

Teacher
Retirement
System of
Texas

CAFER

2019
COMPREHENSIVE
ANNUAL
FINANCIAL
REPORT

A VISION

AS BIG

AS TEXAS

A Component Unit of
the State of Texas

Fiscal Year Ended
August 31, 2019

OUR MISSION

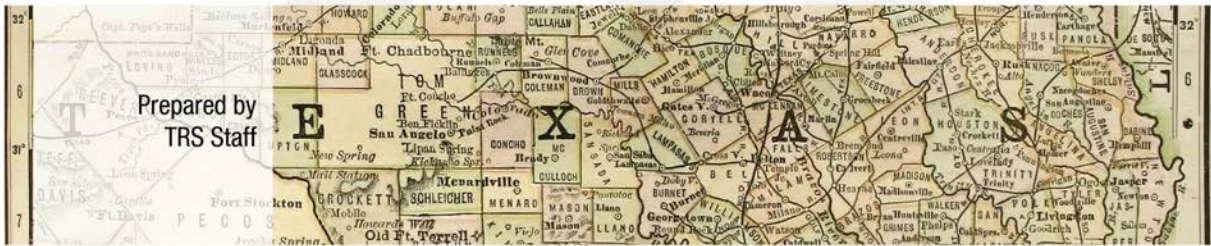



**IMPROVING THE
RETIREMENT
SECURITY OF
OUR MEMBERS
BY PRUDENTLY
INVESTING AND
MANAGING THE
TRUST ASSETS
AND DELIVERING
BENEFITS THAT
MAKE A **POSITIVE
DIFFERENCE** IN
THEIR LIVES.**




As a part of this year's Comprehensive Annual Financial Report — *A Vision as Big as Texas* — we're proud to shine the spotlight on the diverse landscapes of our great state, and to highlight how we serve our membership from the gulf coast to the high plains and all points in-between.

TEACHER RETIREMENT SYSTEM OF TEXAS



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CAFR 2019
INTRODUCTORY SECTION



The gem of our state, Central Texas is blessed with green rolling hills and abundant lakes. Some of the major metropolitan areas in Central Texas include Austin, Seguin, San Antonio, and Waco.



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Jarvis V. Hollingsworth, Chair
General Counsel
Kayne Anderson Capital Advisors, L.P.
Missouri City
Direct appointment of the governor
Term expires 2023



Dr. Greg Gibson
Superintendent
Schertz-Cibolo-Universal City ISD
Schertz
Active public education position
Term expires 2021



Dolores Ramirez, Vice Chair
Teacher
San Benito CISD
San Benito
Active public education position
Term expires 2019



Christopher Moss
President
Allendale, Inc.
DBA The Advanced Financial Group
Lufkin
Position nominated by the State Board
of Education
Term expires 2021



Joe Colonna
Private Investor
Dallas
Direct appointment of the governor
Term expires 2019



James Dick Nance
Former Texas Public School Teacher
Member of Texas Athletic Directors
Association
Hallettsville
Retiree position
Term expires 2023



David Corpus
Bank Office President
Allegiance Bank
Humble
Position nominated by the State Board
of Education
Term expires 2019



Nanette Sissney
Counselor and Former Teacher
Whitesboro Independent School District
Whitesboro
At-Large position
Term expires 2023



John Elliott
Partner
Elliott Stratmann, PLLC
Austin
Direct appointment of the governor
Term expires 2021

In October 2019, Gov. Abbott reappointed David Corpus of Humble for a term ending Aug. 31, 2025. He also appointed two new trustees to six-year terms ending Aug. 31, 2025 – Michael Ball of Argyle (replacing Dolores Ramirez) and Robert "Rob" H. Walls, Jr. of San Antonio (replacing Joe Colonna).

For information on the board election process, please refer to Note 1 in the Financial Section.



Government Finance Officers Association

**Certificate of
Achievement
for Excellence
in Financial
Reporting**

Presented to

Teacher Retirement System of Texas

For its Comprehensive Annual
Financial Report
for the Fiscal Year Ended

August 31, 2018

Christopher P. Morill

Executive Director/CEO



Public Pension Coordinating Council

***Recognition Award for Administration
2018***

Presented to

Teacher Retirement System of Texas

In recognition of meeting professional standards for
plan administration 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)

A handwritten signature in cursive script that reads "Alan H. Winkle".

Alan H. Winkle
Program Administrator



www.trs.state.tx.us

800.223.8778

512.542.6400

Brian K. Guthrie

Executive Director

1000 Red River Street
Austin, Texas 78701-2698

November 20, 2019

Honorable Greg Abbott, Governor
Honorable Glenn Hegar, Texas Comptroller
Sarah Keyton, Legislative Budget Board
John McGeady, Legislative Budget Board
Lisa Collier, First Assistant State Auditor
The Board of Trustees and Members of the Teacher Retirement System

Ladies and Gentlemen,

On behalf of the board of trustees, I am pleased to present the Comprehensive Annual Financial Report (CAFR) of the Teacher Retirement System of Texas (TRS or System) for the fiscal year ended August 31, 2019, the System's 82nd year of operation. During the past fiscal year, the System experienced modest growth as membership grew by 37,727, ending the year with 1,629,682 participants. The Pension Trust Fund saw positive returns in the past year, ending the 2019 fiscal year with a net position of \$158.0 billion compared to \$154.6 billion at the close of the 2018 fiscal year. TRS investment earnings, combined with contribution increases and benefit changes approved by the 85th Texas Legislature, are continuing to enable TRS to provide secure benefits for current and future retirees.

The State Auditor's Office performed an audit, in accordance with generally accepted auditing standards, of the System's financial statements. The opinion letter is presented in this report preceding the financial statements.

Management Responsibility

This report consists of management's representations concerning TRS finances. Management assumes full responsibility for the completeness and reliability of all information presented in this report. To provide a reasonable basis for making these representations, management maintains a comprehensive internal control framework designed to protect assets from loss, theft, or misuse and to compile sufficient, reliable information for the preparation of TRS' financial statements in conformity with Generally Accepted Accounting Principles (GAAP). The objective of the internal control framework is to provide reasonable rather than absolute assurance that the financial statements will be free from material misstatement since the cost of controls should not exceed the benefits to be derived. To the best of our knowledge and belief, management asserts this financial report is complete and reliable in all material respects.

Certificate of Achievement for Excellence in Financial Reporting

The Government Finance Officers Association of the United States and Canada (GFOA) awarded TRS the Certificate of Achievement for Excellence in Financial Reporting for its CAFR for the previous fiscal year. To be awarded the certificate, a report must meet or exceed program standards and must satisfy both GAAP and applicable legal requirements. TRS has received a Certificate of Achievement for each of the last 29 years. We believe that the current report continues to meet program requirements and will be submitted to the GFOA for consideration again this year.

Financial Information

The Basic Financial Statements have been prepared in accordance with GAAP applied on a consistent basis as promulgated by the Governmental Accounting Standards Board (GASB). The Management's Discussion and Analysis (MD&A) includes a narrative introduction, overview, and analysis to accompany the financial statements. The transmittal letter is designed to complement the MD&A and should be read in conjunction with it. The MD&A can be found immediately following the Independent Auditor's Report.

Investments

For the twelve-month period ending August 31, 2019, the total portfolio delivered investment returns of 5.2 percent, which is 0.4 percent below the Fund's benchmark. On a three-year annualized basis, the Pension Trust Fund (Fund) has returned 8.6 percent, which is 0.6 percent above its benchmark. As a result, the total investment value of the Fund as of August 31 was \$157.4 billion, or \$3.3 billion more than this time last year, after contributions and benefit payouts. Annual rates of return for the five and ten-year periods ending August 31, 2019, were 6.5 percent and 9.2 percent, respectively.

Investment risks are diversified over a very broad range of market sectors and securities. TRS' investment strategy is designed to minimize downside risk while capturing upside performance, and it reduces portfolio risk from adverse developments in sectors and issuers experiencing unusual difficulties and offers opportunity to benefit from future markets.

Pension Plan Benefits

For fiscal year 2019, TRS made pension benefit payments totaling \$11.4 billion to more than 434,000 retirees and their beneficiaries. These benefits were funded from a combination of cumulative investment income, member contributions, and state and employer contributions.

Actuarial Soundness of the Pension Trust Fund

As of August 31, 2019, the System had a funded ratio of 76.4 percent with an Unfunded Actuarial Accrued Liability (UAAL) of \$49.5 billion. The UAAL increased from \$46.2 billion at August 31, 2018 primarily due to interest on the UAAL being greater than the contributions towards the UAAL and the impact of salary increases provided by the 2019 Legislature. Interest on the UAAL represents \$1.5 billion of the change, and the salary increases represent \$1.4 billion of the change.

The System earned a dollar weighted rate of return of 5.0 percent on market value, compared to an assumed rate of return of 7.25 percent. This investment shortfall offset deferred investment gains from the prior investment year, resulting in a net loss on the actuarial value of assets. As a result, the System is now deferring net investment losses of \$2.3 billion.

The 86th Legislature adopted Senate Bill 12 which increased contribution rates for the State, employers, and the members in a phase-in schedule that will end in Fiscal Year 2025. The State's base rate of 6.80% in Fiscal Year 2019 will increase to 7.50% in Fiscal Year 2020 and phase-in to 8.25% by Fiscal Year 2024. In addition, all public education employers will pay a supplemental contribution that will gradually increase from 1.50% in Fiscal Year 2020 to 2.00% in Fiscal Year 2025. By the end of the phase-in period, these supplemental contributions will equal approximately 1.25% of total payroll. Combined, these contributions are ultimately assumed to approximate 9.50% of total payroll. The member contribution rate will increase from the current 7.70% to 8.00% in Fiscal Year 2022 and ultimately 8.25% in Fiscal Year 2024.

Based on the scheduled contribution rates and current assumptions, it is estimated that the UAAL will increase for approximately a decade before beginning to decline. If payroll grows as expected (3.0% per year), the contributions provided by the increased contribution rate pattern are sufficient to amortize the current UAAL of the System over a period of 29 years.

Retiree Health Benefits Program

TRS administers TRS-Care, a health benefits program for eligible retired public education employees and their eligible dependents that was established in 1985. TRS-Care is the source of health benefits coverage upon which a substantial portion of retired public education employees rely. Funding is provided by premium payments from retiree participants and contributions from the state, public schools, and active public education employees. TRS-Care also receives additional revenue from the Medicare Part D subsidy program.

An actuarial valuation for TRS-Care was conducted as of August 31, 2019. The valuation results indicate that TRS-Care has a Net Other Post-Employment Benefit Liability of \$47.3 billion. The program was 2.7 percent funded as of

the end of the fiscal year 2019. More detailed information about the valuation results is included in the Notes to the Financial Statements and the Required Supplementary Information.

The 85th Legislature, in regular and special sessions, passed legislation that restructured TRS-Care and provided additional funding to address the solvency and affordability of TRS-Care. Beginning in fiscal year 2018, the state contribution to TRS-Care increased from 1.0 percent to 1.25 percent of public school payroll and the district contribution increased from 0.55 percent to 0.75 percent. Active employee contributions remained unchanged at 0.65 percent.

Active Member Health Benefits Program

TRS-ActiveCare, initiated in 2002, is a self-funded health benefits program that offers plan options that range from catastrophic coverage with reduced premiums to a comprehensive plan at higher premiums. TRS-ActiveCare covers active employees currently employed by public education employers that participate in the program, along with the employees' eligible dependents. TRS-ActiveCare is funded by State, employer, and active employee contributions. Each Plan year, the TRS Board of Trustees has made plan changes and increased premiums to sustain the program. For the 2019 plan year, the Board voted to eliminate new access to the highest plan level.

Agency Highlights

The System began utilizing the Centralized Accounting and Payroll/Personnel System or (CAPPS), which replaced TRS' legacy financial and budgeting systems. In July, TRS began using CAPPS HR/Payroll for timekeeping processes and updating payroll and position management functions.

During the year, TRS implemented the Digital Business Transformation (DBT) program. DBT is comprised of many initiatives, all designed to make it easier for employees to work efficiently and securely from anywhere on any device. TRS successfully implemented Microsoft Teams and OneDrive. With TEAMS and OneDrive, users can collaborate, chat, share documents, and access documents.

With the implementation of DBT initiatives, TRS employees are able to work from home more efficiently. The TRS Remote Work program started in 2014 with about 30 employees. Now, the number of employees who work remotely at least one day a week has grown to 300. Among the benefits of remote work are increased productivity, less time spent commuting, reduced employee turnover, and reduced absenteeism.

Acknowledgments

We wish to express our appreciation for the support of the Governor's, Lieutenant Governor's, and Speaker's Offices, as well as members of the legislature, in maintaining a strong retirement system, which provides valuable benefits for public education employees and retirees.

We are grateful for the dedicated service of all of our trustees. Trustee willingness to accept the substantial responsibilities of directing system administration is a great service to the State and to the members served by TRS.

TRS trustees and staff are keenly focused on prudent Pension Trust Fund portfolio management and efficient, service-oriented delivery of valuable retirement and related benefits for public education employees and retirees. We are pleased to report on operational results for the year and to acknowledge the substantial support of state leadership, trustees, members, interested associations, and TRS staff.

Respectfully submitted,



Brian K. Guthrie
Executive Director



Donald C. Green
Chief Financial Officer

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In September 2019, TRS welcomed Kellie Sauls as the Director of Diversity, Equity, and Inclusion.

Executive Administrative Staff

Brian K. Guthrie, *Executive Director*
Andrew Roth, *Chief Operations
and Administration Officer*
Jerry Albright, *Chief Investment Officer*
Carolina de Onís, *General Counsel*
Amanda Jenami, *Chief Audit Executive*
Barbie Pearson, *Chief Benefit Officer*
Don Green, *Chief Financial Officer*
Katrina Daniel, *Chief Health Care Officer*
Chris Cutler, *Chief Information Officer*
Janet L. Bray, *Chief Organizational Excellence Officer*
Rebecca K. Merrill, *Chief Strategy Officer*
Heather Traeger, *Deputy General Counsel
and Chief Compliance Officer*
Ray Spivey, *Special Advisor to the Executive Director*
Carolyn Perez, *Director, Communications*
Merita Zoga, *Director, Governmental Relations*

General Investment Advisors and Consultants

Aon Hewitt Investment Consulting, Inc., Chicago, IL
Keith C. Brown, Ph.D., Austin

Consulting Actuary

Gabriel, Roeder, Smith & Company, Dallas

International Tax Consulting and Compliance Services

Ernst & Young, L.L.P., Austin and London, England

Investment Consultants

Albourne America, L.L.C.,
San Francisco, CA
(Hedge Funds and Private Markets)
BlackRock Investment Management, L.L.C.,
New York, NY (Private Equity Co-investments)
Grosvenor Capital Management, L.P.,
Chicago, IL (Emerging Managers)
KPMG, L.L.P.,
Philadelphia, PA (Tax Services and Investment Advice)
LaSalle Investment Management, Inc.,
Chicago, IL (Real Estate)
Perella Weinberg Partners Capital Management, L.P.,
Houston (Energy and Natural Resources)
The Rock Creek Group, L.P.,
Washington, D.C. (Emerging Managers)
Valuation Research Corporation,
New York, NY (Private Investment Valuation)
W.D. Von Gonten & Co.,
Houston (Oil and Gas)

Audit Services

Texas State Auditor's Office, Austin

Fiduciary Counsel

Reinhart Boerner Van Deuren, S.C.,
Milwaukee, WI*

Medical Board

Dr. Alice Cox, Fredericksburg
Dr. David Rothschild, Austin
Dr. Larry D. Wilson, Austin**

Texas Public School Retired Employees Group Insurance Program Advisory Committee

Nancy Byler, Early
Marcia McNeil, Austin
Grace Mueller, McQueeney
Teresa Koehler, Houston
Dr. Celeste Cardenas, Austin
Dr. H. John Fuller, Mineola
Dr. Bruce Gearing, Austin

Health Care and Actuarial Consultant

Gabriel, Roeder, Smith & Company, Dallas

Master Custodian and Securities Lending Agent

State Street Bank and Trust Company, Boston, MA

Performance Measurement

State Street Bank and Trust Company, Boston, MA

* *Cohen Milstein Sellers & Toll, PLLC was selected to
replace Reinhart Boerner Van Deuren, S.C. in FY 2020*

** *Dr. Brian C. Buck was selected to replace
Dr. Larry D. Wilson in FY 2020*

*For a schedule of fees and commissions, please refer to the
Investment Section, Report on Investment Activities tables
for Investment Manager Fees and Broker Commissions.*

Pension Trust Fund

Membership of the Teacher Retirement System of Texas includes employees and retirees of state-supported educational institutions in Texas. Participating employers for fiscal year 2019 are disclosed in the following table.

Participating Employers	2019
Public School Districts	1,023
Charter Schools	179
Community and Junior Colleges	50
Senior Colleges and Universities	47
Regional Service Centers	20
Medical Schools	9
Other Education Districts	3
State Agencies	1
Total	1,332

Member Categories	As of August 31,	
	2019	2018
Current Members		
Active Contributing	884,540	872,999
Inactive Non-vested	201,948	193,498
Inactive Vested	108,768	105,000
Total Current Members	1,195,256	1,171,497
Retirement Recipients		
Service	405,236	391,927
Disability	11,994	11,914
Survivor	17,196	16,617
Total Retirement Recipients	434,426	420,458
Total Membership	1,629,682	1,591,955

Population Changes	As of August 31,	
	2019	2018
Active Membership		
New Members	88,953	81,984
Members Withdrawing	(37,806)	(35,497)
Service Retirements	(22,160)	(19,580)
Disability Retirements	(711)	(693)
In-Service Deaths	(1,387)	(1,191)
Other Changes	(3,130)	9,185
Net Increase in Active Membership	23,759	34,208
Retired Membership		
Retirements	22,871	20,273
Deaths After Retirement	(9,433)	(9,042)
Option Continuations	2,939	2,591
Other Changes	(2,409)	(1,132)
Net Increase in Retired Membership	13,968	12,690

Active Member Profile	As of August 31,	
	2019	2018
Average Annual Salary	\$ 49,495	\$ 48,232
Average Age	44.8	44.7
Average Years of Service	10.4	10.4

Annuitant and Beneficiary Profile	As of August 31,	
	2019	2018
Average Monthly Annuities		
Life Annuities	\$ 2,096	\$ 2,078
Disability Annuities	1,200	1,188
Annuities Certain	1,142	1,153
Average Age of Current Retirees	71.4	71.4
Average Age at Retirement		
All Retirees	60.3	60.2
Current Year Retirees	62.2	62.1
Average Years of Service		
All Retirees	24.2	24.2
Current Year Retirees	22.6	22.9
Average Salary at Retirement		
All Retirees	\$ 45,951	\$ 45,246
Current Year Retirees	53,278	53,200
Ratio of Current Members to Retirees	2.8 to 1	2.8 to 1

Texas Public School Retired Employees Group Insurance Program (TRS-Care)

Membership of TRS-Care is eligible to TRS public school retirees. There were 1,224 participating employers during fiscal year 2019.

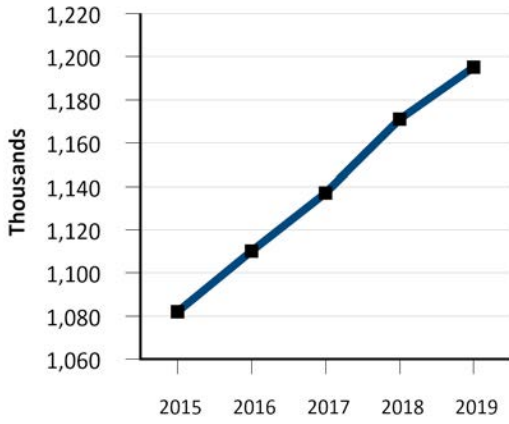
Member Categories	As of August 31,	
	2019	2018
Retirees	181,409	187,960
Surviving Spouses	6,194	6,283
Surviving Children	116	121
Dependent Spouses and Children	37,578	42,201
Total Membership	225,297	236,565

TRS-ActiveCare

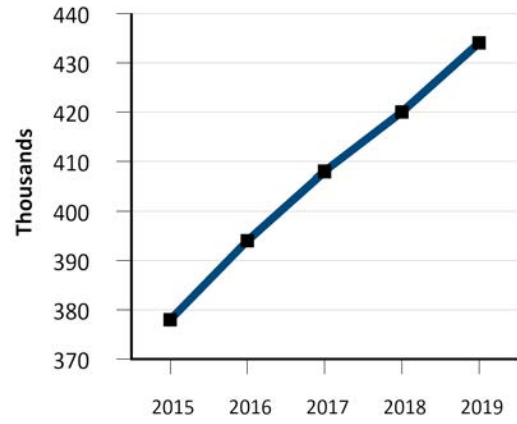
Membership of TRS-ActiveCare includes employees of public school districts, open enrollment charter schools, regional service centers, and other educational districts. There were 1,088 participating employers during fiscal year 2019.

Member Categories	As of August 31,	
	2019	2018
Employees	306,897	308,259
Dependents	168,842	177,638
Total Membership	475,739	485,897

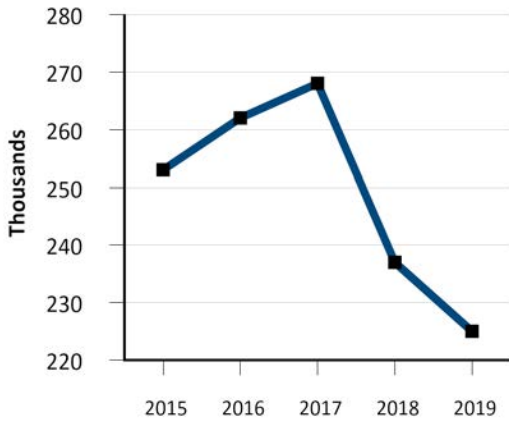
**Pension Trust Fund
Current Members by Year**



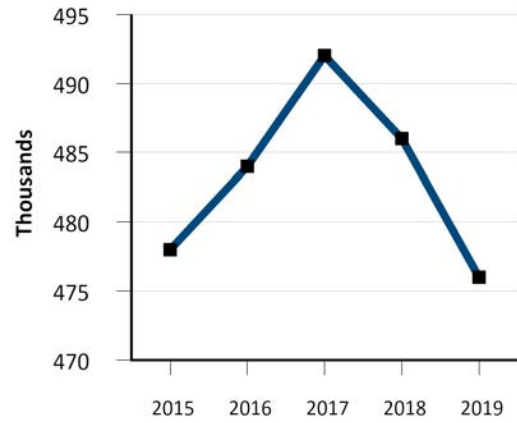
**Pension Trust Fund
Retirement Recipients by Year**



**TRS-Care
Membership by Year**



**TRS-ActiveCare
Membership by Year**



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CAFR 2019

FINANCIAL SECTION

EAST TEXAS/GULF COAST



From the beauty of Caddo Lake and the Piney Woods to the bustling Port of Houston, the East Texas/Gulf Coast Region of Texas has it all. Some of the major metropolitan areas in the East Texas/Gulf Coast Region include Houston, Lufkin, Longview, Baytown, and Galveston.



