. The target asset allocation and best estimates of arithmetic real rates of return for each major asset class are summarized in the following table:

Asset class	Target allocation	Long-term expected real rate of return*
Fixed income	30.00%	(0.10)%
Domestic large equities	46.20	8.90
Domestic small equities	1.30	13.20
International developed market equities	12.40	8.90
International emerging market equities	5.10	10.90
Alternatives	5.00	12.00
Total	100.00%	

* Rates shown are net of inflation.

Discount rate: The discount rate used to measure the total pension liability was 7.30%. The projection of cash flows used to determine the discount rate assumed that plan member contributions will be made at the current contribution rate and that employer and nonemployer contributions will be made at rates equal to the difference between actuarially determined contribution rates and the member rate. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Sensitivity of the net pension liability to changes in the discount rate: The following table presents the net pension liability (asset), calculated using the discount rate of 7.30%, as well as what the net pension liability (asset) would be if it were calculated using a discount rate that is 1-percentage-point lower (6.30%) or 1-percentage-point higher (8.30%) than the current rate (dollars in thousands):

	1% Decrease (6.30%)	Current discount rate (7.30%)	1% Increase (8.30%)
Employers' net pension liability	$25,666	19,222	13,980

Actuarial valuation date: June 30, 2018 is the actuarial valuation date upon which the total pension liability is based. An expected total pension liability is determined as of June 30, 2019 using standard roll-forward techniques. The roll-forward calculation adds the annual normal cost (also called service cost), subtracts the actual benefit payments and refunds for the plan year, and then applies the expected investment rate of return for the year.

(continued)

(13) *Net OPEB Liability of Employers - SEAD-OPEB*

The components of the net OPEB liability (asset) of the participating employers at June 30, 2019 were as follows (dollars in thousands):

Total OPEB liability	$ 951,091
Plan fiduciary net position	1,233,856
Employers' net OPEB liability (asset)	$ (282,765)
Plan fiduciary net position as a percentage of the total OPEB liability	129.73%

Actuarial assumptions: The total OPEB liability was determined by an actuarial valuation as of June 30, 2018, using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	2.75%
Salary increases:	
ERS	3.25% - 7.00%
GJRS	4.50%
LRS	n/a
Investment rate of return	7.30%, net of OPEB plan investment expense, including inflation
Healthcare cost trend rate	n/a

Postretirement mortality rates were based on the RP-2000 Combined Mortality Table with future mortality improvement projected to 2025 with the Society of Actuaries' projection scale BB and set forward two years for both males and females for service retirements and dependent beneficiaries. There is a margin for future mortality improvement in the tables used by the plan.

The actuarial assumptions used in the June 30, 2018 valuation were based on the results of an actuarial experience study for the period July 1, 2009 – June 30, 2014, with the exception of the investment rate of return. Subsequent to the June 30, 2017 measurement date, the SEAD Board adopted a new funding policy. Because of this new funding policy, the assumed investment rate of return was reduced from 7.50% to 7.40% for the June 30, 2017 actuarial valuation. In addition, based on the SEAD Board's new funding policy, the assumed investment rate of return was further reduced by 0.10% from 7.40% to 7.30% as of the June 30, 2018 measurement date.

The long-term expected rate of return on OPEB plan investments was determined using a log-normal distribution analysis in which best-estimate ranges of expected future real rates of return (expected returns, net of OPEB plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. The target asset allocation and best estimates of arithmetic real rates of return for each major asset class are summarized in the following table:

Asset class	Target allocation	Long-term expected real rate of return*
Fixed income	30.00%	(0.10)%
Domestic large equities	46.20	8.90
Domestic small equities	1.30	13.20
International developed market equities	12.40	8.90
International emerging market equities	5.10	10.90
Alternatives	5.00	12.00
Total	100.00%	

* Rates shown are net of inflation.

(continued)

Discount rate: The discount rate used to measure the total OPEB liability was 7.30%. The projection of cash flows used to determine the discount rate assumed that plan member contributions will be made at the current contribution rate and that employer and nonemployer contributions will be made at rates equal to the difference between actuarially determined contribution rates and the member rate. Based on those assumptions, the OPEB plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on OPEB plan investments was applied to all periods of projected benefit payments to determine the total OPEB liability.

Sensitivity of the net OPEB liability to changes in the discount rate: The following table presents the net OPEB liability (asset), calculated using the discount rate of 7.30%, as well as what the net OPEB liability (asset) would be if it were calculated using a discount rate that is 1-percentage-point lower (6.30%) or 1-percentage-point higher (8.30%) than the current rate (dollars in thousands):

	1% Decrease (6.30%)	Current discount rate (7.30%)	1% Increase (8.30%)
Employers' net OPEB liability (asset)	$(156,471)	(282,765)	(386,551)

Actuarial valuation date: June 30, 2018 is the actuarial valuation date upon which the total OPEB liability is based. An expected total OPEB liability is determined as of June 30, 2019 using standard roll-forward techniques. The roll-forward calculation adds the annual normal cost (also called service cost), subtracts the actual benefit payments and refunds for the plan year, and then applies the expected investment rate of return for the year.

(14) System Employees' Other Postemployment Benefits (OPEB)

Certain of the System's employees are members of the State Employees' Assurance Department Retired and Vested Inactive Members Trust Fund and the Georgia State Employees Postretirement Benefit Fund. The notes to the financial statements that follow and required supplementary information on pages 79 and 80 are presented from the perspective of the System as an employer.

General Information about the State Employees' Assurance Department Retired and Vested Inactive Members Trust Fund (SEAD-OPEB)

Plan description: SEAD-OPEB was created in 2007 by the Georgia General Assembly to amend Title 47 of the O.C.G.A., relating to retirement, so as to establish a fund for the provision of term life insurance to retired and vested inactive members of ERS, LRS, and GJRS. The plan is a cost-sharing multiple-employer defined benefit other postemployment benefit plan as defined in GASB Statement No. 74, *Financial Reporting for Postemployment Benefit Plans Other Than OPEB Plans*. The SEAD-OPEB trust fund accumulates the premiums received from the aforementioned retirement plans, including interest earned on deposits and investments of such payments.

Benefits provided: The amount of insurance for a retiree with creditable service prior to April 1, 1964 is the full amount of insurance in effect on the date of retirement. The amount of insurance for a service retiree with no creditable service prior to April 1, 1964 is 70% of the amount of insurance in effect at age 60 or at termination, if earlier. Life insurance proceeds are paid in a lump sum to the beneficiary upon death of the retiree.

Contributions: Georgia law provides that employee contributions to the plan shall be in an amount established by the SEAD Board not to exceed one-half of 1% of the member's earnable compensation. There were no employer contributions required for the fiscal year ended June 30, 2019.

(continued)

OPEB Liabilities and OPEB Expense related to SEAD-OPEB

At June 30, 2019, the System reported an asset of $541.5 thousand for its proportionate share of the net OPEB asset. The net OPEB asset was measured as of June 30, 2018. The total OPEB asset used to calculate the net OPEB asset was based on an actuarial valuation as of June 30, 2017. An expected total OPEB asset as of June 30, 2018 was determined using standard roll-forward techniques. The System's proportionate share of the net OPEB asset was based on actual member salaries reported to the SEAD-OPEB plan during the fiscal year ended June 30, 2018. At June 30, 2018, the employer's proportionate share was 0.200064%, which was an increase of 0.007200% from its proportionate share measured as of June 30, 2017. For the year ended June 30, 2019, the employer recognized a reduction of OPEB expense of $53.0 thousand.

Actuarial assumptions: The total SEAD-OPEB asset as of June 30, 2018 was determined by an actuarial valuation as of June 30, 2017 using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	2.75%
Salary increase:	3.25 - 7.00%, including inflation
Investment rate of return	7.30%, net of OPEB plan investment expense, including inflation
Healthcare cost trend rate	n/a

Postretirement mortality rates were based on the RP-2000 Combined Mortality Table with future mortality improvement projected to 2025 with the Society of Actuaries' projection scale BB and set forward 2 years for both males and females for service retirements and dependent beneficiaries. There is a margin for future mortality improvement in the tables used by the plan.

The actuarial assumptions used in the June 30, 2017 valuation were based on the results of an actuarial experience study for the period July 1, 2009 – June 30, 2014, with the exception of the investment rate of return. Subsequent to the June 30, 2017 measurement date, the SEAD Board adopted a new funding policy. Because of this new funding policy, the assumed investment rate of return was reduced from 7.50% to 7.40% for the June 30, 2017 actuarial valuation. In addition, based on the SEAD Board's new funding policy, the assumed investment rate of return was further reduced by 0.10% from 7.40% to 7.30% as of the June 30, 2018 measurement date.

The long-term expected rate of return on SEAD-OPEB plan investments was determined using a log-normal distribution analysis in which best-estimate ranges of expected future real rates of return (expected nominal returns, net of plan investment expense and the assumed rate of inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. The target asset allocation and estimates of arithmetic real rates of return for each major asset class are summarized in the following table:

Asset class	Target allocation	Long-term expected real rate of return*
Fixed income	30.00%	(0.50)%
Domestic large equities	37.20	9.00
Domestic mid equities	3.40	12.00
Domestic small equities	1.40	13.50
International developed market equities	17.80	8.00
International emerging market equities	5.20	12.00
Alternatives	5.00	10.50
Total	100.00%	

* Rates shown are net of inflation.

(continued)

Discount rate: The discount rate used to measure the total SEAD-OPEB liability was 7.30%. The projection of cash flows used to determine the discount rate assumed that plan member contributions will be made at the current contribution rate and that employers and State of Georgia contributions will be made at rates equal to the difference between actuarially determined contribution rates and the member rate. Based on those assumptions, the SEAD-OPEB plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on SEAD-OPEB plan investments was applied to all periods of projected benefit payments to determine the total SEAD-OPEB liability.

Sensitivity of the System's proportionate share of the net SEAD-OPEB liability to changes in the discount rate: The following presents the System's proportionate share of the net SEAD-OPEB liability (asset) calculated using the discount rate of 7.30%, as well as what the System's proportionate share of the net SEAD-OPEB liability (asset) would be if it were calculated using a discount rate that is 1-percentage-point lower 6.30% or 1-percentage-point higher 8.30% than the current rate (dollars in thousands):

	1% Decrease (6.30%)	Current discount rate (7.30%)	1% Increase (8.30%)
System's proportionate share of the net OPEB liability (asset)	$(292)	(541)	(746)

SEAD-OPEB plan fiduciary net position: Detailed information about the SEAD-OPEB plan's fiduciary net position is presented in the *Combining Statement of Fiduciary Net Position* on page 24 and the *Combining Statement of Changes in Fiduciary Net Postion* on page 26.

General Information about the Georgia State Employees Postemployment Benefit Fund (State OPEB Fund)

Plan description: The State OPEB Fund provides healthcare benefits for retirees and their dependents due under the group health plan for employees of State organizations (including technical colleges) and other entities authorized by law to contract with the Department of Community Health (DCH) for inclusion in the plan.

Benefits provided: Retiree medical eligibility is attained when an employee retires and is immediately eligible to draw a retirement annuity from ERS, LRS, GJRS, Teachers Retirement System (TRS) or PSERS. If elected, dependent coverage starts on the same day as retiree coverage. Medicare-eligible retirees are offered Standard and Premium Medicare Advantage plan options. Non-Medicare-eligible retiree plan options include Health Reimbursement Arrangement (HRA), Health Maintenance Organization (HMO) and a High Deductible Health Plan (HDHP). The State OPEB Fund also pays for administrative expenses of the fund. By law, no other use of the assets of the State OPEB Fund is permitted.

Contributions: As established by the DCH Board of Trustees, the State OPEB Fund is substantially funded on a pay-as-you-go basis; that is, annual cost of providing benefits will be financed in the same year as claims occur. Contributions to the State OPEB Fund from the System were $1.012 million for the year ended June 30, 2019. Active employees are not required to contribute to the State OPEB Fund.

OPEB Liabilities and OPEB Expense related to State OPEB Fund

At June 30, 2019, the System reported a liability of approximately $4.7 million for its proportionate share of the net OPEB liability. The net OPEB liability was measured as of June 30, 2018. The total OPEB liability used to calculate the net OPEB liability was based on an actuarial valuation as of June 30, 2017. An expected total OPEB liability as of June 30, 2018 was determined using standard roll-forward techniques. The System's proportionate share of the net OPEB liability was actuarially determined based on employer contributions during the fiscal year

(continued)

ended June 30, 2018. At June 30, 2018, the System's proportionate share was 0.181584%, which was a decrease of 0.004246% from its proportionate share measured as of June 30, 2017. For the year ended June 30, 2019, the System's recognized OPEB expense was $320.7 thousand.

Actuarial assumptions: The total OPEB liability as of June 30, 2018 was determined by an actuarial valuation as of June 30, 2017 using the following actuarial assumptions and other inputs, applied to all periods included in the measurement and rolled forward to the measurement date of June 30, 2018:

Inflation	2.75%
Salary increase:	3.25 - 7.00%, including inflation
Investment rate of return	7.30%, compounded annually, net of OPEB plan investment expense, including inflation
Healthcare trend rate:	
Pre-Medicare Eligible	7.50%
Medicare Eligible	5.50%
Ultimate trend rate:	
Pre-Medicare Eligible	4.75%
Medicare Eligible	4.75%
Year of Ultimate trend rate	
Pre-Medicare Eligible	2028
Medicare Eligible	2022

Mortality rates were based on the RP-2000 Combined Mortality Table for Males or Females, as appropriate, with adjustments for mortality improvements based on Scale BB. The RP-2000 Combined Mortality Table projected to 2025 with projection scale BB and set forward 2 years or both males and females is used for the period after service retirement and for dependent beneficiaries. The RP-2000 Disabled Mortality Table projected to 2025 with projection scale BB and set back 7 years for males and set forward 3 years for females is used for the period after disability retirement.

The actuarial assumptions used in the June 30, 2017 valuation were based on the results of an actuarial experience study for the pension systems, which covered the five-year period ending June 30, 2014.

Projection of benefits for financial reporting purposes are based on the substantive plan (the plan as understood by the employer and plan members) and include the types of benefits provided at the time of each valuation and the historical pattern of sharing of benefit costs between the employer and plan members to that point. The actuarial methods and assumptions used include techniques that are designed to reduce the effects of short-term volatility in actuarial accrued liabilities and the actuarial value of assets, consistent with the long-term perspective of the calculation.

The long-term expected rate of return on OPEB plan investments was determined using a log-normal distribution analysis in which best-estimate ranges of expected future real rates of return (expected nominal returns, net of investment expense and the assumed rate of inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. The target allocation and best estimates of arithmetic real rates of return for each major asset class are summarized in the table on the following page:

(continued)

Asset class	Target allocation	Long-term expected real rate of return*
Fixed income	30.00%	(0.50)%
Domestic large equities	37.20	9.00
Domestic mid equities	3.40	12.00
Domestic small equities	1.40	13.50
International developed market equities	17.80	8.00
International emerging market equities	5.20	12.00
Alternatives	5.00	10.50
Total	100.00%	

* Rates shown are net of inflation.

Discount rate: The discount rate has changed since the prior measurement date from 3.60% to 5.22%. In order to measure the total OPEB liability for the State OPEB Fund, a single equivalent interest rate of 5.22% was used as the discount rate. This is comprised mainly of the yield or index rate for 20-year tax-exempt general obligation municipal bonds with an average rating of AA or higher (3.87% per the Bond Buyers Index). The projection of cash flows used to determine the discount rate assumed that contributions from members and from the employer will be made at the current level as averaged over the last five years, adjusted for annual projected changes in headcount. Projected future benefit payments for all current plan members were projected through 2118. Based on these assumptions, the OPEB plan's fiduciary net position was projected to be available to make OPEB payments for inactive employees through year 2040. Therefore, the calculated discount rate of 5.22% was applied to all periods of projected benefit payments to determine the total OPEB liability.

Sensitivity of the System's proportionate share of the net State OPEB liability to changes in the discount rate: The following presents the System's proportionate share of the net OPEB liability calculated using the discount rate of 5.22%, as well as what the System's proportionate share of the net OPEB liability would be if it were calculated using a discount rate that is 1-percentage-point lower (4.22%) or 1-percentage-point higher (6.22%) than the current discount rate (dollars in thousands):

	1% Decrease (4.22%)	Current discount rate (5.22%)	1% Increase (6.22%)
System's proportionate share of the net OPEB liability	$5,643	4,749	4,012

Sensitivity of the System's proportionate share of the net State OPEB liability to changes in the healthcare cost trend rates: The following presents the System's proportionate share of the net OPEB liability, as well as what the System's proportionate share of the net OPEB liability would be if it were calculated using healthcare cost trend rates that are 1-percentage-point lower or 1-percentage-point higher than the current healthcare cost trend rates (dollars in thousands):

	1% Decrease	Current healthcare cost trend rate	1% Increase
System's proportionate share of the net OPEB liability	$3,918	4,749	5,766

State OPEB plan fiduciary net position: Detailed information about the State OPEB Benefit plan's fiduciary net position is available in the Comprehensive Annual Financial Report (CAFR) which is publicly available at https://sao.georgia.gov/comprehensive-annual-financial-reports.

(continued)

Deferred Outflows of Resources and Deferred Inflows of Resources for SEAD-OPEB and State OPEB Fund

At June 30, 2019, the System reported deferred outflows of resources and deferred inflows of resources related to SEAD-OPEB and the State OPEB Fund from the following sources (dollars in thousands):

	SEAD-OPEB plan	State OPEB fund	Total
Deferred outflows of resources:			
Difference between expected and actual experience	$ 6	—	6
Change of assumptions	28	—	28
Net different between projected and actual earnings on plan investments	—	110	110
Change in proportion and differences between the System's contributions and proportionate share of contributions	—	—	—
System's contributions subsequent to the measurement date	—	1,012	1,012
Total deferred outflows of resources	$ 34	1,122	1,156

	SEAD-OPEB plan	State OPEB fund	Total
Deferred inflows of resources:			
Difference between expected and actual experience	$ —	373	373
Change of assumptions	—	1,722	1,722
Net different between projected and actual earnings on plan investments	89	—	89
Change in proportion and differences between the System's contributions and proportionate share of contributions	12	193	205
System's contributions subsequent to the measurement date	—	—	—
Total deferred inflows of resources	$ 101	2,288	2,389

(continued)

SEAD-OPEB amounts reported as deferred outflows of resources and deferred inflows of resources related to SEAD-OPEB will be recognized in OPEB expense as follows (dollars in thousands):

Year ended June 30:	
2020	($15)
2021	(18)
2022	(27)
2023	(7)

State OPEB Fund employer contributions subsequent to the measurement date of $1.012 million are reported as deferred outflows of resources and will be recognized as a reduction of the net OPEB liability in the year ended June 30, 2019. Other amounts reported as deferred outflows of resources and deferred inflows of resources related to State OPEB Fund will be recognized in OPEB expense as follows (dollars in thousands):

Year ended June 30:	
2020	($710)
2021	(710)
2022	(585)
2023	(173)

Required Supplementary Information (UNAUDITED)

Schedules of Employers' and Nonemployers' Contributions - Defined Benefit Plans

Year ended June 30, 2019
(In thousands)

	Year ended	Actuarially determined contribution (a)	Contributions in relation to the actuarially determined contribution (b)	Contribution deficiency (excess) (a-b)	Covered payroll (c)	Contributions as a percentage of covered payroll (b/c)
Employees' Retirement System	6/30/2010	$ 263,064	263,064	—	2,571,042	10.2%
	6/30/2011	261,132	261,132	—	2,486,780	10.5
	6/30/2012	273,623	274,034	(411)	2,414,884	11.3
	6/30/2013	358,376	358,992	(616)	2,335,773	15.4
	6/30/2014	428,982	429,752	(770)	2,335,773	18.4
	6/30/2015	517,220	518,163	(943)	2,353,225	22.0
	6/30/2016	595,124	595,566	(442)	2,390,457	24.9
	6/30/2017	624,623	625,281	(658)	2,565,918	24.4
	6/30/2018	650,073	652,167	(2,094)	2,635,896	24.7
	6/30/2019	649,209	649,209	—	2,615,491	24.8
Public School Employees Retirement System[1]	6/30/2010	5,530	5,530	—	n/a	n/a
	6/30/2011	7,509	7,509	—	n/a	n/a
	6/30/2012	15,884	15,884	—	n/a	n/a
	6/30/2013	24,829	24,829	—	n/a	n/a
	6/30/2014	27,160	27,160	—	n/a	n/a
	6/30/2015	28,461	28,461	—	n/a	n/a
	6/30/2016	28,580	28,580	—	n/a	n/a
	6/30/2017	26,277	26,277	—	n/a	n/a
	6/30/2018	29,276	29,276	—	n/a	n/a
	6/30/2019	30,263	30,263	—	n/a	n/a
Legislative Retirement System[2]	6/30/2010	—	75	(75)	n/a	n/a
	6/30/2011	—	75	(75)	n/a	n/a
	6/30/2012	—	76	(76)	n/a	n/a
	6/30/2013	—	128	(128)	n/a	n/a
	6/30/2014	—	45	(45)	n/a	n/a
	6/30/2015	—	—	—	n/a	n/a
	6/30/2016	—	—	—	n/a	n/a
	6/30/2017	—	—	—	n/a	n/a
	6/30/2018	—	—	—	n/a	n/a
	6/30/2019	—	—	—	n/a	n/a

(continued)

Required Supplementary Information (UNAUDITED)

Schedules of Employers' and Nonemployers' Contributions - Defined Benefit Plans

Year ended June 30, 2019
(In thousands)

	Year ended	Actuarially determined contribution (a)	Contributions in relation to the actuarially determined contribution (b)	Contribution deficiency (excess) (a-b)	Covered payroll (c)	Contributions as a percentage of covered payroll (b/c)
Georgia Judicial Retirement System	6/30/2010	$ 2,600	2,600	—	51,293	5.1%
	6/30/2011	1,932	1,932	—	52,331	3.7
	6/30/2012	2,083	2,083	—	51,898	4.0
	6/30/2013	2,279	2,279	—	52,807	4.3
	6/30/2014	2,375	2,375	—	54,787	4.3
	6/30/2015	4,261	4,261	—	54,272	7.9
	6/30/2016	7,623	7,623	—	57,401	13.3
	6/30/2017	6,684	6,684	—	59,695	11.2
	6/30/2018	6,566	6,566	—	60,572	10.8
	6/30/2019	5,254	5,254	—	60,532	8.7
Georgia Military Pension Fund[3]	6/30/2010	1,434	1,434	—	n/a	n/a
	6/30/2011	1,282	1,282	—	n/a	n/a
	6/30/2012	1,521	1,521	—	n/a	n/a
	6/30/2013	1,703	1,703	—	n/a	n/a
	6/30/2014	1,892	1,892	—	n/a	n/a
	6/30/2015	1,893	1,893	—	n/a	n/a
	6/30/2016	1,990	1,990	—	n/a	n/a
	6/30/2017	2,018	2,018	—	n/a	n/a
	6/30/2018	2,377	2,377	—	n/a	n/a
	6/30/2019	2,537	2,537	—	n/a	n/a
State Employees' Assurance Department Retired and Vested Inactive Members Trust Fund	6/30/2010	—	—	—	n/a	n/a
	6/30/2011	—	—	—	n/a	n/a
	6/30/2012	12,724	12,724	—	2,085,902	0.6
	6/30/2013	5,009	5,009	—	1,855,185	0.3
	6/30/2014	—	—	—	n/a	n/a
	6/30/2015	—	—	—	n/a	n/a
	6/30/2016	—	—	—	n/a	n/a
	6/30/2017	—	—	—	n/a	n/a
	6/30/2018	—	—	—	n/a	n/a
	6/30/2019	—	—	—	n/a	n/a

This data, except for annual covered payroll, was provided by the System's actuary.

[1] No statistics regarding covered payroll are available. Contributions are not based upon members' salaries but are simply $4.00 per member, per month, for nine months, each fiscal year if hired prior to July 1, 2012 and $10 per month, per member, for nine months, if hired after July 1,2012.
[2] The Georgia General Assembly made contributions in some years that were not required.
[3] No statistics regarding covered payroll are available. Active and inactive plan member information is maintained by the Georgia Department of Defense.

See accompanying notes to required supplementary schedules and accompanying independent auditors' report.

Required Supplementary Information (UNAUDITED)

Schedules of Employers' and Nonemployers' Net Pension/OPEB Liability and Related Ratios – Defined Benefit Plans
June 30, 2019
(In thousands)

	June 30, 2019	June 30, 2018	June 30, 2017	June 30, 2016	June 30, 2015	June 30, 2014
Employees' Retirement System:						
Total pension liability	$ 17,744,003	17,628,219	17,159,634	17,103,987	17,019,362	17,042,149
Plan fiduciary net position	13,617,472	13,517,186	13,098,299	12,373,567	12,967,964	13,291,531
Employers' and nonemployers' net pension liability	$ 4,126,531	4,111,033	4,061,335	4,730,420	4,051,398	3,750,618
Plan fiduciary net position as a percentage of the total pension liability	76.74 %	76.68 %	76.33 %	72.34 %	76.20 %	77.99 %
Covered payroll	$ 2,615,491	2,635,896	2,565,918	2,390,457	2,353,225	2,335,773
Employers' and nonemployers' net pension liability as a percentage of covered payroll	157.77 %	155.96 %	158.28 %	197.89 %	172.16 %	160.57 %
Public School Employees Retirement System:						
Total pension liability	$ 1,107,495	1,072,165	1,013,163	992,292	946,200	930,745
Plan fiduciary net position	941,587	914,138	868,134	803,775	823,150	821,733
Employers' and nonemployers' net pension liability	$ 165,908	158,027	145,029	188,517	123,050	109,012
Plan fiduciary net position as a percentage of the total pension liability	85.02 %	85.26 %	85.69 %	81.00 %	87.00 %	88.29 %
Covered payroll	n/a	n/a	n/a	n/a	n/a	n/a
Employers' and nonemployers' net pension liability as a percentage of covered payroll	n/a	n/a	n/a	n/a	n/a	n/a
Legislative Retirement System:						
Total pension liability	$ 26,166	26,304	25,898	26,142	25,271	25,216
Plan fiduciary net position	34,540	34,189	32,981	30,975	32,359	32,794
Employer's net pension asset	$ (8,374)	(7,885)	(7,083)	(4,833)	(7,088)	(7,578)
Plan fiduciary net position as a percentage of the total pension liability	132.00 %	129.98 %	127.35 %	118.49 %	128.05 %	130.05 %
Covered payroll	n/a	n/a	n/a	n/a	n/a	n/a
Employer's net pension asset as a percentage of covered payroll	n/a	n/a	n/a	n/a	n/a	n/a
Georgia Judicial Retirement System:						
Total pension liability	$ 440,041	428,624	394,736	368,669	357,081	350,443
Plan fiduciary net position	479,372	466,657	441,182	403,011	404,852	400,790
Employers' and nonemployers' net pension asset	$ (39,331)	(38,033)	(46,446)	(34,342)	(47,771)	(50,347)
Plan fiduciary net position as a percentage of the total pension liability	108.94 %	108.87 %	111.77 %	109.32 %	113.38 %	114.37 %
Covered payroll	$ 60,532	60,572	59,695	57,401	54,272	54,787
Employers' and nonemployers' net pension asset as a percentage of covered payroll	64.98 %	62.79 %	77.81 %	59.83 %	88.02 %	91.90 %

(continued)

Required Supplementary Information (UNAUDITED)

Schedules of Employers' and Nonemployers' Net Pension/OPEB Liability and Related Ratios – Defined Benefit Plans
June 30, 2019
(In thousands)

		June 30, 2019	June 30, 2018	June 30, 2017	June 30, 2016	June 30, 2015	June 30, 2014
Georgia Military Pension Fund:							
Total pension liability	$	45,639	43,204	40,085	36,950	33,343	31,511
Plan fiduciary net position		26,417	23,653	20,711	17,717	16,712	15,251
Employers' net pension liability	$	19,222	19,551	19,374	19,233	16,631	16,260
Plan fiduciary net position as a percentage of the total pension liability		57.88%	54.75%	51.67%	47.95%	50.12%	48.4%
Covered payroll		n/a	n/a	n/a	n/a	n/a	n/a
Employers' net pension liability as a percentage of covered payroll		n/a	n/a	n/a	n/a	n/a	n/a
State Employees' Assurance Department - Retired and Vested Inactive Members Trust Fund:							
Total pension liability	$	951,091	918,816	861,346	—	—	—
Plan fiduciary net position		1,233,856	1,189,462	1,121,251	—	—	—
Employer's net OPEB asset	$	(282,765)	(270,646)	(259,905)	—	—	—
Plan fiduciary net position as a percentage of the total OPEB liability		129.73%	129.46%	130.17%	—%	—%	—%
Covered payroll	$	1,211,274	1,328,485	1,383,860	—	—	—
Employers' net OPEB asset as a percentage of covered payroll		23.34%	20.37%	18.78%	—	—	—

Schedules above are intended to show information for 10 years. Additional years will be displayed as they become available.