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Lisa R. Collier,
CPA, CFE, CIDA,
First Assistant State Auditor

Independent Auditor's Report

Teacher Retirement System Board of Trustees

Mr. Jarvis V. Hollingsworth, Chairman
Mr. Michael Ball
Mr. David Corpus
Mr. John Elliott
Dr. Greg Gibson
Mr. Christopher Moss
Mr. James D. Nance
Ms. Nanette Sissney
Mr. Robert Hamilton Walls Jr.

Report on the Financial Statements

We have audited the accompanying financial statements of the major enterprise fund and the aggregate remaining funds information, consisting of the fiduciary funds and the non-major enterprise fund of the Teacher Retirement System (System), a component unit of the State of Texas as of and for the year ended August 31, 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 accounting principles generally accepted in the United States of America; 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.

Auditor's 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 auditor's 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

Robert E. Johnson Building
1501 N. Congress Avenue
Austin, Texas 78701

P.O. Box 12067
Austin, Texas 78711-2067

Phone:
(512) 936-9500

Fax:
(512) 936-9400

Internet:
www.sao.texas.gov

SAO Report No. 20-306

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 major enterprise fund and aggregate remaining funds information, consisting of the fiduciary funds and the non-major enterprise fund of the System, as of August 31, 2019, and the respective changes in financial position and, where applicable, cash flows thereof for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Emphasis of Matters

Teacher Retirement System Financial Statements

As discussed in Note 1, the financial statements of the System are intended to present the financial position, the changes in financial position and, where applicable, cash flows of only that portion of the major enterprise fund and the aggregate remaining funds information of the State that is attributable to the transactions of the System. They do not purport to, and do not, present fairly the financial position of the State of Texas as of August 31, 2019, the changes in its financial position, or where applicable, its cash flows for the year then ended in accordance with accounting principles generally accepted in the United States of America. Our opinion is not modified with respect to this matter.

Investments with Values That Are Not Readily Determined

As discussed in Note 3, the financial statements include investments valued at approximately \$73 billion as of August 31, 2019, whose fair values have been estimated by management in the absence of readily determinable fair values. Our opinion is not modified with respect to this matter.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the Management's Discussion and Analysis, and the Pension Trust Fund and TRS-Care Required Supplementary Schedules, as listed in the Table of Contents 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.

In regard to the Management's Discussion and Analysis, we have applied certain limited procedures 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.

In regard to the Pension Trust Fund and TRS-Care Required Supplementary Schedules, as listed in the Table of Contents the information is the responsibility of management and was derived from and related 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 information in Pension Trust Fund and TRS-Care Required Supplementary Schedules, as listed in the Table of Contents is fairly stated in all material respects in relation to the basic financial statements as a whole.

Other Information

Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise the System's basic financial statements. The information in Exhibit A and Schedules 1 and 2, as listed in the Table of Contents are presented for purposes of additional analysis and are not a required part of the basic financial statements.

The information in Exhibit A and Schedules 1 and 2, as listed in the Table of Contents is the responsibility of management and was 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 information in Exhibit A and Schedules 1 and 2, as listed in the Table of Contents is fairly stated in all material respects in relation to the basic financial statements as a whole.

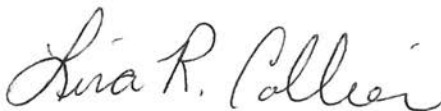
The Introductory, Investment, Actuarial, Statistical, and Benefits sections have not been subjected to the auditing procedures applied in the audit of the basic financial statements, and accordingly, we do not express an opinion or provide any assurance on it.

Report on Summarized Comparative Information

We have previously audited the System's fiscal year 2018 financial statements, and we expressed an unmodified audit opinion on those audited financial statements in our report dated November 20, 2018. In our opinion, the summarized comparative information presented herein as of and for the year ended August 31, 2019, is consistent, in all material respects, with the audited financial statements from which it has been derived.

Other Reporting Required by Government Auditing Standards

In accordance with *Government Auditing Standards*, we will issue a separate report 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.



Lisa R. Collier, CPA, CFE, CIDA
First Assistant State Auditor

November 20, 2019

Management's Discussion and Analysis

We are pleased to provide this overview of the Teacher Retirement System's (TRS or System) financial performance for the fiscal year ended August 31, 2019. The information presented herein should be read in conjunction with other areas within the Financial Section.

Financial Highlights

- The net position of the TRS Pension Trust Fund was \$158.0 billion as of August 31, 2019, an increase of \$3.4 billion from fiscal year 2018.
- The net pension liability was \$52.0 billion, a \$3.0 billion decrease from the August 31, 2018 liability of \$55.0 billion.
- Fiscal year 2019 investment income was \$7.7 billion, a decrease of \$3.6 billion from 2018.
- Pension Plan investments experienced a 5.2 percent annual rate of return for the year ended August 31, 2019, compared to an 8.2 percent annual rate of return for fiscal year 2018.
- The net position of TRS-Care was \$1.3 billion as of August 31, 2019, an increase of \$493.4 million from fiscal year-end 2018.
- TRS-Care's net Other Post-Employment Benefit (OPEB) liability was \$47.3 billion. The liability decreased \$2.6 billion from the prior year.
- TRS-ActiveCare had a net position of \$165.0 million as of August 31, 2019, an increase of \$108.7 million in fiscal year 2019.

Overview of the Financial Statements

This discussion and analysis is intended to serve as an introduction to the TRS financial presentation, which consists of the following components:

- Basic Financial Statements
- Notes to the Financial Statements
- Required Supplementary Information
- Other Supplementary Information

This information presents the net position available for the funds TRS administers as of August 31, 2019 and any changes in net position for the year then ended. The information available in each of these sections is summarized below.

Basic Financial Statements

Basic Financial Statements are presented for the major funds for the fiscal year ended August 31, 2019, along with comparative data for the prior year. Financials presented include the Pension Trust Fund, TRS-Care Fund, TRS-ActiveCare Fund, Agency Fund, and the 403(b) Administrative Program Fund.

Notes to the Financial Statements

The Notes to the Financial Statements provide additional information that is essential to a full understanding of the financial position and are considered an integral part of the financial statements.

Required Supplementary Information

Required Supplementary Information (RSI) consists of the Governmental Accounting Standards Board (GASB) related requirements for the Pension and TRS-Care Funds.

Other Supplementary Information

Other Supplementary Information includes agency fund changes in assets and liabilities, administrative and investing activity expenses, and payments for professional and consulting services.

Growth of the System

As of August 2019, the monthly annuity payroll had grown to \$916.3 million, and TRS was paying benefits to 434,426 recipients. Benefit payments by type of recipient is illustrated in the Total Annual Benefit Payments chart in the financial analysis of the TRS Pension Trust Fund on the following pages.

Pension recipients include retirees and beneficiaries. Disability recipients are disabled members who are receiving disability payments. Survivor recipients are beneficiaries who have elected to receive death benefits in the form of monthly payments. The number of retiree accounts increased by 13,968 during fiscal year 2019.

Of the current TRS member accounts, 884,540 active contributing and deferred retirement option participants were employed during fiscal year 2019 and made contributions to the System. The remaining 310,716 members were no longer employed by TRS covered employers but maintained their membership in TRS by leaving their contributions in the System. The number of current member accounts increased by 23,759 during fiscal year 2019.

Financial Analysis of TRS Funds

Pension Trust Fund

Net position held in trust for benefits at August 31, 2019 was \$158.0 billion, an increase of \$3.4 billion from the \$154.6 billion at August 31, 2018, which includes a prior period adjustment of \$4.3 million to beginning net position.

Fiscal year 2019 investment income was \$7.7 billion, a decrease of \$3.6 billion over 2018. The year was characterized by exceptional returns from US Treasuries as well as the US Dollar, while moderate returns from US Equities outperformed international equities, which contracted amidst moderately slowing global growth expectations and inflation.

Total contributions and other additions increased \$822.1 million, or 12.0 percent, during fiscal year 2019. The increase is due to normal payroll growth and a supplemental appropriation of \$588.8 million from the State of Texas.

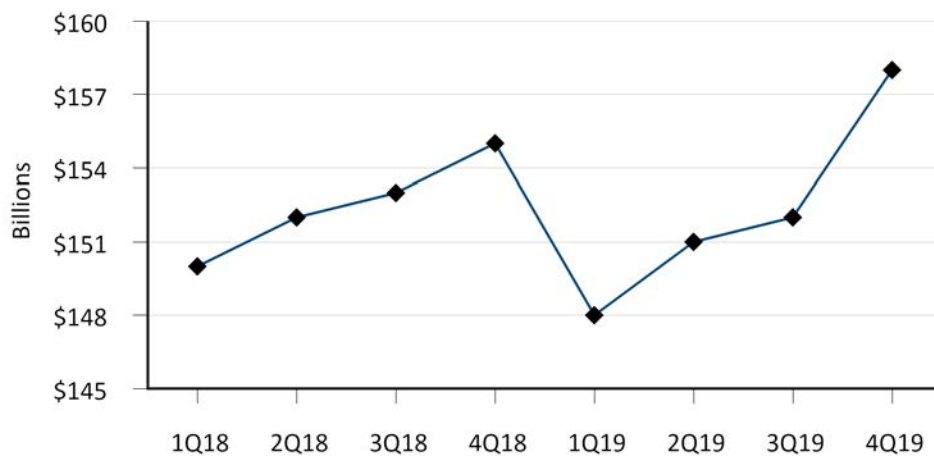
Deductions from net position are primarily retirement pension payments. For fiscal year 2019, benefit

payments totaled \$11.4 billion, an increase of \$1.1 billion. This is in line with the increase in the number of retirees from the previous year, and a supplemental appropriation of \$588.8 million for a one-time benefit payment. For fiscal year 2019, refund of contributions were \$486.5 million, an increase of \$64.1 million over fiscal year 2018, largely due to an increase in member withdrawals.

Administrative expenses, excluding investing activities expenses, on a cost per member basis were \$37.11 for fiscal year 2019 compared to \$40.78 in fiscal year 2018.

Investment cost per member was \$126.66 for fiscal year 2019 as compared to \$133.85 in fiscal year 2018. Investment expense in basis points of net position was 13.58 for fiscal year 2019 and was calculated using average net asset value. Investment expense in basis points for fiscal year 2018 was 14.1.

**Pension Trust Fund
Net Position
Fiscal Years 2018-19**



Statement of Fiduciary Net Position**Pension Trust Fund**

As of August 31

(Dollars in Thousands)

	2019	2018	Dollar Change	Percentage Change
Assets				
Cash and Receivables	\$ 4,014,345	\$ 1,822,151	\$ 2,192,194	120.3 %
Investments	158,881,842	154,699,525	4,182,317	2.7
Invested Securities Lending Collateral	18,832,476	20,335,310	(1,502,834)	(7.4)
Capital Assets	71,496	85,468	(13,972)	(16.3)
Total Assets	\$ 181,800,159	\$ 176,942,454	\$ 4,857,705	2.7 %
Total Deferred Outflow of Resources	\$ 28,118	\$ 2,436	\$ 25,682	1054.3 %
Liabilities				
Benefits Payable	\$ 109,861	\$ 120,465	\$ (10,604)	(8.8)%
Net Other Post-Employment Benefit Liability	85,009	81,850	3,159	3.9
Investments Purchased Payable/Securities Sold Short	3,956,610	1,726,935	2,229,675	129.1
Accounts Payable and Other	686,423	107,990	578,433	535.6
Collateral Obligations	18,821,815	20,320,456	(1,498,641)	(7.4)
Total Liabilities	\$ 23,659,718	\$ 22,357,696	\$ 1,302,023	5.8 %
Total Deferred Inflow of Resources	\$ 190,360	\$ 18,292	\$ 172,068	940.7 %
Total Net Position	\$ 157,978,199	\$ 154,568,902	\$ 3,409,297	2.2 %
Prior Period Adjustment		4,269		
Restated Net Position	\$ 157,978,199	\$ 154,573,171	\$ 3,405,028	2.2 %

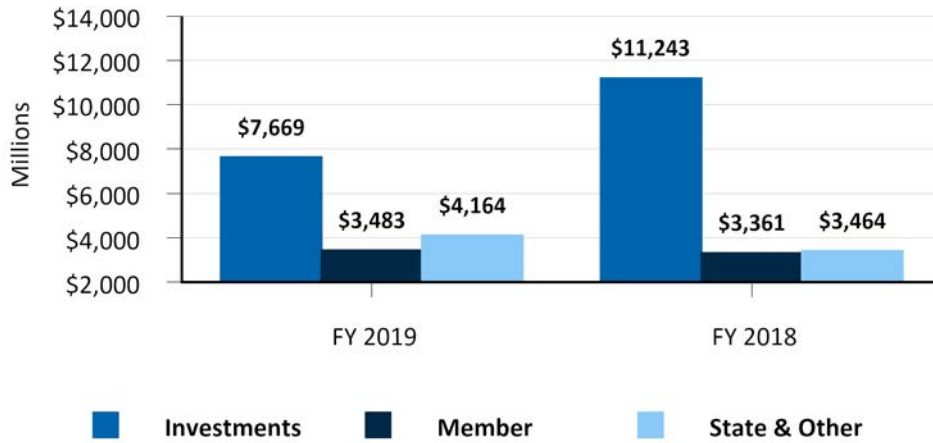
Statement of Changes in Fiduciary Net Position**Pension Trust Fund**

For the Fiscal Years Ended August 31

(Dollars in Thousands)

	2019	2018	Dollar Change	Percentage Change
Additions				
Member Contributions	\$ 3,482,870	\$ 3,360,773	\$ 122,097	3.6 %
Non-Employer Contributing Entity Contributions	1,737,853	1,715,785	22,068	1.3
Employer Contributions	1,761,822	1,671,257	90,565	5.4
Other Revenue	664,666	77,317	587,349	759.7
Investment Income	7,669,029	11,242,814	(3,573,785)	(31.8)
Total Additions	\$ 15,316,240	\$ 18,067,946	\$ (2,751,706)	(15.2)%
Deductions				
Retirement Benefits and Other	\$ 11,359,826	\$ 10,273,780	\$ 1,086,046	10.6 %
Refunds of Contributions	486,461	422,336	64,125	15.2
Other Post-Employment Benefit Expense	4,438	4,380	58	1.3
Administrative Expenses	60,486	64,927	(4,441)	(6.8)
Total Deductions	\$ 11,911,211	\$ 10,765,423	\$ 1,145,788	10.6 %
Change in Net Position	\$ 3,405,029	\$ 7,302,523	\$ (3,897,494)	(53.4)%
Prior Period Adjustment		4,269		
Restated Change in Net Position	\$ 3,405,029	\$ 7,306,792	\$ (3,901,763)	(53.4)%

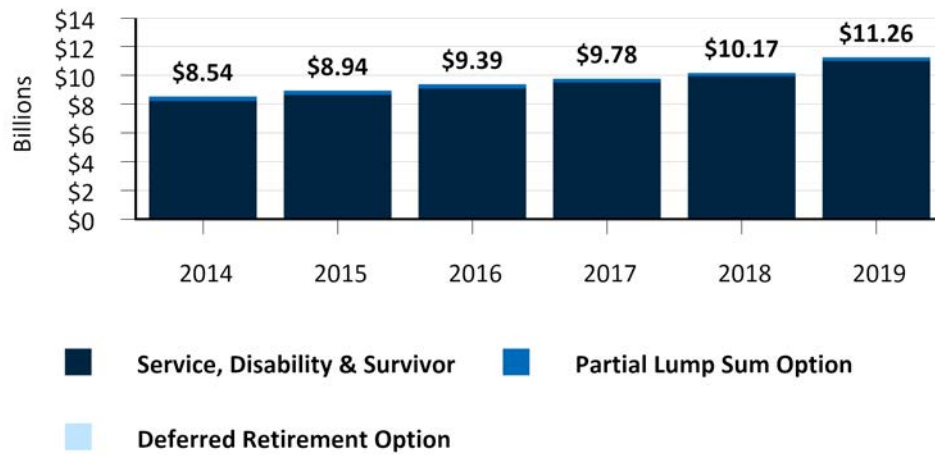
**Pension Trust Fund
Additions to Net Position
Fiscal Years 2018-19**



**Pension Trust Fund
Deductions from Net Position
Fiscal Years 2018-19**



**Pension Trust Fund
Total Annual Benefit Payments
Fiscal Year 2014-19**

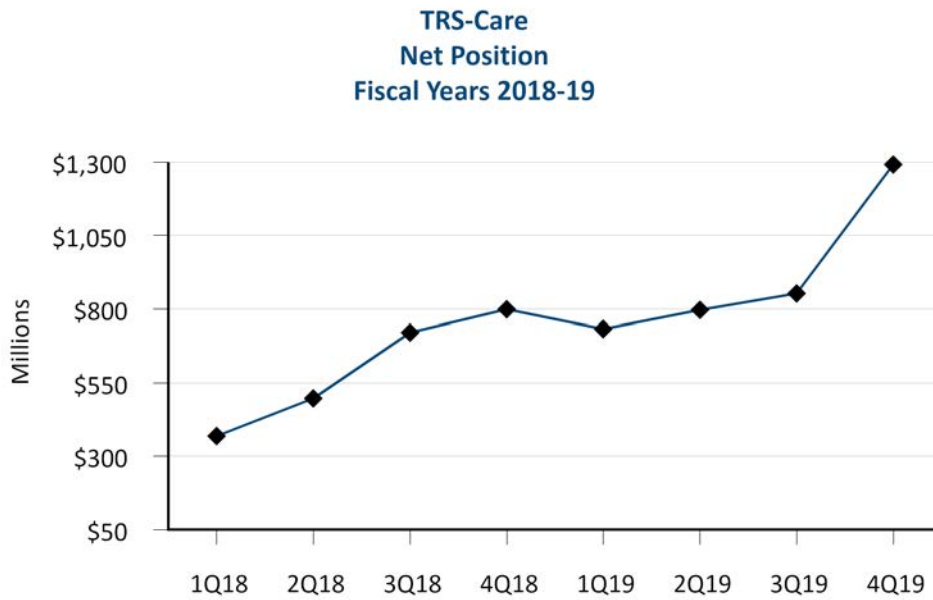


TRS-Care

The net position of TRS-Care at August 31, 2019 was \$1.3 billion, an increase of \$493.4 million from the \$798.6 million at August 31, 2018.

Total contributions of \$937.6 million increased \$24.6 million from \$913.0 million in fiscal year 2018 due to an increase in plan participants. Rebates and federal revenue increased by \$189.5 million due to changes in subsidy programs. Investment income totaled \$25.0 million, which was an increase of \$14.9 million from 2018.

Deductions from net position totaled \$1.1 billion during fiscal year 2019 which was a decrease of \$156.3 million from fiscal year 2018. This was mainly due to better than expected claims experience, health care plan changes, a decrease in enrollment, and a Health Insurance Provider fee freeze for plan year 2019.



Statement of Fiduciary Net Position**TRS-Care**

As of August 31

(Dollars in Thousands)

	2019	2018	Dollar Change	Percentage Change
Assets				
Cash, Receivables and Capital Assets	\$ 1,475,509	\$ 1,001,650	\$ 473,859	47.3 %
Total Assets	\$ 1,475,509	\$ 1,001,650	\$ 473,859	47.3 %
Liabilities				
Accounts Payables and Other	\$ 9,984	\$ 6,668	\$ 3,316	49.7 %
Health Care Fees Payable	—	36,945	(36,945)	(100.0)
Health Care Claims Payable	154,660	159,462	(4,802)	(3.0)
Total Liabilities	\$ 164,644	\$ 203,075	\$ (38,431)	(18.9)%
Total Deferred Inflow of Resources	\$ 18,843	\$ —	\$ 18,843	
Net Position	\$ 1,292,022	\$ 798,575	\$ 493,447	61.8 %

Statement of Changes in Fiduciary Net Position**TRS-Care**

For the Fiscal Years Ended August 31

(Dollars in Thousands)

	2019	2018	Dollar Change	Percentage Change
Additions				
Member Contributions	\$ 227,338	\$ 221,325	\$ 6,013	2.7 %
Non-Employer Contributing Entity Contributions	404,937	395,589	9,348	2.4
Participating Employers Contributions	305,362	296,099	9,263	3.1
Rebates and Discount Income	356,440	284,291	72,149	25.4
Federal Revenue	220,784	103,403	117,381	113.5
Other Revenue	—	803	(803)	(100.0)
Investment Income	25,047	10,127	14,920	147.3
Supplemental Appropriation from State's General Fund - Non-Employer Contributing Entity	73,642	394,600	(320,958)	(81.3)
Total Additions	\$ 1,613,550	\$ 1,706,237	\$ (92,687)	(5.4)%
Deductions				
Health Care Claims	\$ 1,515,398	\$ 1,593,382	\$ (77,984)	(4.9)%
Less: Health Care Premiums Paid by Retirees	(517,965)	(488,069)	(29,896)	6.1
Health Care Claims Processing	38,982	43,264	(4,282)	(9.9)
Insurance Premium Payments	71,795	83,829	(12,034)	(14.4)
Health Care Fees	5,887	37,321	(31,434)	(84.2)
Administrative Expenses	6,005	6,673	(668)	(10.0)
Total Deductions	\$ 1,120,102	\$ 1,276,400	\$ (156,298)	(12.2)%
Change in Net Position	\$ 493,448	\$ 429,838	\$ 63,610	14.8 %

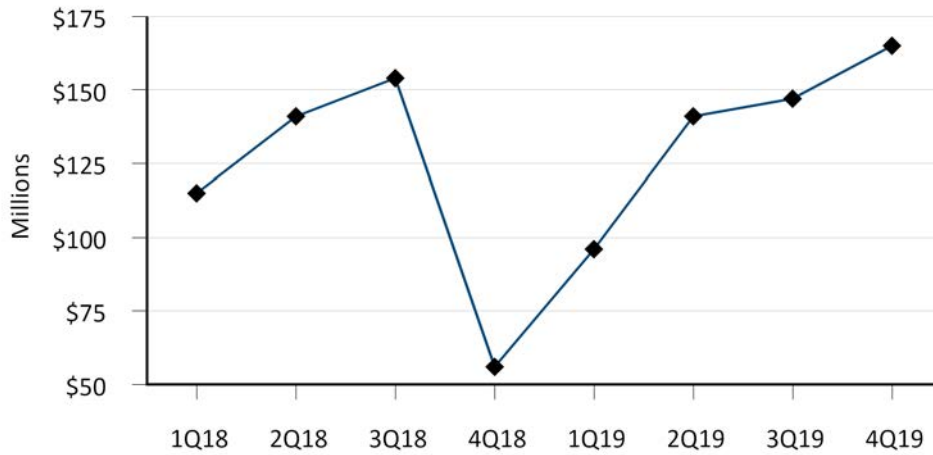
TRS-ActiveCare

The TRS-ActiveCare program operates under the authority of the Texas Insurance Code, Title 8, Subtitle H, Chapter 1579 and the Texas Administrative Code, Title 34, Part 3, Chapter 41, and began operations in fiscal year 2003. The net position was \$165.0 million at August 31, 2019, an increase of \$108.7 million from \$56.3 million the previous fiscal year.

Total revenue of \$2.34 billion increased \$15.9 million from \$2.32 billion in fiscal year 2018 due to renegotiated contract terms. Investment income for the year was \$10.6 million, an increase of \$3.7 million.

Total expenses of \$2.23 billion decreased \$134.2 million from \$2.36 billion in fiscal year 2018 due to better than expected claims experience and a decrease in enrollment.

**TRS-ActiveCare
Net Position
Fiscal Years 2018-19**



Statement of Fiduciary Net Position**TRS-ActiveCare**

As of August 31

(Dollars in Thousands)

	2019	2018	Dollar Change	Percentage Change
Assets				
Cash and Receivables	\$ 414,096	\$ 351,541	\$ 62,555	17.8 %
Total Assets	\$ 414,096	\$ 351,541	\$ 62,555	17.8 %
Liabilities				
Accounts Payable and Other	\$ 9,933	\$ 481	\$ 9,452	1,965.0 %
Premiums and Fees Payable	20,932	20,426	506	2.5
Health Care Claims Payable	216,387	274,342	(57,955)	(21.1)
Total Liabilities	\$ 247,252	\$ 295,249	\$ (47,997)	(16.3)%
Total Deferred Inflow of Resources	\$ 1,891	\$ —	\$ 1,891	
Total Net Position	\$ 164,953	\$ 56,292	\$ 108,661	193.0 %

Statement of Changes in Fiduciary Net Position**TRS-ActiveCare**

For the Fiscal Years Ended August 31

(Dollars in Thousands)

	2019	2018	Dollar Change	Percentage Change
Revenues (Operating and Non-Operating)				
Health Care Premiums	\$ 2,327,440	\$ 2,315,669	\$ 11,771	0.5 %
Investment Income	10,623	6,884	3,739	54.3
Other Revenue	686	259	427	164.9
Total Revenues	\$ 2,338,749	\$ 2,322,812	\$ 15,937	0.7 %
Operating Expenses				
Health Care Claims	\$ 1,863,374	\$ 2,002,143	\$ (138,769)	(6.9)%
Health Care Claims Processing	118,883	120,575	(1,692)	(1.4)
Health Care Fees	929	909	20	2.2
Premium Payments to HMOs	243,199	237,387	5,812	2.4
Administrative Expenses	3,703	3,313	390	11.8
Total Expenses	\$ 2,230,088	\$ 2,364,327	\$ (134,239)	(5.7)%
Change in Net Position	\$ 108,661	\$ (41,515)	\$ 150,176	(361.7)%

Request for Information

Questions concerning any of the information provided in this report or requests for additional information should be addressed to the

Communications Department of the Teacher Retirement System, 1000 Red River Street, Austin, Texas 78701.

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Basic Financial Statements

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Exhibit I**Statement of Fiduciary Net Position**

As of August 31, 2019 (With Comparative Data as of August 31, 2018)

	Pension and Other Post-Employment Benefit (OPEB) Trust Funds	
	Pension Trust Fund	TRS-Care
Assets		
Cash		
Cash in State Treasury	\$ 887,159,943	\$ 1,172,831,303
Cash in Bank (Note 3B)	109,659,682	—
Cash on Hand (Note 3B)	5,604,880	—
Total Cash	\$ 1,002,424,505	\$ 1,172,831,303
Receivables		
Sale of Investments	\$ 2,165,471,676	—
Interest and Dividends	257,264,417	3,711,641
Member and Retiree	3,511,529	—
Service Credit Purchase	12,727,015	—
Due from Employers	568,589,173	52,558,087
Due from State's General Fund	5,971	—
Due from Employees Retirement System of Texas	2,236,438	—
Prepaid Expenses and Deposits	2,010,812	—
Other	103,493	242,707,950
Total Receivables	\$ 3,011,920,524	\$ 298,977,678
Investments (Note 1F and 3)		
Short-Term Investments	\$ 5,806,805,988	—
Equity Investments	43,357,913,826	—
Fixed Income Investments	24,173,126,105	—
Alternative Investments	73,111,856,573	—
Derivative Investments	110,009,349	—
Pooled Investments	12,322,129,864	—
Total Investments	\$ 158,881,841,705	\$ —
Invested Securities Lending Collateral	\$ 18,832,476,273	\$ —
Capital Assets (Note 2)		
Intangible Assets	\$ 55,247,353	—
Less Accumulated Amortization	(22,376,923)	—
Depreciable Assets	60,249,806	—
Less Accumulated Depreciation	(37,877,121)	—
Non-Depreciable Assets	16,253,083	3,699,583
Total Capital Assets	\$ 71,496,198	\$ 3,699,583
Total Assets	\$ 181,800,159,205	\$ 1,475,508,564

(Continued)

Total Pension and Other Post-Employment Benefit (OPEB) Trust Funds		Agency Funds	
2019	2018	Child Support Employee Deductions	
\$ 2,059,991,246	\$ 1,101,510,746	\$	5,195
109,659,682	185,508,824		—
5,604,880	2,803,483		—
\$ 2,175,255,808	\$ 1,289,823,053	\$	5,195
\$ 2,165,471,676	\$ 724,326,292	\$	—
260,976,058	258,947,755		—
3,511,529	2,738,652		—
12,727,015	16,080,819		—
621,147,260	401,285,203		—
5,971	—		—
2,236,438	2,041,387		—
2,010,812	565,170		—
242,811,443	125,600,492		—
\$ 3,310,898,202	\$ 1,531,585,770	\$	—
\$ 5,806,805,988	\$ 5,345,619,565	\$	—
43,357,913,826	48,187,952,545		—
24,173,126,105	23,020,637,600		—
73,111,856,573	65,075,665,805		—
110,009,349	27,974,338		—
12,322,129,864	13,041,675,296		—
\$ 158,881,841,705	\$ 154,699,525,149	\$	—
\$ 18,832,476,273	\$ 20,335,310,295	\$	—
\$ 55,247,353	\$ 55,247,353	\$	—
(22,376,923)	(11,533,797)		—
60,249,806	54,906,059		—
(37,877,121)	(35,406,961)		—
19,952,666	24,646,955		—
\$ 75,195,781	\$ 87,859,609	\$	—
\$ 183,275,667,769	\$ 177,944,103,876	\$	5,195

Exhibit I**Statement of Fiduciary Net Position**

As of August 31, 2019 (With Comparative Data as of August 31, 2018)

	Pension and Other Post-Employment Benefit (OPEB) Trust Funds	
	Pension Trust Fund	TRS-Care
Deferred Outflow of Resources		
Related to Participation in ERS' OPEB Plan	\$ 28,118,303	\$ —
Total Deferred Outflow of Resources	\$ 28,118,303	\$ —
Liabilities (Note 1F)		
Accounts Payable	\$ 599,713,359	\$ 91,589
Payroll Payable	5,604,134	428,328
Investment Fees Payable	21,081,478	—
Benefits Payable	109,861,304	—
Health Care Claims Payable	—	154,659,738
Fees Payable	—	—
Net Other Post-Employment Benefit Liability	85,009,492	—
Investments Purchased Payable	2,242,052,271	—
Securities Sold Short	1,714,558,083	—
Collateral Obligations	18,821,814,504	—
Due to State's General Fund	37,444,975	8,931,338
Due to Employees Retirement System of Texas	10,920,557	—
Employee Compensable Absences Payable (Note 4)	11,454,595	532,697
Other Liabilities	203,986	—
Funds Held for Others	—	—
Total Liabilities	\$ 23,659,718,738	\$ 164,643,690
Deferred Inflow of Resources		
Unrealized Lease Incentives	\$ 119,153	\$ —
Deferred Revenue - School Districts	160,056,912	18,842,525
Related to Participation in ERS' OPEB Plan	30,183,630	—
Total Deferred Inflow of Resources	\$ 190,359,695	\$ 18,842,525
Net Position		
Net Investment in Capital Assets	\$ 71,496,198	\$ 3,699,583
Restricted for Pensions/Other Post-Employment Benefits	157,906,702,877	1,288,322,766
Net Position Restricted for Pensions and Other Post-Employment Benefits	\$ 157,978,199,075	\$ 1,292,022,349

See accompanying Notes to the Financial Statements.

(Continued)

Total Pension and Other Post-Employment Benefit (OPEB) Trust Funds		Agency Funds	
2019	2018	Child Support Employee Deductions	
\$ 28,118,303	\$ 2,436,007	\$	—
\$ 28,118,303	\$ 2,436,007	\$	—
\$ 599,804,948	\$ 8,122,261	\$	—
6,032,462	6,468,235		—
21,081,478	11,817,065		—
109,861,304	120,464,638		—
154,659,738	159,462,440		—
—	36,945,192		—
85,009,492	81,850,260		—
2,242,052,271	811,193,231		—
1,714,558,083	915,741,979		—
18,821,814,504	20,320,455,707		—
46,376,313	69,538,354		—
10,920,557	8,108,482		—
11,987,292	10,533,417		—
203,986	70,264		—
—	—		5,195
\$ 23,824,362,428	\$ 22,560,771,525	\$	5,195
\$ 119,153	\$ 194,407	\$	—
178,899,437	—		—
30,183,630	18,097,485		—
\$ 209,202,220	\$ 18,291,892	\$	—
\$ 75,195,781	\$ 87,859,609	\$	—
159,195,025,643	155,279,616,857		—
\$ 159,270,221,424	\$ 155,367,476,466	\$	—

Exhibit II**Statement of Changes in Fiduciary Net Position**

For the Fiscal Year Ended August 31, 2019 (With Comparative Data for August 31, 2018)

	Pension and Other Post-Employment Benefit (OPEB) Trust Funds	
	Pension Trust Fund	TRS-Care
Additions		
Contributions		
Member	\$ 3,482,869,726	\$ 227,338,454
Non-Employer Contributing Entity - State	1,737,852,502	404,936,501
Employer (Notes 9, 11)		
Employer	1,146,240,091	262,309,539
State - Higher Education	182,863,093	—
Employer - Paid at State Rate	—	32,252,833
Employer Surcharges (Notes 9, 11)		
Employment after Retirement - Employee Rate	13,118,045	—
Employment after Retirement - Employer Rate	11,584,767	10,800,712
Non-OASDI Employers	408,015,906	—
Supplemental Appropriation - Non-Employer Contributing Entity	588,827,787	73,641,562
Service Credit Purchase - Refundable	19,942,841	—
Service Credit Purchase - Non-Refundable	22,262,344	—
State Contributions for 415 Excess Benefit Arrangement	3,325,686	—
Employees Retirement System of Texas		
Service Contributions	26,307,593	—
415 Excess Benefit Arrangement	156,542	—
Other		
Federal Revenue (Note 6)	—	220,783,898
Rebate and Discount Income	—	356,439,596
Total Contributions and Other	\$ 7,643,366,923	\$ 1,588,503,095
Net Investment Income		
Investment Income (Loss)	\$ 7,825,646,595	\$ 25,046,771
Less: Investing Activity Expenses (Schedule 1)	(206,415,457)	—
Total Investment Income (Loss)	\$ 7,619,231,138	\$ 25,046,771
Securities Lending Income (Loss)	\$ 519,726,609	\$ —
Less: Securities Lending Expenses	(469,928,873)	—
Total Securities Lending Income (Loss)	\$ 49,797,736	\$ —
Total Net Investment Income	\$ 7,669,028,874	\$ 25,046,771
Other Additions		
Miscellaneous Revenue	\$ 3,844,018	\$ —
Total Other Additions	\$ 3,844,018	\$ —
Total Additions	\$ 15,316,239,815	\$ 1,613,549,866

(Continued)

Total Pension and Other Post-Employment Benefit (OPEB) Trust Funds	
2019	2018
\$ 3,710,208,180	\$ 3,582,098,574
2,142,789,003	2,111,373,178
1,408,549,630	1,387,458,185
182,863,093	119,464,838
32,252,833	30,037,098
13,118,045	11,530,466
22,385,479	20,467,464
408,015,906	398,397,672
662,469,349	394,600,000
19,942,841	18,361,492
22,262,344	23,176,879
3,325,686	3,658,286
26,307,593	23,947,830
156,542	64,186
220,783,898	103,402,579
356,439,596	284,291,173
\$ 9,231,870,018	\$ 8,512,329,900
\$ 7,850,693,366	\$ 11,391,232,345
(206,415,457)	(213,078,019)
\$ 7,644,277,909	\$ 11,178,154,326
\$ 519,726,609	\$ 379,683,903
(469,928,873)	(304,897,313)
\$ 49,797,736	\$ 74,786,590
\$ 7,694,075,645	\$ 11,252,940,916
\$ 3,844,018	\$ 8,911,270
\$ 3,844,018	\$ 8,911,270
\$ 16,929,789,681	\$ 19,774,182,086

Exhibit II**Statement of Changes in Fiduciary Net Position**

For the Fiscal Year Ended August 31, 2019 (With Comparative Data for August 31, 2018)

	Pension and Other Post-Employment Benefit (OPEB) Trust Funds	
	Pension Trust Fund	TRS-Care
Deductions		
Benefits	\$ 11,253,728,973	\$ —
Refunds of Contributions - Active	480,400,199	—
Refunds of Contributions - Death	6,060,703	—
415 Excess Benefit Arrangement Paid to Employees Retirement System of Texas	3,052,513	—
Benefits Paid to Employees Retirement System of Texas		
Service Contributions	102,787,422	—
415 Excess Benefit Arrangement	257,502	—
Other Post-Employment Benefit Expense	4,438,264	—
Health Care Claims	—	1,515,397,609
Less: Health Care Premiums Paid by Retirees	—	(517,965,033)
Health Care Claims Processing	—	38,982,314
Insurance Premium Payments	—	71,794,507
Affordable Care Act Fees	—	5,886,524
Administrative Expenses, Excluding Investing Activities Expenses		
Salaries and Wages	26,665,378	2,947,135
Payroll Related Costs	1,187,303	567,941
Professional Fees and Services	8,343,491	2,213,622
Travel	251,580	51,695
Materials and Supplies	3,000,588	18,134
Communications and Utilities	1,500,412	79,211
Repairs and Maintenance	2,564,202	—
Rentals and Leases	377,732	24,900
Printing and Reproduction	201,508	43,080
Depreciation Expense	2,449,013	—
Amortization Expense	12,133,546	—
Gain/Loss on Capital Assets	(893)	—
Other Expenses	1,811,785	60,511
Total Deductions	\$ 11,911,211,221	\$ 1,120,102,150
Net Increase (Decrease) in Net Position	\$ 3,405,028,594	\$ 493,447,716
Beginning Net Position Restricted for Pensions and Other Post-Employment Benefits	\$ 154,568,901,833	\$ 798,574,633
Prior Period Adjustments (Note 14)	4,268,648	—
Beginning Net Position, as Restated	\$ 154,573,170,481	\$ 798,574,633
Ending Net Position Restricted for Pensions and Other Post-Employment Benefits	\$ 157,978,199,075	\$ 1,292,022,349

See accompanying Notes to the Financial Statements.

(Continued)

Total Pension and Other Post-Employment Benefit (OPEB) Trust Funds	
2019	2018
\$ 11,253,728,973	\$ 10,172,997,008
480,400,199	416,761,103
6,060,703	5,574,637
3,052,513	3,450,085
102,787,422	97,061,015
257,502	272,386
4,438,264	4,380,304
1,515,397,609	1,593,381,709
(517,965,033)	(488,069,004)
38,982,314	43,264,359
71,794,507	83,828,910
5,886,524	37,321,249
29,612,513	30,065,848
1,755,244	7,500,721
10,557,113	8,826,558
303,275	325,110
3,018,722	4,470,470
1,579,623	665,811
2,564,202	4,095,881
402,632	408,316
244,588	159,044
2,449,013	2,712,909
12,133,546	10,054,900
(893)	45,120
1,872,296	2,267,969
\$ 13,031,313,371	\$ 12,041,822,418
\$ 3,898,476,310	\$ 7,732,359,668
\$ 155,367,476,466	\$ 147,761,458,106
4,268,648	(126,341,308)
\$ 155,371,745,114	\$ 147,635,116,798
\$ 159,270,221,424	\$ 155,367,476,466

Exhibit III
Statement of Net Position
Proprietary Funds

As of August 31, 2019 (With Comparative Data as of August 31, 2018)

	Enterprise Funds			
	Major Fund	Nonmajor Fund	Total	
	TRS-ActiveCare	403(b) Administrative Program	2019	2018
Assets				
Current Assets				
Cash				
Cash in State Treasury	\$ 354,492,676	\$ 495,485	\$ 354,988,161	\$ 290,626,685
Total Cash	\$ 354,492,676	\$ 495,485	\$ 354,988,161	\$ 290,626,685
Receivables				
Interest	\$ 1,402,451	\$ 2,033	\$ 1,404,484	\$ 618,638
Health Care Premiums	—	—	—	6,869,567
COBRA Premiums and Other	58,201,031	—	58,201,031	53,997,588
Total Receivables	\$ 59,603,482	\$ 2,033	\$ 59,605,515	\$ 61,485,793
Total Assets	\$ 414,096,158	\$ 497,518	\$ 414,593,676	\$ 352,112,478
Liabilities (Note 1F)				
Current Liabilities				
Accounts Payable	\$ 9,441,177	\$ 5,000	\$ 9,446,177	\$ 129,845
Payroll Payable	231,592	5,800	237,392	189,960
Fees Payable	1,043,296	—	1,043,296	1,036,000
Premiums Payable to HMOs	19,889,074	—	19,889,074	19,390,451
Health Care Claims Payable	216,386,981	—	216,386,981	274,342,037
Employee Compensable Absences Payable (Note 4)	72,420	1,089	73,509	126,067
Total Current Liabilities	\$ 247,064,540	\$ 11,889	\$ 247,076,429	\$ 295,214,360
Non-Current Liabilities				
Employee Compensable Absences Payable (Note 4)	\$ 187,671	\$ 2,755	\$ 190,426	\$ 61,571
Total Non-Current Liabilities	\$ 187,671	\$ 2,755	\$ 190,426	\$ 61,571
Total Liabilities	\$ 247,252,211	\$ 14,644	\$ 247,266,855	\$ 295,275,931
Deferred Inflow of Resources				
Deferred Revenue - School Districts	\$ 1,890,716	—	\$ 1,890,716	—
Total Deferred Inflow of Resources	\$ 1,890,716	—	\$ 1,890,716	—
Net Position				
Restricted for Health Care Programs	\$ 164,953,231	—	\$ 164,953,231	\$ 56,292,384
Restricted for Administrative Expenses	—	482,874	482,874	544,163
Total Net Position	\$ 164,953,231	\$ 482,874	\$ 165,436,105	\$ 56,836,547

See accompanying Notes to the Financial Statements.

Exhibit IV**Statement of Revenues, Expenses, and Changes in Net Position****Proprietary Funds**

For the Fiscal Year Ended August 31, 2019 (With Comparative Data for August 31, 2018)

	Enterprise Funds			
	Major Fund	Nonmajor Fund	Total	
	TRS-ActiveCare	403(b) Administrative Program	2019	2018
Operating Revenues				
Health Care Premiums	\$ 2,170,132,057	\$ —	\$ 2,170,132,057	\$ 2,171,125,097
COBRA Premiums and Other	157,307,700	—	157,307,700	144,543,929
Administrative Fees	146,090	—	146,090	110,089
Certification Fees	—	10,000	10,000	44,000
Product Registration Fees	—	20,000	20,000	369,000
Total Operating Revenues	\$ 2,327,585,847	\$ 30,000	\$ 2,327,615,847	\$ 2,316,192,115
Operating Expenses				
Health Care Claims	\$ 1,863,374,439	\$ —	\$ 1,863,374,439	\$ 2,002,142,744
Health Care Claims Processing	118,882,697	—	118,882,697	120,574,675
Premium Payments to HMOs	243,198,667	—	243,198,667	237,386,929
Affordable Care Act Fees	928,866	—	928,866	908,733
Administrative Expenses				
Salaries and Wages	2,072,033	58,252	2,130,285	1,657,991
Payroll Related Costs	379,775	11,735	391,510	233,498
Professional Fees and Services	1,197,891	35,000	1,232,891	1,399,200
Travel	14,170	—	14,170	15,613
Materials and Supplies	263	—	263	53,484
Communications and Utilities	9,586	—	9,586	1
Repairs and Maintenance	—	—	—	20,620
Rentals and Leases	22,982	—	22,982	30,361
Printing and Reproduction	53	—	53	5,610
Other Expenses	6,567	5	6,572	27,332
Total Operating Expenses	\$ 2,230,087,989	\$ 104,992	\$ 2,230,192,981	\$ 2,364,456,791
Operating Income (Loss)	\$ 97,497,858	\$ (74,992)	\$ 97,422,866	\$ (48,264,676)
Non-Operating Revenues				
Investment Income	\$ 10,623,456	\$ 13,703	\$ 10,637,159	\$ 6,892,473
Other Non-Operating Revenues	539,533	—	539,533	149,328
Total Non-Operating Revenues	\$ 11,162,989	\$ 13,703	\$ 11,176,692	\$ 7,041,801
Change in Net Position	\$ 108,660,847	\$ (61,289)	\$ 108,599,558	\$ (41,222,875)
Beginning Net Position	\$ 56,292,384	\$ 544,163	\$ 56,836,547	\$ 98,059,422
Ending Net Position	\$ 164,953,231	\$ 482,874	\$ 165,436,105	\$ 56,836,547

See accompanying Notes to the Financial Statements.