See accompanying notes to required supplementary schedule and accompanying independent auditors' report.

Required Supplementary Information (UNAUDITED)

Schedules of Changes in Employers' and Nonemployers' Net Pension/OPEB Liability – Defined Benefit Plans
June 30, 2019
(In thousands)

	June 30, 2019	June 30, 2018	June 30, 2017	June 30, 2016	June 30, 2015	June 30, 2014
Employee's Retirement System:						
Total pension liability:						
Service cost	$ 135,679	129,294	125,910	143,043	145,045	150,075
Interest	1,233,882	1,233,689	1,230,175	1,225,650	1,227,846	1,224,380
Benefit changes	42,097	31,097	30,563	—	—	—
Differences between expected and actual experience	155,573	180,655	72,315	(238)	(53,950)	—
Changes of assumptions	—	314,733	—	70,890	—	—
Benefit payments	(1,443,756)	(1,413,298)	(1,394,283)	(1,347,633)	(1,334,278)	(1,305,998)
Refunds of contributions	(7,691)	(7,585)	(9,033)	(7,087)	(7,450)	(8,757)
Net change in total pension liability	115,784	468,585	55,647	84,625	(22,787)	59,700
Total pension liability-beginning	17,628,219	17,159,634	17,103,987	17,019,362	17,042,149	16,982,449
Total pension liability-end (a)	17,744,003	17,628,219	17,159,634	17,103,987	17,019,362	17,042,149
Plan fiduciary net position:						
Contributions-employer	638,989	639,302	613,201	583,082	505,668	418,807
Contributions-nonemployer	10,220	12,865	12,080	12,484	12,495	10,945
Contributions-member	36,252	37,130	35,863	31,961	33,713	32,423
Administrative expense allotment	10	10	10	10	10	—
Net investment income	873,404	1,166,013	1,475,626	141,292	474,147	2,021,748
Benefit payments	(1,443,756)	(1,413,298)	(1,394,283)	(1,347,633)	(1,334,278)	(1,305,998)
Administrative expense	(7,142)	(8,056)	(8,732)	(8,506)	(7,872)	(7,440)
Refunds of contributions	(7,691)	(7,585)	(9,033)	(7,087)	(7,450)	(8,757)
Other[1]	—	(7,494)	—	—	—	—
Net change in plan fiduciary net position	100,286	418,887	724,732	(594,397)	(323,567)	1,161,728
Plan fiduciary net position-beginning	13,517,186	13,098,299	12,373,567	12,967,964	13,291,531	12,129,803
Plan fiduciary net position-end(b)	13,617,472	13,517,186	13,098,299	12,373,567	12,967,964	13,291,531
Net pension liability-end (a)-(b)	$ 4,126,531	4,111,033	4,061,335	4,730,420	4,051,398	3,750,618

[1] The System is a participating employer in the Georgia State Employees Postemployment Benefit Fund and the State Employees' Assurance Department Retired and Vested Inactive Members Trust Fund. Pursuant to the requirements of GASB Statement No. 75, the fiscal year 2018 beginning Fiduciary Net Position was restated by $7,494,507. The restatement of net position was made for reporting purposes to reflect the impact of recording the initial deferred outflows of resources, net OPEB liability, and net OPEB asset. For actuarial purposes, this adjustment is being recognized in fiscal year 2018 and beginning fiduciary net position was not restated.

Schedules above are intended to show information for 10 years. Additional years will be displayed as they become available.

See accompanying notes to required supplementary schedule and accompanying independent auditors' report.

(continued)

Required Supplementary Information (UNAUDITED)

Schedules of Changes in Employers' and Nonemployers' Net Pension/OPEB Liability – Defined Benefit Plans

June 30, 2019

(In thousands)

		June 30, 2019	June 30, 2018	June 30, 2017	June 30, 2016	June 30, 2015	June 30, 2014
Public School Employees Retirement System:							
Total pension liability:							
Service cost	$	13,762	13,180	12,788	11,952	12,088	11,049
Interest		75,923	73,643	72,157	68,776	67,652	66,143
Benefit changes		18,050	17,289	—	—	—	—
Differences between expected and actual experience		(8,159)	(3,943)	(3,665)	(9,483)	(6,858)	—
Changes of assumptions		—	21,354	—	33,215	—	—
Benefit payments		(63,637)	(61,820)	(59,378)	(57,903)	(56,972)	(56,189)
Refunds of contributions		(609)	(701)	(1,031)	(465)	(455)	(514)
Net change in total pension liability		35,330	59,002	20,871	46,092	15,455	20,489
Total pension liability-beginning		1,072,165	1,013,163	992,292	946,200	930,745	910,256
Total pension liability-end (a)		1,107,495	1,072,165	1,013,163	992,292	946,200	930,745
Plan fiduciary net position:							
Contributions-employer		30,263	29,276	26,277	28,580	28,461	27,160
Contributions-member		2,256	2,162	2,084	1,925	1,800	1,659
Net investment income		60,553	78,418	97,715	9,809	30,129	123,799
Benefit payments		(63,637)	(61,820)	(59,378)	(57,903)	(56,972)	(56,189)
Administrative expense		(1,377)	(1,331)	(1,308)	(1,321)	(1,545)	(1,450)
Refunds of contributions		(609)	(701)	(1,031)	(465)	(456)	(514)
Net change in plan fiduciary net position		27,449	46,004	64,359	(19,375)	1,417	94,465
Plan fiduciary net position-beginning		914,138	868,134	803,775	823,150	821,733	727,268
Plan fiduciary net position-end(b)		941,587	914,138	868,134	803,775	823,150	821,733
Net pension liability-end (a)-(b)	$	165,908	158,027	145,029	188,517	123,050	109,012

Schedules above are intended to show information for 10 years. Additional years will be displayed as they become available.

See accompanying notes to required supplementary schedule and accompanying independent auditors' report.

(continued)

Required Supplementary Information (UNAUDITED)

Schedules of Changes in Employers' and Nonemployers' Net Pension/OPEB Liability – Defined Benefit Plans
June 30, 2019
(In thousands)

	June 30, 2019	June 30, 2018	June 30, 2017	June 30, 2016	June 30, 2015	June 30, 2014
Legislative Retirement System:						
Total pension liability:						
Service cost	$ 366	359	357	331	338	344
Interest	1,850	1,875	1,892	1,829	1,824	1,799
Benefit changes	—	—	—	—	—	—
Differences between expected and actual experience	(428)	(481)	(655)	(465)	(325)	—
Changes of assumptions	—	447	—	938	—	—
Benefit payments	(1,856)	(1,772)	(1,763)	(1,724)	(1,756)	(1,801)
Refunds of contributions	(70)	(22)	(75)	(38)	(26)	(30)
Net change in total pension liability	(138)	406	(244)	871	55	312
Total pension liability-beginning	26,304	25,898	26,142	25,271	25,216	24,904
Total pension liability-end (a)	26,166	26,304	25,898	26,142	25,271	25,216
Plan fiduciary net position:						
Contributions-employer	—	—	—	—	—	45
Contributions-member	339	323	327	328	327	282
Net investment income	2,228	2,962	3,741	363	1,189	4,969
Benefit payments	(1,856)	(1,772)	(1,763)	(1,724)	(1,756)	(1,801)
Administrative expense	(290)	(283)	(224)	(313)	(169)	(152)
Refunds of contributions	(70)	(22)	(75)	(38)	(26)	(30)
Net change in plan fiduciary net position	351	1,208	2,006	(1,384)	(435)	3,313
Plan fiduciary net position-beginning	34,189	32,981	30,975	32,359	32,794	29,481
Plan fiduciary net position-end(b)	34,540	34,189	32,981	30,975	32,359	32,794
Net pension liability-end (a)-(b)	$ (8,374)	(7,885)	(7,083)	(4,833)	(7,088)	(7,578)

Schedules above are intended to show information for 10 years. Additional years will be displayed as they become available.

See accompanying notes to required supplementary schedule and accompanying independent auditors' report.

(continued)

Required Supplementary Information (UNAUDITED)

Schedules of Changes in Employers' and Nonemployers' Net Pension/OPEB Liability – Defined Benefit Plans
June 30, 2019
(In thousands)

	June 30, 2019	June 30, 2018	June 30, 2017	June 30, 2016	June 30, 2015	June 30, 2014
Georgia Judicial Retirement System:						
Total pension liability:						
Service cost	$ 13,350	13,019	12,514	12,713	7,751	7,584
Interest	30,267	28,666	26,826	26,058	25,566	24,530
Benefit changes	1,065	3,442	3,419	—	—	—
Differences between expected and actual experience	(5,250)	6,379	5,258	(3,603)	(7,542)	—
Changes of assumptions	—	7,466	—	(4,308)	—	—
Benefit payments	(27,462)	(24,934)	(21,784)	(19,011)	(18,365)	(17,441)
Refunds of contributions	(553)	(150)	(166)	(261)	(772)	(22
Net change in total pension liability	11,417	33,888	26,067	11,588	6,638	14,651
Total pension liability-beginning	428,624	394,736	368,669	357,081	350,443	335,792
Total pension liability-end (a)	440,041	428,624	394,736	368,669	357,081	350,443
Plan fiduciary net position:						
Contributions-employer	3,117	4,725	4,081	4,754	2,696	1,373
Contributions-nonemployer	2,137	1,841	2,603	2,869	1,564	1,002
Contributions-member	5,469	4,910	4,906	5,507	5,061	4,731
Net investment income	30,827	39,877	49,259	5,055	14,697	60,012
Benefit payments	(27,462)	(24,934)	(21,784)	(19,011)	(18,365)	(17,441)
Administrative expense	(820)	(794)	(728)	(754)	(819)	(754)
Refunds of contributions	(553)	(150)	(166)	(261)	(772)	(22)
Net change in plan fiduciary net position	12,715	25,475	38,171	(1,841)	4,062	48,901
Plan fiduciary net position-beginning	466,657	441,182	403,011	404,852	400,790	351,889
Plan fiduciary net position-end(b)	479,372	466,657	441,182	403,011	404,852	400,790
Net pension liability-end (a)-(b)	$ (39,331)	(38,033)	(46,446)	(34,342)	(47,771)	(50,347)

Schedules above are intended to show information for 10 years. Additional years will be displayed as they become available.

See accompanying notes to required supplementary schedule and accompanying independent auditors' report.

(continued)

Required Supplementary Information (UNAUDITED)

Schedules of Changes in Employers' and Nonemployers' Net Pension/OPEB Liability – Defined Benefit Plans

June 30, 2019
(In thousands)

		June 30, 2019	June 30, 2018	June 30, 2017	June 30, 2016	June 30, 2015	June 30, 2014
Georgia Military Pension Fund:							
Total pension liability:							
Service cost	$	97	84	89	73	73	73
Interest		3,109	2,964	2,732	2,465	2,330	2,223
Benefit changes		—	—	—	—	—	—
Differences between expected and actual experience		449	116	1,356	950	326	—
Changes of assumptions		—	1,093	—	1,082	—	—
Benefit payments		(1,220)	(1,138)	(1,042)	(963)	(897)	(841)
Refunds of contributions		—	—	—	—	—	—
Net change in total pension liability		2,435	3,119	3,135	3,607	1,832	1,455
Total pension liability-beginning		43,204	40,085	36,950	33,343	31,511	30,056
Total pension liability-end (a)		45,639	43,204	40,085	36,950	33,343	31,511
Plan fiduciary net position:							
Contributions-employer		2,537	2,377	2,018	1,990	1,893	1,892
Contributions-member		—	—	—	—	—	—
Net investment income		1,683	1,928	2,262	240	585	2,179
Benefit payments		(1,220)	(1,138)	(1,042)	(963)	(896)	(841)
Administrative expense		(236)	(225)	(244)	(262)	(121)	(110)
Refunds of contributions		—	—	—	—	—	—
Other		—	—	—	—	—	—
Net change in plan fiduciary net position		2,764	2,942	2,994	1,005	1,461	3,120
Plan fiduciary net position-beginning		23,653	20,711	17,717	16,712	15,251	12,131
Plan fiduciary net position-end(b)		26,417	23,653	20,711	17,717	16,712	15,251
Net pension liability-end (a)-(b)	$	19,222	19,551	19,374	19,233	16,631	16,260

Schedules above are intended to show information for 10 years. Additional years will be displayed as they become available.

See accompanying notes to required supplementary schedule and accompanying independent auditors' report.

(continued)

Required Supplementary Information (UNAUDITED)

Schedules of Changes in Employers' and Nonemployers' Net Pension/OPEB Liability – Defined Benefit Plans
June 30, 2019
(In thousands)

		June 30, 2019	June 30, 2018	June 30, 2017
Statement Employees' Assurance Department Retired and Vested Inactive Members Trust Fund:				
Total OPEB Liability:				
Service cost	$	3,617	3,695	3,959
Interest		65,708	63,242	61,076
Benefit changes		—	—	—
Differences between expected and actual experience		366	4,697	—
Changes of assumptions		—	22,085	—
Benefit payments		(37,416)	(36,249)	(36,058)
Refunds of contributions		—	—	—
Net change in total OPEB liability		32,275	57,470	28,977
Total OPEB liability-beginning		918,816	861,346	832,369
Total OPEB liability-end		951,091	918,816	861,346
Plan fiduciary net position:				
Contributions - employer		—	—	1
Insurance premiums - member		3,328	3,599	3,793
Net investment income		79,193	101,542	125,550
Benefit payments		(37,416)	(36,249)	(36,058)
Administrative expense		(716)	(681)	(576)
Refunds of contributions		—	—	—
Other		5	—	—
Net change in plan fiduciary net position		44,394	68,211	92,710
Plan fiduciary net position-beginning		1,189,462	1,121,251	1,028,541
Plan fiduciary net position-end(b)		1,233,856	1,189,462	1,121,251
Net OPEB asset-end (a)-(b)	$	(282,765)	(270,646)	(259,905)

Schedules above are intended to show information for 10 years. Additional years will be displayed as they become available.

See accompanying notes to required supplementary schedule and accompanying independent auditors' report.

Required Supplementary Information (UNAUDITED)

Schedule of Investment Returns
Year ended June 30, 2019

	2019	2018	2017	2016	2015	2014
Pooled Investment Fund:						
Annual money-weighted rate of return, net of investment expense	(1.8)%	0.6%	2.9%	(7.2)%	(5.3)%	6.0%

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

See accompanying notes to required supplementary schedule and accompanying independent auditors’ report.

Required Supplementary Information (UNAUDITED)

Schedules of the System's Proportionate Share of the Net OPEB Liability
Year ended June 30, 2019
(In thousands)

	June 30, 2019	June 30, 2018
SEAD-OPEB:		
System's proportionate share of the net OPEB liability (asset)	0.200064 %	0.192864 %
System's proportionate share of the net OPEB liability (asset)	$ (541)	$ (501)
System's covered payroll	2,770	2,809
System's proportionate share of the net OPEB liability (asset) as a percentage of its covered payroll	(19.55)%	(17.85)%
Plan fiduciary net position as a percentage of the total OPEB liability	129.46 %	130.17 %
State OPEB Fund:		
System's proportion of the net OPEB liability	0.181584 %	0.185830 %
System's proportionate share of the net OPEB liability	$ 4,749	$ 7,571
System's covered payroll	5,415	5,265
System's proportionate share of the net OPEB liability as a percentage of its covered payroll	87.71 %	143.81 %
System's fiduciary net position as a percentage of the total OPEB liability	31.48 %	17.34 %

Schedules above are intended to show information for 10 years. Additional years will be displayed as they become available.

See accompanying notes to required supplementary schedules and accompanying independent auditors' report.

Required Supplementary Information (UNAUDITED)

Schedules of the System's Contributions to OPEB Plans
Year ended June 30, 2019
(In thousands)

	June 30, 2019	June 30, 2018
SEAD-OPEB:		
Contractually required contribution*	$ —	$ —
Contributions in relation to the contractually required contribution	—	—
Contribution deficiency (excess)	—	—
System's covered payroll	2,567	2,770
Contributions as a percentage of a covered payroll	—%	—%
State OPEB Fund:		
Contractually required contribution	$ 1,012	$ 905
Contributions in relation to the contractually required contribution	1,012	905
Contribution deficiency (excess)	—	—
System's covered payroll	5,578	5,415
Contributions as a percentage of a covered payroll	18.15%	16.71%

*Employer contributions are not currently required for the SEAD-OPEB plan.

Schedules above are intended to show information for 10 years. Additional years will be displayed as they become available.

See accompanying notes to required supplementary schedules and accompanying independent auditors' report.

Notes to Required Supplementary Information (UNAUDITED)

June 30, 2019

Required Supplementary Information Schedules for the System as the Plan:

(1) Schedule of Employers' and Nonemployers' Contributions – Defined Benefit Plans

This schedule presents the required contributions and the percent of required contributions actually contributed.

(2) Schedule of Employers' and Nonemployers' Net Pension/OPEB Liability and Related Ratios – Defined Benefit Plans

The components of the net pension/OPEB liability as of the fiscal year end and the fiduciary net position as a percentage of the total pension/OPEB liability as of that date are presented in this schedule. This trend information will be accumulated to display a 10-year presentation.

(3) Schedule of Changes in Employers' and Nonemployers' Net Pension/OPEB Liability – Defined Benefit Plans

Net pension/OPEB liability, which is measured as total pension/OPEB liability less the amount of the fiduciary net position, is presented in this schedule. This trend information will be accumulated to display a 10-year presentation.

(4) Schedule of Investment Returns

This schedule presents historical trend information about the annual money-weighted rate of return on plan investments, net of plan investment expense. This trend information will be accumulated to display a 10-year presentation.

(5) Individual Plan Information

This note provides information about changes of benefit terms, changes of assumptions, and methods and assumptions used in calculations of actuarially determined contributions.

(a) *Employees' Retirement System*

Changes of benefit terms –

- A new benefit tier was added for members joining the System on and after July 1, 2009.
- A one-time 3% payment was granted to certain retirees and beneficiaries effective July 2016.
- A one-time 3% payment was granted to certain retirees and beneficiaries effective July 2017.
- Two one-time 2% payments were granted to certain retirees and beneficiaries effective July 2018 and January 2019.

Changes of assumptions – Subsequent to the June 30, 2017 measurement date, the ERS Board adopted a new funding policy. Because of this new funding policy, the assumed investment rate of return was reduced from 7.50% to 7.40% for the June 30, 2017 actuarial valuation. In addition, based on the ERS Board's new funding policy, the assumed investment rate of return was reduced by 0.10% from 7.40% to 7.30% as of the June 30, 2018 measurement date.

(continued)

Notes to Required Supplementary Information (UNAUDITED)

June 30, 2019

(b) *Public School Employees' Retirement System*

Changes of benefit terms – The member contribution rate was increased from $4 to $10 per month for members joining the System on or after July 1, 2012. The monthly benefit accrual rate was increased from $14.75 to $15.00 per year of creditable service effective July 1, 2017. The monthly benefit accrual rate was increased from $15.00 to $15.25 per year of creditable service effective July 1, 2018.

Changes of assumptions – Subsequent to the June 30, 2017 measurement date, the PSERS Board adopted a new funding policy. Because of this new funding policy, the assumed investment rate of return was reduced from 7.50% to 7.40% for the June 30, 2017 actuarial valuation. In addition, based on the PSERS Board's new funding policy, the assumed investment rate of return was reduced by 0.10% from 7.40% to 7.30% as of the June 30, 2018 measurement date.

(c) *Legislative Retirement System*

Changes of benefit terms – none

Changes of assumptions – Subsequent to the June 30, 2017 measurement date, the ERS Board adopted a new funding policy. Because of this new funding policy, the assumed investment rate of return was reduced from 7.50% to 7.40% for the June 30, 2017 actuarial valuation. In addition, based on the ERS Board's new funding policy, the assumed investment rate of return was reduced by 0.10% from 7.40% to 7.30% as of the June 30, 2018 measurement date.

(d) *Georgia Judicial Retirement System*

Changes of benefit terms – Spouses' benefits were changed for members joining the System on and after July 1, 2012. A 2% cost-of-living adjustment was granted to certain retired members and beneficiaries effective July 1, 2016. A 2% cost-of-living adjustment was granted to certain retired members and beneficiaries effective July 1, 2018. A 2% cost-of-living adjustment was granted to certain retired members and beneficiaries effective July 1, 2019.

Changes of assumptions – Subsequent to the June 30, 2017 measurement date, the GJRS Board adopted a new funding policy. Because of this new funding policy, the assumed investment rate of return was reduced from 7.50% to 7.40% for the June 30, 2017 actuarial valuation. In addition, based on the GJRS Board's new funding policy, the assumed investment rate of return was further reduced by 0.10% from 7.40% to 7.30% as of the June 30, 2018 measurement date.

(e) *Georgia Military Pension Fund*

Changes of benefit terms – none

Changes of assumptions – Subsequent to the June 30, 2017 measurement date, the ERS Board adopted a new funding policy. Because of this new funding policy, the assumed investment rate of return was reduced from 7.50% to 7.40% for the June 30, 2017 actuarial valuation. In addition, based on the ERS Board's new funding policy, the assumed investment rate of return was reduced by 0.10% from 7.40% to 7.30% as of the June 30, 2018 measurement date.

(continued)

Notes to Required Supplementary Information (UNAUDITED)

June 30, 2019

(f) *State Employees' Assurance Department Retired and Vested Inactive Members Trust Fund (SEAD-OPEB) as a plan*

Changes of benefit terms – none

Changes of assumptions – Subsequent to the June 30, 2017 measurement date, the SEAD Board adopted a new funding policy. Because of this new funding policy, the assumed investment rate of return was reduced from 7.50% to 7.40% for the June 30, 2017 actuarial valuation. In addition, based on the SEAD Board's new funding policy, the assumed investment rate of return was reduced by 0.10% from 7.40% to 7.30% as of the June 30, 2018 measurement date.

(continued)

Notes to Required Supplementary Information (UNAUDITED)

June 30, 2019

The following actuarial methods and assumptions were used to determine the most recent contribution rates reported in the schedules of employer and nonemployer contributions calculated as of June 30, three years prior to the end of the first calendar year in which contributions are reported:

	ERS	PSERS	LRS
Actuarial cost method	Entry age	Entry age	Entry age
Amortization method	Level dollar, closed	Level dollar, closed	Level dollar, open
Remaining amortization period	18.2 years	21.9 years	Infinite
Asset valuation method	Five-year smoothed fair	Five-year smoothed fair	Five-year smoothed fair
Inflation	2.75%	2.75%	2.75%
Salary increases	3.25 to 7.00%	n/a	n/a
Investment rate of return	7.50% net of pension plan investment expense, including inflation	7.50% net of pension plan investment expense, including inflation	7.50% net of pension plan investment expense, including inflation
Cost of living adjustments	None	1.50% Semi-annually	1.50% Semi-annually

	GJRS	GMPF
Actuarial cost method	Entry age	Entry age
Amortization method	Level percent of pay, closed	Level dollar, closed
Remaining amortization period	17.8 years	17.3 years
Asset valuation method	Five-year smoothed fair	Five-year smoothed fair
Inflation	2.75%	2.75%
Salary increases	4.50%	n/a
Investment rate of return	7.50% net of pension plan investment expense, including inflation	7.50% net of pension plan investment expense, including inflation
Cost of living adjustments	None	None

	SEAD - OPEB
Actuarial cost method	Entry age
Amortization method	Level percent, open
Remaining amortization period	Infinite
Asset valuation method	Fair value of assets
Inflation	2.75%
Salary increases	
ERS	3.25-7.00%
JRS	4.50%
LRS	n/a
Investment rate of return	7.50% net of pension plan investment expense, including inflation
Cost of living adjustments	None

(continued)

Notes to Required Supplementary Information (UNAUDITED)

June 30, 2019

Required Supplementary Information Schedules for the System as a participating employer:

(1) Schedules of the System's Proportionate Share of the Net OPEB Liability

The information in this schedule presents historical information related to the OPEB liability that is recognized by the System in the current period financial statements. This trend information will be accumulated to display a 10 year presentation.

(2) Schedules of the System's Contributions to OPEB Plans

This schedule presents the required contributions and the percent of required contributions actually contributed.

(3) Individual Plan Information

This note provides information about changes of benefit terms, changes of assumptions, and methods and assumptions used in calculations of actuarially determined contributions.

***(a)* SEAD-OPEB**

Changes of benefit terms – none

Changes of assumptions – On December 17, 2015, the SEAD Board adopted recommended changes to the economic and demographic assumptions utilized by the Plan. Primary among the changes were the updates to rates of mortality, retirement, disability, withdrawal and salary increases. On March 15, 2018, the Board adopted a new funding policy. Because of this new funding policy, the assumed investment rate of return was reduced from 7.50% to 7.40% for June 30, 2017 actuarial valuation. In addition, based on the Board's new funding policy, the assumed investment rate of return was further reduced by 0.10% from 7.40% to 7.30% as of the June 30, 2018 Measurement Date.

***(b)* State OPEB Fund**

Changes of benefit terms – In the June 30, 2010 actuarial valuation, there was a change of benefit terms to require Medicare-eligible recipients to enroll in a Medicare Advantage plan to receive the State subsidy.

Changes of assumptions – In the revised June 30, 2017 actuarial valuation, there was a change relating to employee allocation. Employees were previously allocated based on their Retirement System membership, and currently employees are allocated based on their current employer payroll location.

In the June 30, 2015 actuarial valuation, decremental and underlying inflation assumptions were changed to reflect the Retirement Systems' experience studies.

In the June 30, 2012 actuarial valuation, a data audit was performed and data collection procedures and assumptions were changed.