Exhibit V
Statement of Cash Flows
Proprietary Funds

For the Fiscal Year Ended August 31, 2019 (With Comparative Data for August 31, 2018)

	Enterprise Funds			
	Major Fund	Nonmajor Fund	Total	
	TRS-ActiveCare	403(b) Administrative Program	2019	2018
Cash Flows from Operating Activities				
Receipts from Health Care Premiums	\$ 2,178,892,340	\$ —	\$ 2,178,892,340	\$ 2,163,853,994
Receipts from COBRA Premiums and Other	153,104,257	—	153,104,257	124,758,125
Receipts from Long-Term Care Administrative Fees	146,090	—	146,090	110,089
Receipts from Certification/Product Registration Fees	—	30,000	30,000	413,000
Payments for Administrative Expenses	5,748,993	(117,244)	5,631,749	(3,554,852)
Payments for Health Care Claims	(1,921,329,495)	—	(1,921,329,495)	(1,983,185,953)
Payments for Health Care Claims Processing	(118,882,697)	—	(118,882,697)	(120,574,675)
Payments for HMO Premiums	(242,700,044)	—	(242,700,044)	(236,534,111)
Payments for Affordable Care Act Fees	(921,570)	—	(921,570)	(868,977)
Net Cash Provided (Used) by Operating Activities	\$ 54,057,874	\$ (87,244)	\$ 53,970,630	\$ (55,583,360)
Cash Flows from Non-Capital Financing Activities				
Proceeds from Other Non-Operating Revenues	\$ 539,533	\$ —	\$ 539,533	\$ 149,328
Net Cash Provided (Used) by Non-Capital Financing Activities	\$ 539,533	\$ —	\$ 539,533	\$ 149,328
Cash Flows from Investing Activities				
Interest Received	\$ 9,838,595	\$ 12,718	\$ 9,851,313	\$ 6,696,027
Net Cash Provided (Used) by Investing Activities	\$ 9,838,595	\$ 12,718	\$ 9,851,313	\$ 6,696,027
Net Increase (Decrease) in Cash	\$ 64,436,002	\$ (74,526)	\$ 64,361,476	\$ (48,738,005)
Beginning Cash and Cash Equivalents	\$ 290,056,674	\$ 570,011	\$ 290,626,685	\$ 339,364,690
Ending Cash and Cash Equivalents	\$ 354,492,676	\$ 495,485	\$ 354,988,161	\$ 290,626,685

See accompanying Notes to the Financial Statements.

Exhibit V**Statement of Cash Flows****Proprietary Funds**

For the Fiscal Year Ended August 31, 2019 (With Comparative Data for August 31, 2018)

	Enterprise Funds			
	Major Fund	Non-Major Fund	Total	
	TRS-ActiveCare	403(b) Administrative Program	2019	2018
Reconciliation of Operating Income (Loss) to Net Cash Provided (Used) by Operating Activities				
Operating Income (Loss)	\$ 97,497,858	\$ (74,992)	\$ 97,422,866	\$ (48,264,676)
Adjustments to Reconcile Operating Income (Loss) to Net Cash Provided (Used) by Operating Activities				
Changes in Assets & Liabilities				
Increase (Decrease) in Unearned Health Care Premium Revenue	\$ 8,760,283	\$ —	\$ 8,760,283	\$ (7,271,103)
(Increase) Decrease in COBRA Premiums and Other Receivables	(4,203,443)	—	(4,203,443)	(19,785,804)
Increase (Decrease) in Premiums Payable to HMOs	498,623	—	498,623	852,818
Increase (Decrease) in Health Care Claims Payable	(57,955,056)	—	(57,955,056)	18,956,791
Increase (Decrease) in Affordable Care Act Fees Payable	7,296	—	7,296	39,756
Increase (Decrease) in Accounts Payable	9,327,892	(11,560)	9,316,332	(141,258)
Increase (Decrease) in Payroll Payable	47,476	(44)	47,432	24,060
Increase (Decrease) in Employee Compensable Absences Payable	76,945	(648)	76,297	6,056
Total Adjustments	\$ (43,439,984)	\$ (12,252)	\$ (43,452,236)	\$ (7,318,684)
Net Cash Provided (Used) by Operating Activities	\$ 54,057,874	\$ (87,244)	\$ 53,970,630	\$ (55,583,360)

See accompanying Notes to the Financial Statements.

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Notes to the Financial Statements

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Note 1: Summary of Significant Accounting Policies

A. Reporting Entity

The Teacher Retirement System of Texas (TRS or System) is a separate legal entity and considered a discrete component unit of the State of Texas. The System is governed by a nine member board of trustees which has significant independence in the operation and management of the System under the provisions of the state constitution and laws. The trustees serve staggered six-year terms that expire on August 31 of odd numbered years and are all appointed by the Governor pursuant to Texas Government Code Title 8, Subtitle C, Chapter 825. The trustees are appointed as follows:

- Three direct appointments by the Governor
- Two appointments from a list nominated by the State Board of Education
- Two appointments from three active member candidates from a public school, charter school, regional service center, nominated by members of those districts
- One appointment from three retired member candidates nominated by TRS retirees
- One at-large appointment selected from three candidates nominated from active members of any public or charter school, regional service center, institute of higher learning, or from TRS retirees

The state legislature confirms trustees appointed by the governor, establishes laws with regard to structure, benefits and contributions, and authorizes Pension Trust Fund administrative expenses. State contributions and appropriations received by TRS are determined by the legislature.

This report includes all activities and programs for which TRS exercises fiscal control and responsibility and includes all funds that comprise the System's legal entity.

TRS administers retirement and related benefits to employees and beneficiaries of employees of public, state-supported, educational institutions of Texas. It operates primarily under the provisions of the Texas Constitution, Article XVI, Section 67 and Texas Government Code, Title 8, Subtitle C. The Pension Trust Fund is a multiple-employer, cost-sharing, defined benefit pension plan with a special funding situation

that is a qualified pension trust under Section 401(a) of the Internal Revenue Code.

The System administers the Texas Public School Retired Employees Group Insurance Program and the Texas Active School Employees Uniform Group Benefits Program. These programs provide two separate health care plans, TRS-Care and TRS-ActiveCare, respectively.

TRS-Care is considered an employee benefit trust fund and provides health care coverage for certain persons, and their dependents, who retire under TRS. The statutory authority for the program is Texas Insurance Code, Title 8, Subtitle H, Chapter 1575 and Texas Administrative Code, Title 34, Part 3, Chapter 41. The inception of the plan was fiscal year 1986.

TRS-ActiveCare provides health care coverage to employees, and their dependents, of participating public education entities. Optional life and long-term care insurance, which are provided to active members and retirees, are also accounted for in the fund. Authority for the plan can be found in the Texas Insurance Code, Title 8, Subtitle H, Chapter 1579 and in the Texas Administrative Code, Title 34, Part 3, Chapter 41. The plan began operations on September 1, 2002.

The System also administered a 403(b) Administrative Program in which companies were required to be certified by TRS to offer qualified investment products to public education employees through payroll deductions in accordance with Internal Revenue Code section 403(b). Authority for the program can be found in Vernon's Civil Statutes, Title 109, Article 6228a-5, Sections 4-8A and in the Texas Administrative Code, Title 34, Part 3, Chapter 53. The program began operations on September 1, 2001. In May 2019, the 86th Texas Legislature passed House Bill 2820 removing TRS as the program administrator effective August 31, 2019.

An Agency Fund is used to account for garnishments of salaries and wages for child support payments from TRS employees.

B. Measurement Focus, Basis of Accounting, and Basis of Presentation

The System's accounts are organized on the basis of funds, each of which is considered a separate accounting entity. The operations of each fund are accounted for with a self-balancing set of accounts that comprise its assets, liabilities, additions/revenues and deductions/expenses. The following fund types are used to reflect the System's transactions:

- Fiduciary Funds include the Pension Trust Fund, TRS-Care (employee benefits trust fund), and the Agency Fund.
- Proprietary Funds include TRS-ActiveCare and the 403(b) Administrative Program which are both Enterprise funds. TRS-ActiveCare is considered a major fund.

Fiduciary funds are used to report assets held in a trustee or agency capacity for others. The reporting focus is on net position and changes in net position. The pension and other post-employment benefit trust funds are used to report resources held in trust for the members and beneficiaries of the defined benefit pension plan and the other post-employment benefit plan. Agency funds are a type of fiduciary fund used to report assets collected and transferred to the State or other entities. Agency funds are custodial in nature and do not measure the results of operations. Assets and liabilities are recorded using the accrual basis of accounting.

Enterprise funds are a type of proprietary fund used to report any activity for which a fee is charged to external users for goods or services. The reporting focus is on the determination of operating income, changes in net position, financial position, and cash flows. Proprietary funds distinguish operating activities from non-operating. Operating activities generally result from providing services and producing or delivering goods. Operating revenues for the System's proprietary funds are derived from self-insurance premiums and providing plan and product certification services to qualified 403(b) plans. Operating expenses include the costs of claims, costs of certification/product services and related administrative expenses. Non-operating revenues and expenses are those items that do not meet any of the above definitions.

Separate financial statements are provided for each fund. The fiduciary, excluding agency funds, and proprietary financial statements are reported using the economic resources measurement focus and the accrual basis of accounting. Additions are recognized when earned, and deductions are recognized when the liability is incurred, regardless of the timing of related cash flows. Contributions are recognized in the period in which amounts are due, pursuant to state law. Benefits and refunds of contributions are recognized when due and payable in accordance with the terms of the plan. All economic resources, including financial and capital assets, and related liabilities, both current

and long-term, and the changes therein are reported in each funds' financial statements.

C. New Accounting Pronouncements

The accompanying financial statements were prepared in conformity with generally accepted accounting principles (GAAP) as prescribed by the Governmental Accounting Standards Board (GASB). TRS determined no new GASB statements were applicable to TRS during fiscal year 2019.

D. Comparative Data in Total

The basic financial statements include certain prior year summarized comparative data in total but not at the level of detail required for a presentation in conformity with generally accepted accounting principles. Accordingly, such information should be read in conjunction with the System's financial statements for the fiscal year ended August 31, 2018, from which the summarized information was derived.

E. Budgets and Appropriations

The administrative costs and capital asset outlay for each of the System's funds and programs are controlled by annual budgets approved by the Board of Trustees.

The Pension Trust Fund receives state contributions from the Texas Legislature's general revenue appropriations for retirement benefits for active members employed by a participating employer. In fiscal years 2019 and 2018, contributions were made by the State of Texas to the System at the rate of 6.8 percent of the pensionable compensation paid to active members for each year.

Although appropriated by the legislature, expenses for the Pension Trust Fund administrative operations and capital expenditures are paid from the Pension Trust Fund and not from the State's General Fund.

TRS-Care received contributions from the State's General Fund equal to 1.25 percent of salaries paid to public education employees in fiscal year 2019. Administrative expenses for this program are paid from the trust fund.

The two Enterprise Funds, TRS-ActiveCare and the 403(b) Administrative Program, are supported by fees and receive no appropriations from the State for administrative expenses.

TRS administers a governmental excess benefit arrangement under section 415(m) of the Internal Revenue Code of 1986 (26 U.S.C.). Authorized under the provisions of the Texas Government Code, Title 8,

Subtitle C, Section 825.517, this program created a separate, non-qualified, unfunded excess benefit arrangement outside the Pension Trust Fund of the retirement system.

Contributions to the excess benefit arrangement are made from the State's general revenue appropriations. These contributions are not held in trust and may not be commingled with other funds of the retirement system. They yield no net position. Therefore, for reporting purposes, only the contributions and benefits are reflected on Exhibit II, Statement of Changes in Fiduciary Net Position.

F. Assets, Liabilities, and Legal Reserves

Cash and Cash Equivalents

Cash and cash equivalents include investments with an original maturity of three months or less that are used for cash management instead of investing activities.

Highly liquid assets of a short-term investment fund are not considered cash equivalents.

Receivables

Receivables represent the amount of money owed to TRS for goods or services delivered or used that have not been received at fiscal year-end.

- Sale of Investments receivables occur when the trade date is before the fiscal year-end and the settlement date is in the next fiscal year.
- Interest and Dividends receivables represent distributions of income made on bank accounts and other investments that TRS earned in the current fiscal year but did not receive until after fiscal year-end.
- Member and Retiree receivables represent contributions that are due from members for the current fiscal year but not received until after fiscal year-end.
- Service Credit Purchase receivables represent the outstanding balance due from members on service credit purchase installment contracts at fiscal year-end. Payments can be made on a monthly basis for up to five years for purchasing additional creditable service. Receivables are recognized when an agreement is signed.
- Due from Employers receivables represent contributions that are due from participating employers for the current fiscal year but not received until after fiscal year-end.
- Due from Employees Retirement System (ERS) of Texas receivables represent ERS' share of current year retirement benefits that are due to TRS for retirees' service earned from ERS.
- Prepaid Expenses and Deposits receivables represent refundable security deposits paid on lease agreements that TRS has entered into.
- Other Receivables represent amounts owed to TRS such as refund or annuity repayments due at fiscal year-end but not received until the next fiscal year.

Investments

Investments are reported at fair value. Fair value is a market-based measurement, not an entity-specific measurement. It is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.

Measurement, recognition, or disclosure of an asset or liability depends on the aggregation or disaggregation of the unit of account of the asset or liability. TRS utilizes one or more of the following valuation techniques in order to measure fair value: the market approach, the cost approach, and the income approach. TRS has investments that have values not based on quoted market prices.

Capital Assets

Capital assets associated with the funds' activities are included in the Statement of Net Position. Purchases of capital assets by the fund are reported at cost on the acquisition date. Donated capital assets, donated works of art, and similar items are reported at acquisition value. Depreciation of all exhaustible capital assets is charged as an expense against the fund's operations. Depreciation is calculated using the straight-line method over the asset's useful life. Note 2 includes a table identifying the capitalization threshold and estimated useful life by asset type.

Deferred Outflow of Resources

Deferred outflow of resources represent a consumption of net position that applies to a future period and will not be recognized as an expense until that future period.

- Related to Participation in ERS' Other Post-Employment Benefit (OPEB) plan represents amounts for OPEB expenses that will be recognized in future periods. See Note 10.

Liabilities

- Accounts Payable represents the liability for assets or services received at fiscal year-end for which payment has not been made.
- Payroll Payable represents the liability for employee salaries that is due and payable at fiscal year-end.
- Investment Fees Payable represent fees due to external investment managers and the custodian bank that are due at fiscal year-end.
- Benefits Payable represent the liability for retirement, disability, and death benefits due at fiscal year-end and payable within the next 30 days.
- Health Care Claims Payable includes an estimate for health care claims incurred but not reported to the System at fiscal year-end.
- Fees Payable represent health insurance provider fees payable at fiscal year-end.
- Net Other Post-Employment Benefit Liability represents TRS' share of the ERS plan net OPEB liability.
- Investments Purchased Payable represent the liability for securities purchased prior to fiscal year-end for which payment has not been made. Foreign investments purchased payable is reported at current exchange rates.
- Securities Sold Short represent obligations to deliver securities which include Equities and Rights.
- Collateral Obligations are the cash collateral received from borrowers in the securities lending program.
- Due to State's General Fund represents amounts owed to the State for excess contributions received at fiscal year-end.
- Due to Employees Retirement System of Texas represents amounts owed for current year retirement benefits due to ERS for retirees' service earned from TRS.
- Employee Compensable Absences Payable represents amounts owed to employees for compensatory time unpaid at fiscal year-end.
- Other Liabilities represent taxes payable by the blended component unit, Teacher Retirement

Investment Company of Texas, Ltd. (TRICOT) at fiscal year-end. See Note 13.

Deferred Inflow of Resources

Deferred Inflow of Resources represent an acquisition of net position that applies to a future period and will not be recognized as income until that future period.

- Unrealized Lease Incentives represent amounts for lease incentives granted to TRS at the inception of a lease that is amortized over future periods.
- Unearned Revenue represents payments for future contributions received during the fiscal year.
- Related to Participation in ERS' OPEB Plan represents amounts for OPEB revenues that will be recognized in future periods. See Note 10.

Interfund/Interagency Transactions and Balances

The Pension Trust Fund provides various administrative services to other TRS programs and accounts for these services as reciprocal interfund activity. These transactions are reported using the appropriate classification accounts for additions/revenues or deductions/expenses as if transacted with parties external to the State. They are not presented as transfers. The interfund receivables and payables related to reciprocal interfund activity are classified as receivables and accounts payable on the financial statements.

Interagency transactions have been classified using the above criteria for reciprocal interfund activity.

Note 2: Capital Assets

Capital assets are presented at historical cost or, if not purchased, at fair value at the date of acquisition. When appropriate, straight-line depreciation and amortization have been charged over the shorter of the estimated useful lives of the assets or the lease period.

All capital assets belong to either the Pension Trust Fund or the TRS-Care Fund. Balances, capitalization thresholds, and depreciable lives for all capital asset classes are shown in the following tables.

Asset Class	Balance 9/1/2018	Adjustments	Reclasses & Completed CIP	Additions	Deletions	Balance 8/31/2019 (Exhibit I)
Non-Depreciable Assets						
Land and Land Improvements	\$ 1,658,310	\$ —	\$ —	\$ —	\$ —	\$ 1,658,310
Construction in Progress	22,864,509	(5,858,095)	(4,037,634)	5,201,440	—	18,170,220
Artwork	124,136	—	—	—	—	124,136
Total Non-Depreciable Assets	\$ 24,646,955	\$ (5,858,095)	\$ (4,037,634)	\$ 5,201,440	\$ —	\$ 19,952,666
Depreciable Assets						
Buildings and Building Improvements	\$ 39,175,704	\$ —	\$ 3,873,031	\$ —	\$ —	\$ 43,048,735
Furniture and Equipment	11,493,445	—	—	1,377,764	(71,651)	12,799,558
Vehicle, Boats, and Aircraft	47,113	—	—	—	—	47,113
Leasehold Improvements	3,547,715	—	164,603	—	—	3,712,318
Facilities and Other Improvements	642,082	—	—	—	—	642,082
Total Depreciable Assets	\$ 54,906,059	\$ —	\$ 4,037,634	\$ 1,377,764	\$ (71,651)	\$ 60,249,806
Accumulated Depreciation						
Buildings and Building Improvements	\$ (23,558,999)	\$ —	\$ —	\$ (1,343,169)	\$ —	\$ (24,902,168)
Furniture and Equipment	(8,389,749)	—	—	(1,121,480)	71,651	(9,439,578)
Vehicles, Boats, and Aircraft	(31,563)	—	—	(6,730)	—	(38,293)
Leasehold Improvements	(3,159,471)	—	—	(21,147)	—	(3,180,618)
Facilities and Other Improvements	(267,179)	—	—	(49,285)	—	(316,464)
Total Accumulated Depreciation	\$ (35,406,961)	\$ —	\$ —	\$ (2,541,811)	\$ 71,651	\$ (37,877,121)
Total Net Depreciable Assets	\$ 19,499,098	\$ —	\$ 4,037,634	\$ (1,164,047)	\$ —	\$ 22,372,685
Intangible Assets						
Computer Software	\$ 55,247,353	\$ —	\$ —	\$ —	\$ —	\$ 55,247,353
Total Intangible Assets	\$ 55,247,353	\$ —	\$ —	\$ —	\$ —	\$ 55,247,353
Accumulated Amortization						
Computer Software	\$ (11,533,797)	\$ —	\$ —	\$ (10,843,126)	\$ —	\$ (22,376,923)
Total Accumulated Amortization	\$ (11,533,797)	\$ —	\$ —	\$ (10,843,126)	\$ —	\$ (22,376,923)
Total Net Intangible Assets	\$ 43,713,556	\$ —	\$ —	\$ (10,843,126)	\$ —	\$ 32,870,430
Total Net Capital Assets	\$ 87,859,609	\$ (5,858,095)	\$ —	\$ (6,805,733)	\$ —	\$ 75,195,781

Asset Class	Capitalization Threshold	Depreciable Life
Land	\$ —	—
Construction in Progress	—	—
Artwork	—	—
Buildings and Building Improvements	100,000	10-50 years
Furniture and Equipment	5,000	3-10 years
Vehicles, Boats, and Aircraft	5,000	7 years
Leasehold Improvements	100,000	6-22 years
Facilities and Other Improvements	100,000	10-20 years
Internally Generated Computer Software	1,000,000	5 years
Other Computer Software	100,000	5 years

Note 3: Deposits and Investments

A. Investment Policy and Target Asset Allocation

The Board of Trustees has the primary fiduciary responsibility for investing TRS trust assets in accordance with Article XVI, Section 67 of the Texas Constitution and with applicable law. The Board adopts the Investment Policy Statement which establishes investment objectives and policy, obtains expert advice and assistance, and oversees the employment of a qualified and competent investment staff (Investment Management Division) and legal staff. The Board also monitors the actions of staff, consultants, and advisors to ensure compliance with its policies. The current Investment Policy Statement has been in effect since October 1, 2018, and there were no significant investment policy changes during the reporting period. For the fiscal year ended August 31, 2019, there were no significant violations of state statute, investment policy, or contractual provisions. The Statement in its entirety can be accessed at www.trs.texas.gov.

The total or overall investment portfolio includes all assets invested by TRS to provide retirement, death, health, and disability benefits administered by the System, and is structured and managed to achieve the following objectives:

- a. Control risk through proper diversification of asset classes and by establishing long-term risk and return expectations; and

- b. As applicable to the pension plan, achieve a long-term rate of return that:
 - i. Exceeds the assumed actuarial rate of return adopted by the Board;
 - ii. Exceeds the long-term rate of inflation by an annualized 5 percent; and
 - iii. Exceeds the return of the Fund Policy Benchmark.

Categories of permissible investments include cash equivalents, debt securities, private markets, derivatives, mutual funds, closed-end funds, publicly traded or Rule 144A assets, and commingled funds.

On September 19, 2019, the Board of Trustees approved an amended Investment Policy Statement effective October 1, 2019. The amendments include revised asset class target weights, establishing a benchmark for Asset Allocation Leverage, and updating asset class ranges. The target asset allocation set forth in the Investment Policy Statement dated October 1, 2018 is shown as of August 31, 2019. Additionally, the target asset allocation set forth in the amended Investment Policy Statement dated October 1, 2019 and the expected long-term portfolio returns resulting from the updated asset allocation set forth in the amended Investment Policy Statement is shown for comparison and relevance.

Asset Class	FY 2019 Target Allocation* %	New Target Allocation** %	Long-Term Expected Geometric Real Rate of Return***
Global Equity			
USA	18.00%	18.00%	6.40%
Non-U.S. Developed	13.00	13.00	6.30
Emerging Markets	9.00	9.00	7.30
Directional Hedge Funds	4.00	—	—
Private Equity	13.00	14.00	8.40
Stable Value			
U.S. Treasuries ****	11.00	16.00	3.10
Stable Value Hedge Funds	4.00	5.00	4.50
Absolute Return (Including Credit Sensitive Investments)	—	—	—
Real Return			
Global Inflation Linked Bonds ****	3.00	—	—
Real Estate	14.00	15.00	8.50
Energy, Natural Resources and Infrastructure	5.00	6.00	7.30
Commodities	—	—	—
Risk Parity			
Risk Parity	5.00	8.00	5.8%/6.5%*****
Asset Allocation Leverage			
Cash	1.0	2.0	2.5
Asset Allocation Leverage	—	(6.0)	2.7
Expected Return		7.23%	

* FY 2019 Target Allocation based on the Strategic Asset Allocation dated 10/1/2018

** New target allocation based on the Strategic Asset Allocation dated 10/1/2019

*** 10-Year annualized geometric nominal returns include the real rate of return and inflation of 2.1%

**** New Target Allocation groups Government Bonds within the stable value allocation. This includes global sovereign nominal and inflation-linked bonds

***** 5.8% (6.5%) return expectation corresponds to Risk Parity with a 10% (12%) target volatility

For the fiscal year ended August 31, 2019, the annual money-weighted rate of return on pension plan investments was 5.1 percent. The annual money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

B. Cash and Deposits

Cash and deposits of the System are maintained in bank accounts and in the State of Texas Treasury. The Treasury invests funds in time deposits, repurchase and reverse repurchase agreements, obligations of the United States government, and obligations of federal credit organizations. The Treasury has an arrangement with financial institutions to collateralize state deposits in excess of depository insurance. As of August 31, 2019, the carrying amount of the system's bank accounts totaled \$109,659,682, the bank balance

totaled \$109,641,778, and cash on hand totaled \$5,604,880.

C. Investments

Fair Value Measurement Techniques

Fair value maximizes the use of relevant observable inputs and minimizes the use of unobservable inputs. A fair value hierarchy prioritizes the inputs to valuation techniques used to measure fair value, assigning the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1) and the lowest priority to unobservable inputs (Level 3). A financial instrument's level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement. Fair value inputs are categorized into the following three levels:

- Level 1 - Quoted prices (unadjusted) in active markets for identical assets or liabilities that can be accessed at the System's measurement date;
- Level 2 - Inputs other than quoted prices included within Level 1 that are observable for an asset or liability, either directly or indirectly;
- Level 3 - Unobservable inputs for an asset or liability.

For investments that do not have a readily determinable fair value and fall outside of the fair value hierarchy, the System establishes fair value by utilizing the Net Asset Value Per Share (NAVPS), or its equivalent, as a practical expedient, provided all of the following criteria are met:

- Fair value is not readily determinable;
- The NAVPS is calculated consistently with the Financial Accounting Standards Board's measurement principles for investment companies (Accounting and Standards Codification Topic 946);
- The NAVPS represents a proportionate share of the net assets to which it is attributed;
- And the NAVPS is provided by the investee.

The System obtains the NAVPS from the most recent capital account statement or audited financial statement issued by a General Partner or Fund Administrator. If either statement's fiscal year end does not coincide with the System's fiscal year end, the NAVPS is adjusted for any distributions or contributions that occur subsequent to the statement's measurement date through the System's fiscal year end.

Short-Term Investments

Short-Term Investments include Short-Term Foreign Currency Contracts, Short-Term Investment Funds (STIF), and Short-Term Commingled Funds.

Short-Term Foreign Currency Contracts are priced at the spot rate in active markets and valued at Level 1.

The STIF is a 2a-7 like fund and is priced at the NAVPS by the custodian bank, State Street Bank and Trust Company. Short-Term Commingled Funds are valued at the NAVPS by the General Partner or Fund Administrator.

Equity Investments

Equity Investments include both Domestic and International Equities.

Equities priced at the last sale price in their respective active markets are valued at Level 1.

Equities that are not actively traded and have a stale price as of the System's measurement date are valued at Level 3.

Fixed Income Investments

Fixed Income Investments include Asset and Mortgage Backed Bonds, Domestic Corporate Bonds, International Corporate Bonds, Sovereign Government Issue Bonds, U.S. Government Agency Bonds, U.S. Treasury Bonds, U.S. Treasury STRIPS, and U.S. TIPS.

U.S. Treasury Bonds priced at the last sale price of the primary exchange are valued at Level 1.

Fixed Income Investments priced using a bid evaluation matrix pricing technique that is based on their relationship to non-proprietary index market quotations, yields, maturities, call features, and ratings are valued at Level 2.

Corporate Bonds priced at Level 3 are valued by a third party.

Alternative Investments

Alternative Investments include Privately Held Equity, Privately Held Debt, Absolute Return, Directional Hedge Funds, Energy, Natural Resources and Infrastructure, Private Equity, Real Assets, Risk Parity, and Stable Value Hedge Funds.

Privately Held Equity and Debt are priced by a third party that uses a guideline market multiples approach and a sum of parts valuation analysis is valued at Level 3.

All other Alternative Investments are valued at the NAVPS by the General Partners or Fund Administrators.

Derivative Investments

Derivative Investments include Forwards, Futures, Options, Rights, Swaps, and Warrants, and they are either executed on an exchange or in a bilateral deal in an over-the-counter (OTC) market with an International Swaps and Derivatives Association (ISDA) counterparty as a broker.

Derivative Investments priced at the last sale price in their respective active markets are valued at Level 1.

Derivative Investments that are valued using a matrix pricing technique that are based on their relationship to benchmark quoted prices are valued at Level 2.

Pooled Investments

Pooled Investments include Commingled Equity, Commingled Fixed Income, and Mutual Funds and are priced at the NAVPS by the General Partners or Fund Administrators.

Other Fair Value Measurements

Invested Securities Lending Collateral is comprised of the reinvested cash collateral received from borrowers in the securities lending program, in addition to the operating costs of the program. Securities priced at the last sale price in their respective active markets are valued at Level 1. Securities priced using a bid evaluation matrix pricing technique that is based on their relationships to non-proprietary index market quotations, yields, maturities, call features, and ratings are valued at Level 2.

Securities Sold Short represent obligations to deliver securities which include Equities and Rights. These obligations are priced at fair value at the last sale price in their respective active markets and valued at Level 1 in the fair value hierarchy.

Fair Value Measurements and Unfunded Commitments

The recurring fair value measurement of the System as of August 31, 2019 are reported on the following page.

The System manages unfunded capital commitments that it is legally obligated to fund when called by a General Partner. Funding of committed capital occurs over an extended time period and may take several years before the total allocation to each asset class is fully invested. Because an individual investment may begin to return capital to the system prior to the full funding of the system's commitment, the outstanding invested capital of the investment might at times be substantially less than the total commitment.

The System's unfunded capital commitment balance is presented as of August 31, 2019. Additionally, as of August 31, 2019, the System reported an unfunded capital commitment balance of \$1,120,151,586 that has not yet been allocated to a specific Alternative Investment type and an unfunded capital commitment balance of \$33,000,000 for externally managed funds that are not reported at the NAVPS.

TRS may sell some investments for an amount different from the NAV per share (or its equivalent). While potential investments have been identified for possible sale, the system has not meet the criteria set forth in GASB 72 to apply prices other than the NAV per share (or its equivalent) as of August 31, 2019.

Investments and Other Items	Total Fair Value	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Short-Term Investments				
Short-Term Foreign Currency Contracts	\$ (1,129)	\$ (1,129)	\$ —	\$ —
U.S. Treasury Bills	—	—	—	—
Total Short-Term Investments	\$ (1,129)	\$ (1,129)	\$ —	\$ —
Equity Investments				
Domestic Equity	\$ 15,890,635,247	\$ 15,890,598,898	\$ —	\$ 36,349
International Equity	27,467,278,579	27,465,946,017	—	1,332,562
Total Equity Investments	\$ 43,357,913,826	\$ 43,356,544,915	\$ —	\$ 1,368,911
Fixed Income Investments				
Asset and Mortgage Backed Bonds	\$ 162,753,861	\$ —	\$ 159,283,755	\$ 3,470,106
Domestic Corporate Bonds	9,617	—	9,367	250
International Corporate Bonds	24,735,514	—	24,735,514	—
Sovereign Government Issue Bonds	1,049,536,316	—	1,049,536,316	—
U.S. Government Agency Bonds	48,316,716	—	48,316,716	—
U.S. Treasury Bonds	17,261,109,669	17,261,109,669	—	—
U.S. Treasury STRIPS	35,769,610	—	35,769,610	—
U.S. TIPS	5,590,894,802	—	5,590,894,802	—
Total Fixed Income Investments	\$ 24,173,126,105	\$ 17,261,109,669	\$ 6,908,546,080	\$ 3,470,356
Alternative Investments				
Privately Held Debt	\$ 71,287,263	\$ —	\$ —	\$ 71,287,263
Privately Held Equity	859,448,322	—	—	859,448,322
Total Alternative Investments	\$ 930,735,585	\$ —	\$ —	\$ 930,735,585
Derivative Investments				
Forwards	\$ 38,001,244	\$ 38,001,244	\$ —	\$ —
Futures	71,149,313	71,149,313	—	—
Options	(14,556,906)	—	(14,556,906)	—
Rights	13,142	13,142	—	—
Swaps	14,531,688	—	14,531,688	—
Warrants	870,868	870,868	—	—
Total Derivative Investments	\$ 110,009,349	\$ 110,034,567	\$ (25,218)	\$ —
Other Fair Value Measurements				
Invested Securities Lending Collateral*	\$ 18,811,348,011	\$ —	\$ 18,333,439,429	\$ 477,908,582
Securities Sold Short	(1,714,558,083)	(1,714,558,083)	—	—
Total Other Fair Value Measurements	\$ 17,096,789,928	\$ (1,714,558,083)	\$ 18,333,439,429	\$ 477,908,582
Total	\$ 85,668,573,664	\$ 59,013,129,939	\$ 25,241,960,291	\$ 1,413,483,434

*Excludes receivables and payables related to the Securities Lending Pool.

Investments	Net Asset Value Per Share (NAVPS)	Unfunded Capital Commitments
Short-Term Investments		
Short-Term Investment Funds	\$ 5,762,115,291	\$ —
Short-Term Commingled Funds	44,691,826	—
Total Short-Term Investments	\$ 5,806,807,117	\$ —
Alternative Investments		
Absolute Return	\$ 4,032,620,305	\$ 2,665,199,965
Directional Hedge Funds	5,679,634,655	105,000,000
Energy, Natural Resources, and Infrastructure	8,597,989,083	6,332,843,160
Private Equity	22,672,861,413	13,870,228,484
Real Estate	21,229,476,434	13,972,903,675
Risk Parity	3,385,110,789	—
Stable Value Hedge Funds	6,583,428,309	—
Total Alternative Investments	\$ 72,181,120,988	\$ 36,946,175,284
Pooled Investments		
Commingled Domestic Equity	\$ 6,466,806,682	\$ —
Commingled Fixed Income	90,127,268	—
Commingled International Equity	5,167,862,346	—
Domestic Mutual Funds	597,333,568	—
Total Pooled Investments	\$ 12,322,129,864	\$ —
Total	\$ 90,310,057,969	\$ 36,946,175,284

Significant Investment Strategies

The System achieves portfolio diversification by investing in a variety of strategies, geographies, and industry sectors for investments reported at the NAVPS.

Absolute Return

U.S. Investment Grade - Invests in U.S. dollar-denominated investment grade securities.

U.S. High Yield - Invests in U.S. dollar-denominated, high-yield corporate bonds issued in the U.S.

U.S. Securitized/Structured - Invests in bonds backed by securities.

Non-U.S. Developed Fixed Income - Primarily invests in sovereign debt issued by developed countries outside of the U.S.

Emerging Market Debt - Invests in debt issued by corporations or governments in emerging market countries.

Partnerships - Invests in fixed income related portfolios managed by strategic partners.

Commingled Equity, Fixed Income, and Mutual Funds

External Public Total Non-U.S. Developed - Invests in long positions in equity securities as well as certain derivatives in non-U.S. developed markets.

External Public Total U.S. - Invests in long positions in equity securities as well as certain derivatives in US markets.

External Public Total World Equity - Invests in equity securities in countries represented in the MSCI ACWI Value Index, as well as certain other global markets. Instruments used include but are not limited to ADRs, swaps, warrants, and other derivative instruments, money market instruments, and currency forwards and/or futures.

External Public Strategic Partnership - Allocations to strategic partners that have a broad mandate to invest in a variety of public markets.

External Public Total Emerging Markets - Invests mainly in equity and equity-related securities traded in the securities markets of newly industrializing countries and emerging markets.

Directional Hedge Funds

Event Driven - Seeks to exploit pricing inefficiencies that may occur before or after a corporate event, such as an earnings call, bankruptcy, merger, acquisition, or spinoff.

Fixed Income - Invests in fixed income strategies which typically involve some amount of credit exposure.

Long Short Equity - Involves buying long equities that are expected to increase in value and selling short equities that are expected to decrease in value.

Multi-Strategy - Engages in a variety of investment strategies with the objective to smooth returns, reduce volatility, and decrease asset-class and single-strategy risks. Strategies adopted in a multi-strategy fund may include, but are not limited to, convertible bond arbitrage, equity long/short, statistical arbitrage and merger arbitrage.

Other - Trades in a broad range of instruments.

Energy, Natural Resources, and Infrastructure

Energy Diversified - Invests in exploration, production, or distribution of oil, gas and other energy sources.

Infrastructure - Invests in infrastructure projects like roads, railways, ports, airports, telecommunications facilities, etc...

Natural Resources - Invests in companies engaged in extractive practices of commodities, including mining for coal, metallic ore, sand, gravel and oil shale; logging of naturally occurring trees; and drilling for oil and gas.

Private Equity

Buyouts - Acquires shares of a company to gain a controlling interest.

Credit/Special Situations - Invests and trades in public and private debt obligations or equity securities or other indebtedness of companies undergoing financial distress, a turn-around in business operations, or companies which management believes are undervalued because of a discrete extraordinary event.

Emerging Managers - Trades in a broad range of instruments with emerging managers.

Venture/Growth Equity - Invests in companies with potential for significant growth.

Real Assets

Core - Invests in stable, fully leased, multi-tenant properties typically within strong, diversified metropolitan markets.

Emerging Managers - Trades in a broad range of instruments with emerging managers.

Opportunistic - Targets underperforming and/or under managed properties, or properties that are temporarily depressed in value.

Other - Trades in a broad range of instruments.

REIT - Invests in companies that own or finance income-producing real estate.

Special Situations - Typically provides both equity and debt capital to distressed properties.

Value Added - Involves buying a property, improving it in some way, and selling it at an opportune time for gain. Properties are considered value added when they exhibit management or operational problems, require physical improvement, and/or suffer from capital constraints.

Risk Parity

Targets specific levels of risk to certain factors and/or assets in order to achieve increased portfolio diversification.

Short-Term Investment and Commingled Funds

Invests in highly liquid short-term (cash-like) funds.

Stable Value Hedge Funds

Commodities and Trends - Trades in a number of debt, equity, foreign exchange and commodity instruments and derivative contracts relating to those instruments, including swaps, indices, forwards, futures and option contracts.

Equity Market Neutral - Seeks to exploit differences in stock prices by being long and short in stocks within the same sector, industry, market capitalization, country, etc.

Fixed Income - Assumes opposing positions in fixed income products to take advantage of small price discrepancies while limiting interest rate risk.

Macro and Volatility - Invests in instruments whose prices fluctuate based on the changes in economic policies, along with the flow of capital around the globe.

Multi-Strategy - Aims to deliver consistently positive returns regardless of the directional movement in equity, interest rate or currency markets.

Other - Trades in a broad range of instruments.

Reinsurance - Provides property catastrophe and specialty reinsurance coverages to insurers and reinsurers on a worldwide basis.

Redemptions

The System's Directional Hedge Funds, Stable Value Hedge Funds, Commingled Domestic Equity, and

Commingled International Equity are subject to redemption restrictions that constrain the System's ability to redeem these types of Alternative and Pooled Investments. The following table details the redemption frequency, redemption notice period, redemption restrictions, such as lockups and gates, and an estimate of the eventual lapse of those restrictions, or, if an estimate cannot be made, the fiscal year in which the restriction took place, by fair value as of August 31, 2019.

Fair Value	Redemption Frequency	Redemption Notice Period	Redemption Restrictions	Redemption Restrictions Lapse
\$ 1,240,024,955	NA	NA	NA	NA
366,372,693	Annually	90 Days	25% Fund Gate	No Estimate; Effective 2010
1,006,138,524	Bi-Monthly	9 Days	30% Fund Gate	No Estimate; Effective 2017
2,100,717,055	Daily	1 - 5 Days	NA	NA
1,740,620,092	Monthly	10 - 30 Days	NA	NA
13,109,554	Quarterly	90 Days	2 Year Lockup; 50% Quarterly Investor Gate	Lockup Lapses 2018; Gate - No Estimate; Effective 2017.
(176,192)	Quarterly	95 Days	NA	NA
\$ 6,466,806,681	Total Commingled Domestic Equity			
1,270,333,718	NA	NA	NA	NA
1,080,075,113	NA	30 Days	NA	NA
1,173,832,980	Monthly	30 Days	NA	NA
480,482,033	Monthly	90 Days	12, 36, 48 Month Lockup	No Estimate; Rolling 3 Year Lock Up Period
456,017,284	Quarterly	60 Days	15% Fund Gate	NA
707,121,217	Quarterly	60 Days	NA	NA
\$ 5,167,862,345	Total Commingled International Equity			
\$ 194,027,000	Annually	3/1	Up to 50% can be redeemed at 25% Fund Gate	No estimate; Effective 2013
118,519,173	Bi-Monthly	15 or 30 Days	10% Fund Gate for 15 Day Notice	No estimate; Effective 2013
4,209,342	Monthly	45 Days	20% Fund Gate	No estimate; Effective 2006
246,536,408	Monthly	25 - 90 Days	20% - 25% Investor Gate	No estimate; Effective 2010-2017
2,035,683,523	Monthly	2 - 60 Days	NA	NA
565,803,085	Monthly, Quarterly, 12/31	Monthly - 45-90 Days; Quarterly - 45 Days; 12/31 - 90 Days	1/6th Investor Gate	No estimate; Effective 2014
459,568,404	Monthly; Semi-Annual	Monthly, 20 Day Notice; Semi-Annual, 10/31 or 03/31 Notice	NA	NA
310,182,772	Quarterly	90 Days	1-Year Soft Lock; 25% Investor Level per Quarter	Lockup Lapses 2019; Gate - No Estimate; Effective 2018
706,121,382	Quarterly	45 - 90 Days	15% - 25% Fund Gate	No estimate; Effective 2007-2015
983,597,805	Quarterly	90 Days	25% Quarterly Investor Gate	No estimate; Effective 2014
546,871,989	Quarterly	90 Days	NA	NA
412,307,427	Semi-Annually	90 Days	16.67% Semi-Annual Investor Gate	No estimate; Effective 2013
\$ 6,583,428,310	Total Stable Value Hedge Funds			

Fair Value	Redemption Frequency	Redemption Notice Period	Redemption Restrictions	Redemption Restrictions Lapse
\$ 16,207,365	24 Months	90 Days	2 Year Lockup	Lockup Lapses 2019
20,983,555	Daily	30 Days	NA	NA
291,252,349	Monthly	60 Days	1 Year Lockup; 20% Fund Gate; 25% Investor Gate	Lockup Lapses 2019; Gate - No Estimate; Effective 2018
18,465,460	Monthly	60 Days	25% Investor Gate	NA
255,235,011	Monthly	90 Days	36 Months, 10% of Capital Lockup Period	Lapses 2019
175,976,104	Monthly	45 - 90 Days	NA	NA
439,935,224	NA	NA	NA	NA
939,166,344	Quarterly	40 - 65 Days	10% - 25% Fund Gate	No Estimate; Effective 2011-2017
906,014	Quarterly	60 Days	20% Quarterly Fund Gate	No Estimate; Effective 2010
874,583,695	Quarterly	60 - 90 Days	16.7% - 25% Investor Gate	No Estimate; Effective 2012-2017
41,065,833	Quarterly	65 - 90 Days	25% Quarterly Investor Gate	No Estimate; Effective 2014-2016
210,611,080	Quarterly	24 Months	35% Investor Gate	No Estimate; Effective 2014
228,823,117	Quarterly	45 Days	3 Year Lockup; 25% Fund Gate	Lockup Lapses 2019; Gate - No Estimate; Effective 2017
292,979,424	Quarterly	90 Days	25% Fund Gate; 3 Year Rolling Hard Lock	Lockup Lapses June 2019; Gate - No Estimate; Effective 2017
352,701,291	Quarterly	45 Days	3 Year Lockup	Lockup Lapses 2020
33,190,044	Quarterly	30 - 65 Days	25% Investor Gate	No Estimate; Effective 2016
573,539,871	Quarterly	45 - 95 Days	NA	NA
109,091,100	Semi-Annually	90 Days	20% Fund Gate	No Estimate; Effective 2010
352,746,483	Semi-Annually	95 Days	NA	NA
150,375,290	Yearly	60 Days	NA	NA
301,800,000	Yearly	90 Days	25% Investor Gate	NA
\$ 5,679,634,654 Total Directional Hedge Funds				

Liquidations

The System receives distributions through the liquidation of the underlying assets of the investees for a majority of its Alternative Investment interests in Private Equity, Real Assets, and Energy, Natural

Resources, and Infrastructure since these investments can never be redeemed with the investees. The following table discloses the System's estimate of the period over which the underlying assets are expected to be liquidated by the investees as of August 31, 2019.