Additional Information

Statement of Changes in Assets and Liabilities - Survivors Benefit Fund

Year ended June 30, 2019
(In thousands)

	Balance 6/30/2018	Additions	Deductions	Balance 6/30/2019
Assets:				
Cash and cash equivalents	$ 91	—	5	86
Equity in pooled investment fund	148,450	10,208	—	158,658
Total assets	148,541	10,208	5	158,744
Liabilities:				
Due to other funds/plans	148,541	10,208	(5)	158,744
Total liabilities	$ 148,541	10,208	(5)	158,744

See accompanying independent auditors' report.

(continued)

Additional Information

Schedule of Administrative Expenses - Contributions and Expenses
Year ended June 30, 2019
(In thousands)

Contributions from fiduciary funds:		
Employees' Retirement System	$	7,142
Public School Employees Retirement System		1,377
Legislative Retirement System		290
Georgia Judicial Retirement System		820
Georgia Military Pension Fund		235
Superior Court Judges Retirement Fund		2
District Attorneys Retirement Fund		1
Georgia Defined Contribution Plan		882
401(k) Plan		3,431
457 Plan		724
State Employees' Assurance Department - OPEB		716
Total fiduciary funds		15,620
Contributions from proprietary fund:		
State Employees' Assurance Department Active Members Fund		80
Total contributions		15,700
Expenses:		
Personal services:		
Salaries and fringes		5,581
Retirement contributions		1,307
FICA		403
Health insurance		220
Miscellaneous		51
		7,562
Communications:		
Postage		253
Publications and printing		9
Telecommunications		98
Travel		18
		378
Professional services:		
Accounting services		714
Computer services		877
Contracts		3,691
Actuarial services		298
Medical services		111
Audit fees		368
Legal services		27
		6,086
Management fees:		
Building maintenance		635
Other services and charges:		
Temporary services		560
Supplies and materials		84
Repairs and maintenance		29
Courier services		4
Depreciation		290
Miscellaneous		70
Office equipment		2
		1,039
Total expenses		15,700
Net income	$	0

See accompanying independent auditors' report.

Additional Information

Schedule of Investment Expenses

Year ended June 30, 2019
(In thousands)

Investment advisory and custodial fees	$	8,124
Miscellaneous		12,199
Total investment expenses	$	20,323

See accompanying independent auditors' report.

Investment Section

Finding the Hidden Gems in Georgia

School Bus Graveyard - Alto

Serving those who serve Georgia

ERSGA

Employees' Retirement System of Georgia

Investment Overview

Slowing global growth and heightened geopolitical tensions are key themes as a new fiscal year begins. For the U.S., annual economic growth as measured by Real GDP rose 2.3%. This is a deceleration from last fiscal year, a trend that is generally consistent across the world. Overall, U.S. equity returns this past year were up over 9%, while foreign markets lagged with a modest 1% return. Longer-term periods for total equities were generally quite positive.

We continually emphasize that the pension plan has a long-term investment horizon and that short-term concerns should not drive investment decisions. The System invests primarily in a mix of liquid, high-quality bonds and stocks. In addition, the System continues to build its private markets program in a disciplined manner. These types of investments further diversify the portfolio and allow the System to participate in rising markets while moderating the risks on the downside. A high-quality balanced fund has proven to be a successful strategy in a variety of markets over long periods of time.

As in previous years, the bias to quality was a primary goal and was successfully met. “Conservation of Capital” and “Conservatism” remain the guiding principles for investment decisions. The Board of Trustees continues to use a diversified portfolio to accomplish these objectives.

U.S. economic growth has slowed somewhat to slightly over 2% with a strong consumer sector offsetting a slowing manufacturing sector. A relatively low inflation rate, strong employment, and rising wages are keeping consumer spending strong. The international economic situation is not as resilient, which has prompted central banks worldwide to shift to a policy of accommodation after broadly raising rates the last few years. Globally, most surprising has been the continued aggressive bond-buying program in Europe where the overall deposit rate is negative and a shockingly large number of corporate issues are selling at negative rates. One emerging trend is a decline in the outlook for corporate earnings.

Studies undertaken to evaluate the investment returns of pension funds over very long-time horizons indicate that the asset allocation decision has the largest impact on the fund’s returns. Although the returns for the various asset categories vary from year to year, over the long term, equities typically outperform fixed income and cash by a very wide margin. For that reason, the System has generally maintained significant equity exposure with the remainder of the fund invested in fixed income securities designed to generate income and preserve capital.

Returns for one, three, five, ten and twenty-year periods are presented in this section. Longer periods, such as the twenty-year, allow for a more valid evaluation of returns, both in absolute terms and relative to an asset class index, by reducing emphasis on the short-term volatility of markets. The Daily Valuation Method, a time-weighted rate of return, was used to calculate returns in a manner consistent with the CFA Institute’s objectives as stated in its publication “Global Investment Performance Standards Handbook,” third edition.

The return for the S&P 500 was 10.4%. The S&P MidCap 400 and the S&P SmallCap 600 indexes had returns of 1.4% and (4.9%), respectively. Growth stocks generally outperformed value stocks for the year, while, by sector, utilities edged out information technology for the best performance. Energy was the worst-performing sector and was one of only two sectors that declined this past fiscal year.

International market returns were positive but weak. The MSCI EAFE Index returned 1.3%, and the Emerging Market Index had a return of 1.2%. For reference, the ICE U.S. Dollar Index was up 1.6% for the year.

Interest rates declined the last year across the maturity spectrum. Parts of the yield curve inverted this year as the ten-year treasury yield dropped. In fact, the ten-year Treasury return was 10.3% as compared to returns of 2.3%, 3.0%, and 7.4% for the three-month, one-year, and five-year Treasuries, respectively. During the fiscal year, the Federal Reserve raised rates twice for a total of 50 basis points.

We look at two fixed income indexes to measure the bond market’s performance. The Bloomberg Barclays Government / Credit Index had a return of 8.5%. It is a broad index containing corporate and government-sponsored bonds as well as Treasuries. The FTSE Gov/Corp AAA/AA had a return of 7.4% and is a broad index containing higher-rated corporate bonds as well as Treasuries and government securities. The spread between corporate bonds and Treasury bonds widened during the first half of the fiscal year as the Federal Reserve pushed rates higher. This trend reversed in the second half of the fiscal year, leading to better corporate performance.

In summary, the investment status of the System is excellent. The high quality of the System’s investments is in keeping with the continued policy of “Conservatism” and “Conservation of Capital.”

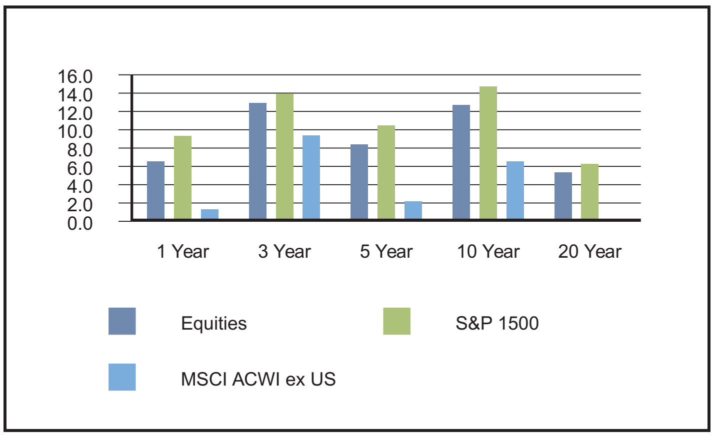
Prepared by the Division of Investment Services

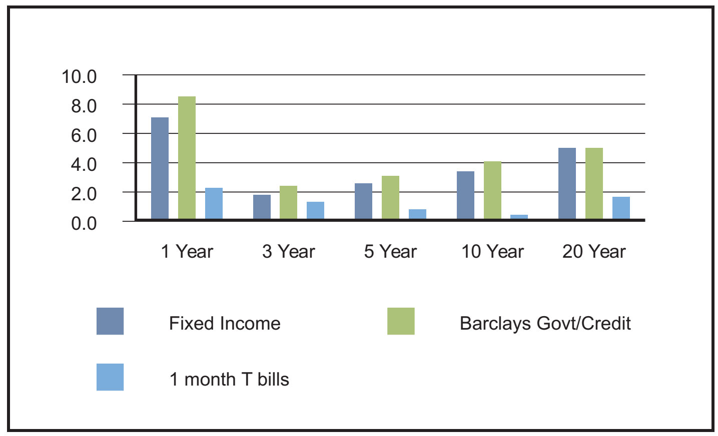
Pooled Investment Fund

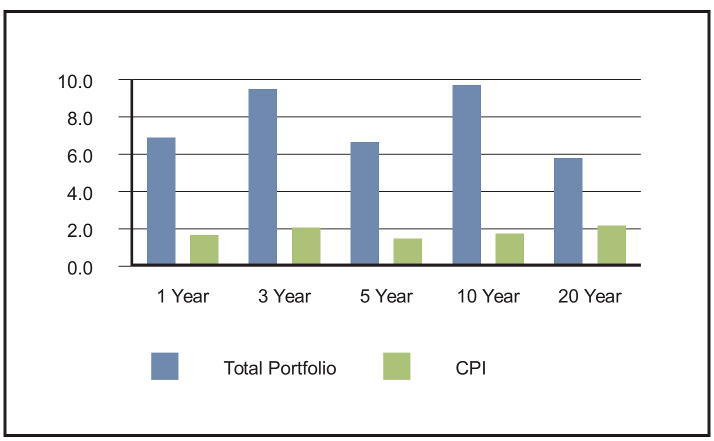
As of June 30, 2019 (dollar amounts in thousands)

Employees' Retirement System (ERS)	$	13,567,302
Public School Employees Retirement System (PSERS)		942,101
Legislative Retirement System (LRS)		34,559
Georgia Judicial Retirement System (GJRS)		478,823
State Employees' Assurance Department (SEAD) - Active		305,795
State Employees' Assurance Department (SEAD) - OPEB		1,233,750
Survivors Benefit Fund (SBF)		158,658
Georgia Military Pension Fund (GMPF)		26,404
Total	$	16,747,392

Rates of Return



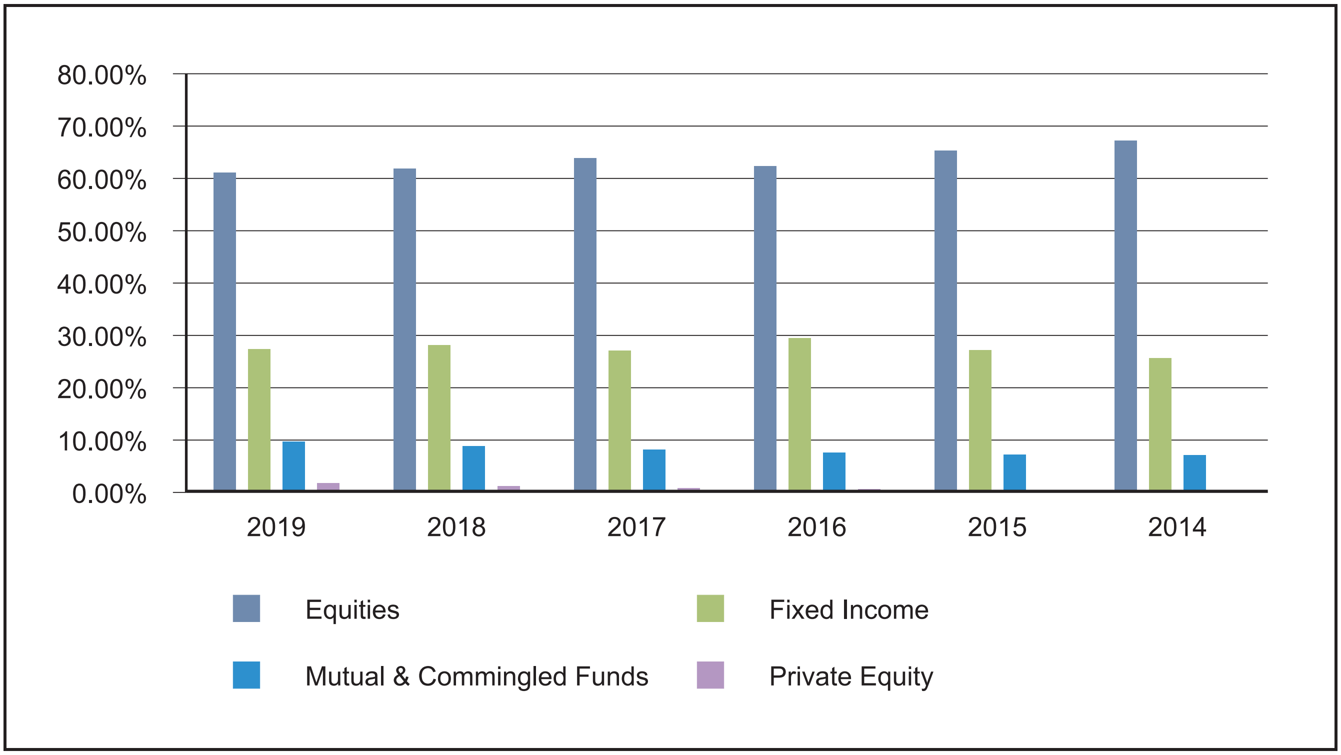




	Equities	S&P 1500	MSCI ACWI ex US	Fixed Income	Barclay's Govt/Credit	1 Month T-Bills	Total Portfolio	CPI
1 year	6.54%	9.32%	1.29%	7.08%	8.52%	2.28%	6.90%	1.66%
3 year	12.92%	13.91%	9.39%	1.80%	2.41%	1.32%	9.49%	2.06%
5 year	8.40%	10.45%	2.16%	2.60%	3.11%	0.81%	6.66%	1.48%
10 year	12.69%	14.73%	6.54%	3.42%	4.09%	0.44%	9.70%	1.74%
20 year	5.36%	6.30%	—%	5.01%	5.02%	1.66%	5.79%	2.18%

Note: Time-weighted rates of return are calculated using the Daily Valuation Method based on market rates of return.

Asset Allocation at Fair Value



Investment Summary

Asset Allocation as of June 30 (in percentages)

	2019	2018	2017	2016	2015	2014
Equities	61.1%	61.9	63.9	62.3	65.3	67.2
Fixed Income	27.4	28.1	27.1	29.5	27.2	25.6
Mutual and Commingled Funds	9.7	8.8	8.2	7.6	7.2	7.1
Private Equity	1.8	1.2	0.8	0.6	0.3	0.1
Total	**100.0%**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Asset Allocation as of June 30 (in millions)

	2019	2018	2017	2016	2015	2014
Equities	$ 11,138	11,140	11,030	10,005	10,915	11,372
Fixed Income	4,984	5,040	4,668	4,733	4,543	4,314
Mutual and Commingled Funds	1,769	1,599	1,421	1,226	1,204	1,209
Private Equity	335	222	134	94	52	22
Total	$ 18,226	18,001	17,253	16,058	16,714	16,917

Schedule of Fees and Commissions (In thousands)

Year ended June 30, 2019

Investment Advisors' Fees:		
U.S. Equity	$	3,190
International Equity		4,351
Fixed Income		—
Investment Commissions:		
U.S. Equity		1,690
International Equity		1,150
Transaction Fees:		648
Miscellaneous*:		19,061
Total Fees and Commissions	$	30,090

*Includes capitalized fees not included in total investment expenses shown on page 88.

Twenty Largest Equity Holdings † (In thousands)
As of June 30, 2019

Shares	Company		Fair Value
1,763,294	Microsoft Corp.	$	236,211
113,471	Amazon.Com Inc.		214,872
974,584	Apple Inc.		192,890
162,341	Alphabet Inc.		175,646
624,287	Facebook Inc.		120,487
652,410	Visa Inc.		113,226
850,168	JPMorgan Chase & Co.		95,049
438,470	Berkshire Hathaway Inc.		93,469
616,940	Johnson & Johnson		85,927
1,106,213	Exxon Mobil Corp.		84,769
464,800	Alibaba Group Holding Ltd.		78,760
293,419	UnitedHealth Group		71,597
625,698	Procter & Gamble Co.		68,608
185,950	Netflix Inc.		68,303
1,150,157	Verizon Communications Inc.		65,709
1,445,785	Pfizer Inc.		62,631
284,612	The Home Depot Inc.		59,191
469,999	Chevron Corp.		58,487
411,837	The Walt Disney Co.		57,509
1,947,386	Bank of America Corp.		56,474
	Top Twenty Equities	$	2,059,815
	Remaining Equities		9,077,616
	Total Equities	$	11,137,431

†A complete listing is available upon written request, subject to restrictions of O.C.G.A. Section 47-1-14.

Top 10 Fixed Income Holdings*

As of June 30, 2019

Issuer	Year of Maturity	Interest Rate	Par Value (in thousands)	Fair Value (in thousands)
US TREAS. NOTE	2024	2.2500%	$ 313,000	$ 320,287
US TREAS. NOTE	2025	2.6250	200,000	208,836
US TREAS. NOTE	2025	2.5000	200,000	207,406
US TREAS. NOTE	2025	2.7500	190,000	200,108
US TREAS. NOTE	2027	2.2500	192,000	196,658
US TREAS. NOTE	2023	1.5000	195,000	193,378
US TREAS. NOTE	2027	2.2500	160,000	163,800
US TREAS. NOTE	2021	2.1250	153,000	154,166
GENERAL ELECTRIC COMPANY	2022	2.7000	141,000	140,843
US TREAS. BOND	2039	3.5000	113,000	134,227
Total of 10 Largest ERS & GDCP Fixed Income Holdings				1,919,709
Remaining Fixed Income Holdings				$ 3,064,330
Total ERS and Defined Contribution Fixed Income Securities				$ 4,984,039

*A complete listing is available upon written request, subject to restrictions of O.C.G.A. Section 47-1-14.

Actuarial Section

Finding the Hidden Gems in Georgia

Lunch Box Museum - Columbus

ERSGA
Employees' Retirement System of Georgia
Serving those who serve Georgia

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April 18, 2019

Board of Trustees
Employees' Retirement System of Georgia
Two Northside 75, Suite 300
Atlanta, GA 30318

Attn: Mr. James Potvin, Executive Director

Members of the Board:

Section 47-2-26 of the law governing the operation of the Employees' Retirement System of Georgia provides that the actuary shall make annual valuations of the contingent assets and liabilities of the Retirement System on the basis of regular interest and the tables last adopted by the Board of Trustees. We have submitted the report giving the results of the actuarial valuation of the System prepared as of June 30, 2018. The report indicates that annual employer contributions at the rate of 19.91% of compensation for Old Plan Members, 24.66% of compensation for New Plan Members, and 21.57% of compensation for GSEPS Members for the fiscal year ending June 30, 2021 are sufficient to support the benefits of the System.

In preparing the valuation, the actuary relied on data provided by the System. While not verifying data at the source, the actuary performed tests for consistency and reasonableness. Our firm, as actuary, is responsible for all of the actuarial trend data in the financial section of the annual report and the supporting schedules in the actuarial section of the annual report.

In our opinion, the valuation is complete and accurate, and the methodology and assumptions are reasonable as a basis for the valuation. The valuation takes into account the effect of all amendments to the System enacted through the 2018 session of the General Assembly. The valuation reflects two one-time 2% payments to certain retirees and beneficiaries effective July 2018 and January 2019. Effective with the June 30, 2017 valuation, the assumed rate of return will be reduced by 0.10% (10 basis points) from the immediate prior actuarial valuation, as long as the actual rate of return for the fiscal year ending with the current valuation date exceeds the assumed rate of return from the immediate prior actuarial valuation. The assumed rate of return may not decrease below 7.00% net of investment expenses. Since the actual rate of return for the year ending June 30, 2018 was greater than 7.40%, the assumed rate of return used in the current valuation was decreased from 7.40% to 7.30%.

The System is funded on an actuarial reserve basis. The actuarial 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 financial reporting purposes meet the parameters set by Actuarial Standards of Practice (ASOPs). The funding objective of the plan is that contribution rates over time will remain level as a percent of payroll. The valuation method used is the entry age normal cost method. The normal contribution rate to cover current cost has been determined as a level percent of payroll. Gains and losses are reflected in the total unfunded accrued liability which is being amortized on a level dollar basis in accordance with the funding policy adopted by the Board.

The Plan and the employers are required to comply with the financial reporting requirements of GASB Statements No. 67 and 68. The necessary disclosure information is provided in separate supplemental reports.

We have provided the following information and supporting schedules for the Actuarial Section of the Comprehensive Annual Financial Report:

- Summary of Actuarial Assumptions
- Schedule of Active Members
- Schedule of Funding Progress
- Schedule of Retirees Added to and Removed from Rolls
- Analysis of Change in Unfunded Accrued Liability
- Solvency Test Results

The System is being funded in conformity with the minimum funding standard set forth in Code Section 47-20-10 of the Public Retirement Systems Standards Law and the funding policy adopted by the Board. 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 valuations, the continued sufficiency

(continued)

of the retirement fund to provide the benefits called for under the System may be safely anticipated.

This is to certify that the independent consulting actuary is a member of the American Academy of Actuaries and has 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 System and on actuarial assumptions that are internally consistent and reasonably based on the actual experience of the System.

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 amounts for the System. Use of these computations for purposes other than meeting these requirements may not be appropriate.

Sincerely yours,

Edward J. Koebel

Edward J. Koebel, EA, FCA, MAAA
Principal and Consulting Actuary

Cathy Turcot

Cathy Turcot
Principal and Managing Director

Ben Mobley

Ben Mobley, EA, FCA, MAAA
Senior Actuary

(continued)

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April 18, 2019

Board of Trustees
Georgia Public School Employees Retirement System
Two Northside 75, Suite 300
Atlanta, GA 30318

Attn: Mr. James Potvin, Executive Director

Members of the Board:

Section 47-4-60 of the law governing the operation of the Georgia Public School Employees Retirement System provides that the employer contribution shall be actuarially determined and approved by the Board of Trustees. We have submitted the report giving the results of the actuarial valuation of the System prepared as of June 30, 2018. Based on a monthly benefit accrual rate of $15.25, which is effective July 1, 2018, the valuation indicates that annual employer contributions of $30,264,000 or $865.85 per active member for the fiscal year ending June 30, 2021 are sufficient to support the benefits of the System.

Since the previous valuation, the monthly benefit rate has been increased from $15.00 to $15.25 per year of creditable service with an effective date of July 1, 2018. In addition, the results of the valuation reflect that the Board granted a 2% cost-of-living adjustment (COLA) on July 1, 2018 to certain retired members and beneficiaries rather than the 1.50% anticipated cost-of-living adjustments to retired members on July 1, 2018 and on January 1, 2019.

Effective with the June 30, 2017 valuation, the assumed rate of return will be reduced by 0.10% (10 basis points) from the immediate prior actuarial valuation, as long as the actual rate of return for the fiscal year ending with the current valuation date exceeds the assumed rate of return from the immediate prior actuarial valuation. The assumed rate of return may not decrease below 7.00% net of investment expenses. Since the actual rate of return for the year ending June 30, 2018 was greater than 7.40%, the assumed rate of return used in the current valuation was decreased from 7.40% to 7.30%.

In preparing the valuation, the actuary relied on data provided by the System. While not verifying data at the source, the actuary performed tests for consistency and reasonableness. Our firm, as actuary, is responsible for all of the actuarial trend data in the financial section of the annual report and the supporting schedules in the actuarial section of the annual report.

In our opinion, the valuation is complete and accurate, and the methodology and assumptions are reasonable as a basis for the valuation. The valuation takes into account the effect of all amendments to the System enacted through the 2018 session of the General Assembly.

The System is funded on an actuarial reserve basis. The actuarial 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 financial reporting purposes meet the parameters set by Actuarial Standards of Practice (ASOPs). The funding objective of the plan is that contribution rates over time will remain level as a dollar per active member. The valuation method used is the entry age normal cost method. The normal contribution rate to cover current cost has been determined as a dollar per active member. Gains and losses are reflected in the total unfunded accrued liability which is being amortized as a level dollar per active member in accordance with the funding policy adopted by the Board.

The Plan and the employers are required to comply with the financial reporting requirements of GASB Statements No. 67 and 68. The necessary disclosure information is provided in separate supplemental reports.

We have provided the following information and supporting schedules for the Actuarial Section of the Comprehensive Annual Financial Report:

- Summary of Actuarial Assumptions
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- Analysis of Change in Unfunded Accrued Liability
- Solvency Test Results

(continued)

The System is currently being funded in conformity with the minimum funding standard set forth in Code Section 47-20-10 of the Public Retirement Systems Standards Law and the funding policy adopted by the Board. In our opinion the System is currently 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.

This is to certify that the independent consulting actuary is a member of the American Academy of Actuaries and has 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 System and on actuarial assumptions that are internally consistent and reasonably based on the actual experience of the System.

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 amounts for the System. Use of these computations for purposes other than meeting these requirements may not be appropriate.

Sincerely yours,

Edward J. Koebel

Edward J. Koebel, EA, FCA, MAAA
Principal and Consulting Actuary

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April 18, 2019

Board of Trustees
Georgia Judicial Retirement System
Two Northside 75, Suite 300
Atlanta, GA 30318

Attn: Mr. James Potvin, Executive Director

Members of the Board:

Section 47-23-21 of the law governing the operation of the Georgia Judicial Retirement System provides that the actuary shall make annual valuations of the contingent assets and liabilities of the Retirement System on the basis of regular interest and the tables last adopted by the Board of Trustees. We have submitted the report giving the results of the actuarial valuation of the System prepared as of June 30, 2018. The report indicates that annual employer contributions at the rate of 8.38% of compensation for the fiscal year ending June 30, 2021 are sufficient to support the benefits of the System.

The results of the valuation reflect the two one-time payments to certain retirees and beneficiaries effective July 2018 and January 2019.

In preparing the valuation, the actuary relied on data provided by the System. While not verifying data at the source, the actuary performed tests for consistency and reasonableness. Our firm, as actuary, is responsible for all of the actuarial trend data in the financial section of the annual report and the supporting schedules in the actuarial section of the annual report.

In our opinion, the valuation is complete and accurate, and the methodology and assumptions are reasonable as a basis for the valuation. The valuation takes into account the effect of all amendments to the System enacted through the 2018 session of the General Assembly. Effective with the June 30, 2017 valuation, the assumed rate of return will be reduced by 0.10% (10 basis points) from the immediate prior actuarial valuation, as long as the actual rate of return for the fiscal year ending with the current valuation date exceeds the assumed rate of return from the immediate prior actuarial valuation. The assumed rate of return may not decrease below 7.00% net of investment expenses. Since the actual rate of return for the year ending June 30, 2018 was greater than 7.40%, the assumed rate of return used in the current valuation was decreased from 7.40% to 7.30%.

The System is funded on an actuarial reserve basis. The actuarial 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 financial reporting purposes meet the parameters set by Actuarial Standards of Practice (ASOPs). The funding objective of the plan is that contribution rates over time will remain level as a percent of payroll. The valuation method used is the entry age normal cost method. The normal contribution rate to cover current cost has been determined as a level percent of payroll. Gains and losses are reflected in the total unfunded accrued liability which is negative and being amortized as a level percent of payroll in accordance with the funding policy adopted by the Board.

The Plan and the employers are required to comply with the financial reporting requirements of GASB Statements No. 67 and 68. The necessary disclosure information is provided in separate supplemental reports.