Investment Type	Less than 1 Year	1-5 Years	6-10 Years	Greater than 10 Years	N/A	Total
Absolute Return	\$ —	\$ 1,568,807,271	\$ —	\$ —	\$ 2,463,813,033	\$ 4,032,620,304
Energy, Natural Resources, and Infrastructure	861,516,610	3,268,115,189	3,749,478,720	718,878,564	—	8,597,989,083
Private Equity	1,094,341,277	10,874,339,451	8,727,385,807	1,976,794,879	—	22,672,861,414
Real Estate	691,854,987	4,991,292,746	8,435,307,356	7,111,021,345	—	21,229,476,434
Risk Parity	—	—	—	—	3,385,110,789	3,385,110,789
Total	\$ 2,647,712,874	\$20,702,554,657	\$20,912,171,883	\$ 9,806,694,788	\$ 5,848,923,822	\$59,918,058,024

D. Derivative Investments

Derivatives are used to efficiently manage and reduce the risk of the overall investment portfolio. Through the use of derivatives, the risks that are bound together in traditional cash market investments can be

separated and managed independently. Derivative Investments are classified as Investments on the Statement of Fiduciary Net Position, and the changes

in their fair value are classified as Investment Revenue on the Statement of Changes in Fiduciary Net Position. The fair value, changes in fair value, and notional value of the System's Derivative Investments, classified by derivative type, are displayed in the following table as of August 31, 2019.

The System's over-the counter (OTC) Derivative Investments include contingent features that require the System to post collateral in the event that the fair

value surpasses a specified contractual threshold. The aggregate fair value of all Derivative Investments with these collateral posting provisions is \$15,400,480, and as of August 31, 2019, the System has posted \$29,260,191 in collateral. At August 31, 2019, the System has not triggered any events that would require the posting of additional collateral to its counterparties.

Fiduciary Funds Derivative Investments	Fair Value	Change in Fair Value Gain/(Loss)	Notional Value
Forwards			
FX Forwards	\$ 38,001,244	\$ 174,588,651	\$ (2,922,794,713)
Total Forwards	\$ 38,001,244	\$ 174,588,651	
Futures			
Commodity Futures	\$ (1,949,644)	\$ (43,664,088)	1,219,056,252
Fixed Income Futures	79,902,662	510,972,406	3,716,995,405
Foreign Currency Futures	308,601	963,022	(7,457,217)
Index Futures	(7,112,305)	(68,264,432)	4,978,401,532
Total Futures	\$ 71,149,314	\$ 400,006,908	
Options			
Equity Options	\$ —	\$ —	—
Futures Options	—	6,094	—
Index Options	(14,556,906)	(29,439,481)	(23,652,242)
Total Options	\$ (14,556,906)	\$ (29,433,387)	
Rights			
Rights	\$ 13,142	\$ (31,666)	12,732
Total Rights	\$ 13,142	\$ (31,666)	
Swaps			
Credit Default Swaps	\$ 24,932,422	\$ (5,048,342)	727,097,006
Interest Rate Swaps	(1,773,380)	218,553	(25,507,904)
Total Return Swaps	(8,627,354)	(47,996,398)	379,072,541
Total Swaps	\$ 14,531,688	\$ (52,826,187)	
Warrants			
Warrants	\$ 870,868	\$ (846,182)	3,856,868
Total Warrants	\$ 870,868	\$ (846,182)	
Total	\$ 110,009,350	\$ 491,458,137	

E. Securities Lending

The System is authorized by Section 825.303, Govt Code, to lend securities in accordance with the Securities Lending Policy adopted effective May 1, 2017 by the Board of Trustees and as required by statute. The system's custodian and lending agent, State Street Bank and Trust Company, administers the

securities lending program for domestic and international equity and fixed income securities. TRS securities held by a prime broker are not eligible for securities lending by the prime broker. During the reporting period, Securities Lending Policy changes permitted the lending agent to act as a principal to borrow TRS securities for its own account. This change facilitates the system's participation in the custodian's enhanced custody program, which allows the

retirement system to self-borrow securities for short sale deliveries and to finance market borrowing through loans of securities to the lending agent. The Securities Lending Policy can be accessed at www.trstexas.gov. There were no significant policy violations during the fiscal year.

Collateral received from borrowers is delivered to the lending agent in the form of cash or government securities eligible for book entry in either the Federal Reserve system or the Participants Trust Company, or their respective successors. The initial collateral delivered to secure a loan of domestic securities must have a market value of at least 102 percent of the initial market value of domestic loaned securities and at least 105 percent of the initial market value of international loaned securities. Collateral is marked to market daily. If, while the loan is outstanding, the current market value of the collateral initially delivered is less than 100 percent or 105 percent of the current market value of the domestic or international securities, respectively, the lending agent must require the borrower to deliver additional collateral to restore the value to 102 percent or 105 percent of the current market value of the loaned securities for domestic or international securities, respectively. The system is authorized to invest cash collateral in the following types of instruments: U.S. government securities or U.S. government-sponsored enterprise (GSE) securities, money market instruments, repurchase agreements, fixed or floating rate debt obligations, and derivative instruments.

The securities lending contracts require the custodian to indemnify the system against loss resulting from borrower default or failure of the agent to properly execute its responsibilities under the lending agreement as required by Section 825.303(b)(3), Govt Code. Non-cash collateral cannot be pledged or sold unless the borrower defaults. All securities loans can be terminated on demand by the System or the borrower, and there are no restrictions on the amount of loans that can be made.

The par value, dollar-weighted average maturity of the collective cash collateral investment portfolio may not exceed 120 days. The expected final maturity of any individual fixed-rate instrument and individual floating-rate instrument may not exceed 36 months and seven years, respectively. As of August 31, 2019, the maturities of the investments made with cash collateral generally match the maturities of their securities loans, with the weighted average maturity of the invested cash collateral at 15 days, and the

weighted average term of all securities on loan at 17 days.

As of August 31, 2019, the system reported Invested Securities Lending Collateral worth \$18,832,476,273. The system holds \$18,821,814,504 in cash collateral and \$1,464,575,837 in non-cash collateral. Securities on loan totaled \$20,549,515,372, which included \$653,645,700 lent to the lending agent. Securities on loan include investments in Domestic Corporate Bonds, Domestic Equities, International Equities, U.S. Government Agency Bonds, and U.S. Treasury Bonds.

F. Deposit and Investment Risk Factors

Custodial Credit Risk

Custodial credit risk for deposits is the risk that, in the event of the failure of a depository financial institution, the System will not be able to recover deposits or will not be able to recover collateral securities that are in the possession of an outside party. Custodial credit risk for investments is the risk that, in the event of the failure of the counterparty to a transaction, the System will not be able to recover the value of investment or collateral securities that are in the possession of an outside party.

Deposits

The System does not have a formal deposit policy for custodial credit risk. Deposits held at the State of Texas Treasury are not subject to custodial credit risk since the Treasury holds collateral in the System's name in excess of depository insurance. Deposits held in bank accounts in excess of depository insurance are uninsured and uncollateralized. As of August 31, 2019, \$109,068,161 of the System's bank balance was uninsured and uncollateralized.

Investments

The System has contracted with State Street Bank and Trust Company and Goldman Sachs to serve as custodians for the System's investments. The System does not have a formal investment policy for custodial credit risk. As of August 31, 2019, the Short-Term Investment Fund is held by the custodian in a 2a-7 like investment pool not evidenced by a security and is not exposed to custodial credit risk. These securities are held in the name of the system by the custodian. All other investments are registered in the name of the Teachers Retirement System of Texas or in the name of the System's custodian.

Securities Lending

The System does not have a formal investment policy for custodial credit risk for its securities lending program. The System reinvests all cash collateral received in an unrated cash collateral pool held by the System's securities lending agent and is, therefore, not exposed to custodial credit risk. Since non-cash

collateral is not reported on the balance sheet, it is exposed to custodial credit risk, as is the related underlying securities on loan. The following table shows the underlying securities for the non-cash collateral loans, which are held by the counterparty, the securities lending agent, but not in the System's name and are not insured as of August 31, 2019.

Investment Type	Securities on Loan Fair Value	Non-Cash Collateral Value
Domestic Corporate Bonds	\$ 4,169	\$ 4,250
Domestic Equity	751,449,902	758,187,834
International Equity	440,481,363	445,529,115
U.S. Treasury Bonds	255,589,070	260,854,675
Total	\$ 1,447,524,504	\$ 1,464,575,874

Credit Risk

Credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligations.

Investments

The System does not have a formal credit risk policy for its investments. The S&P credit rating and fair value of

the System's Fixed Income Investments as of August 31, 2019 is disclosed in the following table.

Credit ratings of U.S. Treasuries, U.S. Treasury STRIPS, and U.S. TIPS are not disclosed since these investments are explicitly guaranteed by the U.S. Government. The System's Short-Term Investment Funds and Short-Term Commingled Funds are unrated.

Fixed Income Investment Type						
S&P Rating	Asset and Mortgage Backed Bonds	Domestic Corporate Bonds	International Corporate Bonds	Sovereign Government Issue Bonds	U.S. Government Agency Bonds ¹	Total
AAA	\$ 10,320,257	\$ —	\$ —	\$ —	\$ —	10,320,257
AA+	6,592,858	—	—	—	37,498,852	44,091,710
AA	2,390,261	—	—	—	—	2,390,261
AA-	319,906	—	—	—	—	319,906
A+	135,023	—	—	—	—	135,023
A	11,699,717	—	—	—	—	11,699,717
A-	1,413,672	—	—	—	—	1,413,672
BBB+	6,452,685	—	—	—	—	6,452,685
BBB	23,973,286	—	—	—	—	23,973,286
BBB-	3,366,345	—	—	—	—	3,366,345
BB+	2,048,948	—	4,968,184	—	—	7,017,132
BB	2,740,494	—	3,143,910	—	—	5,884,404
BB-	2,937,871	—	7,347,030	—	901,903	11,186,804
B+	3,036,068	—	3,060,360	4,580	1,506,830	7,607,838
B	3,724,992	—	—	—	—	3,724,992
B-	1,988,228	—	—	—	—	1,988,228
CCC+	—	—	—	—	—	—
CCC	18,482,355	—	—	—	—	18,482,355
CCC-	—	—	—	7,341,574	—	7,341,574
CC	493,697	—	—	—	—	493,697
D	3,005,610	—	—	—	—	3,005,610
NR ²	57,631,588	9,617	6,216,030	1,042,190,162	8,409,131	1,114,456,528
Total	\$ 162,753,861	\$ 9,617	\$ 24,735,514	\$ 1,049,536,316	\$ 48,316,716	\$ 1,285,352,024

¹U.S. Government Agency Bonds (FHLB, FNMA, FHLMC) are implicitly guaranteed by the U.S. Government.

²NR represents unrated securities.

Derivative Investments

The maximum allowable unsecured counterparty exposure for over-the-counter (OTC) derivative transactions is \$500 million, based on the total net market value of all OTC positions held with each counterparty. The total counterparty exposure for each counterparty, including the collateralized portions of these agreements, may not exceed 5 percent of the System's total fund market value. The minimum credit rating, based on a Nationally Recognized Statistical Rating Organization (NRSRO), must be rated at least A- or better at the inception of the contract. For any counterparty that experiences deterioration in credit quality that results in a NRSRO rating below the A- level, subsequent to the inception of transaction, additional eligible collateral may be posted, or the transaction may be terminated.

All OTC derivatives must be governed by an International Swaps and Derivatives Association (ISDA) Master Agreement and Credit Support Annex or, if centrally cleared by clearing agreements, the close-out

netting provisions and collateralization provisions must be included.

The counterparty limits for repurchase transactions and tri-party repurchase transactions may not exceed 5 percent of the System's total fund market value, unless the transactions are covered by a third-party indemnification agreement by an organization that bears a long-term NRSRO credit rating of A- or better and is enhanced by acceptable collateral. Each repurchase agreement will be entered into under the Public Securities Association (PSA) and International Securities Market Association (ISMA) Global Master Repurchase Agreement. Each ISDA Master Agreement must also include a table that delineates the excess purchased securities margin (haircut) required, based on the collateral type, duration, and credit quality.

The following table discloses the net exposure to credit risk by counterparty and their corresponding credit rating by each of the Big Three credit rating agencies as of August 31, 2019.

The aggregate fair value of Derivative Investment instruments in asset positions as of August 31, 2019, was \$149,356,659, which represents the maximum amount of loss due to credit risk that would be recognized if all counterparties failed to perform as contracted. The exposure is reduced by \$14,571,777 of collateral held and \$103,024,708 of liabilities included in netting arrangements with those counterparties, resulting in a net exposure to credit risk of \$31,760,174.

The System's net exposure to credit risk is limited to 5% of the market value of the system's total fund value. As of August 31, 2019, significant concentrations of net exposure to credit risk existed at UBS AG (99%), but the net exposure for the counterparty did not surpass 5% of the System's total fund market value.

Counterparty	Net Exposure	Percentage of Net Exposure	S&P Rating	Fitch Rating	Moody's Rating
Credit Suisse	\$ 124,797	0.4%	A+	A	A1
Goldman Sachs	104,724	0.3	A+	A	A1
UBS AG	31,530,653	99.3	A+	AA-	Aa3
Total	\$ 31,760,174	100.0%			

Securities Lending

Instruments having a maturity at the time of purchase of less than 13 months must be rated in one of the two highest short-term ratings categories of the following Nationally Recognized Statistical Ratings Organizations (NRSRO) - Moody's, Standard & Poor's, Fitch or DBRS - or be considered by the Board of Trustees to be of comparable quality. Instruments having a maturity at the time of purchase greater than 13 months must be rated at the time of purchase within the highest major, long-term rating category of an NRSRO (e.g., Moody's A3 or Standard & Poor's A-), or, if unrated, be determined to be of comparable quality by the Board of Trustees. As of August 31, 2019, there was no credit risk exposure because the amounts owed to borrowers exceeded the amounts owed to the system.

Interest Rate Risk

Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment.

Investments

The System does not have a formal interest rate risk policy for its investments. The following table presents the fair value and the weighted effective duration rate for the System's Fixed Income Investments that are subject to interest rate risk as of August 31, 2019.

Asset and Mortgage Backed Bonds are based on cash flows from interest payments on underlying mortgages, which makes them sensitive to interest rate changes when mortgagees make prepayments in periods of declining interest rates.

Fixed Income Investment Type	Fair Value	Weighted Effective Duration Rate
Asset and Mortgage Backed Bonds	\$ 162,753,861	1.3
Domestic Corporate Bonds	9,617	3.0
International Corporate Bonds	24,735,514	3.6
Sovereign Government Issue Bonds	1,049,536,316	10.8
U.S. Government Agency Bonds	48,316,716	2.1
U.S. Treasury Bonds	17,261,109,669	18.1
U.S. Treasury STRIPS	35,769,610	16.5
U.S. TIPS	5,590,894,802	8.1
U.S. Treasury Bills	—	—
Total	\$ 24,173,126,105	15.3

Derivative Investments

The System does not have a formal interest rate risk policy for its Derivative Investments. The System's investments in Swaps are highly sensitive to interest

rate changes because they are based on fluctuating Interbank Offered Rates.

As the Rates fluctuate, the total expected cash flows will fluctuate. The reference rates, embedded options, fair value, and notional value of the system's Interest

Rate and Return Swaps that are exposed to interest rate risk, as of August 31, 2019, are presented in the following table.

Reference Rate & Embedded Options	Investment Maturities (in Years)				Notional Value
	Fair Value	Less than 1	1-5	6-10	
Interest Rate Swaps					
Receive Variable 3-month LIBOR, Pay Fixed 1.60550%	\$ (47,602)	\$ —	\$ —	\$ (47,602)	\$ (2,385,000)
Receive Variable 3-month LIBOR, Pay Fixed 2.61200%	(440,570)	—	(440,570)	—	(8,010,000)
Receive Variable 3-month LIBOR, Pay Fixed 2.63900%	(448,910)	—	(448,910)	—	(7,975,000)
Receive Variable 3-month STIBO, Pay Fixed 1.34950%	(836,297)	—	—	(836,297)	(7,137,904)
Total Interest Rate Swaps	\$ (1,773,379)	\$ —	\$ (889,480)	\$ (883,899)	
Total Return Swaps					
Receive Equity, Pay Variable 12-month FEDL	\$ 1,169,672	\$ 496,090	\$ 673,582	\$ —	\$ 54,242,502
Receive Equity, Pay Variable 3-month EURIB	97,432	97,432	—	—	15,459,994
Receive Equity, Pay Variable 3-month LIBOR	(5,440,089)	(5,440,089)	—	—	1,062,885,158
Receive Equity, Pay Variable 6-month HIBOR	7,915	7,915	—	—	3,166,760
Receive Variable 11-month FEDL0, Pay Equity	(222,424)	(222,424)	—	—	(4,091,753)
Receive Variable 12-month FEDL, Pay Equity	(309,847)	(249,000)	(60,847)	—	(32,520,863)
Receive Variable 12-month SOFRR, Pay Equity	(247,403)	—	(247,403)	—	(16,699,607)
Receive Variable 1-month FED01, Pay Equity	(32,619)	(32,619)	—	—	(2,265,532)
Receive Variable 3-month EURIB, Pay Equity	(121,704)	(121,704)	—	—	(15,455,140)
Receive Variable 3-month LIBOR, Pay Equity	(6,746,469)	(6,746,469)	—	—	(800,351,416)
Receive Variable 3-month BBSW, Pay Equity	(8,891)	(8,891)	—	—	(9,655,274)
Receive Equity, Pay Variable LIBOR 1 Week	1,442,823	1,442,823	—	—	15,611,858
Receive Variable SONIO/N, Pay Equity	2,734,663	2,734,663	—	—	(17,190,342)
Receive Variable EONIA, Pay Equity	(130,571)	(130,571)	—	—	(10,381,010)
Receive Variable JYMUON, Pay Equity	665,683	665,683	—	—	(29,822,223)
Receive Variable HIBOR, Pay Equity	1,079,114	1,079,114	—	—	(5,731,623)
Receive Variable RBACOR, Pay Equity	(1,383,941)	(1,383,941)	—	—	(13,492,676)
Receive Equity, Pay Variable EE000 1 Week	(157,206)	(157,206)	—	—	7,878,995
Receive Equity, Pay Variable TIBOR 1 Week	(1,736,741)	(1,736,741)	—	—	33,129,399
Receive Equity, Pay Variable BBSW 1 Month	10,674	10,674	—	—	16,870,725
Receive Equity, Pay Variable HIBOR 1 Week	31,890	31,890	—	—	7,953,651
Total Return Swaps	\$ (9,298,039)	\$ (9,663,371)	\$ 365,332	\$ —	
Total	\$ (11,071,418)	\$ (9,663,371)	\$ (524,148)	\$ (883,899)	

Foreign Currency Risk

Foreign currency risk is the risk that changes in exchange rates will adversely affect the fair value of a deposit or an investment. The System does not have a formal deposit policy for foreign currency risk. The risk of holding investments in foreign currency is managed by applying currency hedge ratios to the system's public markets and private markets non-dollar

exposures. Each currency hedge ratio is the percentage of aggregate, non-dollar currency exposure to be passively hedged, and the hedging horizon is intermediate (one to three years). The System's exposure to foreign currency risk as of August 31, 2019 is presented in the following table.

Notes to the Financial Statements

Currency by Country	Cash	Alternative Investments	Derivative Investments	Equity Investments	Fixed Income Investments	Pooled Investments	Total
Argentina Peso	\$ —	\$ —	\$ (1,745,264)	\$ —	\$ —	\$ —	\$ (1,745,264)
Australia Dollar	1,911,207	—	65,278,209	748,237,655	216,003,730	—	1,031,430,801
Bangladesh Taka	3	—	—	—	—	—	3
Botswana Pula	—	—	—	64,048	—	—	64,048
Brazil Real	415,428	—	(7,004,800)	638,583,115	—	—	631,993,743
Canada Dollar	3,985,280	—	1,959,352	1,632,464,798	—	—	1,638,409,430
Chile Peso	1,841	—	710,421	42,818,818	—	—	43,531,080
China Yuan Renminbi	2,843,852	—	7,915	196,409,048	—	—	199,260,815
China Yuan Renminbi Offshore	(1,810,477)	—	(8,456,418)	—	—	—	(10,266,895)
Colombia Peso	54,000	—	437,640	9,279,234	—	—	9,770,874
Czech Republic Koruna	3,620,441	—	(529,279)	21,069,716	—	—	24,160,878
Denmark Krone	34,316	—	3,029	208,309,184	—	—	208,346,529
Egypt Pound	1,180	—	—	31,123,597	—	—	31,124,777
Euro Member Countries	64,737,669	3,160,540,486	61,882,503	4,972,533,846	417,674,965	480,482,033	9,157,851,502
Hong Kong Dollar	11,572,606	—	1,155,700	2,519,556,663	—	—	2,532,284,969
Hungary Forint	3,749	—	1,000,435	61,993,153	—	—	62,997,337
India Rupee	484,116	—	(1,617,201)	988,652,055	270	—	987,519,240
Indonesia Rupiah	253,218	—	84,777	348,110,424	—	—	348,448,419
Israel Shekel	1,162,646	—	580,329	49,985,114	—	—	51,728,089
Japan Yen	8,129,704	—	(1,644,890)	3,890,381,932	7,991,213	—	3,904,857,959
Korea (South) Won	4,935,216	—	200,948	1,275,978,211	—	—	1,281,114,375
Kuwait Dinar	—	—	—	5	—	—	5
Malaysia Ringgit	5,008	—	—	174,960,451	—	—	174,965,459
Mexico Peso	768,111	—	1,009,632	308,812,470	—	—	310,590,213
Morocco Dirham	—	—	—	—	—	—	—
New Zealand Dollar	4,291	—	2,029,176	18,066,736	—	—	20,100,203
Nigeria Naira	—	—	—	4,044	—	—	4,044
Norway Krone	101,254	—	(12,878,686)	293,297,802	—	—	280,520,370
Pakistan Rupee	—	—	—	7,344,964	—	—	7,344,964
Peru Sol	—	—	157,716	—	—	—	157,716
Philippines Peso	17,857	—	112,640	92,953,792	—	—	93,084,289
Poland Zloty	409,877	—	(102,725)	78,089,213	—	—	78,396,365
Qatar Riyal	112,353	—	—	31,870,204	—	—	31,982,557
Romania New Leu	—	—	(138,810)	—	—	—	(138,810)
Russia Ruble	—	—	217,773	155,146,763	—	—	155,364,536
Saudi Arabia Riyal	955,573	—	—	32,535,594	—	—	33,491,167
Singapore Dollar	185,602	—	734,615	157,719,322	—	—	158,639,539
South Africa Rand	309,967	—	(2,867,261)	539,778,996	—	—	537,221,702
Sweden Krona	139,881	—	3,245,825	227,983,728	—	—	231,369,434
Switzerland Franc	199,184	—	(439,844)	1,129,495,339	—	—	1,129,254,679
Taiwan New Dollar	1,847,180	—	(233,605)	997,911,960	—	—	999,525,535
Thailand Baht	1,825,027	—	(14,192)	334,797,702	—	—	336,608,537
Tunisia Dinar	—	—	—	—	—	—	—
Turkey Lira	3,922	—	1,090,364	116,532,750	—	—	117,627,036
United Arab Emirates Dirham	306,094	—	—	53,930,473	—	—	54,236,567
United Kingdom Pound	3,500,899	484,255,587	14,923,995	2,407,356,522	400,524,834	—	3,310,561,837
Viet Nam Dong	—	—	—	87	—	—	87
Total	\$ 113,028,075	\$ 3,644,796,073	\$ 119,150,019	\$ 24,794,139,528	\$ 1,042,195,012	\$ 480,482,033	\$ 30,193,790,740

Note 4: Employee Compensable Leave

Salary costs related to an employees' right to be compensated for leave balances are accrued as expenses in the period in which the services are rendered. Accumulated compensable leave liabilities are reported in the Statement of Fiduciary Net Position for the Pension and Other Post-Employment Benefit Trust Funds and in the Statement of Net Position for the Proprietary Funds.

Note 5: Operating Leases

In the fiscal year 2014, TRS entered into a non-cancelable operating lease agreement for building space which expires March 31, 2021. As part of the building lease, TRS received a construction allowance which is being amortized on a straight-line basis over the life of the lease as a reduction of rental expenses.

Rental expenses related to the lease for the fiscal year ended August 31, 2019 for the Pension Trust Fund were \$3,818,374, including an adjustment for amortization of unrealized lease incentives of \$75,254. Fees for off-site storage for data security, copier rentals, and a mail machine were \$12,644, \$382,910, and \$189,656, respectively. Rental expenses related to the Teacher Retirement Investment Company of Texas (TRICOT) located in London were \$516,320 for leases.

The future minimum lease payments for the next nine years are listed in the following table.

Fiscal Year	Amount
2020	\$ 2,403,149
2021	1,731,738
2022	499,862
2023	179,545
2024	172,660
2025-2029	862,475
Total	\$ 5,849,429

Note 6: Fringe Benefits Paid by the State of Texas and the Federal Government

The State has a joint contributory retirement plan for substantially all its employees. The employees of TRS participate in the same pension plan they administer (Note 11).

Federal legislation enacted in January 2006 established prescription drug coverage for Medicare beneficiaries known as Medicare Part D. One of the provisions of Medicare Part D provided Retiree Drug Subsidy (RDS) reimbursements to TRS-Care on behalf of certain plan participants totaling \$3,478,125 for the fiscal year

ended August 31, 2019. TRS-Care's Employer Group Waiver Plan (EGWP) reimbursements totaled \$20,361,900 for Medicare Part D direct subsidies, \$194,556,010 for catastrophic reinsurance subsidies, and \$2,387,863 for low income subsidies.

Note 7: Contingent Liabilities

Sick leave, the accumulation of which is unlimited, is earned at the rate of eight hours per month and is taken only in the event of illness or paid to the estate of an employee in the event of death. Pursuant to Texas Government Code 661.033, the maximum sick leave that may be paid to an employee's estate is one-half of the employee's accumulated entitlement or 336 hours, whichever is less. The balance of vacation leave, the accumulation of which is limited based on years of service is also paid to the estate of an employee in the event of death. The System's policy is to recognize the cost of any sick leave when paid and to recognize the cost of any vacation leave when earned.

The System is contingently liable for retro-active retirement benefits payable to retiring members who complete the retirement process within one year of applying for retirement benefits. As of August 31, 2019, the maximum liability for pending retirement benefits payable is \$2.9 million.

In addition, under Texas Insurance Code, Article 3.51-7, the System is liable to pay a lump-sum death benefit of \$2,500 when added to the death benefit authorized under Texas Government Code, Title 8, Chapter 824, to the beneficiaries of deceased, retired employees.

A Performance Incentive Compensation Plan was adopted effective September 2007 and amended 2015, to enable the system to remain competitive in its efforts to attract, retain and motivate high caliber investment division staff. The purpose of the Plan is to provide the opportunity for investment division employees to earn performance incentive pay based on the fund's investment performance and the employee's job performance. The performance incentive pay is paid over the subsequent 2 years. The remaining liability for the incentive pay plan year ending September 30, 2018 will not exceed \$4.4 million. For the incentive pay plan year ending September 30, 2019, the liability is estimated not to exceed \$28.2 million. Payments can only be earned following years in which the Pension Trust Fund experiences a positive return, and employees must be employed by TRS on the designated dates in the Plan in order to earn and receive payment. The Board of Trustees may cancel or modify the Plan at any time.

An Executive Performance Incentive Plan was adopted effective July 1, 2016 in order to remain competitive in its efforts to attract and retain high caliber executives. The purpose of the plan is to provide an opportunity for select executive management to earn performance incentive pay based on key objectives tied to the overall success of TRS. The performance incentive pay is paid over the subsequent 2 years. For the incentive pay plan year ending June 30, 2018, the remaining liability is estimated at \$51,000. The plan year changed during the year to a September 30 year-end so the remaining liability for 2018 was adjusted accordingly. For the incentive pay plan year ending September 30, 2019, the liability is estimated at \$213,000.

TRS is a defendant in litigation involving issues arising from its normal activities. The outcome of this litigation cannot be determined at this time. Based upon consultation with legal counsel, management believes there will be no material adverse effect on the basic financial statements as a result of the ultimate outcome of these matters.

Note 8: Continuance Subject to Review

As provided by Texas Government Code, Title 8, Section 825.006, "The Board of Trustees of the Teacher Retirement System of Texas is subject to review under Chapter 325 (Texas Sunset Act), but is not abolished under that chapter. The board shall be reviewed during the period in which state agencies abolished in 2021, and every 12th year after that year, are reviewed."

Note 9: Other Post-Employment Benefits (OPEB) Plan - TRS-Care

A. Plan Description

The Texas Public School Retired Employees Group Insurance Program (TRS-Care) is a multiple-employer, cost-sharing, defined Other Post-Employment Benefit (OPEB) plan with a special funding situation. The TRS-Care program was established in 1986 by the Texas Legislature.

The Board of Trustees of TRS administers the TRS-Care program and the related fund in accordance with the Texas Insurance Code Chapter 1575. The Board of Trustees is granted the authority to establish basic and optional group insurance coverage for participants as well as to amend benefit terms as needed under Chapter 1575.052. The Board may adopt rules, plans, procedures, and orders reasonably necessary to administer the program, including minimum benefits and financing standards. Information regarding the

TRS-Care board and its composition can be found on page 3 and in Note 1.

B. Benefits Provided

TRS-Care provides health insurance coverage to retirees from public schools, charter schools, regional service centers, and other educational districts who are members of the TRS pension system. Eligible non-Medicare retirees and their dependents may enroll in TRS-Care Standard, a high-deductible health plan. Eligible Medicare retirees and their dependents may enroll in the TRS-Care Medicare Advantage medical plan and the TRS-Care Medicare Rx prescription drug plan. To qualify for TRS-Care coverage, a retiree must have at least 10 years of service credit in the TRS pension system. For more information on TRS-Care eligibility and detailed information on TRS-Care, please refer to the Benefits section.

The General Appropriations Act passed by the 86th Legislature included funding to maintain TRS Care premiums at their current level through 2021. The 86th legislature also passed SB 1682 which requires TRS to establish a contingency reserve in the TRS-Care fund equal to 60 days of expenditures.

C. Contributors to the Plan

Contributors to the plan include active and retired members, employers, and the State of Texas as the only non-employer contributing entity.

During fiscal year 2019, the number of participating employers are presented in the following table.

Participating Employers	
Independent School Districts*	1,022
Open Enrollment Charter Schools	179
Regional Service Centers	20
Other Educational Districts	3
Total	1,224

*Excludes Windham School District which is not covered by TRS-Care.

TRS-Care plan membership as of August 31, 2018 is shown in the following table. Because the actuarial valuation was based on a roll-forward (See Section F), the counts are as of that date.

TRS-Care Plan Membership	
Active plan members	718,000
Inactive plan members currently receiving benefits	194,346
Inactive plan members entitled to but not yet receiving benefits	14,142
Total	926,488

The Average Expected Remaining Service Life (AERSL) of 9.0344 is based on the membership information as of the beginning of the fiscal year.

D. Contributions

Contribution rates for the TRS-Care plan are established in State Statute by the Texas Legislature, and there is no continuing obligation to provide benefits beyond each fiscal year. The TRS-Care plan is currently funded on a pay-as-you-go basis and is subject to change based on available funding. Funding for TRS-Care is provided by retiree premium contributions; and contributions from the state, active employees, and participating employers are based on active employee compensation. The TRS Board does not have the authority to set or amend contribution rates.

At the inception of the plan, funding was projected to last 10 years through fiscal year 1995. The original funding was sufficient to maintain the solvency of the fund through fiscal year 2000. Since that time, appropriations and contributions have been established to fund the benefits for each successive biennium.

Section 1575.202 of the Texas Insurance Code establishes the State's contribution rate which is 1.25 percent of the employee's salary. Section 1575.203 establishes the active employee rate which is 0.65 percent of salary. Section 1575.204 establishes a public school contribution rate of not less than 0.25 percent or not more than 0.75 percent of the salary of each active employee of the employer. The actual public school contribution rate is prescribed by the Legislature in the General Appropriations Act, which is 0.75 percent of each active employee's pay for fiscal year 2019. The following table shows contributions to the TRS-Care plan by type of contributor.

2019 Contribution Rates		
Contributor	Rate	Amount
Active Employee	0.65% \$	227,338,454
Non-Employer Contributing Entity (State)	1.25	404,936,501
Participating Employers	0.75	262,309,539
Federal/Private Funding*	1.25	32,252,833
Total	\$	926,837,327

*Contributions paid from federal funds and private grants are remitted by the employer and paid at the State rate.

All employers whose employees are covered by the TRS pension plan are also required to pay a surcharge of \$535 per month when employing a retiree of the TRS. The TRS-Care surcharges for fiscal year 2019 totaled \$10,800,712.

A supplemental appropriation was received in 2019 for \$73.6 million, which was re-appropriated from amounts received by the pension and TRS-Care funds in excess of the state's actual obligation and then transferred to TRS-Care.

The premium rates for retirees are reflected in the following table.

TRS-Care Monthly Premium Rates			
		Medicare	Non-Medicare
Retiree or Surviving Spouse	\$	135	\$ 200
Retiree and Spouse	\$	529	\$ 689
Retiree or Surviving Spouse and Children	\$	468	\$ 408
Retiree and Family	\$	1,020	\$ 999

E. Net OPEB Liability

Components of the Net OPEB Liability of the TRS-Care plan as of August 31, 2019 are disclosed in the following table.

Components of Liability	Amount
Total OPEB Liability	\$ 48,583,247,239
Less: Plan Fiduciary Net Position	(1,292,022,349)
Net OPEB Liability	\$ 47,291,224,890
Net Position as a Percentage of Total OPEB Liability	2.66%

F. Actuarial Methods and Assumptions

Roll Forward

The actuarial valuation was performed as of August 31, 2018. Update procedures were used to roll forward the total OPEB liability to August 31, 2019.

The actuarial valuation of the OPEB plan offered through TRS-Care is similar to the actuarial valuation performed for the pension plan, except that the OPEB valuation is more complex. All of the demographic assumptions, including rates of retirement, termination, and disability, and most of the economic assumptions, including general inflation and salary increases, used in the OPEB valuation were identical to those used in the respective TRS pension valuation. The demographic assumptions were developed in the experience study performed for TRS for the period ending August 31, 2017.

The following assumptions used for members of TRS are identical to the assumptions employed in the August 31, 2019 TRS annual pension actuarial valuation:

- Rates of Mortality
- Rates of Retirement
- Rates of Termination
- Rates of Disability
- General Inflation
- Wage Inflation
- Salary Increases

The active mortality rates were based on 90 percent of the RP-2014 Employee Mortality Tables for males and females, with full generational mortality using Scale BB. The post-retirement mortality rates for healthy lives were based on the 2018 TRS of Texas Healthy Pensioner Mortality Tables, with full generational projection using the ultimate improvement rates from the most recently published scale (U-MP).

Health Care Trend Rates

The initial medical trend rates were 10.25 percent for Medicare retirees and 7.50 percent for non-Medicare retirees. There was an initial prescription drug trend rate of 10.25 percent for all retirees. The initial trend rates decrease to an ultimate trend rate of 4.50 percent over a period of 13 years.

Actuarial Methods and Assumptions

Valuation Date	August 31, 2018, rolled forward to August 31, 2019
Actuarial Cost Method	Individual Entry Age Normal
Inflation	2.30%
Single Discount Rate	2.63% as of August 31, 2019
Aging Factors	Based on plan specific experience
Election Rates	Normal Retirement: 65% participation prior to age 65 and 50% after age 65. 25% of pre-65 retirees are assumed to discontinue coverage at age 65
Expenses	Third-party administrative expenses related to the delivery of health care benefits are included in the age-adjusted claims costs.
Salary Increases	3.05% to 9.05%, including inflation
Ad Hoc Post-Employment Benefit Changes	None

The impact of the Cadillac Tax that is returning in fiscal year 2023, has been calculated as a portion of the trend assumption. Assumptions and methods used to determine the impact of the Cadillac Tax include:

- 2018 thresholds of \$850/\$2,292 were indexed annually by 2.30 percent.
- Premium data submitted was not adjusted for permissible exclusions to the Cadillac Tax.
- There were no special adjustments to the dollar limit other than those permissible for non-Medicare retirees over 55.

Results indicate that the value of the excise tax would be reasonably represented by a 25 basis point addition to the long-term trend rate assumption.

G. Discount Rate

A single discount rate of 2.63 percent was used to measure the total OPEB liability. This was a decrease of 1.06 percent in the discount rate since the previous year. Because the plan is a pay-as-you-go plan, the single discount rate is equal to the prevailing municipal bond rate.

H. Change of Assumptions Since the Prior Measurement Date

The following assumptions, methods and plan changes which are specific to TRS-Care were updated from the prior year’s report:

- The discount rate changed from 3.69 percent as of August 31, 2018 to 2.63 percent, as of August 31, 2019. This change increased the total OPEB liability (TOL).
- The participation rate for pre-65 retirees was lowered from 70 percent to 65 percent. The participation rate for post-65 retirees was lowered from 75 percent to 50 percent. 25 percent of pre-65 retirees are assumed to discontinue their coverage at age 65. There was no lapse assumption in the prior valuation. These changes decreased the TOL.
- The trend rates were reset to better reflect the plan's anticipated experience. This change increased the TOL.
- The percentage of retirees who are assumed to have two-person coverage was lowered from 20 percent to 15 percent. In addition, the participation assumption for the surviving spouses of employees that die while actively employed was lowered from 20 percent to 10 percent. These changes decreased the TOL.

I. Change of Benefit Terms Since the Prior Measurement Date

There were no changes in benefit terms since the prior measurement date.

J. Sensitivity of the Net OPEB Liability to the Single Discount Rate Assumption

The following presents the net OPEB liability of the plan using the discount rate for 20-year, tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher, as well as what the net OPEB liability would be if it were calculated using a discount rate that is one-percentage point lower, 1.63 percent, or one-percentage point higher, 3.63 percent, than the AA/Aa rate.

Sensitivity of the Net OPEB Liability to the Single Discount Rate Assumptions		
1% Decrease 1.63%	Current Single Discount Rate 2.63%	1% Increase 3.63%
\$57,095,682,852	\$47,291,224,890	\$39,621,188,484

K. Sensitivity of the Net OPEB Liability to the Healthcare Cost Trend Rate Assumptions

The following presents the net OPEB liability of the plan using the assumed healthcare cost trend rate, as well as what the net OPEB liability would be if it were

calculated using a trend rate that is one-percentage point lower or one-percentage point higher than the assumed healthcare cost trend rate.

Sensitivity of the Net OPEB Liability to the Healthcare Cost Trend Rate Assumptions		
1% Decrease	Current Healthcare Cost Trend Rate	1% Increase
\$38,578,522,354	\$47,291,224,890	\$58,962,245,589

Note 10: Other Post-Employment Benefits (OPEB) Plan - TRS Employees

A. Plan Description

The employees of TRS are provided post-employment health care and basic life insurance benefits through the Texas Employees Group Benefits Program (GBP). The GBP is administered by the board of trustees of the Employees Retirement System (ERS) of Texas and operates under the provisions of the Texas Insurance Code, Chapter 1551. The GBP is a cost-sharing, multiple-employer, post-employment benefit plan with a special funding situation. Benefit and contribution provisions of the plan are authorized by state law and may be amended by the Texas Legislature.

B. Benefits Provided

The Plan covers retired employees of the State and other entities as specified by the State legislature. Eligibility is limited to retirees:

- with 10 or more years of service credit, and is at least 65 years of age, or
- when the sum of a member's age and years of service credit equals or exceeds 80, and
- if the individual was employed, as the last state employment before retirement, by a state agency whose employees are authorized to participate in the group benefits program, or
- if the individual retires under the jurisdiction of the Employees Retirement System of Texas or the Teacher Retirement System of Texas

The benefits include a health plan providing medical and prescription drug coverage and \$2,500 of life insurance. A retiree may pay for spouse and dependent coverage as well as coverage for dental, vision, life and dependent life insurance.

C. Contributors to the Plan

Contributors to the plan include state agencies, universities, junior and community colleges, other entities, the State of Texas as the only non-employer contributing entity, active and retired employees and their dependents.

D. Contributions

Employer and employee contribution rates are determined annually by the ERS Board of Trustees based upon the total amount appropriated by the Texas Legislature. The State of Texas is the only non-employer contributing entity in the plan and is required to contribute the cost of the retiree's group health coverage to the plan. Employers are required to contribute 1 percent of base payroll for group health insurance. TRS pays the State contribution for its employees and retirees. For the fiscal year ended August 31, 2019, there are five programs offered by ERS. The table below represents contribution rates for the most prevalent program.

2019 Contribution Rates Retiree Health and Basic Life Premium		
Type of Coverage	Employer Pays	Employee Pays
Employee Only	\$ 624.82	\$ —
Employee & Spouse	982.82	358.00
Employee & Children	864.52	239.70
Employee & Family	1,222.52	597.70

TRS covers 100 percent of a member only premium and 50 percent of the additional premium for family coverage. The retiree contributes any premium over and above the system's contribution for additional coverage. The amount of TRS contributions recognized by the OPEB plan during the reporting period was \$8,332,250.

E. OPEB Plan Fiduciary Net Position

The fiduciary net position of the Employees Retirement System of Texas (ERS) and their OPEB plan has been determined using the flow of economic resources measurement focus and the full accrual basis of accounting. For purposes of measuring the net OPEB liability, this includes deferred outflows of resources and deferred inflows of resources related to OPEB, OPEB expense, and information about assets, liabilities and additions to/deductions from ERS' fiduciary net position. Benefits and refunds of contributions are recognized when due and payable in accordance with the benefit terms.

The plan is a pay-as-you-go plan and does not accumulate funds in advance of retirement. The ERS Board of Trustees adopted an amendment to the investment policy in August 2017 requiring that all funds be invested in short-term fixed income securities and specified that the expected rate of return on these investments is 2.4 percent.

F. Net OPEB Liability

At August 31, 2019, the amounts recognized by TRS as its proportionate share of the ERS net OPEB liability, the related State support and the total net OPEB liability attributable to TRS are disclosed in the following table.

Components of the ERS OPEB Liability	Amount
TRS' proportionate share of the collective Net OPEB Liability	\$ 85,009,492
State's proportionate share of the collective Net OPEB Liability associated with TRS	N/A*
Total	\$ 85,009,492

*Pursuant to Texas Insurance Code, Sec. 1551.315, TRS paid the State contribution for TRS employees since they were compensated from funds not appropriated in the General Appropriations Act; the State was not allocated any proportionate share of TRS' Net OPEB Liability.

TRS' portion of the collective net OPEB liability at August 31, 2019 was 0.2868285 percent and was based on TRS' employer contributions to the OPEB plan relative to the employer contributions of all employers to the plan for the period September 1, 2017 through August 31, 2018. There was an increase of .0466083 percent in TRS' proportionate share from the prior year of .2402202 percent due to a change in the basis of the allocation from the prior year by the plan administrator.

The net OPEB liability at August 31, 2019 was based on a measurement date of August 31, 2018, and the total OPEB liability used to calculate the net OPEB liability was determined by an actuarial valuation as of August 31, 2018.

G. Actuarial Assumptions

Significant assumptions and other inputs used to measure the total OPEB liability for the Group Benefits Program (GPB) are disclosed in the following table.

Actuarial Methods and Assumptions	
Valuation Date	August 31, 2018
Discount Rate	3.96%
Actuarial Cost Method	Entry Age
Amortization Method	Level % of Payroll, Open
Amortization Period	30 years
Asset Valuation Method	N/A
Salary Increases	2.50% to 9.50%, including inflation
Inflation	2.50%
Ad Hoc Post-Employment Benefit Changes	None
Annual Healthcare Trend Rates	7.3% for FY 2020, 7.4% for FY 2021, 7.0% for FY 2022, decreasing .5% per year to an ultimate rate of 4.5% for FY 2027 and later years

Projections of the sharing of benefit-related costs are based on an established pattern of practice.