We have provided the following information and supporting schedules for the Actuarial Section of the Comprehensive Annual Financial Report:

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- Analysis of Change in Unfunded Accrued Liability
- Solvency Test Results

The System is being funded in conformity with the minimum funding standard set forth in Code Section 47-20-10 of the Public Retirement Systems Standards Law and the funding policy adopted by the Board. 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

(continued)

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.

This is to certify that the independent consulting actuary is a member of the American Academy of Actuaries and has 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.

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 amounts for the System. Use of these computations for purposes other than meeting these requirements may not be appropriate.

Sincerely yours,

Edward J. Koebel

Edward J. Koebel, EA, FCA, MAAA
Principal and Consulting Actuary

Cathy Turcot

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Principal and Managing Director

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April 18, 2019

Board of Trustees
Legislative Retirement System of Georgia
Two Northside 75, Suite 300
Atlanta, GA 30318

Attn: Mr. James Potvin, Executive Director

Members of the Board:

Section 47-6-22 of the law governing the operation of the Georgia Legislative Retirement System provides that the actuary shall make periodic valuations of the contingent assets and liabilities of the Retirement System on the basis of regular interest and the tables last adopted by the Board of Trustees. We have submitted the report giving the results of the actuarial valuation of the System prepared as of June 30, 2018. The report indicates that no annual employer contributions for the fiscal year ending June 30, 2021 are required to support the benefits of the System.

The results of the valuation reflect that the Board did not grant the anticipated cost-of-living adjustments (COLAs) to retired members on July 1, 2018 and on January 1, 2019. In addition, the results of the valuation reflect the two one-time payments to certain retirees and beneficiaries effective July 2018 and January 2019.

In preparing the valuation, the actuary relied on data provided by the System. While not verifying data at the source, the actuary performed tests for consistency and reasonableness. Our firm, as actuary, is responsible for all of the actuarial trend data in the financial section of the annual report and the supporting schedules in the actuarial section of the annual report.

In our opinion, the valuation is complete and accurate, and the methodology and assumptions are reasonable as a basis for the valuation. The valuation takes into account the effect of all amendments to the System enacted through the 2018 session of the General Assembly. Effective with the June 30, 2017 valuation, the assumed rate of return will be reduced by 0.10% (10 basis points) from the immediate prior actuarial valuation, as long as the actual rate of return for the fiscal year ending with the current valuation date exceeds the assumed rate of return from the immediate prior actuarial valuation. The assumed rate of return may not decrease below 7.00% net of investment expenses. Since the actual rate of return for the year ending June 30, 2018 was greater than 7.40%, the assumed rate of return used in the current valuation was decreased from 7.40% to 7.30%.

The System is funded on an actuarial reserve basis. The actuarial 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 financial reporting purposes meet the parameters set by Actuarial Standards of Practice (ASOPs). The funding objective of the plan is that contribution rates over time will remain level as a dollar per active member. The valuation method used is the entry age normal cost method. The normal contribution rate to cover current cost has been determined as a level dollar per active member. Gains and losses are reflected in the total unfunded accrued liability which is negative and being amortized as a level dollar per active member in accordance with the funding policy adopted by the Board.

The Plan and the employers are required to comply with the financial reporting requirements of GASB Statements No. 67 and 68. The necessary disclosure information is provided in separate supplemental reports.

We have provided the following information and supporting schedules for the Actuarial Section of the Comprehensive Annual Financial Report:

- Summary of Actuarial Assumptions
- Schedule of Active Members
- Schedule of Funding Progress
- Schedule of Retirees Added to and Removed from Rolls
- Analysis of Change in Unfunded Accrued Liability
- Solvency Test Results

The System is being funded in conformity with the minimum funding standard set forth in Code Section 47-20-10 of the Public Retirement Systems Standards Law and the funding policy adopted by the Board. In our opinion the System is

(continued)

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.

This is to certify that the independent consulting actuary is a member of the American Academy of Actuaries and has 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.

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 amounts for the System. Use of these computations for purposes other than meeting these requirements may not be appropriate.

Sincerely yours,

Edward J. Koebel

Edward J. Koebel, EA, FCA, MAAA
Principal and Consulting Actuary

Cathy Turcot

Cathy Turcot
Principal and Managing Director

Ben Mobley

Ben Mobley, EA, FCA, MAAA
Senior Actuary

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April 18, 2019

Board of Trustees
Georgia Military Pension Fund
Two Northside 75, Suite 300
Atlanta, GA 30318

Attn: Mr. James Potvin, Executive Director

Members of the Board:

Section 47-24-22 of the law governing the operation of the Georgia Military Pension Fund provides that the actuary shall make periodic valuations of the contingent assets and liabilities of the Pension Fund on the basis of regular interest and the tables last adopted by the Board of Trustees. We have submitted the report giving the results of the actuarial valuation of the Fund prepared as of June 30, 2018. The report indicates that annual employer contributions of $2,683,883 or $194.43 per active member for the fiscal year ending June 30, 2021 are sufficient to support the benefits of the Fund.

Effective with the June 30, 2017 valuation, the assumed rate of return will be reduced by 0.10% (10 basis points) from the immediate prior actuarial valuation, as long as the actual rate of return for the fiscal year ending with the current valuation date exceeds the assumed rate of return from the immediate prior actuarial valuation. The assumed rate of return may not decrease below 7.00% net of investment expenses. Since the actual rate of return for the year ending June 30, 2018 was greater than 7.40%, the assumed rate of return used in the current valuation was decreased from 7.40% to 7.30%.

In preparing the valuation, the actuary relied on data provided by the Fund. While not verifying data at the source, the actuary performed tests for consistency and reasonableness. Our firm, as actuary, is responsible for all of the actuarial trend data in the financial section of the annual report and the supporting schedules in the actuarial section of the annual report.

In our opinion, the valuation is complete and accurate, and the methodology and assumptions are reasonable as a basis for the valuation. The valuation takes into account the effect of all amendments to the Fund enacted through the 2018 session of the General Assembly.

The Fund is funded on an actuarial reserve basis. The actuarial assumptions recommended by the actuary and adopted by the Board are in the aggregate reasonably related to the experience under the Fund and to reasonable expectations of anticipated experience under the Fund. The assumptions and methods used for financial reporting purposes meet the parameters set by Actuarial Standards of Practice (ASOPs). The funding objective of the plan is that contribution rates over time will remain level as a dollar per active member. The valuation method used is the entry age normal cost method. The normal contribution rate to cover current cost has been determined as a dollar per active member. Gains and losses are reflected in the total unfunded accrued liability which is being amortized as a level dollar per active member in accordance with the funding policy adopted by the Board.

The Plan and the employers are required to comply with the financial reporting requirements of GASB Statements No. 67 and 68. The necessary disclosure information is provided in separate supplemental reports.

We have provided the following information and supporting schedules for the Actuarial Section of the Comprehensive Annual Financial Report:

- Summary of Actuarial Assumptions
- Schedule of Active Members
- Schedule of Funding Progress
- Schedule of Retirees Added to and Removed from Rolls
- Analysis of Change in Unfunded Accrued Liability
- Solvency Test Results

The Fund is being funded in conformity with the minimum funding standard set forth in Code Section 47-20-10 of the Public Retirement Systems Standards Law and the funding policy adopted by the Board. In our opinion the Fund is operating on an actuarially sound basis. Assuming that contributions to the Fund 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 Fund may be safely anticipated.

(continued)

This is to certify that the independent consulting actuary is a member of the American Academy of Actuaries and has experience is 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 Fund.

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 amounts for the System. Use of these computations for purposes other than meeting these requirements may not be appropriate.

Sincerely yours,

Edward J. Koebel

Edward J. Koebel, EA, FCA, MAAA
Principal and Consulting Actuary

Cathy Turcot

Cathy Turcot
Principal and Managing Director

Ben Mobley

Ben Mobley, EA, FCA, MAAA
Senior Actuary

SEAD Post-Retirement (SEAD-OPEB)

Cavanaugh Macdonald
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www.CavMacConsulting.com

April 18, 2019

Board of Trustees
Employees' Retirement System of Georgia
Two Northside 75, Suite 300
Atlanta, GA 30318

Attn: Mr. James Potvin, Executive Director

Members of the Board:

Chapters 47-2 and 47-19 of the Code of Georgia which govern the operation of the Georgia Employees' Group Term Life Insurance Plan provide that the actuary shall make periodic valuations of the contingent assets and liabilities of the Insurance Plan on the basis of regular interest and the tables last adopted by the Board of Trustees. In this report, we have determined liabilities for life insurance benefits payable upon death after retirement (Post-Retirement).

We have determined the liabilities for life insurance benefits payable upon death after retirement. We have submitted the report giving the results of the valuation of the Plan prepared as of June 30, 2018. The report indicates, for post-retirement benefits, there is no employer annual required contribution for the fiscal year ending June 30, 2021.

Since the previous valuation, the Board has amended the funding policy to change the long-term assumed rate of return assumption. Effective with the June 30, 2017 valuation, the assumed rate of return will be reduced by 0.10% (10 basis points) from the immediate prior actuarial valuation, as long as the actual rate of return for the fiscal year ending with the current valuation date exceeds the assumed rate of return from the immediate prior actuarial valuation. The assumed rate of return may not decrease below 7.00% net of investment expenses. Since the actual rate of return for the year ending June 30, 2018 was greater than 7.40%, the assumed rate of return used in the current valuation was decreased from 7.40% to 7.30%. Gains and losses are reflected in the unfunded accrued liability. The actuarial assumptions used are in the aggregate reasonably related to the experience under the Plan and to reasonable expectations of anticipated experience under the Plan. In our opinion, the Plan is operating on an actuarially sound basis and the sufficiency of the funds to provide the benefits called for by the Plan may be safely anticipated assuming future actuarially determined contributions (ADC) are contributed when due.

The Plan and the employers are required to comply with the financial reporting requirements of GASB Statements No. 74 and 75. The necessary disclosure information is provided in separate supplemental reports.

This is to certify that the independent consulting actuary is a member of the American Academy of Actuaries and has 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 Plan.

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 amounts for the System. Use of these computations for purposes other than meeting these requirements may not be appropriate.

(continued)

Sincerely yours,

Edward J. Koebel, EA, FCA, MAAA
Principal and Consulting Actuary

Cathy Turcot
Principal and Managing Director

Ben Mobley, EA, FCA, MAAA
Senior Actuary

Summary of Plan Provisions

ERS – Please see Notes to Financial Statements, (2)(a), pages 30-31.
PSERS – Please see Notes to Financial Statements, (2)(b), page 32.
LRS – Please see Notes to Financial Statements, (2)(c), page 33.
GJRS – Please see Notes to Financial Statements, (2)(d), pages 33-34.
GMPF – Please see Notes to Financial Statements, (2)(e), pages 34-35.
SEAD-OPEB – Please see Notes to Financial Statements, (2)(h), pages 36-37.

The following Boards are responsible for establishing and maintaining the funding policies of the various defined benefit pension plans administered by the System:

- Board of Trustees of the Employees' Retirement System: ERS, LRS, and GMPF
- Board of Trustees of the Public School Employees Retirement System: PSERS
- Board of Trustees of the Georgia Judicial Retirement System: GJRS

The following Board is responsible for establishing and maintaining the funding policy of the defined benefit post-employment life insurance plan administered by the System:

- Board of Directors of the State Employees' Assurance Department: SEAD-OPEB

ERS, PSERS, LRS, GJRS, and GMPF are all subject to the provisions of GASB Statement No. 67, *Financial Reporting for Pension Plans*, an amendment of GASB Statement No. 25 (GASB 67). All of the plans covered under GASB 67 use the Entry Age Normal actuarial cost method for both funding and financial reporting purposes. This continues a long-standing practice for all of those plans and provides a point of consistency between the funding provisions and the GASB 67 requirements.

SEAD-OPEB is subject to the provisions of GASB 74. SEAD-OPEB uses the Entry Age Normal actuarial cost method for both funding and financial reporting purposes.

For all of the plans covered under GASB 67, the GASB 67 reports prepared as of June 30, 2019 were largely based on the data, assumptions, and results of the annual funding valuations as of June 30, 2018. The Total Pension Liability (TPL) for each plan, determined using the Entry Age Normal method, was then rolled forward to the June 30, 2019 measurement date. The Net Pension Liability for each plan is equal to the rolled forward TPL less the plan's net position as of June 30, 2019.

For the plan covered under GASB 74, the GASB 74 report prepared as of June 30, 2019 was largely based on the data, assumptions, and results of the annual funding valuation as of June 30, 2018. The Total OPEB Liability (TOL) for the plan, determined using the Entry Age Normal method, was then rolled forward to the June 30, 2019 measurement date. The Net OPEB Liability for the plan is equal to the rolled forward TOL less the plan's net position as of June 30, 2019.

For the funding valuations as of June 30, 2018, the Actuarial Value of Assets is calculated using a five-year smoothing methodology, whereby excesses and shortfalls of actual investment income over or under the expected investment return will be recognized over the succeeding five-year periods.

For the life insurance plan's funding valuation as of June 30, 2018, the Actuarial Value of Assets is equal to the Fair Value of Assets as of June 30, 2018.

(continued)

Summary of Plan Provisions

For the funding valuations, each plan covered under GASB 67 utilizes a 7.30% assumed rate of return and a 7.30% discount rate for the calculation of the respective plans' liabilities. The Single Equivalent Interest Rate required under GASB 67 has been determined to be 7.30% by the plans' actuaries.

The plan covered under GASB 74 utilizes a 7.30% assumed rate of return and a 7.30% discount rate for the calculation of the plan's liabilities. The Single Equivalent Interest Rate required under GASB 74 has been determined to be 7.30% by the plan's actuaries.

Summary of Actuarial Assumptions

The laws governing the Employees' Retirement System and the plans it administers require an actuary to perform an annual valuation of the soundness of the plans. In addition, the actuary must perform at least once every five years an actuarial investigation of the mortality, service, and compensation experience of the members and beneficiaries of the System. The latest valuation was performed as of June 30, 2018 based on actuarial assumptions approved by the Board during the last experience study on December 17, 2015.

The more pertinent facts and significant assumptions underlying the computations included in the June 30, 2018 reports are as follows:

	ERS	PSERS	GJRS	LRS	GMPF
Valuation Date	June 30, 2018	June 30, 2018	June 30, 2018	June 30, 2018	June 30, 2018
Actuarial Cost Method	Entry age	Entry age	Entry age	Entry age	Entry age
Amortization Method	Level dollar, closed	Level dollar, closed	Level percent of pay, closed	Level dollar, open	Level dollar, closed
Amortization Period	15.3 years	20.4 years	15.6 years	Infinite	15.6 years
Actuarial Asset Valuation Method	The actuarial value of assets was based on the total fair value income of investments, with the excess or shortfall of actual investment income over or under the expected investment return smoothed over five years. One-fifth of the excess or shortfall is recognized each year for five years.				
Investment Rate of Return	7.30%	7.30%	7.30%	7.30%	7.30%
Inflation Rate	2.75%	2.75%	2.75%	2.75%	2.75%
Projected Salary Increases	3.25 to 7.00%	n/a	4.50%	n/a	n/a
COLA	None	1.50% Semi-annually	None	3.00% Annually	None

	SEAD-OPEB
Valuation Date	June 30, 2018
Actuarial Cost Method	Entry age
Amortization Method	Level percent, open
Amortization Period	Infinite
Actuarial Asset Valuation Method	Fair Value of Assets
Investment Rate of Return	7.30%
Inflation Rate	2.75%
Projected Salary Increases	
ERS	3.25-7.00%
GJRS	4.50%
LRS	n/a
COLA	None

(continued)

Summary of Actuarial Assumptions

Rates of Withdrawal Prior to Retirement (Withdrawal, Death, Disability)

ERS

Representative values of the assumed annual rates of separation other than retirement for non-law enforcement officers are as follows. Special rates of separation apply to law enforcement officers.

	Annual Rates of Death		Annual Rates of Disability	
Age	Men	Women	Men	Women
20	.0320%	.0177%	.05%	.02%
25	.0349	.0192	.05	.02
30	.0412	.0245	.05	.02
35	.0717	.0441	.05	.02
40	.1001	.0655	.25	.10
45	.1399	.1043	.48	.25
50	.1983	.1555	.70	.45
55	.2810	.2228	1.05	.73
60	.4092	.3058	—	—
65	.5600	.4304	—	—

Annual Rates of Withdrawal Years of Service						
	0-4		5-9		10 & over	
Age	Men	Women	Men	Women	Men	Women
20	35.00%	30.00%	—%	—%	—%	—%
25	27.50	25.00	15.00	17.50	—	—
30	23.00	21.50	11.50	12.50	7.50	8.25
35	21.50	19.50	10.00	10.50	6.00	6.00
40	19.50	18.25	9.50	9.50	4.75	5.00
45	18.60	16.50	9.00	8.00	4.00	4.00
50	16.60	15.00	7.25	7.25	4.25	4.25
55	14.50	14.00	7.00	7.00	4.75	4.50
60	14.00	14.50	6.00	6.25	—	—
65	15.00	17.00	10.00	11.00	—	—

(continued)

Summary of Actuarial Assumptions

Rates of Withdrawal Prior to Retirement (Withdrawal, Death, Disability)

PSERS

Age	Annual Rates of Death Men	Annual Rates of Death Women	Annual Rates of Disability Both
20	.0320%	.0177%	—%
25	.0349	.0192	—
30	.0412	.0245	—
35	.0717	.0441	.0025
40	.1001	.0655	.0110
45	.1399	.1043	.0370
50	.1983	.1555	.0865
55	.2810	.2228	.2250
60	.4092	.3058	.3500
65	.5600	.4304	—

Annual Rates of Withdrawal Years of Service						
	0-4		5-9		10 & over	
Age	Men	Women	Men	Women	Men	Women
20	37.00%	32.00%	—%	—%	—%	—%
25	28.00	28.00	17.00	18.00	—	—
30	25.00	23.00	15.00	15.00	12.00	10.00
35	23.00	19.00	13.00	13.00	9.00	10.00
40	21.00	17.00	12.00	12.00	7.50	8.00
45	19.00	15.50	11.00	10.00	6.50	7.00
50	17.00	14.00	9.00	8.50	6.50	6.00
55	15.00	12.00	9.00	8.00	6.00	5.50
60	12.00	11.00	7.50	7.50	—	—

(continued)

Summary of Actuarial Assumptions

Rates of Withdrawal Prior to Retirement (Withdrawal, Death, Disability)

GJRS

Annual Rates of				
	Withdrawal	Death		Disability
Age	Both	Men	Women	Both
20	4.0%	.032%	.018%	.03%
25	4.0	.035	.019	.03
30	4.0	.041	.025	.05
35	4.0	.072	.044	.08
40	6.0	.100	.066	.10
45	4.0	.140	.104	.18
50	3.0	.198	.156	.25
55	2.5	.281	.223	.45
60	2.5	.409	.306	.73
65	2.5	.560	.430	1.18

LRS

Annual Rates of			
	Withdrawal	Death	
Age	Both	Men	Women
20	8.0%	.032%	.018%
25	8.0	.035	.019
30	8.0	.041	.025
35	8.0	.072	.044
40	8.0	.100	.066
45	8.5	.140	.104
50	8.5	.198	.156
55	9.0	.281	.223
60	9.0	.409	.306
65	9.0	.560	.430

GMPF

Rates of Withdrawal from Active Service	
Service	Rates
2 or Less	13.0%
3-7	17.5
8-9	14.0
10-14	13.5
15-19	8.5
20 or more	14.5

Age	Rates of Death	
	Men	Women
25	.0349%	.0192%
30	.0412	.0245
35	.0717	.0441
40	.1001	.0655
45	.1399	.1043
50	.1983	.1555
55	.2810	.2228
60	.4092	.3058

(continued)

Summary of Actuarial Assumptions

Rates of Withdrawal Prior to Retirement (Withdrawal, Death, Disability)

SEAD-OPEB

	All Groups Annual Rates of Death		ERS Annual Rates of Disability		GJRS Annual Rates of Disability
Age	Men	Women	Men	Women	Both
20	.0320%	.0177%	.05%	.02%	.03%
25	.0349	.0192	.05	.02	.03
30	.0412	.0245	.05	.02	.05
35	.0717	.0441	.05	.02	.08
40	.1001	.0655	.25	.10	.10
45	.1399	.1043	.48	.25	.18
50	.1983	.1555	.70	.45	.25
55	.2810	.2228	1.05	.73	.45
60	.4092	.3058	—	—	.73
65	.5600	.4304	—	—	1.18

	ERS Annual Rates of Withdrawal Years of Service						LRS Annual Rates of Withdrawal	GJRS Annual Rates of Withdrawal
	0-4		5-9		10 & over			
Age	Men	Women	Men	Women	Men	Women	Both	Both
20	35.00%	30.00%	—%	—%	—%	—%	8.00%	4.00%
25	27.50	25.00	15.00	17.50	—	—	8.00	4.00
30	23.00	21.50	11.50	12.50	7.50	8.25	8.00	4.00
35	21.50	19.50	10.00	10.50	6.00	6.00	8.00	4.00
40	19.50	18.25	9.50	9.50	4.75	5.00	8.00	6.00
45	18.60	16.50	9.00	8.00	4.00	4.00	8.50	4.00
50	16.60	15.00	7.25	7.25	4.25	4.25	8.50	3.00
55	14.50	14.00	7.00	7.00	4.75	4.50	9.00	2.50
60	14.00	14.50	6.00	6.25	—	—	9.00	2.50
65	15.00	17.00	10.00	11.00	—	—	9.00	2.50

(continued)

Summary of Actuarial Assumptions

Annual Rates of Retirement

ERS

	Old Plan							
	Early Retirement		Age 60 for 30 years		34 years		More than 34 years	
Age	Men	Women	Men	Women	Men	Women	Men	Women
50	2.0%	2.0%	7.5%	6.0%	100.0%	100.0%	90.0%	100.0%
52	2.0	2.0	7.5	6.0	100.0	100.0	90.0	100.0
55	3.0	3.5	7.5	10.0	100.0	100.0	75.0	90.0
57	3.5	5.0	10.5	10.0	100.0	100.0	70.0	70.0
60	—	—	15.0	20.0	97.5	95.0	40.0	55.0
62	—	—	32.0	40.0	97.5	95.0	40.0	65.0
65	—	—	35.0	40.0	35.0	40.0	35.0	40.0
67	—	—	35.0	35.0	35.0	35.0	35.0	35.0
70	—	—	35.0	35.0	35.0	35.0	35.0	35.0
75	—	—	100.0	100.0	100.0	100.0	100.0	100.0

	New Plan and GSEPS			
	Early Retirement		Normal Retirement	
Age	Men	Women	Men*	Women**
50	7.0%	4.5%	70.0%	50.0%
52	7.0	4.5	70.0	45.0
55	7.0	6.5	60.0	50.0
57	8.0	8.0	50.0	40.0
60	—	—	25.0	30.0
62	—	—	40.0	40.0
65	—	—	32.0	35.0
67	—	—	32.0	32.0
70	—	—	30.0	30.0
75	—	—	100.0	100.0

*An additional 10% of active male New Plan and GSEPS members less than age 55 and 20% between ages 55-59, inclusive, are expected to retire in the year in which they attain 30 years of service.

**An additional 20% of active female New Plan and GSEPS members less than age 60 are expected to retire in the year in which they attain 30 years of service.

(continued)

Summary of Actuarial Assumptions

Annual Rates of Retirement

PSERS

Age	Annual Rate of Retirement	Age	Annual Rate of Retirement
60	13.0%	68	23.0%
61	13.0	69	26.0
62	22.0	70	27.0
63	17.5	71	27.0
64	17.0	72	27.0
65	28.0	73	27.0
66	27.0	74	27.0
67	23.0	75 & over	100.0

GJRS

Age	Annual Rate of Retirement
60	15.0%
61	10.0
62	12.0
63-64	10.0
65-69	15.0
70-74	25.0
75	100.0

LRS

Age	Annual Rate of Retirement	Age	Annual Rate of Retirement
60	10.0%	66	12.0%
61	10.0	67	15.0
62	15.0	68	12.0
63	10.0	69	12.0
64	10.0	70-74	20.0
65	12.0	75	100.0

GMPF

Age	Annual Rate of Retirement
60	75.0%
61	60.0
62	70.0
63	60.0
64	60.0
65 & over	100.0

(continued)

Summary of Actuarial Assumptions

Annual Rates of Retirement

SEAD-OPEB

ERS Members

Old Plan								
	Early Retirement		Age 60 or 30 years		34 years		More than 34 years	
Age	Men	Women	Men	Women	Men	Women	Men	Women
50	2.0%	2.0%	7.5%	6.0%	100.0%	100.0%	90.0%	100.0%
52	2.0	2.0	7.5	6.0	100.0	100.0	90.0	100.0
55	3.0	3.5	7.5	10.0	100.0	100.0	75.0	90.0
57	3.5	5.0	10.5	10.0	100.0	100.0	70.0	70.0
60	—	—	15.0	20.0	97.5	95.0	40.0	55.0
62	—	—	32.0	40.0	97.5	95.0	40.0	65.0
65	—	—	35.0	40.0	35.0	40.0	35.0	40.0
67	—	—	35.0	35.0	35.0	35.0	35.0	35.0
70	—	—	35.0	35.0	35.0	35.0	35.0	35.0
75	—	—	100.0	100.0	100.0	100.0	100.0	100.0

New Plan and GSEPS				
	Early Retirement		Normal Retirement	
Age	Men	Women	Men*	Women**
50	7.0%	4.5%	70.0%	50.0%
52	7.0	4.5	70.0	45.0
55	7.0	6.5	60.0	50.0
57	8.0	8.0	50.0	40.0
60	—	—	25.0	30.0
62	—	—	40.0	40.0
65	—	—	32.0	35.0
67	—	—	32.0	32.0
70	—	—	30.0	30.0
75	—	—	100.0	100.0

*An additional 10% of active male New Plan and GSEPS members less than age 55 and 20% between ages 55-59, inclusive, are expected to retire in the year in which they attain 30 years of service.

**An additional 20% of active female New Plan and GSEPS members less than age 60 are expected to retire in the year in which they attain 30 years of service.

LRS Members

Age	Annual Rate of Retirement	Age	Annual Rate of Retirement
60	10.0%	67	15.0%
61	10.0	68-69	12.0
62	15.0	70-74	20.0
63-64	10.0	75	100.0
65-66	12.0		

(continued)

Summary of Actuarial Assumptions

Annual Rates of Retirement

SEAD-OPEB

GJRS Members

Age	Annual Rate of Retirement
60	15.0%
61	10.0
62	12.0
63-64	10.0
65-66	15.0
67	15.0
68-69	15.0
70-74	25.0
75	100.0

Summary of Actuarial Assumptions

Annual Rates of Death After Retirement

For all plans except PSERS, the RP-2000 Combined Mortality Table (projected to 2025 with projection scale BB and set forward two years for both males and females) is used for the period after retirement and for dependent beneficiaries. The RP-2000 Disabled Mortality Table (projected to 2025 with projection scale BB and and set back seven years for males and set forward three years for females) is used for the period after disability retirement. For PSERS, the RP-2000 Blue-Collar Mortality Table (projected to 2025 with projection scale BB and set forward three years for males and two years for females) is used for the period after service retirement and for beneficiaries of deceased members. The RP-2000 Disabled Mortality Table (projected to 2025 with projection scale BB and set forward five years for both males and females) is used for the period after disability retirement. For all plans, there is a margin for future mortality improvement in the tables.

ERS

Age	Men	Women	Age	Men	Women
40	0.1127%	0.0790%	65	1.1300%	0.8994%
45	0.1609	0.1230	70	1.8697	1.5281
50	0.2474	0.1872	75	3.2147	2.5220
55	0.4246	0.2918	80	5.5160	4.1628
60	0.6985	0.4923	85	9.5631	7.1239

PSERS

Age	Men	Women	Age	Men	Women
40	0.1476%	0.0995%	65	1.4859%	0.9774%
45	0.1974	0.1484	70	2.4262	1.7054
50	0.3057	0.2084	75	3.9830	2.7288
55	0.5644	0.2844	80	6.5238	4.4542
60	0.9575	0.5014	85	10.9551	7.5727

GJRS

Age	Men	Women	Age	Men	Women
40	0.1127%	0.0790%	65	1.1300%	0.8994%
45	0.1609	0.1230	70	1.8697	1.5281
50	0.2474	0.1872	75	3.2147	2.5220
55	0.4246	0.2918	80	5.5160	4.1628
60	0.6985	0.4923	85	9.5631	7.1239

(continued)

Summary of Actuarial Assumptions

Annual Rates of Death After Retirement

LRS

Age	Men	Women	Age	Men	Women
40	0.1127%	0.0790%	65	1.1300%	0.8994%
45	0.1609	0.1230	70	1.8697	1.5281
50	0.2474	0.1872	75	3.2147	2.5220
55	0.4246	0.2918	80	5.5160	4.1628
60	0.6985	0.4923	85	9.5631	7.1239

GMPF

Age	Men	Women	Age	Men	Women
40	0.1127%	0.0790%	65	1.1300%	0.8994%
45	0.1609	0.1230	70	1.8697	1.5281
50	0.2474	0.1872	75	3.2147	2.5220
55	0.4246	0.2918	80	5.5160	4.1628
60	0.6985	0.4923	85	9.5631	7.1239

SEAD-OPEB

Age	Men	Women	Age	Men	Women
40	0.1127%	0.0790%	65	1.1300%	0.8994%
45	0.1609	0.1230	70	1.8697	1.5281
50	0.2474	0.1872	75	3.2147	2.5220
55	0.4246	0.2918	80	5.5160	4.1628
60	0.6985	0.4923	85	9.5631	7.1239

Active Members

ERS

Year	Active Members	Annual Payroll (in thousands)	Average Pay	Change
2009	71,272	$ 2,674,155	$ 37,520	0.6%
2010	68,566	2,571,042	37,497	(0.1)
2011	66,081	2,486,780	37,632	0.4
2012	63,942	2,414,884	37,767	0.4
2013	61,550	2,335,773	37,949	0.5
2014	60,486	2,315,625	38,284	0.9
2015	60,416	2,352,920	38,945	1.7
2016	59,766	2,384,358	39,895	2.4
2017	60,906	2,546,492	41,810	4.8
2018	60,405	2,634,129	43,608	4.3

PSERS

PSERS is not a compensation based plan.

Year	Active Members
2009	40,581
2010	39,962
2011	39,249
2012	38,654
2013	37,361
2014	36,096
2015	35,477
2016	34,866
2017	35,509
2018	34,953

GJRS

Year	Active Members	Annual Payroll (in thousands)	Average Pay	Change
2009	502	$ 52,083	$ 103,751	(2.1)%
2010	495	51,293	103,622	(0.1)
2011	507	52,331	103,216	(0.4)
2012	503	51,898	103,177	—
2013	506	52,807	104,362	1.1
2014	513	53,628	104,539	0.2
2015	516	54,272	105,178	0.6
2016	526	57,401	109,128	3.8
2017	527	59,695	113,273	3.8
2018	527	60,572	114,937	1.5

(continued)

Active Members

LRS

LRS is not a compensation based plan.

Year	Active Members
2009	218
2010	216
2011	218
2012	220
2013	223
2014	222
2015	218
2016	224
2017	222
2018	222

GMPF

GMPF is not a compensation based plan.

Year	Active Members
2009	12,019
2010	13,032
2011	13,776
2012	13,526
2013	13,573
2014	13,469
2015	13,754
2016	13,850
2017	13,037
2018	13,804

SEAD-OPEB

Year	Active Members
2009	69,745
2010	62,305
2011	55,516
2012	49,261
2013	43,512
2014	39,101
2015	35,189
2016	32,076
2017	29,024
2018	26,224

Note: Payroll data on page 122 for fiscal year 2018 will not equal that which is presented in the Financial section in the Schedules of Employers' and Nonemployers' Contributions on pages 68-69. Valuation data at that time was a snapshot of the valuation date, annualized for new hires, but does not include those who terminated during the year.

Member and Employer Contribution Rates

ERS

		Employer Rates		
Year	Member	Old Plan*	New Plan	GSEPS
2010	1.25%	10.41%	10.41%	6.54%
2011	1.25	10.41	10.41	6.54
2012	1.25	11.63	11.63	7.42
2013	1.25	14.90	14.90	11.54
2014	1.25	18.46	18.46	15.18
2015	1.25	21.96	21.96	18.87
2016	1.25	24.72	24.72	21.69
2017	1.25	24.69	24.69	21.69
2018	1.25	24.69	24.69	21.66
2019	1.25	24.66	24.66	21.66

* Old Plan rate includes an employer pick-up of employee contributions.

PSERS

Year	Pre 7/1/12 Member	Post 7/1/12 Member	Employer
2010	$ 36 per year	n/a	$ 5,529,000
2011	$ 36 per year	n/a	7,509,000
2012	$ 36 per year	n/a	15,884,000
2013	$ 36 per year	n/a	24,829,000
2014	$ 36 per year	n/a	27,160,000
2015	$ 36 per year	$ 90 per year	28,461,000
2016	$ 36 per year	$ 90 per year	28,580,000
2017	$ 36 per year	$ 90 per year	26,277,000
2018	$ 36 per year	$ 90 per year	29,276,000
2019	$ 36 per year	$ 90 per year	30,263,000

GJRS

Year	Member	Employer
2010	7.50%	3.85%
2011	7.50	3.85
2012	7.50	3.90
2013	7.50	3.90
2014	7.50	4.23
2015	7.50	6.98
2016	7.50	12.19
2017	7.50	10.48
2018	7.50	7.17
2019	7.50	7.83

(continued)

Member and Employer Contribution Rates

LRS

Year	Member	Employer
2010	8.50%	$ 75,000
2011	8.50	75,000
2012	8.50	75,000
2013	8.50	128,000
2014	8.50	45,000
2015	8.50	—
2016	8.50	—
2017	8.50	—
2018	8.50	—
2019	8.50	—

GMPF

Year	Member	Employer
2010	n/a	$ 1,434,000
2011	n/a	1,282,000
2012	n/a	1,521,000
2013	n/a	1,703,000
2014	n/a	1,892,000
2015	n/a	1,893,369
2016	n/a	1,989,530
2017	n/a	2,017,875
2018	n/a	2,377,312
2019	n/a	2,537,272

SEAD-OPEB

Year	Member - Old Plan	Member - New Plan, LRS, GJRS	Employer
2010	0.45%	0.23%	—%
2011	0.45	0.23	—
2012	0.45	0.23	0.61
2013	0.45	0.23	0.27
2014	0.45	0.23	—
2015	0.45	0.23	—
2016	0.45	0.23	—
2017	0.45	0.23	—
2018	0.45	0.23	—
2019	0.45	0.23	—

Schedules of Funding Progress - Defined Benefit Plans
(in thousands)

	Actuarial Valuation Date	Actuarial Value of Plan Assets (a)	Actuarial Accrued Liability (AAL) Entry-Age (b)	Unfunded AAL/ (Funded Excess) (b-a)	Funded Ratio (a/b)	Annual Covered Payroll (c)	Unfunded AAL/ (Funded Excess) as Percentage of Covered Payroll [(b-a)/c]
Employees' Retirement System	6/30/2009	$ 13,613,606	$ 15,878,022	$ 2,264,416	85.7%	$ 2,674,155	84.7%
	6/30/2010	13,046,193	16,295,352	3,249,159	80.1	2,571,042	126.4
	6/30/2011	12,667,577	16,656,905	3,989,348	76.0	2,486,780	160.4
	6/30/2012	12,260,595	16,777,922	4,517,327	73.1	2,414,884	187.1
	6/30/2013	12,129,804	16,982,449	4,852,645	71.4	2,335,773	207.8
	6/30/2014	12,376,120	16,991,963	4,615,843	72.8	2,315,625	199.3
	6/30/2015	12,675,649	17,099,527	4,423,878	74.1	2,352,920	188.0
	6/30/2016	12,854,518	17,199,688	4,345,170	74.7	2,384,358	182.2
	6/30/2017	13,088,185	17,514,898	4,426,713	74.7	2,546,492	173.8
	6/30/2018	13,412,046	17,812,441	4,400,395	75.3	2,634,129	167.1
Public School Employees Retirement System[1]	6/30/2009	769,618	823,232	53,614	93.5	n/a	n/a
	6/30/2010	737,406	875,396	137,990	84.2	n/a	n/a
	6/30/2011	719,601	885,927	166,326	81.2	n/a	n/a
	6/30/2012	710,915	895,324	184,409	79.4	n/a	n/a
	6/30/2013	727,268	910,256	182,988	79.9	n/a	n/a
	6/30/2014	765,450	924,365	158,915	82.8	n/a	n/a
	6/30/2015	805,277	967,409	162,132	83.2	n/a	n/a
	6/30/2016	834,554	988,883	154,329	84.4	n/a	n/a
	6/30/2017	865,786	1,035,935	170,149	83.6	n/a	n/a
	6/30/2018	905,046	1,081,184	176,138	83.7	n/a	n/a
Legislative Retirement System	6/30/2009	30,303	23,523	(6,780)	128.8	3,780	(179.4)
	6/30/2010	29,581	25,003	(4,578)	118.3	3,745	(122.2)
	6/30/2011	29,278	25,245	(4,033)	116.0	3,780	(106.7)
	6/30/2012	28,990	24,966	(4,024)	116.1	3,815	(105.5)
	6/30/2013	29,481	24,904	(4,577)	118.4	3,867	(118.4)
	6/30/2014	30,538	24,913	(5,624)	122.6	3,850	(146.1)
	6/30/2015	31,635	25,690	(5,945)	123.1	3,764	(157.9)
	6/30/2016	32,171	25,533	(6,638)	126.0	3,875	(171.3)
	6/30/2017	32,913	25,674	(7,239)	128.2	3,830	(189.0)
	6/30/2018	33,871	25,905	(7,966)	130.7	3,844	(207.2)
Georgia Judicial Retirement System	6/30/2009	317,624	282,474	(35,150)	112.4	52,083	(67.5)
	6/30/2010	320,050	281,496	(38,554)	113.7	51,293	(75.2)
	6/30/2011	327,483	290,486	(36,997)	112.7	52,331	(70.7)
	6/30/2012	335,225	308,862	(26,363)	108.5	51,898	(50.8)
	6/30/2013	351,889	335,792	(16,097)	104.8	52,807	(30.5)
	6/30/2014	373,560	343,428	(30,132)	108.8	53,628	(56.2)
	6/30/2015	396,399	350,298	(46,101)	113.2	54,272	(84.9)
	6/30/2016	418,412	376,740	(41,672)	111.1	57,401	(72.6)
	6/30/2017	439,828	407,607	(32,221)	107.9	59,695	(54.0)
	6/30/2018	461,787	424,724	(37,063)	108.7	60,572	(61.2)

(continued)

Schedules of Funding Progress - Defined Benefit Plans
(in thousands)

	Actuarial Valuation Date	Actuarial Value of Plan Assets (a)	Actuarial Accrued Liability (AAL) Entry-Age (b)	Unfunded AAL/ (Funded Excess) (b-a)	Funded Ratio (a/b)	Annual Covered Payroll (c)	Unfunded AAL/ (Funded Excess) as Percentage of Covered Payroll [(b-a)/c]
Georgia Military Pension Fund[2]	6/30/2009	$ 6,413	$ 21,021	$ 14,608	30.5%	n/a	n/a
	6/30/2010	7,558	23,773	16,215	31.8	n/a	n/a
	6/30/2011	8,702	26,767	18,065	32.5	n/a	n/a
	6/30/2012	10,087	28,231	18,144	35.7	n/a	n/a
	6/30/2013	12,131	30,056	17,925	40.4	n/a	n/a
	6/30/2014	14,264	31,815	17,551	44.8	n/a	n/a
	6/30/2015	16,446	35,213	18,767	46.7	n/a	n/a
	6/30/2016	18,414	38,211	19,797	48.2	n/a	n/a
	6/30/2017	20,604	40,731	20,127	50.6	n/a	n/a
	6/30/2018	23,362	43,622	20,260	53.6	n/a	n/a

This data, except for annual covered payroll, was provided by the System's actuary.

¹ No statistics regarding covered payroll are available. Contributions are not based on members' salaries, but are simply $4.00 per month, per member for nine months each fiscal year if hired prior to July 1, 2012 and $10 per month, per member for nine months if hired after July 1, 2012.
² No statistics regarding covered payroll are available. Active and inactive plan member information is maintained by the Georgia Department of Defense.

Note: Payroll data on page 122 for fiscal year 2018 will not equal that which is presented in the Financial section in the Schedules of Employers' and Nonemployers' Contributions on pages 68-69. Valuation data at that time was a snapshot of the valuation date, annualized for new hires, but does not include those who terminated during the year.

Schedule of Retirees Added to and Removed from Rolls

ERS

Year Ended	Added to Rolls: Number	Added to Rolls: Annual Allowances (in thousands)	Removed from Rolls: Number	Removed from Rolls: Annual Allowances (in thousands)	Roll End of Year: Number	Roll End of Year: Annual Allowances (in thousands)	% Increase in Annual Allowance	Average Annual Allowances
2009	2,444	$ 85,329	1,055	$ 20,194	36,968	$ 1,062,758	6.5%	$ 28,748
2010	2,665	70,383	1,051	22,413	38,582	1,110,728	4.5	28,789
2011	2,797	69,031	1,170	25,347	40,209	1,154,412	3.9	28,710
2012	2,956	71,464	1,305	27,696	41,860	1,198,180	3.8	28,624
2013	3,664	88,855	1,176	26,334	44,348	1,260,701	5.2	28,427
2014	2,440	51,178	1,059	22,997	45,729	1,288,882	2.2	28,185
2015	2,656	54,003	1,350	30,927	47,035	1,311,958	1.8	27,893
2016	2,572	51,031	1,342	30,724	48,265	1,332,265	1.5	27,603
2017	2,630	45,833	1,420	32,372	49,475	1,345,726	1.0	27,200
2018	2,612	50,005	1,422	33,530	50,665	1,362,201	1.2	26,886

PSERS

Year Ended	Added to Rolls: Number	Added to Rolls: Annual Allowances (in thousands)	Removed from Rolls: Number	Removed from Rolls: Annual Allowances (in thousands)	Roll End of Year: Number	Roll End of Year: Annual Allowances (in thousands)	% Increase in Annual Allowance	Average Annual Allowances
2009	886	$ 5,290	575	$ 2,260	13,798	$ 51,835	6.2%	$ 3,757
2010	1,001	4,494	642	2,666	14,157	53,663	3.5	3,791
2011	1,174	3,168	731	3,072	14,600	53,759	0.2	3,682
2012	1,133	3,192	684	2,834	15,049	54,117	0.7	3,596
2013	1,298	3,803	650	2,738	15,697	55,182	2.0	3,515
2014	1,345	3,749	647	2,604	16,395	56,327	2.1	3,436
2015	1,247	3,482	690	2,679	16,952	57,130	1.4	3,370
2016	1,363	3,927	763	2,890	17,552	58,167	1.8	3,314
2017	1,253	4,322	756	2,927	18,049	59,562	2.4	3,300
2018	1,258	5,436	885	3,354	18,422	61,644	3.5	3,346

GJRS

Year Ended	Added to Rolls: Number	Added to Rolls: Annual Allowances (in thousands)	Removed from Rolls: Number	Removed from Rolls: Annual Allowances (in thousands)	Roll End of Year: Number	Roll End of Year: Annual Allowances (in thousands)	% Increase in Annual Allowance	Average Annual Allowances
2009	29	$ 2,238	6	$ 191	201	$ 12,012	20.5%	$ 59,761
2010	16	933	10	508	207	12,437	3.5	60,082
2011	15	1,168	2	105	220	13,500	8.5	61,364
2012	22	1,732	8	405	234	14,827	9.8	63,363
2013	42	2,763	13	629	263	16,961	14.4	64,490
2014	23	1,175	9	326	277	17,810	5.0	64,296
2015	21	1,416	11	561	287	18,665	4.8	65,035
2016	13	919	5	269	295	19,315	3.5	65,475
2017	62	5,304	10	771	347	23,848	23.5	68,726
2018	23	1,950	12	558	358	25,240	5.8	70,503

(continued)

Schedule of Retirees Added to and Removed from Rolls

LRS

Year Ended	Added to Rolls: Number	Added to Rolls: Annual Allowances (in thousands)	Removed from Rolls: Number	Removed from Rolls: Annual Allowances (in thousands)	Roll End of Year: Number	Roll End of Year: Annual Allowances (in thousands)	% Increase in Annual Allowance	Average Annual Allowances
2009	10	$ 117	7	$ 54	229	$ 1,702	3.8%	$ 7,432
2010	10	106	3	36	236	1,772	4.1	7,508
2011	18	104	10	86	244	1,790	1.0	7,336
2012	10	66	11	82	243	1,774	(0.9)	7,300
2013	32	200	15	140	260	1,834	3.4	7,054
2014	6	30	7	61	259	1,803	(1.7)	6,961
2015	13	87	12	112	260	1,778	(1.4)	6,838
2016	9	58	13	111	256	1,725	(3.0)	6,738
2017	13	80	6	74	263	1,731	0.3	6,582
2018	11	57	7	56	267	1,732	0.4	6,489

GMPF

Year Ended	Added to Rolls: Number	Added to Rolls: Annual Allowances (in thousands)	Removed from Rolls: Number	Removed from Rolls: Annual Allowances (in thousands)	Roll End of Year: Number	Roll End of Year: Annual Allowances (in thousands)	% Increase in Annual Allowance	Average Annual Allowances
2009	85	$ 91	3	$ 4	386	$ 421	26.0%	$ 1,091
2010	92	100	1	1	477	520	23.5	1,090
2011	94	101	3	4	568	617	18.7	1,086
2012	95	106	3	3	660	720	16.7	1,091
2013	83	87	5	5	738	802	11.4	1,087
2014	62	68	5	6	795	864	7.7	1,087
2015	54	55	6	5	843	914	5.8	1,084
2016	79	82	9	9	913	987	8.0	1,081
2017	83	90	11	11	985	1,066	8.0	1,082
2018	97	106	7	8	1,075	1,164	9.2	1,083

SEAD-OPEB is a post-employment life insurance plan which does not have annuity payments.

Analysis of Change in Unfunded Accrued Liability (UAL)

	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
	Amount of Increase (Decrease) (in millions)									
ERS										
Interest (7.40) added to previous UAL	$ 327.6	$ 325.9	$ 331.8	$ 346.2	$ 363.9	$ 338.8	$ 299.2	$ 243.7	$ 169.8	$ 124.8
Accrued liability contribution	(574.4)	(551.0)	(514.7)	(419.4)	(321.7)	(239.1)	(147.7)	(122.9)	(89.4)	(99.7)
Experience:										
Valuation asset growth	(130.4)	(48.6)	8.5	(198.9)	(228.9)	253.7	396.3	433.6	710.1	609.1
Pensioners' mortality	2.6	9.0	12.8	13.9	60.4	20.6	15.5	16.4	49.2	65.4
Turnover and retirements	58.7	39.9	43.6	50.8	45.5	103.7	93.8	91.4	118.4	107.3
New entrants	12.4	7.8	7.8	10.3	9.3	14.1	12.1	28.4	15.0	16.7
Salary increases	53.5	127.5	(0.6)	(89.6)	(159.4)	(46.8)	(74.2)	49.0	(259.2)	(296.9)
Method changes	—	—	—	—	—	(128.3)	—	—	—	—
Amendments (COLAs)	39.2	28.9	28.4	—	—	—	(118.8)	—	—	(358.6)
Assumption changes	161.1	158.3	—	80.4	—	—	—	—	250.7	—
Lawsuit	—	—	—	—	—	—	—	—	—	75.9
Programming modification	—	—	—	—	—	—	26.3	(28.7)	—	—
Data changes	15.3	(16.2)	3.6	14.4	(6.0)	18.7	12.9	9.1	(2.4)	270.5
Misc. changes	8.1	—	0.1	(0.1)	0.1	(0.1)	12.6	20.2	22.5	86.4
Total	$ (26.3)	$ 81.5	$ (78.7)	$ (192.0)	$ (236.8)	$ 335.3	$ 528.0	$ 740.2	$ 984.7	$ 600.9

	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
	Amount of Increase (Decrease) (in thousands)									
PSERS										
Interest (7.40) added to previous UAL	$ 12,591.0	$ 11,574.7	$ 12,159.9	$ 11,918.7	$ 13,724.1	$ 13,830.7	$ 12,474.4	$ 10,349.3	$ 4,021.0	$ (1,567.9)
Accrued liability contribution	(17,584.7)	(15,278.9)	(17,394.7)	(17,704.8)	(15,915.4)	(12,497.7)	(4,843.8)	4,022.8	6,403.4	5,026.0
Experience:										
Valuation asset growth	(8,805.0)	(3,247.0)	841.0	(12,207.0)	(14,071.0)	13,868.0	21,922.0	24,002.0	39,729.0	34,015.0
Pensioners' mortality	(2,859.3)	(308.6)	(643.8)	414.9	1,286.7	(381.9)	(1,149.5)	(3,000.5)	(828.9)	973.7
Turnover and retirements	(1,024.6)	(879.7)	(228.2)	2,618.5	2,580.8	4,772.4	4,974.5	3,403.6	12,375.8	6,201.3
New entrants	3,206.8	4,334.7	2,798.1	2,875.9	2,786.0	2,757.7	2,783.8	3,167.0	3,047.8	3,267.7
Method changes	—	—	—	—	—	(9,259.0)	—	—	—	—
Amendments	16,292.1	15,892.7	—	—	—	—	—	—	—	—
COLAs	(6,469.5)	(6,786.4)	(5,492.0)	(14,772.9)	(14,398.9)	(14,813.1)	(20,664.9)	(16,603.6)	(14,121.2)	—
Assumption changes	10,995.2	10,547.5	—	30,030.0	—	—	—	—	33,717.7	—
Lawsuit	—	—	—	—	—	—	—	—	—	2,168.0
Data Changes	—	—	—	—	—	—	—	—	(2,192.3)	24,199.5
Allotment for Expenses	—	—	—	—	—	—	—	2,122.7	2,029.0	433.0
Misc. changes	(352.4)	(29.5)	157.2	43.0	(64.9)	301.7	2,586.9	872.4	195.0	(197.3)
Total	$ 5,989.6	$ 15,819.5	$ (7,802.5)	$ 3,216.3	$ (24,072.6)	$ (1,421.2)	$ 18,083.4	$ 28,335.7	$ 84,376.3	$ 74,519.0

(continued)

Analysis of Change in Unfunded Accrued Liability (UAL)

	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
	Amount of Increase (Decrease) (in thousands)									
GJRS										
Interest (7.40) added to previous UAL	$ (2,416.5)	$ (3,125.4)	$ (3,457.6)	$ (2,259.9)	$ (1,207.3)	$ (1,977.2)	$ (2,774.8)	$ (2,891.5)	$ (2,636.2)	$ (3,360.0)
Accrued liability contribution	2,005.4	1,245.0	(746.2)	3,754.1	5,803.3	5,187.8	4,710.8	4,079.8	4,592.1	3,596.2
Experience:										
Valuation asset growth	(4,346.6)	(1,538.9)	562.3	(5,855.8)	(6,807.0)	4,949.6	8,638.5	9,404.0	16,228.0	13,941.0
Pensioners' mortality	543.1	(339.7)	1,530.2	639.6	2,138.5	533.8	376.9	2,076.8	560.9	1,102.3
Turnover and retirements	(162.6)	2,307.0	872.4	(370.0)	(5,962.8)	3,941.4	2,080.7	(276.3)	2,290.6	1,982.9
New entrants	338.7	2,353.1	1,190.9	1,539.1	1,272.3	3,138.0	442.3	750.1	—	967.2
Salary increases	(5,756.8)	187.7	209.7	(8,848.5)	(10,382.5)	(4,620.6)	(4,536.5)	1,265.9	(10,213.5)	(10,561.2)
Method changes	—	—	—	—	—	(6,827.0)	—	—	—	—
Amendments (COLAs)	993.1	3,345.4	3,179.6	—	—	—	(870.0)	—	—	(2,359.4)
Assumption changes	3,696.0	3,615.6	—	(5,030.9)	—	—	—	—	(14,826.5)	—
Data changes	—	—	—	—	—	—	—	—	579.1	4,581.2
Programming modification	—	—	—	—	—	4,606.4	1,648.9	—	—	—
Misc. changes	263.6	1,402.0	1,086.9	464.1	1,110.1	1,333.8	917.5	(12,852.1)	21.3	(240.6)
Total	$ (4,842.6)	$ 9,451.8	$ 4,428.2	$ (15,968.2)	$ (14,035.4)	$ 10,266.0	$ 10,634.3	$ 1,556.7	$ (3,404.2)	$ 9,649.6

	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
	Amount of Increase (Decrease) (in thousands)									
LRS										
Interest (7.40) added to previous UAL	$ (535.7)	$ (497.8)	$ (445.9)	$ (421.9)	$ (343.3)	$ (301.8)	$ (302.5)	$ (343.4)	$ (508.5)	$ (468.9)
Accrued liability contribution	322.9	250.3	338.3	173.4	161.9	(62.4)	33.9	107.1	(32.5)	(21.1)
Experience:										
Valuation asset growth	(342.2)	(129.2)	24.1	(491.6)	(576.5)	513.9	829.0	906.2	1,534.0	1,307.4
Pensioners' mortality	118.3	245.9	(66.1)	(50.8)	323.8	(29.6)	19.1	(18.7)	339.2	240.7
Turnover and retirements	(175.2)	(257.7)	(198.9)	(10.1)	(347.5)	17.4	(84.3)	254.5	105.1	(5.7)
New entrants	16.7	99.2	26.8	35.1	135.2	144.5	16.9	74.0	98.8	—
Method changes	—	—	—	—	—	(418.0)	—	—	—	—
Amendments	67.6	50.4	51.5	—	—	(488.1)	(549.7)	(481.8)	(465.3)	—
No COLAs	(462.8)	(458.3)	(418.2)	(452.6)	(470.8)	—	—	—	—	—
Assumption changes	229.1	223.7	—	852.3	—	—	—	—	975.2	—
Data changes	—	—	—	—	—	—	—	—	114.8	(1,529.1)
Misc. changes	34.8	(127.9)	(4.7)	46.2	69.9	71.1	46.4	46.9	41.6	(51.7)
Total	$ (726.5)	$ (601.5)	$ (693.1)	$ (320.0)	$ (1,047.3)	$ (553.1)	$ 8.8	$ 544.9	$ 2,202.4	$ (528.4)

(continued)

Analysis of Change in Unfunded Accrued Liability (UAL)

	2018	2017	2016	2015	2014	2013	2012	2011
	Amount of Increase (Decrease) (in thousands)							
GMPF*								
Interest (7.40) added to previous UAL	$ 1,489.4	$ 1,484.8	$ 1,407.5	$ 1,316.3	$ 1,344.3	$ 1,360.8	$ 1,354.9	$ 1,216.1
Accrued liability contribution	(2,140.6)	(1,747.5)	(1,698.6)	(1,765.6)	(1,775.3)	(1,661.5)	(1,502.4)	(1,173.3)
Experience:								
Valuation asset growth	(181.0)	(50.0)	59.0	(203.0)	(247.0)	39.3	107.0	113.8
Pensioners' mortality	40.7	(109.2)	119.3	126.1	88.8	80.2	68.3	58.5
Turnover and retirements	143.1	11.0	233.3	120.5	(87.9)	186.4	17.9	205.4
New entrants	208.9	138.9	165.1	236.9	142.6	137.8	127.1	1,469.6
Method changes	—	—	—	—	—	(393.0)	—	—
Assumption changes	570.2	537.6	—	985.8	—	—	—	—
Expense deficit	—	—	—	—	—	—	—	37.0
Misc. changes	2.6	64.2	744.4	398.7	161.1	30.6	(93.6)	(77.0)
Total	$ 133.3	$ 329.8	$ 1,030.0	$ 1,215.7	$ (373.4)	$ (219.4)	$ 79.2	$ 1,850.1

*Note: Data prior to 2011 is not available for GMPF.

SEAD-OPEB: Data is not available.

Solvency Test Results
(in thousands)

ERS

Actuarial Valuation as of 6/30	Actuarial Accrued Liability for: Active Member Contributions (1)	Retirants & Beneficiaries (2)	Active Member (Employer Funded Portion) (3)	Valuation Assets	Portion of Aggregate Accrued Liabilities Covered by Assets (1)	(2)	(3)
2009	$ 589,012	$ 10,034,939	$ 5,254,071	$ 13,613,606	100.0%	100.0%	56.9%
2010	551,607	10,652,040	5,091,705	13,046,193	100.0	100.0	36.2
2011	503,867	11,058,344	5,094,694	12,667,557	100.0	100.0	21.7
2012	460,861	11,420,011	4,897,050	12,260,595	100.0	100.0	7.8
2013	405,841	11,935,364	4,641,244	12,129,803	100.0	98.2	—
2014	385,058	12,108,737	4,498,168	12,376,120	100.0	99.0	—
2015	367,462	12,520,321	4,211,744	12,675,649	100.0	98.3	—
2016	368,281	12,592,980	4,238,427	12,854,518	100.0	99.2	—
2017	368,935	12,729,977	4,415,986	13,088,185	100.0	99.9	—
2018	372,375	12,927,796	4,512,270	13,412,046	100.0	100.0	2.5

PSERS

Actuarial Valuation as of 6/30	Actuarial Accrued Liability for: Active Member Contributions (1)	Retirants & Beneficiaries (2)	Active Member (Employer Funded Portion) (3)	Valuation Assets	Portion of Aggregate Accrued Liabilities Covered by Assets (1)	(2)	(3)
2009	$ 15,862	$ 506,659	$ 300,711	$ 769,618	100.0%	100.0%	82.2%
2010	16,361	528,808	330,227	737,406	100.0	100.0	58.2
2011	16,627	532,509	336,790	719,601	100.0	100.0	50.6
2012	16,917	537,284	341,123	710,915	100.0	100.0	45.9
2013	17,016	549,796	343,444	727,268	100.0	100.0	46.7
2014	16,995	566,344	341,026	765,450	100.0	100.0	53.4
2015	17,196	585,471	364,742	805,277	100.0	100.0	55.5
2016	17,413	609,807	361,663	834,554	100.0	100.0	57.3
2017	18,077	640,197	377,661	865,786	100.0	100.0	54.9
2018	18,570	674,222	388,392	905,046	100.0	100.0	54.6

GJRS

Actuarial Valuation as of 6/30	Actuarial Accrued Liability for: Active Member Contributions (1)	Retirants & Beneficiaries (2)	Active Member (Employer Funded Portion) (3)	Valuation Assets	Portion of Aggregate Accrued Liabilities Covered by Assets (1)	(2)	(3)
2009	$ 61,188	$ 108,923	$ 112,363	$ 317,624	100.0%	100.0%	100.0%
2010	67,293	117,730	96,473	320,050	100.0	100.0	100.0
2011	71,047	128,991	90,440	327,483	100.0	100.0	100.0
2012	73,998	141,880	92,984	335,225	100.0	100.0	100.0
2013	73,949	162,364	99,479	351,889	100.0	100.0	100.0
2014	80,007	162,527	100,894	373,560	100.0	100.0	100.0
2015	84,170	174,147	91,981	396,399	100.0	100.0	100.0
2016	91,991	180,107	104,642	418,412	100.0	100.0	100.0
2017	84,841	220,738	102,028	439,828	100.0	100.0	100.0
2018	88,890	231,811	104,023	461,787	100.0	100.0	100.0

(continued)

Solvency Test Results
(in thousands)

LRS

Actuarial Valuation as of 6/30	Actuarial Accrued Liability for: Active Member Contributions (1)	Retirants & Beneficiaries (2)	Active Member (Employer Funded Portion) (3)	Valuation Assets	Portion of Aggregate Accrued Liabilities Covered by Assets (1)	(2)	(3)
2009	$ 2,908	$ 18,465	$ 2,150	$ 30,303	100.0%	100.0%	100.0%
2010	3,166	19,208	2,629	29,581	100.0	100.0	100.0
2011	2,921	19,759	2,564	29,278	100.0	100.0	100.0
2012	3,185	19,200	2,581	28,990	100.0	100.0	100.0
2013	2,951	19,623	2,330	29,481	100.0	100.0	100.0
2014	3,430	19,006	2,477	30,538	100.0	100.0	100.0
2015	3,287	19,873	2,530	31,635	100.0	100.0	100.0
2016	3,630	19,202	2,701	32,171	100.0	100.0	100.0
2017	3,543	19,382	2,749	32,913	100.0	100.0	100.0
2018	3,862	19,048	2,995	33,871	100.0	100.0	100.0

GMPF

Actuarial Valuation as of 6/30	Actuarial Accrued Liability for: Active Member Contributions (1)	Retirants & Beneficiaries (2)	Active Member (Employer Funded Portion) (3)	Valuation Assets	Portion of Aggregate Accrued Liabilities Covered by Assets (1)	(2)	(3)
2009	$ —	$ 12,742	$ 8,279	$ 6,413	n/a	50.3%	—%
2010	—	14,015	9,758	7,558	n/a	53.9	—
2011	—	15,379	11,388	8,702	n/a	56.6	—
2012	—	17,518	10,713	10,087	n/a	57.6	—
2013	—	19,396	10,660	12,131	n/a	62.5	—
2014	—	21,389	10,426	14,264	n/a	66.7	—
2015	—	24,075	11,138	16,446	n/a	68.3	—
2016	—	26,337	11,874	18,414	n/a	69.9	—
2017	—	28,867	11,864	20,604	n/a	71.4	—
2018	—	30,964	12,658	23,362	n/a	75.4	—

SEAD-OPEB

Actuarial Valuation as of 6/30	Actuarial Accrued Liability for: Active Member Contributions (1)	Retirants & Beneficiaries (2)	Active Member (Employer Funded Portion) (3)	Valuation Assets	Portion of Aggregate Accrued Liabilities Covered by Assets (1)	(2)	(3)
2009	$ —	$ 524,718	$ 208,953	$ 628,199	n/a	100.0%	49.5%
2010	—	516,633	174,368	680,449	n/a	100.0	93.9
2011	—	503,327	175,093	807,893	n/a	100.0	100.0
2012	—	528,165	176,452	818,284	n/a	100.0	100.0
2013	—	586,228	168,558	907,831	n/a	100.0	100.0
2014	—	621,502	166,518	1,037,901	n/a	100.0	100.0
2015	—	621,426	148,321	1,046,559	n/a	100.0	100.0
2016	—	652,291	180,078	1,028,541	n/a	100.0	100.0
2017	—	693,118	183,468	1,121,251	n/a	100.0	100.0
2018	—	735,214	183,943	1,189,462	n/a	100.0	100.0

Statistical Section

Finding the Hidden Gems in Georgia

Driftwood Beach - Jekyll Island

ERSGA
Employees' Retirement System of Georgia
Serving those who serve Georgia

Introduction

The objective of the statistical section is to provide a historical perspective, context and relevant details to assist readers in evaluating the condition of the plans. All non-accounting data is taken from ERSGA's internal sources except for information which is derived from the actuarial valuations. FY2010 was the first year ERSGA added this information in their Annual Financial Report. Therefore, historical detail may not be complete for some schedules. Statistical information is not presented for SCJRF and DARF as both plans are immaterial, have no active members, and are closed to new members.

Fiduciary Funds

Financial Trends

The following schedules have been included to help the reader understand how the System's financial position has changed over the past 10 years:

Additions by Source
Deductions by Type
Changes in Fiduciary Net Position

Operational Trends

The following schedules have been included to help the readers understand how the System's financial report relates to the services provided by the System and the activities it performs:

Retiree Information
Withdrawal (Refund) Data
New Retiree Elections
Statistical Data as of June 30, 2019

Proprietary Fund

Schedule of Revenue and Expenses
10-year Schedule of Membership

Additions by Source - Contribution/Investment Income

(in thousands)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
ERS										
Member Contributions	$ 42,052	$ 39,480	$ 36,561	$ 38,955	$ 32,423	$ 33,713	$ 31,961	$ 35,863	$ 37,130	$ 36,252
Employer Contributions	263,064	261,132	274,034	358,992	418,807	505,668	583,082	613,201	639,302	638,989
Nonemployer Contributions	—	—	—	—	10,945	12,495	12,484	12,080	12,865	10,220
Net Investment Income (Loss)	1,176,741	2,269,270	231,782	1,495,849	2,021,748	474,147	141,292	1,475,626	1,166,013	873,404
Other	—	—	—	—	—	10	10	10	10	10
Total Additions to (Deductions from) Fiduciary Net Position	$ 1,481,857	$ 2,569,882	$ 542,377	$ 1,893,796	$ 2,483,923	$ 1,026,033	$ 768,829	$ 2,136,780	$ 1,855,320	$ 1,558,875
PSERS										
Member Contributions	$ 1,483	$ 1,451	$ 1,426	$ 1,538	$ 1,659	$ 1,800	$ 1,925	$ 2,084	$ 2,162	$ 2,256
Employer Contributions	5,530	7,509	15,884	24,829	—	—	—	—	—	—
Nonemployer Contributions	—	—	—	—	27,160	28,461	28,580	26,277	29,276	30,263
Net Investment Income (Loss)	66,404	128,096	13,554	88,067	123,799	30,129	9,809	97,715	78,418	60,553
Other	—	—	—	—	—	—	—	—	—	—
Total Additions to (Deductions from) Fiduciary Net Position	$ 73,417	$ 137,056	$ 30,864	$ 114,434	$ 152,618	$ 60,390	$ 40,314	$ 126,076	$ 109,856	$ 93,072
GJRS										
Member Contributions	$ 5,018	$ 4,721	$ 4,904	$ 4,408	$ 4,731	$ 5,061	$ 5,507	$ 4,906	$ 4,910	$ 5,469
Employer Contributions	3,369	1,163	2,083	2,279	1,373	2,696	4,754	4,081	4,725	3,117
Nonemployer Contributions	—	—	—	—	1,002	1,564	2,869	2,603	1,841	2,137
Net Investment Income (Loss)	27,378	57,330	6,571	42,104	60,012	14,697	5,055	49,259	39,877	30,827
Other	175	—	—	—	—	—	—	—	—	—
Total Additions to (Deductions from) Fiduciary Net Position	$ 35,940	$ 63,214	$ 13,558	$ 48,791	$ 67,118	$ 24,018	$ 18,185	$ 60,849	$ 51,353	$ 41,550
LRS										
Member Contributions	$ 318	$ 320	$ 323	$ 373	$ 282	$ 327	$ 328	$ 327	$ 323	$ 339
Employer Contributions	75	75	76	128	45	—	—	—	—	—
Nonemployer Contributions	—	—	—	—	—	—	—	—	—	—
Net Investment Income (Loss)	2,610	5,194	550	3,573	4,969	1,189	363	3,741	2,962	2,228
Other	110	—	—	—	—	—	—	—	—	—
Total Additions to (Deductions from) Fiduciary Net Position	$ 3,113	$ 5,589	$ 949	$ 4,074	$ 5,296	$ 1,516	$ 691	$ 4,068	$ 3,285	$ 2,567

(continued)

Additions by Source - Contribution/Investment Income
(in thousands)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
GMPF										
Member Contributions	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —
Employer Contributions	1,434	1,282	1,521	1,703	1,892	1,893	1,990	2,018	2,377	2,537
Nonemployer Contributions	—	—	—	—	—	—	—	—	—	—
Net Investment Income (Loss)	565	1,465	221	1,374	2,179	585	240	2,262	1,928	1,683
Other	—	—	—	—	—	—	—	—	—	—
Total Additions to (Deductions from) Fiduciary Net Position	$ 1,999	$ 2,747	$ 1,742	$ 3,077	$ 4,071	$ 2,478	$ 2,230	$ 4,280	$ 4,305	$ 4,220
SEAD - OPEB										
Member Contributions	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —
Employer Contributions	—	—	—	—	—	—	—	1	—	5
Insurance Premiums	6,755	6,437	5,532	5,075	4,502	4,187	3,931	3,793	3,599	3,328
Net Investment Income (Loss)	69,340	144,270	17,193	108,148	154,868	37,876	12,559	125,550	101,542	79,193
Other	—	—	—	—	—	—	—	—	—	—
Total Additions to (Deductions from) Fiduciary Net Position	$ 76,095	$ 150,707	$ 22,725	$ 113,223	$ 159,370	$ 42,063	$ 16,490	$ 129,344	$ 105,141	$ 82,526
Defined Contribution Plan - GDCP										
Member Contributions	$ 16,002	$ 17,656	$ 17,171	$ 16,676	$ 16,290	$ 15,655	$ 14,708	$ 14,921	$ 14,585	$ 14,578
Employer Contributions	—	—	—	—	—	—	—	—	—	—
Nonemployer Contributions	—	—	—	—	—	—	—	—	—	—
Net Investment Income (Loss)	10,319	775	652	137	1,368	1,326	5,591	(1,056)	(356)	8,324
Other	—	—	—	—	—	—	—	—	—	—
Total Additions to (Deductions from) Fiduciary Net Position	$ 26,321	$ 18,431	$ 17,823	$ 16,813	$ 17,658	$ 16,981	$ 20,299	$ 13,865	$ 14,229	$ 22,902

(continued)

Additions by Source - Contribution/Investment Income
(in thousands)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Defined Contribution Plan - 401(k)										
Member Contributions	$ 33,899	$ 38,006	$ 40,331	$ 44,428	$ 53,724	$ 64,870	$ 79,422	$ 93,608	$ 110,848	$ 119,770
Employer Contributions	15,664	25,442	4,355	18,279	21,513	25,615	29,982	36,761	43,176	47,170
Nonemployer Contributions	—	—	—	—	—	—	—	—	—	—
Net Investment Income (Loss)	25,283	59,581	3,112	52,835	78,583	17,665	5,281	88,771	72,671	61,106
Other	385	446	800	948	1,122	1,298	1,429	1,584	1,744	544
Total Additions to (Deductions from) Fiduciary Net Position	$ 75,231	$ 123,475	$ 48,598	$ 116,490	$ 154,942	$ 109,448	$ 116,114	$ 220,724	$ 228,439	$ 228,590
Defined Contribution Plan - 457										
Member Contributions	$ 21,171	$ 20,108	$ 19,551	$ 18,753	$ 17,623	$ 17,445	$ 17,413	$ 18,899	$ 20,133	$ 20,264
Employer Contributions	—	—	—	—	—	—	—	—	—	—
Nonemployer Contributions	—	—	—	—	—	—	—	—	—	—
Net Investment Income (Loss)	35,806	70,963	7,785	55,737	73,746	18,991	7,855	59,541	46,748	39,100
Other	468	339	—	—	—	—	—	—	—	53
Total Additions to (Deductions from) Fiduciary Net Position	$ 57,445	$ 91,410	$ 27,336	$ 74,490	$ 91,369	$ 36,436	$ 25,268	$ 78,440	$ 66,881	$ 59,417

Deductions by Type
(in thousands)

ERS

Fiscal Year	Benefit Payments: Service	Partial Lump-Sum Option	Disability	Survivor Benefits	Total Benefit Payments	Net Administrative Expenses	Refunds	Total Deductions from Fiduciary Net Position
2010	$ 878,482	$ 23,480	$ 146,031	$ 82,676	$ 1,130,669	$ 14,505	$ 6,483	$ 1,151,657
2011	921,136	30,946	140,849	75,891	1,168,822	14,431	7,515	1,190,768
2012	964,485	31,963	143,317	76,973	1,216,738	12,051	7,767	1,236,556
2013	1,007,816	35,933	145,152	80,300	1,269,201	12,889	7,390	1,289,480
2014	1,051,993	24,567	146,245	83,193	1,305,998	7,440	8,757	1,322,195
2015	1,076,676	24,391	147,418	85,794	1,334,278	7,872	7,450	1,349,600
2016	1,092,909	19,154	147,706	87,843	1,347,633	8,506	7,087	1,363,226
2017	1,130,996	19,765	151,772	91,750	1,394,283	8,732	9,033	1,412,048
2018	1,146,226	21,624	152,469	92,979	1,413,298	8,056	7,585	1,428,939
2019	1,171,942	20,535	155,193	96,086	1,443,756	7,142	7,691	1,458,589

PSERS

Fiscal Year	Benefit Payments: Service	Disability	Survivor Benefits	Total Benefit Payments	Net Administrative Expenses	Refunds	Total Deductions from Fiduciary Net Position
2010	$ 45,741	$ 5,402	$ 2,052	$ 53,195	$ 1,956	$ 251	$ 55,402
2011	46,548	5,369	2,063	53,980	2,046	267	56,293
2012	46,911	5,369	1,903	54,183	2,040	349	56,572
2013	47,805	5,328	1,908	55,041	2,021	492	57,554
2014	48,911	5,280	1,998	56,189	1,450	514	58,153
2015	49,704	5,227	2,041	56,972	1,545	456	58,973
2016	50,572	5,172	2,160	57,903	1,321	465	59,689
2017	52,012	5,117	2,249	59,378	1,308	1,031	61,717
2018	54,257	5,114	2,449	61,820	1,331	701	63,852
2019	56,008	4,991	2,638	63,637	1,377	609	65,623

GJRS

Fiscal Year	Benefit Payments: Service	Disability	Survivor Benefits	Total Benefit Payments	Net Administrative Expenses	Refunds	Total Deductions from Fiduciary Net Position
2010	$ 10,633	$ 114	$ 1,618	$ 12,365	$ 270	$ 139	$ 12,774
2011	11,245	112	1,654	13,011	290	260	13,561
2012	12,608	113	1,695	14,416	310	146	14,872
2013	14,273	112	1,865	16,250	313	105	16,668
2014	15,305	112	2,024	17,441	754	22	18,217
2015	16,084	112	2,169	18,365	819	772	19,956
2016	16,677	112	2,222	19,011	754	261	20,026
2017	19,349	114	2,321	21,784	728	166	22,678
2018	22,239	117	2,578	24,934	794	150	25,878
2019	24,642	119	2,701	27,462	820	553	28,835

(continued)

Deductions by Type
(in thousands)

LRS

Fiscal Year	Benefit Payments: Service	Benefit Payments: Survivor Benefits	Benefit Payments: Total Benefit Payments	Net Administrative Expenses	Refunds	Total Deductions from Fiduciary Net Position
2010	$ 1,308	$ 436	$ 1,744	$ 120	$ 47	$ 1,911
2011	1,309	452	1,761	131	60	1,952
2012	1,364	446	1,810	110	74	1,994
2013	1,376	448	1,824	119	88	2,031
2014	1,336	465	1,801	152	30	1,983
2015	1,315	441	1,756	169	26	1,951
2016	1,294	429	1,724	313	38	2,075
2017	1,323	440	1,763	224	75	2,062
2018	1,347	425	1,772	283	22	2,077
2019	1,383	473	1,856	290	70	2,216

GMPF

Fiscal Year	Benefit Payments: Service*	Benefit Payments: Total Benefit Payments	Net Administrative Expenses	Total Deductions from Fiduciary Net Position
2010	$ 489	$ 489	$ 43	$ 532
2011	579	579	37	616
2012	678	678	34	712
2013	772	772	31	803
2014	841	841	110	951
2015	896	896	121	1,017
2016	963	963	262	1,225
2017	1,042	1,042	244	1,286
2018	1,138	1,138	225	1,363
2019	1,221	1,221	235	1,456

*The only type of retirement in GMPF is a service retirement.

SEAD-OPEB

Fiscal Year	Benefit Payments: Death Benefits**	Benefit Payments: Total Benefit Payments	Net Administrative Expenses	Total Deductions from Fiduciary Net Position
2010	$ 23,642	$ 23,642	$ 203	$ 23,845
2011	23,060	23,060	203	23,263
2012	24,855	24,855	203	25,058
2013	28,482	28,482	203	28,685
2014	28,891	28,891	414	29,305
2015	32,979	32,979	428	33,407
2016	33,911	33,911	599	34,510
2017	36,058	36,058	576	36,634
2018	36,249	36,249	681	36,930
2019	37,416	37,416	716	38,132

**The only type of benefit in SEAD-OPEB is a death benefit.

(continued)

Deductions by Type

(in thousands)

Defined Contribution Plan - GDCP

Fiscal Year	Benefit Payments: Periodic Payments	Benefit Payments: Total Benefit Payments	Net Administrative Expenses	Refunds	Total Deductions from Fiduciary Net Position
2010	$ 9	$ 9	$ 1,110	$ 10,613	$ 11,732
2011	9	9	1,180	11,390	12,579
2012	11	11	1,138	12,749	13,898
2013	9	9	1,160	14,415	15,584
2014	9	9	991	17,721	18,721
2015	—	—	990	22,340	23,330
2016	—	35	766	11,911	12,712
2017	—	—	785	11,544	12,329
2018	—	—	852	10,080	10,932
2019	10	10	882	10,931	11,823

Defined Contribution Plan - 401(k)

Fiscal Year	Benefit Payments: Distributions	Benefit Payments: Total Benefit Payments	Net Administrative Expenses	Total Deductions from Fiduciary Net Position
2010	$ 23,618	$ 23,618	$ 829	$ 24,447
2011	42,457	42,457	2,054	44,511
2012	36,986	36,986	2,111	39,097
2013	57,351	57,351	2,457	59,808
2014	43,133	43,133	2,300	45,433
2015	95,428	95,428	2,755	98,183
2016	46,508	46,508	2,832	49,340
2017	55,866	55,866	3,096	58,962
2018	64,103	64,103	3,639	67,742
2019	79,644	79,644	3,431	83,075

Defined Contribution Plan - 457

Fiscal Year	Benefit Payments: Distributions	Benefit Payments: Total Benefit Payments	Net Administrative Expenses	Total Deductions from Fiduciary Net Position
2010	$ 37,014	$ 37,014	$ 2,115	$ 39,129
2011	44,773	44,773	1,064	45,837
2012	41,835	41,835	910	42,745
2013	63,388	63,388	996	64,384
2014	45,807	45,807	812	46,619
2015	50,479	50,479	866	51,345
2016	43,288	43,288	820	44,108
2017	38,872	38,872	789	39,661
2018	40,690	40,690	442	41,132
2019	42,081	42,081	724	42,805

Changes in Fiduciary Net Position
(in thousands)

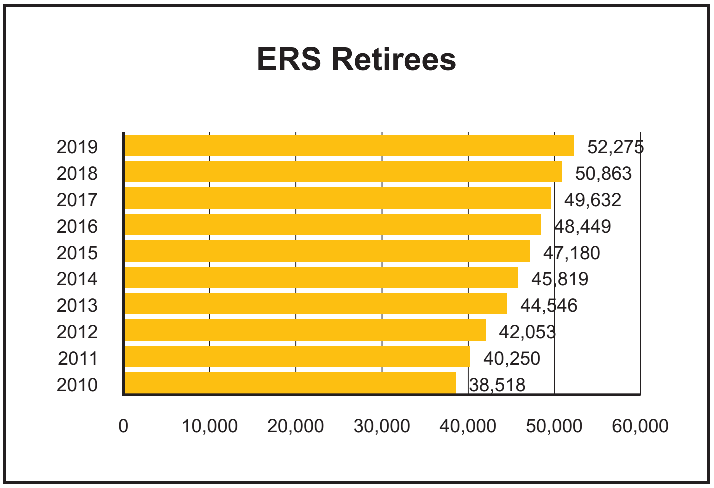
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
ERS										
Total Additions	$ 1,481,857	$2,569,882	$ 542,377	$1,893,796	$2,483,923	$1,026,033	$ 768,829	$2,136,780	$1,855,320	$1,558,875
Total Deductions	1,151,657	1,190,768	1,236,556	1,289,480	1,322,195	1,349,600	1,363,226	1,412,048	1,428,939	1,458,589
Transfer In (Out)	—	—	(12,724)	(5,009)	—	—	—	—	—	—
Changes in Fiduciary Net Position	330,200	1,379,114	(706,903)	599,307	1,161,728	(323,567)	(594,397)	724,732	426,381	100,286
PSERS										
Total Additions	73,417	137,056	30,864	114,434	152,618	60,390	40,314	126,076	109,856	93,072
Total Deductions	55,402	56,293	56,572	57,554	58,153	58,973	59,689	61,717	63,852	65,623
Transfer In (Out)	—	—	—	—	—	—	—	—	—	—
Changes in Fiduciary Net Position	18,015	80,763	(25,708)	56,880	94,465	1,417	(19,375)	64,359	46,004	27,449
GJRS										
Total Additions	35,940	63,214	13,558	48,791	67,118	24,018	18,185	60,849	51,353	41,550
Total Deductions	12,774	13,561	14,872	16,668	18,217	19,956	20,026	22,678	25,878	28,835
Transfer In (Out)	—	—	—	—	—	—	—	—	—	—
Changes in Fiduciary Net Position	23,166	49,653	(1,314)	32,123	48,901	4,062	(1,841)	38,171	25,475	12,715
LRS										
Total Additions	3,113	5,589	949	4,074	5,296	1,516	691	4,068	3,285	2,567
Total Deductions	1,911	1,952	1,994	2,031	1,983	1,951	2,075	2,062	2,077	2,216
Transfer In (Out)	—	—	—	—	—	—	—	—	—	—
Changes in Fiduciary Net Position	1,202	3,637	(1,045)	2,043	3,313	(435)	(1,384)	2,006	1,208	351
GMPF										
Total Additions	1,999	2,747	1,742	3,077	4,071	2,478	2,230	4,280	4,305	4,220
Total Deductions	532	616	712	803	951	1,017	1,225	1,286	1,363	1,456
Transfer In (Out)	—	—	—	—	—	—	—	—	—	—
Changes in Fiduciary Net Position	1,467	2,131	1,030	2,274	3,120	1,461	1,005	2,994	2,942	2,764

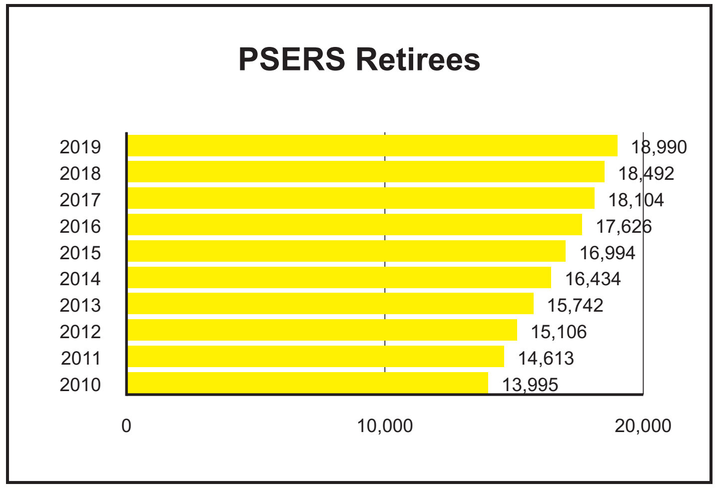
(continued)

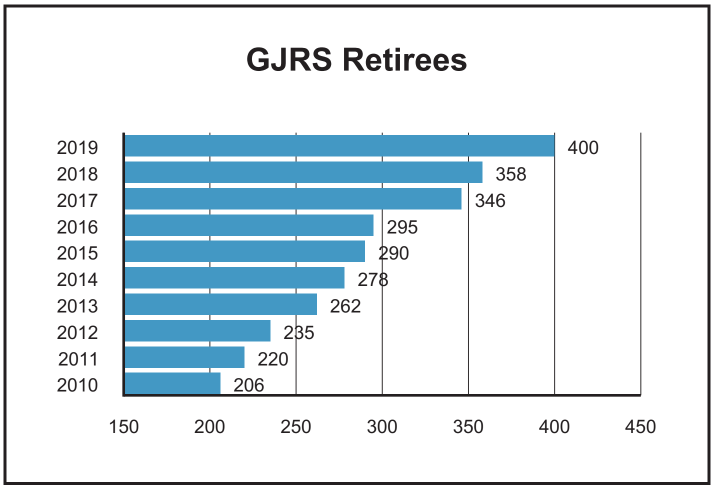
Changes in Fiduciary Net Position
(in thousands)

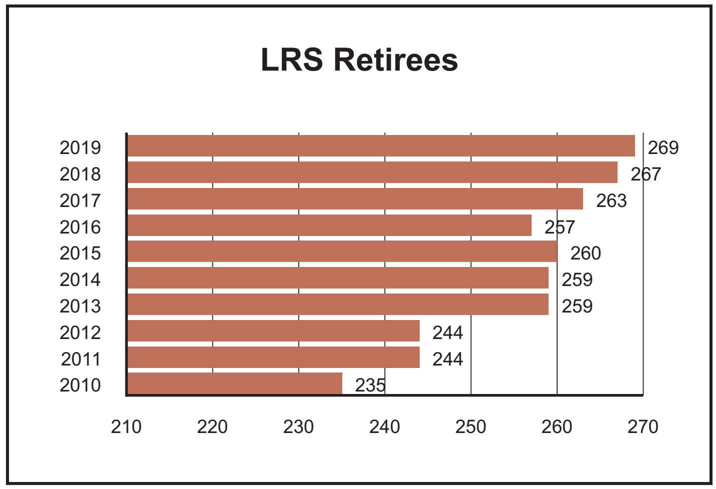
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
SEAD - OPEB										
Total Additions	$ 76,095	$ 150,707	$ 22,725	$ 113,223	$ 159,370	$ 42,063	$ 16,490	$ 129,344	$ 105,141	$ 82,526
Total Deductions	23,845	23,263	25,058	28,685	29,305	33,407	34,510	36,634	36,930	38,132
Transfer In (Out)	—	—	12,724	5,009	5	2	2	—	—	—
Changes in Fiduciary Net Position	52,250	127,444	10,391	89,547	130,070	8,658	(18,018)	92,710	68,211	44,394
Defined Contribution Plan - GDCP										
Total Additions	26,321	18,431	17,823	16,813	17,658	16,981	20,299	13,865	14,229	22,902
Total Deductions	11,732	12,579	13,898	15,584	18,721	23,330	12,712	12,329	10,932	11,823
Transfer In (Out)	—	—	—	—	—	—	—	—	—	—
Changes in Fiduciary Net Position	14,589	5,852	3,925	1,229	(1,063)	(6,349)	7,587	1,536	3,297	11,079
Defined Contribution Plan - 401(k)										
Total Additions	75,231	123,475	48,598	116,490	154,942	109,448	116,114	220,724	228,439	228,590
Total Deductions	24,447	44,511	39,097	59,808	45,433	98,183	49,340	58,962	67,742	83,075
Transfer In (Out)	—	—	—	—	—	—	—	—	—	—
Changes in Fiduciary Net Position	50,784	78,964	9,501	56,682	109,509	11,265	66,774	161,762	160,697	145,515
Defined Contribution Plan - 457										
Total Additions	57,445	91,410	27,336	74,490	91,369	36,436	25,268	78,440	66,881	59,417
Total Deductions	39,129	45,837	42,745	64,384	46,619	51,345	44,108	39,661	41,132	42,805
Transfer In (Out)	—	—	—	—	—	—	—	—	—	—
Changes in Fiduciary Net Position	18,316	45,573	(15,409)	10,106	44,750	(14,909)	(18,840)	38,779	25,749	16,612

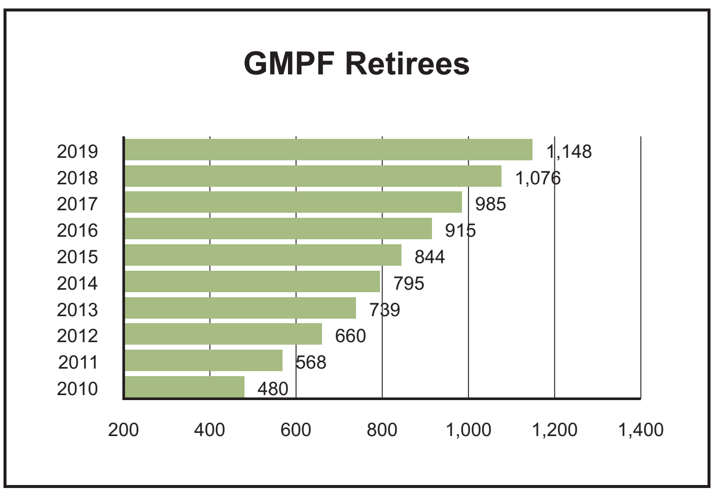
Number of Retirees



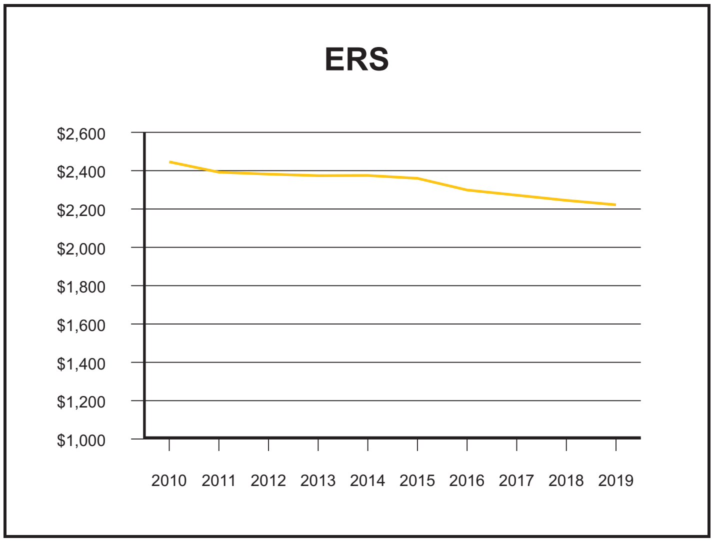


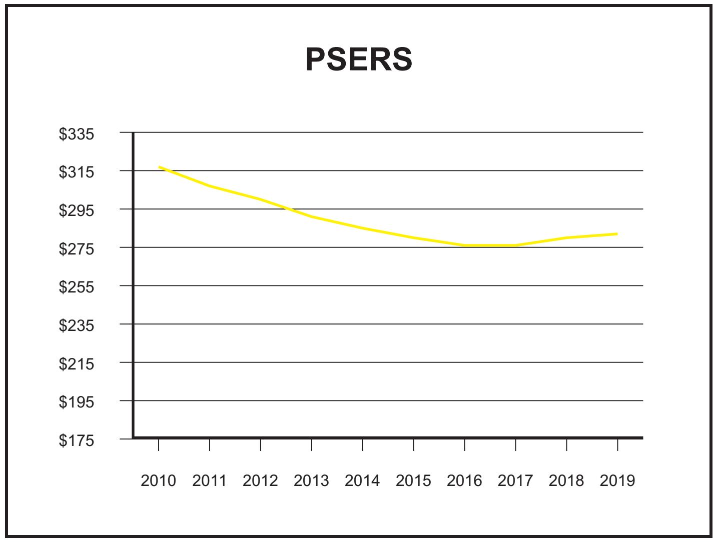


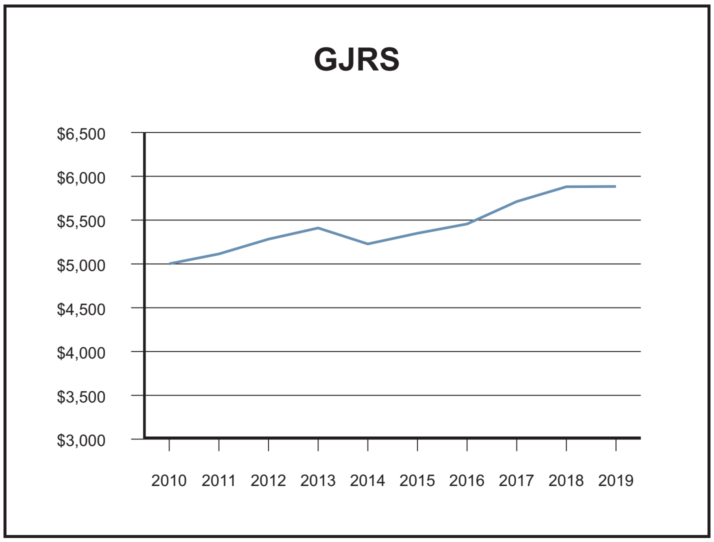


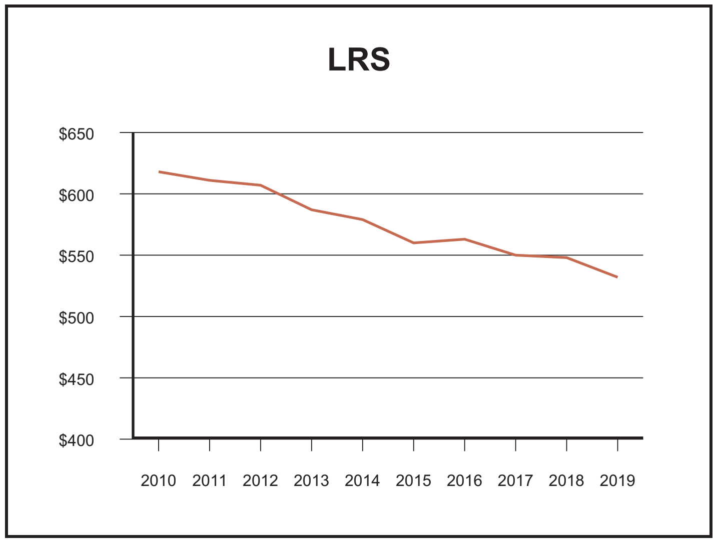


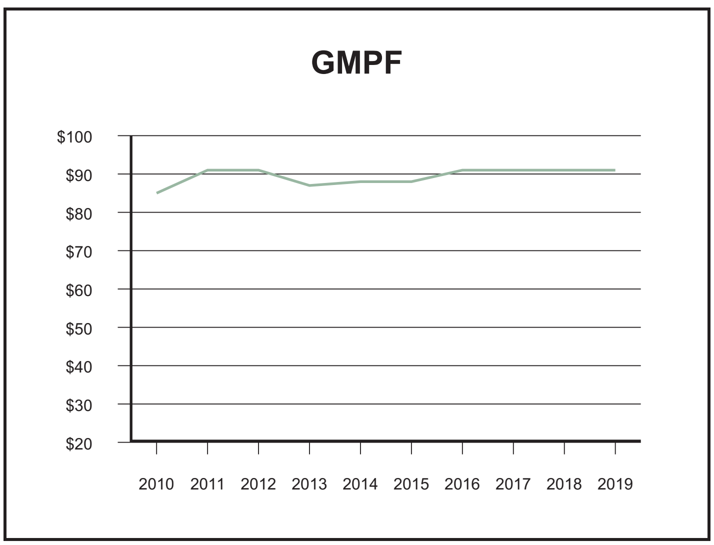
Average Monthly Payments to Retirees



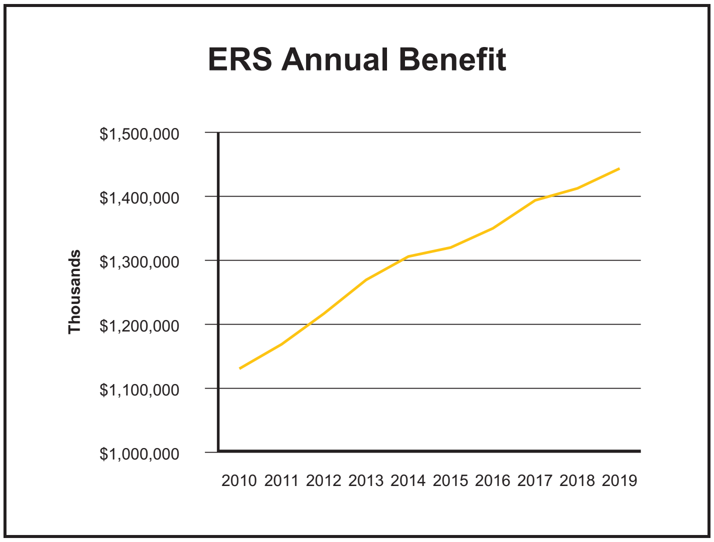


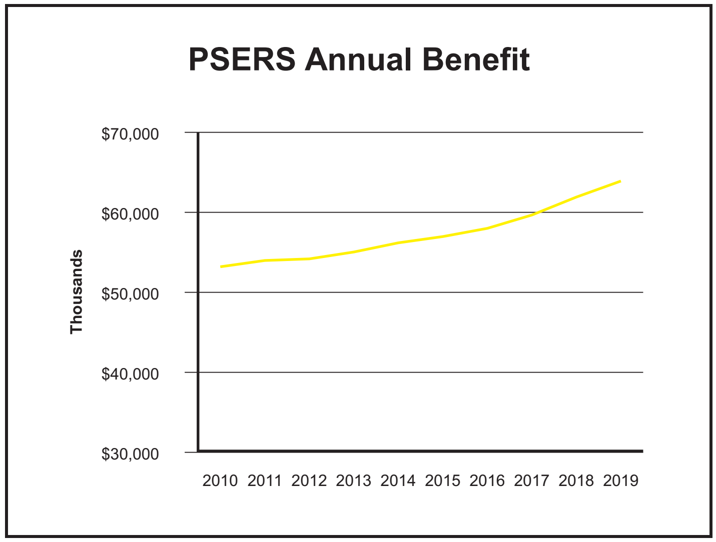


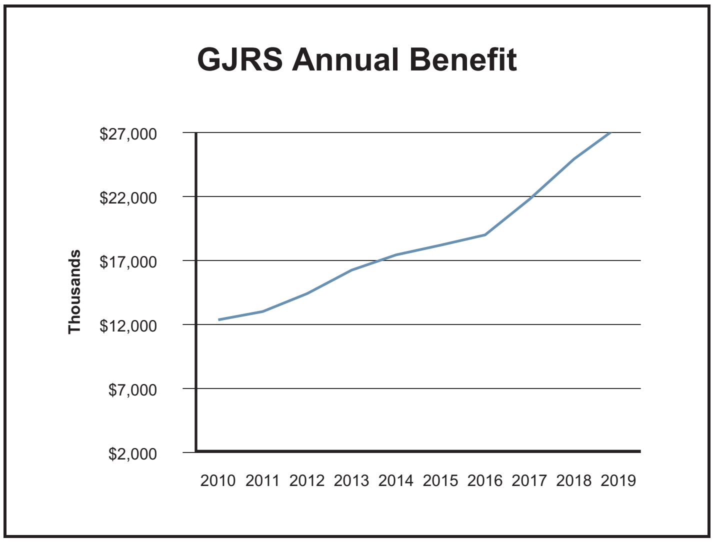


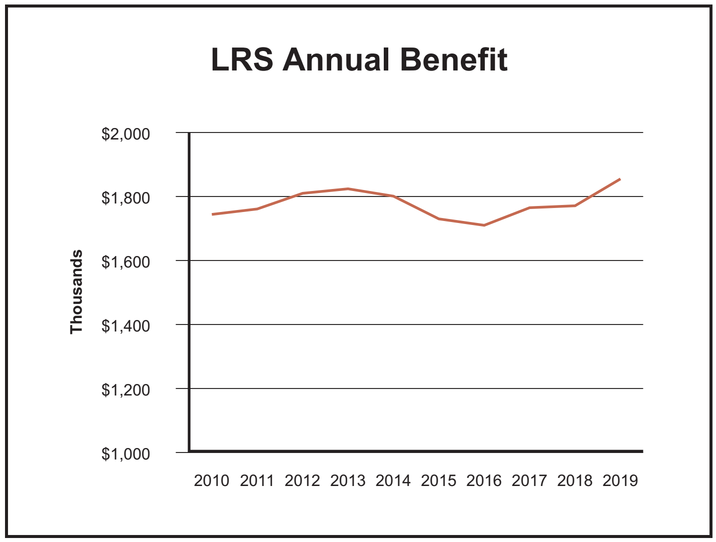


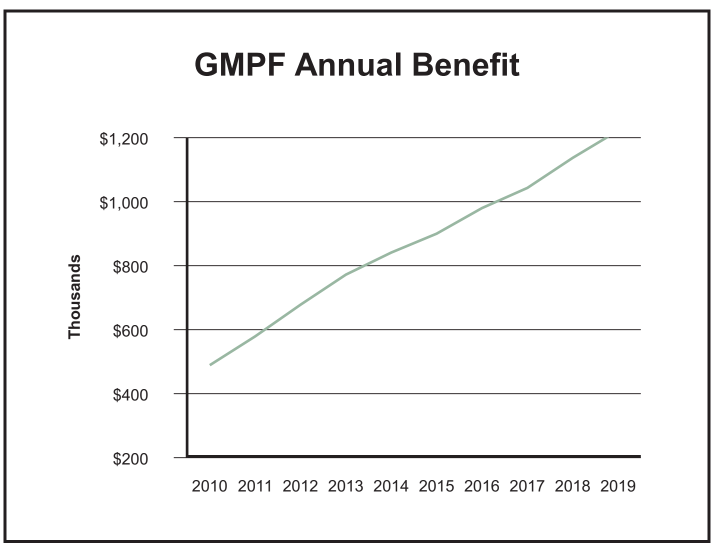
Annual Benefit



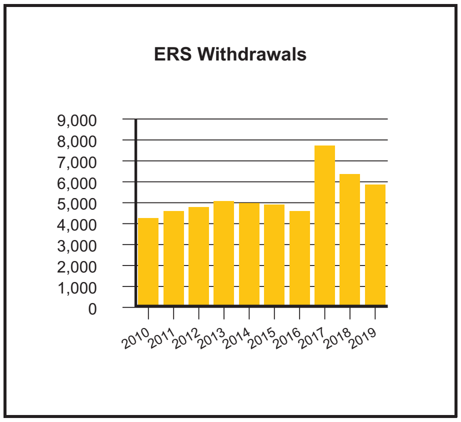


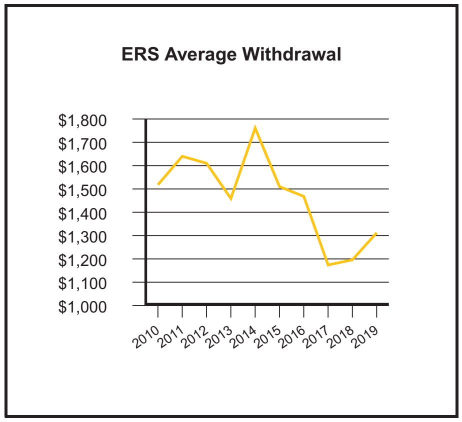


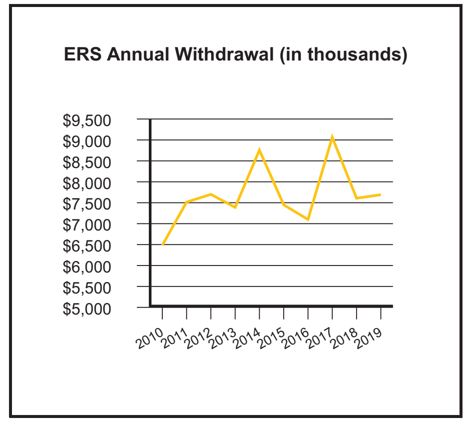


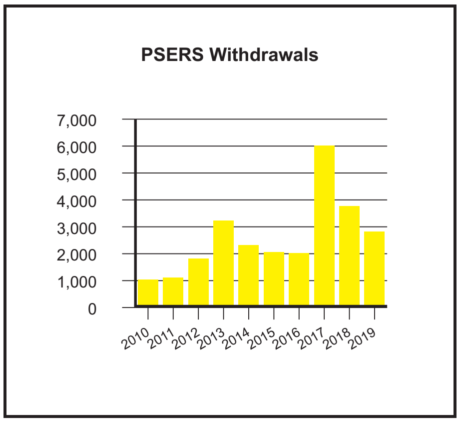


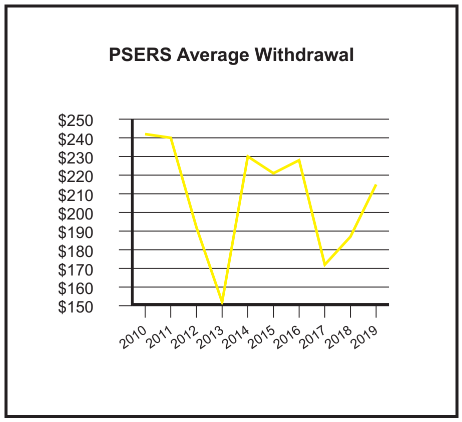
Withdrawal Statistics

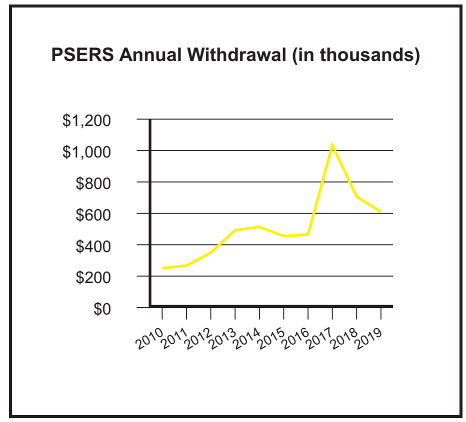


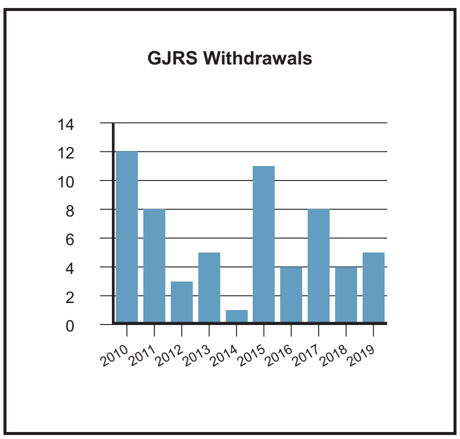


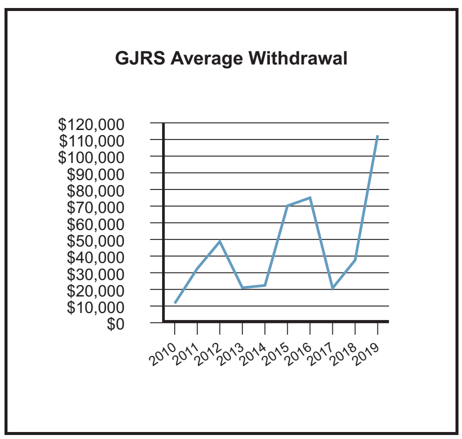


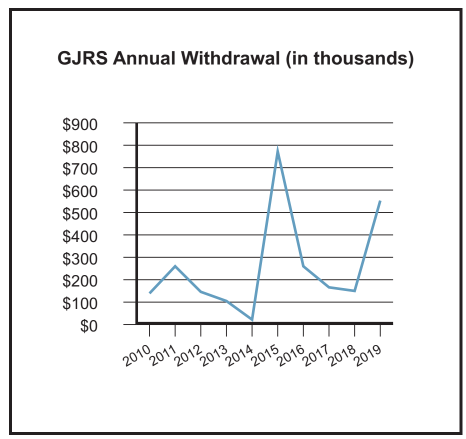


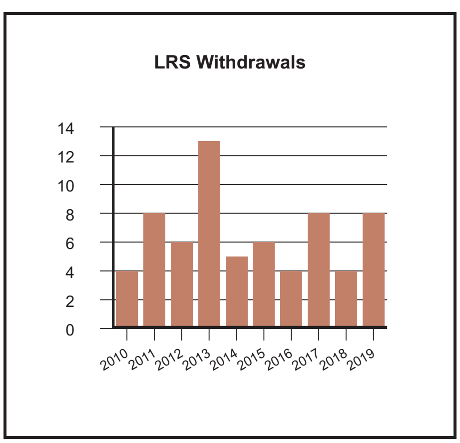


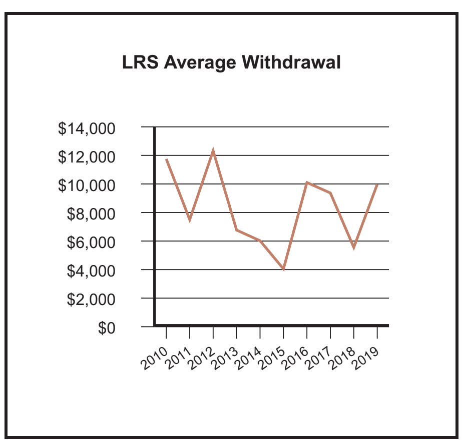


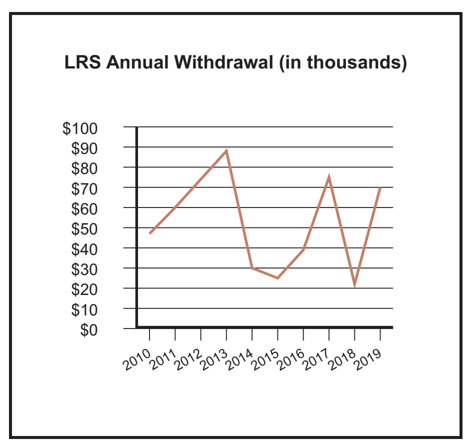












Note: The GMPF Plan does not have a refund feature.

Average Monthly Benefit Payment for New Retirees - ERS

	Years of Credited Service					
	10-15	16-20	21-25	26-30	Over 30	Total
2010						
Average Monthly Benefit	$ 694.23	$ 1,086.00	$ 1,502.32	$ 1,849.65	$ 3,653.29	$ 2,247.01
Average Final Average Salary	$ 3,023.45	$ 3,345.36	$ 3,555.21	$ 3,802.65	$ 4,588.73	$ 3,900.93
Number of Retirees	391	324	332	375	981	2,403
2011						
Average Monthly Benefit	$ 734.74	$ 1,107.16	$ 1,504.51	$ 1,995.24	$ 3,575.54	$ 2,143.95
Average Final Average Salary	$ 3,228.07	$ 3,205.88	$ 3,478.73	$ 3,762.88	$ 4,532.07	$ 3,825.88
Number of Retirees	437	322	389	461	885	2,494
2012						
Average Monthly Benefit	$ 729.60	$ 1,247.16	$ 1,624.82	$ 2,125.35	$ 3,708.26	$ 2,109.84
Average Final Average Salary	$ 3,040.00	$ 3,275.37	$ 3,388.85	$ 3,807.26	$ 4,702.47	$ 3,775.94
Number of Retirees	518	385	414	486	776	2,578
2013						
Average Monthly Benefit	$ 836.73	$ 1,183.19	$ 1,650.14	$ 2,120.33	$ 3,487.96	$ 2,088.46
Average Final Average Salary	$ 3,391.36	$ 3,339.84	$ 3,411.24	$ 3,765.16	$ 4,659.17	$ 3,855.98
Number of Retirees	684	453	466	780	1,033	3,416
2014						
Average Monthly Benefit	$ 769.91	$ 1,232.07	$ 1,527.47	$ 2,057.32	$ 3,242.25	$ 1,870.02
Average Final Average Salary	$ 3,309.44	$ 3,337.66	$ 3,263.54	$ 3,718.37	$ 4,486.34	$ 3,699.86
Number of Retirees	483	306	311	477	542	2,119
2015						
Average Monthly Benefit	$ 750.98	$ 1,224.00	$ 1,620.88	$ 2,068.82	$ 3,074.69	$ 1,837.97
Average Final Average Salary	$ 3,269.25	$ 3,443.88	$ 3,547.63	$ 3,750.99	$ 4,536.68	$ 3,760.27
Number of Retirees	524	316	341	623	561	2,365
2016						
Average Monthly Benefit	$ 759.54	$ 1,224.52	$ 1,760.28	$ 2,171.75	$ 2,996.81	$ 1,783.98
Average Final Average Salary	$ 3,189.20	$ 3,376.84	$ 3,657.08	$ 3,935.01	$ 4,618.83	$ 3,764.34
Number of Retirees	559	340	330	530	466	2,225
2017						
Average Monthly Benefit	$ 796.76	$ 1,204.27	$ 1,786.30	$ 2,109.53	$ 2,870.19	$ 1,732.36
Average Final Average Salary	$ 3,479.90	$ 3,405.67	$ 3,850.73	$ 3,813.78	$ 4,595.25	$ 3,829.66
Number of Retirees	551	395	359	453	470	2,228
2018						
Average Monthly Benefit	$ 794.94	$ 1,318.26	$ 1,679.64	$ 2,302.80	$ 2,879.55	$ 1,791.49
Average Final Average Salary	$ 3,505.83	$ 3,674.56	$ 3,707.56	$ 4,154.11	$ 4,638.01	$ 3,950.06
Number of Retirees	570	389	306	525	476	2,266
2019						
Average Monthly Benefit	$ 806.32	$ 1,332.96	$ 1,888.94	$ 2,269.75	$ 3,089.58	$ 1,852.26
Average Final Average Salary	$ 3,624.77	$ 3,867.03	$ 4,173.06	$ 4,178.96	$ 4,954.06	$ 4,153.40
Number of Retirees	624	436	335	461	545	2,401

(continued)

Average Monthly Benefit Payment for New Retirees - PSERS

	Years of Credited Service					
	10-15	16-20	21-25	26-30	Over 30	Total
2010						
Average Monthly Benefit	$ 157.66	$ 224.92	$ 300.93	$ 359.24	$ 464.07	$ 243.41
Number of Retirees	448	200	162	76	105	1,001
2011						
Average Monthly Benefit	$ 158.67	$ 227.68	$ 297.01	$ 374.01	$ 479.42	$ 245.04
Number of Retirees	463	200	126	79	114	982
2012						
Average Monthly Benefit	$ 159.25	$ 236.46	$ 303.66	$ 362.36	$ 476.51	$ 238.59
Number of Retirees	480	182	136	74	87	958
2013						
Average Monthly Benefit	$ 159.34	$ 232.10	$ 300.66	$ 360.75	$ 478.49	$ 245.72
Number of Retirees	580	255	175	113	133	1,256
2014						
Average Monthly Benefit	$ 154.20	$ 227.41	$ 297.58	$ 345.98	$ 437.20	$ 233.71
Number of Retirees	603	268	147	121	131	1,270
2015						
Average Monthly Benefit	$ 155.20	$ 225.02	$ 290.82	$ 360.11	$ 471.12	$ 233.25
Number of Retirees	568	254	166	105	99	1,192
2016						
Average Monthly Benefit	$ 160.28	$ 232.09	$ 298.45	$ 358.11	$ 489.48	$ 242.18
Number of Retirees	529	273	454	103	103	1,162
2017						
Average Monthly Benefit	$ 153.93	$ 226.90	$ 286.35	$ 348.16	$ 437.62	$ 228.12
Number of Retirees	515	230	126	78	104	1,053
2018						
Average Monthly Benefit	$ 156.77	$ 228.48	$ 293.26	$ 363.46	$ 480.15	$ 238.68
Number of Retirees	508	241	148	91	102	1,090
2019						
Average Monthly Benefit	$ 162.22	$ 225.88	$ 301.08	$ 366.63	$ 485.44	$ 245.95
Number of Retirees	486	266	162	109	100	1,123

Note: PSERS is not a final average pay plan.

(continued)

Average Monthly Benefit Payment for New Retirees - GJRS

	Years of Credited Service					
	10-15	16-20	21-25	26-30	Over 30	Total
2010						
Average Monthly Benefit	$ 6,337.43	$ 4,563.90	$ 7,643.86	$ 6,422.80	$ —	$ 6,242.00
Average Final Average Salary	$ 10,490.01	$ 7,018.08	$ 10,490.01	$ 8,602.74	$ —	$ 9,150.21
Number of Retirees	1	5	2	4	—	12
2011						
Average Monthly Benefit	$ 4,632.24	$ 10,170.24	$ 9,799.81	$ 8,428.40	$ —	$ 7,614.02
Average Final Average Salary	$ 9,211.23	$ 14,910.13	$ 13,052.66	$ 11,264.63	$ —	$ 11,505.85
Number of Retirees	4	2	2	3	—	11
2012						
Average Monthly Benefit	$ 4,204.95	$ 6,610.26	$ 7,565.84	$ 8,791.96	$ 7,831.84	$ 6,915.64
Average Final Average Salary	$ 7,788.39	$ 9,887.17	$ 10,361.29	$ 11,714.95	$ 10,490.01	$ 10,035.77
Number of Retirees	5	4	4	7	1	20
2013						
Average Monthly Benefit	$ 5,179.20	$ 5,844.29	$ 6,170.52	$ 7,954.14	$ 6,169.77	$ 6,132.24
Average Final Average Salary	$ 9,271.48	$ 8,344.35	$ 8,370.72	$ 10,624.52	$ 8,864.27	$ 9,010.27
Number of Retirees	8	7	7	5	7	34
2014						
Average Monthly Benefit	$ 2,989.92	$ 4,468.12	$ 6,496.50	$ —	$ 2,703.82	$ 4,470.15
Average Final Average Salary	$ 6,265.39	$ 7,772.95	$ 8,998.48	$ —	$ 4,289.57	$ 7,166.46
Number of Retirees	6	2	7	—	3	18
2015						
Average Monthly Benefit	$ 4,010.30	$ 6,317.44	$ 7,051.15	$ 7,589.28	$ 2,406.28	$ 6,267.69
Average Final Average Salary	$ 6,937.39	$ 9,141.51	$ 9,751.01	$ 10,165.12	$ 3,222.98	$ 8,905.45
Number of Retirees	2	5	7	2	1	17
2016						
Average Monthly Benefit	$ —	$ 6,534.36	$ 8,121.58	$ —	$ 8,635.31	$ 7,120.51
Average Final Average Salary	$ —	$ 9,655.37	$ 11,204.04	$ —	$ 11,566.18	$ 10,211.83
Number of Retirees	—	6	2	—	1	9
2017						
Average Monthly Benefit	$ 4,519.89	$ 6,690.09	$ 8,737.31	$ 5,895.46	$ 8,026.56	$ 6,964.60
Average Final Average Salary	$ 9,049.84	$ 9,833.21	$ 12,013.62	$ 7,896.41	$ 10,750.81	$ 10,232.13
Number of Retirees	10	18	13	4	10	55
2018						
Average Monthly Benefit	$ 6,056.07	$ 7,565.45	$ 7,700.44	$ 7,979.26	$ —	$ 7,403.36
Average Final Average Salary	$ 11,385.55	$ 11,096.74	$ 10,618.33	$ 10,687.46	$ —	$ 10,902.57
Number of Retirees	3	5	7	2	—	17
2019						
Average Monthly Benefit	$ 4,646.94	$ 6,293.69	$ 8,486.61	$ 7,795.06	$ 8,348.20	$ 6,878.64
Average Final Average Salary	$ 8,909.34	$ 9,278.67	$ 11,566.18	$ 11,014.40	$ 11,181.62	$ 10,204.03
Number of Retirees	9	10	7	8	5	39

(continued)

Average Monthly Benefit Payment for New Retirees - LRS

	Years of Credited Service					
	8-14	15-19	20-24	25-29	Over 29	Total
2010						
Average Monthly Benefit	$ 372.93	$ 558.00	$ —	$ —	$ —	$ 465.47
Number of Retirees	8	1	—	—	—	9
2011						
Average Monthly Benefit	$ 341.79	$ 589.12	$ —	$ 843.26	$ 934.73	$ 456.99
Number of Retirees	12	1	—	2	1	16
2012						
Average Monthly Benefit	$ 363.66	$ 549.08	$ —	$ —	$ 1,286.43	$ 548.46
Number of Retirees	4	2	—	—	1	7
2013						
Average Monthly Benefit	$ 308.15	$ 568.93	$ 670.94	$ —	$ 1,166.93	$ 497.03
Number of Retirees	14	4	2	—	3	23
2014						
Average Monthly Benefit	$ 289.25	$ 480.21	$ —	$ —	$ —	$ 336.99
Number of Retirees	3	1	—	—	—	4
2015						
Average Monthly Benefit	$ 341.03	$ 382.95	$ 642.84	$ —	$ 1,228.50	$ 588.51
Number of Retirees	5	1	3	—	2	11
2016						
Average Monthly Benefit	$ 322.51	$ 524.09	$ —	$ —	$ —	$ 380.11
Number of Retirees	5	2	—	—	—	7
2017						
Average Monthly Benefit	$ 362.52	$ 557.02	$ 740.79	$ —	$ —	$ 484.34
Number of Retirees	6	3	2	—	—	11
2018						
Average Monthly Benefit	$ 323.56	$ 476.35	$ 719.16	$ —	$ —	$ 418.44
Number of Retirees	5	3	1	—	—	9
2019						
Average Monthly Benefit	$ 358.24	$ 493.00	$ 658.44	$ 793.55	$ —	$ 503.28
Number of Retirees	6	2	2	2	—	12

Note: LRS is not a final average pay plan.

(continued)

Average Monthly Benefit Payment for New Retirees - GMPF

	Years of Credited Service			
	20-25	26-30	Over 30	Total
2010				
Average Monthly Benefit	$ 63.82	$ 85.83	$ 100.00	$ 90.44
Number of Retirees	17	18	56	91
2011				
Average Monthly Benefit	$ 63.16	$ 91.47	$ 100.00	$ 90.40
Number of Retirees	19	17	52	88
2012				
Average Monthly Benefit	$ 61.54	$ 90.33	$ 100.00	$ 92.83
Number of Retirees	13	15	63	90
2013				
Average Monthly Benefit	$ 59.44	$ 89.55	$ 100.00	$ 88.29
Number of Retirees	18	22	42	82
2014				
Average Monthly Benefit	$ 61.11	$ 90.53	$ 100.00	$ 91.02
Number of Retirees	9	19	31	59
2015				
Average Monthly Benefit	$ 62.07	$ 94.10	$ 100.00	$ 86.99
Number of Retirees	15	16	20	51
2016				
Average Monthly Benefit	$ 66.30	$ 89.29	$ 100.00	$ 85.07
Number of Retirees	27	14	30	71
2017				
Average Monthly Benefit	$ 65.00	$ 89.05	$ 100.00	$ 91.09
Number of Retirees	11	21	37	69
2018				
Average Monthly Benefit	$ 61.00	$ 87.39	$ 100.00	$ 91.17
Number of Retirees	10	23	44	77
2019				
Average Monthly Benefit	$ 67.14	$ 91.11	$ 100.00	$ 87.38
Number of Retirees	21	36	23	80

Note: GMPF is not a final average pay plan.

(continued)

Retired Members by Retirement Type

ERS
June 30, 2019

Amount of Monthly Benefit	Retirement Type		
	Service	Disability	Survivor
$ 1 - 500	3,742	267	543
501 - 1,000	8,524	1,046	417
1,001 - 1,500	7,022	1,162	281
1,501 - 2,000	5,413	970	191
2,001 - 2,500	4,271	790	128
2,501 - 3,000	3,371	608	85
3,001 - 3,500	2,620	447	58
3,501 - 4,000	2,157	332	46
4,001 - 4,500	1,680	237	26
4,501 - 5,000	1,499	176	17
5,001 - 5,500	1,172	127	8
5,501 - 6,000	790	71	9
over 6,000	1,861	100	11
Totals	44,122	6,333	1,820

PSERS
June 30, 2019

Amount of Monthly Benefit	Retirement Type		
	Service	Disability	Survivor
$ 1 - 100	84	6	232
101 - 200	6,108	34	185
201 - 300	5,239	260	51
301 - 400	2,808	382	12
401 - 500	1,719	273	5
over 500	1,384	207	1
Totals	17,342	1,162	486

(continued)

Retired Members by Retirement Type

GJRS
June 30, 2019

Amount of Monthly Benefit	Retirement Type		
	Service	Disability	Survivor
$ 1 - 1,000	19	—	2
1,001 - 2,000	19	—	8
2,001 - 3,000	27	—	5
3,001 - 4,000	39	—	2
4,001 - 5,000	26	2	2
5,001 -,6,000	16	—	—
6,001 - 7,000	38	—	—
7,001 - 8,000	71	—	—
over 8,000	124	—	—
Totals	379	2	19

LRS
June 30, 2019

Amount of Monthly Benefit	Retirement Type		
	Service	Disability	Survivor
$ 1 - 250	20	—	—
251 - 500	121	—	11
501 - 750	66	—	3
751 - 1,000	25	—	4
over 1,000	17	—	2
Totals	249	—	20

GMPF
June 30, 2019

Amount of Monthly Benefit	Retirement Type
	Service
$ 1 - 49	—
50 - 100	1,148
over 100	—
Totals	1,148

Retired Members by Optional Form of Benefit

ERS

June 30, 2019

Amount of Monthly Benefit	Form of Benefit						
	Maximum Plan	Option 1	Option 2	Option 3	Option 4	Option 5A	Option 5B
$ 1 - 500	1,332	416	1,260	412	905	165	62
501 - 1,000	4,225	1,234	1,961	661	1,281	417	208
1,001 - 1,500	3,443	1,123	1,452	646	1,077	475	249
1,501 - 2,000	2,697	1,001	961	567	716	332	300
2,001 - 2,500	2,093	738	657	486	603	335	277
2,501 - 3,000	1,618	554	485	345	648	197	217
3,001 - 3,500	1,126	399	333	311	622	164	170
3,501 - 4,000	865	269	270	213	649	127	142
4,001 - 4,500	613	194	174	173	612	56	121
4,501 - 5,000	487	119	136	176	626	61	87
5,001 - 5,500	321	111	94	112	576	44	49
5,501 - 6,000	204	46	62	114	368	27	49
over 6,000	422	115	158	217	944	40	76
Totals	19,446	6,319	8,003	4,433	9,627	2,440	2,007

Maximum Plan Single life annuity

Option 1 Reduced single life annuity with a guarantee of the remainder of the annuity savings fund account (contributions and interest), if any, to be paid upon the retiree's death

Option 2 100% joint and survivor annuity with a popup option upon divorce

Option 3 50% joint and survivor annuity with a popup option upon divorce

Option 4 Various options, including a specified monthly amount payable to a beneficiary upon the retiree's death, several period certain annuities of varying length, and a five-year accelerated benefit

Option 5A 100% joint and survivor annuity with a popup option upon divorce or the death of the beneficiary before the retiree

Option 5B 50% joint and survivor annuity with a popup option upon divorce or the death of the beneficiary before the retiree

(continued)

Retired Members by Optional Form of Benefit

PSERS
June 30, 2019

Amount of Monthly Benefit	Form of Benefit					
	Maximum Plan	Option AA	Option AB	Option AC	Option AD	Option B
$ 1 - 100	—	40	249	7	19	7
101 - 200	4,246	1,172	387	8	139	375
201 - 300	4,472	582	204	6	68	218
301 - 400	2,648	335	88	6	28	97
401 - 500	1,762	136	43	4	8	44
over 500	1,468	67	29	5	1	22
Totals	14,596	2,332	1,000	36	263	763

Maximum Plan Single life annuity

Option AA 100% joint and survivor annuity

Option AB 50% joint and survivor annuity

Option AC Joint and survivor annuity with a specified monthly amount payable to a beneficiary

Option AD Joint and survivor annuity with the amount payable to a beneficiary limited by the age difference between the retiree and the beneficiary

Option B Annuity for a guaranteed period of time (5, 10, 15, or 20 years). If retiree outlives guarantee period, there is no benefit due after retiree's death

(continued)

Retired Members by Optional Form of Benefit

GJRS

June 30, 2019

Amount of Monthly Benefit	Form of Benefit							
	Maximum Plan	Spousal Coverage	Option 1	Option 2	Option 3	Option 4A	Option 4B	Option 4C
$ 1 - 1000	1	20	—	—	—	—	—	—
1,001 - 2,000	3	24	—	—	—	—	—	—
2,001 - 3,000	4	28	—	—	—	—	—	—
3,001 - 4,000	3	38	—	—	—	—	—	—
4,001 - 5,000	5	25	—	—	—	—	—	—
5,001 - 6,000	7	8	1	—	—	—	—	—
6,001 - 7,000	8	30	—	—	—	—	—	—
7,000 - 8,000	23	48	—	—	—	—	—	—
over 8,000	24	100	—	—	—	—	—	—
Totals	78	321	1	—	—	—	—	—

Maximum Plan Single life annuity

Spousal Coverage* Indicates the member paid additional contributions to provide a 50% joint and survivor annuity at retirement

Option 1** 100% joint and survivor annuity

Option 2** 66 ⅔% joint and survivor annuity

Option 3** 50% joint and survivor annuity

Option 4A** 100% joint and survivor annuity with a popup option upon death of beneficiary before the retiree

Option 4B** 66 ⅔% joint and survivor annuity with a popup option upon death of beneficiary before the retiree

Option 4C** 50% joint and survivor annuity with a popup option upon death of beneficiary before the retiree

*Only available if membership start date prior to July 1, 2012
**Only available if membership start date on or after July 1, 2012

(continued)

Retired Members by Optional Form of Benefit

LRS
June 30, 2019

Amount of Monthly Benefit	Form of Benefit		
	Maximum Plan	Option B1	Option B2
$ 1 - 250	—	16	4
251 - 500	46	75	11
501 - 750	38	21	10
751 - 1,000	7	19	3
over 1,000	7	9	3
Totals	98	140	31

Maximum Plan Single life annuity

Option B1 100% joint and survivor annuity

Option B2 50% joint and survivor annuity

GMPF and SEAD - OPEB
June 30, 2019

The GMPF Plan provides a benefit only in one form, a life annuity. All 1,148 current retirees, therefore, have this same form of benefit. The SEAD-OPEB plan provides only a lump sum death benefit to a member's beneficiary(ies).

Top Participatory Employers FY10

	Member Count	% of Total Plan
ERS		
Department of Corrections	12,527	18.2%
Department of Behavioral Health and Developmental Disability	6,869	10.0
Department of Transportation	4,846	7.1
Department of Labor	3,867	5.7
Department of Juvenile Justice	3,679	5.4
Department of Natural Resources	2,079	3.0
Department of Human Services	1,942	2.8
Department of Driver Services	1,674	2.4
Department of Community Health	1,351	2.0
Department of Revenue	1,154	1.7
Total Top Employers	39,988	58.3
Total ERS Member Count	68,567	
PSERS		
Gwinnett County Schools	3,931	9.8
Cobb County Schools	2,471	6.2
Dekalb County Schools	2,234	5.6
Clayton County Schools	1,382	3.4
Muscogee County Schools	970	2.4
Henry County Schools	909	2.3
Cherokee County Schools	902	2.3
Forsyth County Schools	894	2.2
Richmond County Schools	877	2.2
Paulding County Schools	715	1.8
Total Top Employers	15,285	38.2
Total PSERS Member Count	39,962	
GJRS		
Council of Superior Court Judges	203	41.0
Council of State Court Judges	108	21.8
Prosecuting Attorney's Council	96	19.4
Council of Juvenile Judges	71	14.4
Total Top Employers	478	96.6
Total GJRS Member Count	495	

FY10 data is the first available.

Data for SEAD-OPEB is not available.

Top Participatory Employers FY19

	Member Count	% of Total Plan
ERS		
Department of Corrections	9,072	15.32%
Department of Behavioral Health and Developmental Disability	4,093	6.91
Department of Transportation	3,956	6.68
Department of Human Services	3,502	5.91
Department of Juvenile Justice	3,118	5.27
Department of Community Supervision	1,979	3.34
Department of Public Safety	1,871	3.16
Department of Natural Resources	1,743	2.95
Department of Labor	999	1.69
Department of Revenue	975	1.65
Total Top Employers	31,308	52.88
Total ERS Member Count	59,207	
PSERS		
Gwinnett County Schools	3,503	10.08
Cobb County Schools	2,266	6.52
Dekalb County Schools	2,158	6.21
Clayton County Schools	1,201	3.45
Forsyth County Schools	978	2.81
Chatham County Schools	930	2.67
Houston County Schools	774	2.23
Muscogee County Schools	737	2.12
Richmond County Schools	732	2.10
Cherokee County Schools	709	2.04
Total Top Employers	13,988	40.23
Total PSERS Member Count	34,768	
GJRS		
Council of Superior Court Judges	210	40.31
Council of State Court Judges	127	24.37
Council of Juvenile Judges	73	14.01
Solicitor General	56	10.75
Total Top Employers	466	89.44
Total GJRS Member Count	521	
SEAD - OPEB		
Department of Corrections	3,324	14.22
Department of Transportation	2,087	8.93
Department of Human Services	1,488	6.37
Department of Behavioral Health and Developmental Disability	1,207	5.17
Department of Juvenile Justice	932	3.99
Department of Natural Resources	881	3.77
Department of Community Supervision	829	3.55
Department of Public Safety	776	3.32
Department of Labor	584	2.50
Department of Community Health	388	1.66
Total Top Employers	12,496	53.48
Total Active Member Count	23,368	

Schedule of Revenue and Expenses - State Employees' Assurance Department Active Members Fund

Year ended June 30, 2019
(In thousands)

		2019	2018	2017
Operating revenue:				
Insurance premiums	$	531	540	599
Total operating revenue		531	540	599
Operating expenses:				
Death benefits		3,424	2,972	4,019
Administrative expenses		80	76	64
Total operating expenses		3,504	3,048	4,083
Total operating loss		(2,973)	(2,508)	(3,484)
Nonoperating revenues (expenses):				
Allocation of investment income from pooled investment fund		19,708	24,493	29,847
Investment expenses		(65)	(64)	(62)
Total nonoperating revenues		19,643	24,429	29,785
Change in net position		16,670	21,921	26,301
Total net position:				
Beginning of year		289,207	267,286	240,985
End of year	$	305,877	289,207	267,286

In fiscal year 2017, the System adopted the provisions of GASB Statement No. 74 and revised its accounting methodology with regard to the presentation of SEAD-Active, and began reporting it as a proprietary fund. In previous years it was reported as a fiduciary fund. Additional years will be displayed as they become available.

Schedule of Membership -
State Employees' Assurance Department Active Members Fund

Fiscal Year	Covered Lives
2010	62,305
2011	55,412
2012	49,212
2013	43,127
2014	38,711
2015	35,142
2016	31,869
2017	28,873
2018	26,032
2019	23,368

Statistical Data at June 30, 2019

System	Net Position	Employer and Nonemployer Contributions	Employee Contributions	Active Members	Inactives	Retirees	Annual Payment	Average Monthly Benefit
ERS	$13.6 billion	Old Plan: 19.91% New Plan: 24.66% GSEPS 21.66% ($649.2 million)	Old Plan: 6% (with 4.75% pickup) New Plan: 1.25% GSEPS: 1.25% ($36.3 million)	Old Plan: (0.07%) 39 New Plan: (39.15% 23,180) GSEPS: (60,78%) 35,988 Total: 59,207	60,574	Total: 52,275 Service: 40,271 Beneficiary: 5,926 Disability: 5,478 Inv. Sep.: 446 Law. Enf.: 154	$1.4 billion	$2,222
PSERS	$941.6 million	$30.3 million	$36 yr prior July 1, 2012 $90 yr after July 1, 2012 ($2.3 million)	34,768	49,213	18,990	$63.6 million	$282
GJRS	$479.4 million	7.83% ($5.3 million)	7.5% +2.5% Spousal ($5.5 million)	521	64	400	$27.5 million	$5,884
LRS	$34.5 million	0% (None)	8.5% (with 4.75% pickup) ($339 thousand)	221	180	269	$1.9 million	$532
GDCP	$125.7 million	None	7.5% ($14.6 million)	13,025	112,934	2	$9.7 thousand	$4,866
SCJRF	$6 thousand	$626 thousand	None	None	None	7	$626 thousand	$4,551
DARF	$2 thousand	$37 thousand	None	None	None	3	$37 thousand	$953
SEAD	$1.2 billion	$5 thousand	New Plan: 0.25% Old Plan: 0.50% ($3.3 million)	No. Insured: 23,368	1,018	No. Insured: 43,596	No. of Claims: 1,113 Amt. Pd: $40.5 mil	Average Claim: $36,430
GMPF	$26.4 million	$2.5 million	None	13,715	None	1,148	$1.2 million	$91