The sources of the mortality assumptions for State Agency Members are:

- For Service Retirees, Survivors and other Inactive Members - The 2017 State Retirees of Texas Mortality table with a 1 year set forward for male CPO/CO members and Ultimate MP Projection Scale projected from the year 2017
- For Disability Retirees - The RP-2014 Disabled Retiree Mortality with Ultimate MP Projection Scale projected from the year 2014
- For Active Members - RP-2014 Active Member Mortality tables with Ultimate MP Projection Scale from the year 2014

The sources of the mortality assumptions for Higher Education Members are:

- For Service Retirees, Survivors and other Inactive Members - Tables based on TRS experience with Ultimate MP Projection Scale from the year 2018.
- Disability Retirees - Tables based on the TRS experience with Ultimate MP Projection Scale from the year 2018 using a 3 year set forward and minimum mortality rates of 4 per 100 male members and 2 per 100 female members
- Active Members - Sex Distinct RP-2014 Employee Mortality multiplied by 90 percent

with Ultimate MP Projection Scale from the year 2014

H. Discount Rate

The discount rate used to measure the total OPEB liability was 3.96 percent. The change in the discount rate since the prior measurement date is an increase of .45 percent (from 3.51 percent to 3.96 percent), in order to reflect the requirements of GASB Statement 74.

Projected cash flows into the plan are equal to projected benefit payments out of the OPEB plan.

The long-term expected rate of return on OPEB plan investments, the assumed asset allocation and the arithmetic or geometric means is not applicable since the plan operates on a pay-as-you-go basis and is not intended to accumulate assets.

The municipal bond rate was 3.96 percent and the source of the rate is the Bond Buyer Index of general obligation bonds with 20 years to maturity and mixed credit quality. The bonds' average credit quality is roughly equivalent to Moody's Investors Service's Aa2 rating and Standard & Poor's Corp.'s AA rating.

The periods of projected benefit payments to which the long-term expected rate of return applies is zero years.

I. Sensitivity of the Net OPEB Liability

The sensitivity of the net OPEB liability to variations in the healthcare cost trend rate assumptions are disclosed in the following table.

Sensitivity of the Net OPEB Liability to the Healthcare Cost Trend Rate Assumptions		
	Current Healthcare Cost Trend Rate	
1% Decrease		1% Increase
\$71,992,046	\$85,009,492	\$101,802,023

Sensitivity of the net OPEB liability to variations in the discount rate assumptions is disclosed in the following table.

Sensitivity of the Net OPEB Liability to the Single Discount Rate Assumptions		
	Current Single Discount Rate (3.96%)	
1% Decrease (2.96%)		1% Increase (4.96%)
\$100,926,046	\$85,009,492	\$72,962,450

J. Changes of Assumptions Since the Prior Measurement Date

Demographic Assumptions

Since the last valuation was prepared for the plan, demographic assumptions (including rates of retirement, disability, termination, mortality, and assumed salary increases) for higher education members were updated to reflect assumptions recently adopted by the TRS Board of Trustees. These new assumptions were based on an experience study of the TRS retirement plan performed by the TRS actuary for the period ending August 31, 2017.

In addition, the following assumptions have been updated since the previous valuation to reflect recent plan experience and expected trends:

- Percentage of current retirees and retiree spouses not yet eligible to participate in the HealthSelect Medicare Advantage Plan and future retirees and retiree spouses who will elect to participate in the plan at the earliest date at which coverage can commence
- Percentage of future retirees assumed to be married and electing coverage for their spouse

Economic Assumptions

Assumptions for expenses, assumed per capita health benefit costs, and health benefit costs and retiree contribution and expense trends have been updated since the previous valuation to reflect recent health plan experience and its effects on short-term expectations.

The discount rate was changed from 3.51 percent to 3.96 percent as a result of requirements by GASB Statement 74 to utilize the yield or index rate for 20-year, tax-exempt general obligation bonds rated AA/Aa (or equivalent) or higher in effect on the measurement date.

The minor benefit changes described below have been reflected in the FY 2019 assumed per capita health benefit costs.

K. Changes of Benefit Terms since prior Measurement Date

Benefit revisions have been updated since the prior valuation.

The only benefit changes for HealthSelect retirees and dependents for whom Medicare is not primary is an increase in the out-of-pocket maximums for both HealthSelect and Consumer Directed HealthSelect.

They changed from \$6,550 to \$6,650 for individuals and from \$13,100 to \$13,300 for families in order to remain consistent with Internal Revenue Service maximums.

There were no benefit changes for HealthSelect retirees and the dependents for whom Medicare is primary.

L. OPEB Expense and Deferred Inflows and Outflows

TRS recognized \$4,438,264 in OPEB expense during fiscal year 2019.

At August 31, 2019, TRS reported its proportionate share of the ERS collective deferred outflows and deferred inflows of resources related to OPEB from the sources listed in the following table.

Category	Deferred Outflow of Resources	Deferred Inflow of Resources
Differences between expected and actual experience	\$ —	\$ 2,966,619
Changes in assumptions	—	27,217,011
Net difference between projected and actual earnings	36,730	—
Changes in proportion and differences between employer's contributions and employer's proportionate share of contributions	19,126,867	—
Total	\$ 19,163,597	\$ 30,183,630

The balances of deferred outflows and deferred inflows of resources related to OPEB TRS will recognize as OPEB expense in future years is disclosed in the following table.

Measurement Year Ended August 31,	OPEB Expense Amounts	Balance of Deferred Outflows (Inflows)
2019	\$ (7,589,522)	\$ (22,594,108)
2020	(7,589,522)	(15,004,586)
2021	(7,589,522)	(7,415,064)
2022	(5,306,957)	(2,108,107)
Thereafter	(2,108,107)	—
Total	\$ (30,183,630)	

M. OPEB Plan Financial Report

ERS issues a publicly available financial report that includes financial statements and required supplementary information for the GBP. The report may be obtained by visiting www.ers.texas.gov, by writing to the Finance Division of the Employees Retirement System of Texas at 200 East 18th Street, Austin, Texas 78701, or by calling 1-877-275-4377.

Note 11: TRS Pension Plan

A. Plan Description

The Teacher Retirement System of Texas (TRS or System or Plan) is a public employee retirement system (PERS) that is a multiple-employer, cost-sharing, defined benefit pension plan with a special funding situation. The Plan is administered by the Board of Trustees of TRS. Information regarding the Board and its composition can be found on page 3 or in Note 1.

Benefits are established or amended under the authority of the Texas Constitution, Article XVI, Section 67 and by the Legislature in the Texas Government Code, Title 8, Subtitle C. The Board of Trustees does not have the authority to establish or amend benefits.

B. Benefits Provided

TRS provides retirement, disability, and death benefits. Membership in the Plan includes all employees of public, state-supported educational institutions in Texas who are employed for one-half or more of the standard work load and who are not exempt from membership under Texas Government Code, Title 8, Section 822.002.

State law requires the plan to be actuarially sound in order for the legislature to consider a benefit enhancement, such as a supplemental payment to the retirees.

In May 2019, the 86th Texas legislature approved the TRS Pension Reform Bill (SB12) that provides for gradual contribution increases from the state, participating employers and active employees to make the pension fund actuarially sound. These increases immediately made the pension fund actuarially sound and the legislature approved funding for a 13th check.

All eligible members retired as of December 31, 2018 will receive an extra annuity check in September 2019 in either the matching amount

of their monthly annuity payment or \$2,000, whichever is less.

C. Contributors to the Plan

Contributors to the Plan include active members, employers, and the State of Texas as the only non-employer contributing entity. The State is also the employer for senior colleges, medical schools, and state agencies, including TRS. In each respective role, the State contributes to the plan in accordance with State Statutes and the General Appropriations Act.

The number of participating employers during fiscal year 2019 are disclosed in the following table.

Participating Employers	
Independent School Districts	1,023
Charter Schools (open enrollment only)	179
Community and Junior Colleges	50
Senior Colleges and Universities	47
Regional Service Centers	20
Medical Schools	9
Educational Districts	3
State Agency	1
Total	1,332

Plan membership as of August 31, 2018 is shown in the following table. Because the actuarial valuation was based on a roll forward from fiscal year 2018 (see Section F), the Plan membership counts are as of August 31, 2018.

Pension Plan Membership	
Retired plan members or beneficiaries currently receiving benefits	420,458
Inactive plan members entitled to but not yet receiving benefits	298,498
Active plan members	872,999
Total	1,591,955

The Average Expected Remaining Service Life (AERSL) of 6.3623 years is based on membership information as of the beginning of the fiscal year.

D. Contributions

Contribution requirements are established or amended pursuant to the following state laws:

- Article 16, Section 67 of the Texas Constitution requires the legislature to establish a member contribution rate of not less than 6 percent of the member's annual compensation and a state contribution rate of not less than 6

percent and not more than 10 percent of the aggregate annual compensation paid to members of the System during the fiscal year.

- Government Code section 821.006 prohibits benefit improvements if it increases the amortization period of TRS' unfunded actuarial liability to greater than 31 years or, if the amortization period already exceeds 31 years, the period would be increased by such action. Actuarial implications of the funding provided in this manner are determined by the System's actuary.

As the non-employer contributing entity, the State of Texas contributes to the retirement system the current employer contribution rate times the aggregate annual compensation of all members of the Plan during the fiscal year, reduced by the employer contributions described below.

All participating employers and the State of Texas, as the employer for senior universities and medical schools, are required to pay the employer contribution rate in the following situations:

- On the portion of a member's salary that exceeds the statutory minimum for members entitled to the statutory minimum under Section 21.402 of the Texas Education Code
- During a new member's first 90 days of employment
- When any or all of an employee's salary is paid by federal, private, local or non-educational and general funds
- When the employing district is a public junior college or junior college district, the employer shall contribute to the retirement system an amount equal to 50 percent of the state contribution rate for certain instructional or administrative employees and 100 percent of the state contribution rate for all other employees.

The following table shows contributions to the Plan by type of contributor for the fiscal year 2019.

Contributor	Contribution Rate	Amount
Member	7.7%	\$ 3,482,869,726
Non-Employer Contributing Entity (State)	6.8	1,737,852,502
Employers	6.8	1,329,103,184
Total		\$ 6,549,825,412

Employers are also required to pay surcharges in the following cases:

- When a school district or charter school does not contribute to the Federal Old-Age, Survivors, and Disability Insurance (OASDI) Program for certain employees, they must contribute 1.5 percent of the member's salary.
- When employing a retiree of TRS, the employer shall pay an amount equal to the member contribution and the state contribution as an employment after retirement surcharge.

Employer surcharges paid for the fiscal year 2019 are shown below.

Surcharge	Rate	Amount
Non-OASDI	1.5%	\$ 408,015,906
Employment after Retirement - Employer	6.8	11,584,767
Employment after Retirement - Employee	7.7	13,118,045
Total		\$ 432,718,718

The current and future contribution rates are shown below.

Fiscal Year	Contribution Rates		
	State	Public * Education Employer	Active Employee
2019	6.80%	1.50%	7.70%
2020	7.50	1.50	7.70
2021	7.50	1.60	7.70
2022	7.75	1.70	8.00
2023	8.00	1.80	8.00
2024	8.25	1.90	8.25
2025	8.25	2.00	8.25

* SB12 requires an increase in employer contributions by public school districts, charter schools and regional education service centers. Prior to SB12 only those employers not participating in social security were required to pay a 1.5 percent contribution (Non-OASDI surcharge). Beginning September 1, 2019 all

employers are required to pay the Public Education Employer contribution irrespective of participation in social security.

E. Net Pension Liability

Components of the Net Pension Liability of the Plan as of August 31, 2019 are disclosed below.

Components of Liability	Amount
Total Pension Liability	\$ 209,961,325,288
Less: Plan Fiduciary Net Position	(157,978,199,075)
Net Pension Liability	\$ 51,983,126,213
Net Position as Percentage of Total Pension Liability	75.24%

F. Actuarial Methods and Assumptions

Roll Forward

The actuarial valuation was performed as of August 31, 2018. Update procedures were used to roll forward the total pension liability to August 31, 2019.

The total pension liability is determined by an annual actuarial valuation. The actuarial methods and assumptions were selected by the Board of Trustees based upon analysis and recommendations by the System's actuary. The Board of Trustees has sole authority to determine the actuarial assumptions used for the Plan. The actuarial methods and assumptions were primarily based on a study of actual experience for the three year period ending August 31, 2018 and were adopted in July 2018.

The active mortality rates were based on 90 percent of the RP 2014 Employee Mortality Tables for males and females with full generational mortality. The post-retirement mortality rates for healthy lives were based on the 2018 TRS of Texas Healthy Pensioner Mortality Tables with full generational projection using the ultimate improvement rates from the most recently published projection scale U-MP.

The long-term expected rate of return on pension plan investments is 7.25 percent. The long-term expected rate of return on plan investments was determined using a building-block method 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. Best estimates of geometric real rates of return for each major asset class included in the System's target asset

allocation as of August 31, 2019 are summarized in Note 3.

The following table discloses the assumptions that were applied to this measurement period.

Actuarial Methods and Assumptions	
Valuation Date	August 31, 2018 rolled forward to August 31, 2019
Actuarial Cost Method	Individual Entry Age Normal
Asset Valuation Method	Market Value
Single Discount Rate	7.25%
Long-term Expected Rate	7.25%
Municipal Bond Rate as of August 2019	2.63%. Source for the rate is the Fixed Income Market Data/Yield Curve/Data Municipal Bonds with 20 years to maturity that include only federally tax-exempt municipal bonds as reported in Fidelity Index's "20-Year Municipal GO AA Index."
Last year ending August 31 in Projection Period (100 years)	2116
Inflation	2.30%
Salary Increases	3.05% to 9.05% including inflation
Ad hoc post-employment benefit changes	None

The actuarial assumptions used in the determination of the total pension liability are the same assumptions used in the actuarial valuation as of August 31, 2018. For a full description of these assumptions please see the actuarial valuation report dated November 9, 2018.

G. Discount Rate

A single discount rate of 7.25 percent was used to measure the total pension liability. The single discount rate was based on the expected rate of return on plan investments of 7.25 percent. The projection of cash flows used to determine this single discount rate assumed that contributions from active members, employers and the non-employer contributing entity will be made at the rates set by the Legislature during the 2019 legislative session. It is assumed that future employer and state contributions will be 8.50 percent of payroll in fiscal year 2020 gradually increasing to 9.55 percent of payroll over the next several years. This includes all employer and State contributions for active and rehired retirees.

Based on these 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.

H. Change of Assumptions Since the Prior Measurement Date

- The single discount rate as of August 31, 2018 was a blended rate of 6.907 percent and that has changed to the long-term rate of return of 7.25 percent as of August 31, 2019.
- With the enactment of SB 3 by the 2019 Texas Legislature, an assumption has been made about how this would impact future salaries. It is assumed that eligible active members will each receive a \$2,700 increase in fiscal year 2020. This is in addition to the salary increase expected based on the actuarial assumptions.

I. Sensitivity of the Net Pension Liability to the Single Discount Rate Assumption

The following table presents the net pension liability of the plan using the discount rate of 7.25 percent, and what the net pension liability would be if it were calculated using a discount rate that is one percentage point lower (6.25 percent) or one percentage point higher (8.25 percent) than the current rate.

Sensitivity of the Net Pension Liability to the Single Discount Rate Assumptions		
1% Decrease	Current Single Discount Rate	1% Increase
6.25%	7.25%	8.25%
\$79,905,616,584	\$51,983,126,213	\$29,360,519,479

J. Deferred Retirement Option Program

The Deferred Retirement Option Plan (DROP) was closed to new members on December 31, 2005. The Plan was available for active members who were eligible for normal age retirement with at least 25 years of credited service. Participation options were in 12-month increments for up to five years. For detailed information on the Plan, see the Summary of Benefits section. The balance in the DROP reserve account at August 31, 2019 was \$4,148,102.

K. Funding Progress

The required Schedule of Changes in the Employer's Net Pension Liability and Related Ratios immediately

following the Notes to the Financial Statements presents multi-year trend information about whether the net position of the Plan is increasing or decreasing relative to the pension liability over time.

Note 12: Risk Management

The 77th Texas Legislature enacted the Texas Active School Employees Uniform Group Benefits Act (H.B. 3343), establishing a new statewide health coverage program for public school employees and their dependents. TRS began administering this program, known as TRS-ActiveCare, September 1, 2002. The plan is available to all public school districts, charter schools with open enrollment, regional service centers and certain other employers. The risk associated with this program is retained by the plan's participants, and no risk is transferred to the plan's administrators, to employers, or to the state.

Note 13: Component Units

A. Description

Teacher Retirement Investment Company of Texas, Ltd. (TRICOT) is a limited liability corporation organized under United Kingdom (UK) law that began operating in November 2015. TRS is the sole shareholder of TRICOT. TRS formed TRICOT for the purpose of opening a London investment office and increasing investment opportunities for the TRS portfolio. TRICOT is presented as a blended component unit in the Pension Trust Fund fiduciary fund type of TRS with a fiscal year end of August 31.

B. Criteria for Inclusion as a Component Unit

TRS used the following criteria and determined TRICOT to be a component unit according to GASB 14, as modified by GASB 39 and 61:

- TRICOT is considered a special-purpose government entity engaged only in fiduciary activities on behalf of TRS.
- TRICOT is a part of the System. TRS maintains complete control over TRICOT and all related assets. If TRICOT were dissolved, any remaining assets, net of liabilities, would revert back to TRS.
- As a "private limited liability company" in the UK, TRICOT is legally separate according to GASB 14, paragraph 15.
- TRS' executive director, as a shareholder representative, appoints the sole director of TRICOT.

- TRICOT is financially dependent upon TRS and has no other sources of funding.
- TRICOT provides services exclusively to TRS.
- It would be misleading to exclude TRICOT in the financial statements.

Written requests for TRICOT's financial statements should be addressed to:

Communications Department
 Teacher Retirement System of Texas
 1000 Red River Street
 Austin, TX 78701
 1-800-223-8778

Note 14: Adjustments to Fund Balances and Net Position

Pension Trust Fund

During fiscal year 2019, there were two restatements for the fund. One was related to GASB 75, Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions. This pertains to the post-employment health care plan TRS employees participate in. A restatement that increased net position by \$5,920,477 was required due to a change in the basis of allocating the Net OPEB Liability by the ERS OPEB plan administrator. In fiscal year 2018, ERS used employer contributions for retired employees only, and in fiscal year 2019 used employer contributions for both active and retired employees. These contributions are treated as a reduction in the Net OPEB Liability and not healthcare insurance expense. This was offset by a restatement in the amount of (\$1,651,829) that was due to a reduction in a construction-in-progress project that was previously capitalized. The net effect was an increase in Net Position of \$4,268,648.

Pension Trust Fund Restatement	
Beginning Net Position as Previously Reported	\$ 154,568,901,833
Prior Period Adjustment (Note 14)	4,268,648
Beginning Net Position, As Restated	\$ 154,573,170,481

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Required Supplementary Information

Pension Trust Fund	
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TRS Care	
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Schedule of Changes in the Employers' Net Pension Liability and Related Ratios

Pension Trust Fund

For the Fiscal Years Ended August 31

Last Ten Fiscal Years*

(Dollars in Thousands)

	2019	2018	2017	2016
Total Pension Liability				
Service Cost	\$ 5,642,075	\$ 4,654,171	\$ 4,489,046	\$ 4,392,077
Interest on the Total Pension Liability	14,267,256	14,109,277	13,515,486	12,896,571
Benefit Changes	588,828	—	—	—
Differences between Expected and Actual Experience	(982,694)	—	(969,831)	373,669
Changes of Actuarial Assumptions	(7,425,279)	22,106,679	700,880	—
Benefit Payments	(11,253,729)	(10,172,997)	(9,775,775)	(9,379,123)
Refunds of Member Accounts	(486,461)	(422,336)	(420,421)	(373,419)
Net Change in Total Pension Liability	\$ 349,996	\$ 30,274,794	\$ 7,539,385	\$ 7,909,775
Beginning Total Pension Liability	\$ 209,611,329	\$ 179,336,535	\$ 171,797,150	\$ 163,887,375
Ending Total Pension Liability (a)	\$ 209,961,325	\$ 209,611,329	\$ 179,336,535	\$ 171,797,150
Plan Fiduciary Net Position				
Employer Contributions	\$ 1,761,822	\$ 1,671,257	\$ 1,588,309	\$ 1,483,390
Member Contributions	3,482,870	3,360,773	3,242,556	2,943,669
Non-Employer Contributing Entity Contributions	1,737,852	1,715,785	1,697,963	1,675,631
Net Investment Income	7,669,029	11,242,814	17,079,807	9,193,281
Benefit Payments	(11,253,729)	(10,172,997)	(9,775,775)	(9,379,123)
Refunds of Member Accounts	(486,461)	(422,336)	(420,421)	(373,419)
Administrative Expenses	(60,486)	(64,926)	(44,190)	(44,403)
Other	558,400	(123,390)	(14,964)	(29,095)
Net Change in Plan Fiduciary Net Position**	\$ 3,409,297	\$ 7,206,980	\$ 13,353,285	\$ 5,469,931
Beginning Plan Fiduciary Net Position	\$ 154,568,902	\$ 147,361,922	\$ 134,008,637	\$ 128,538,706
Ending Plan Fiduciary Net Position (b)	\$ 157,978,199	\$ 154,568,902	\$ 147,361,922	\$ 134,008,637
Ending Net Pension Liability (a)-(b)	\$ 51,983,126	\$ 55,042,427	\$ 31,974,613	\$ 37,788,513
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	75.24%	73.74%	82.17%	78.00%
Covered Payroll	\$ 45,232,074	\$ 43,646,405	\$ 42,111,120	\$ 40,742,826
Net Pension Liability as a Percentage of Covered Payroll	114.93%	126.11%	75.93%	92.75%

*Schedule is presented on a prospective basis in accordance with GASB 67, paragraph 50.

**Prior period adjustment is reported in Net Change in Plan Fiduciary Net Position.

(Continued)

	2015		2014
\$	4,225,449	\$	3,965,994
	12,555,646		11,813,446
	—		—
	(1,588,619)		482,639
	(1,474,724)		2,028,541
	(8,935,112)		(8,548,643)
	(391,341)		(410,600)
\$	4,391,299	\$	9,331,377
\$	159,496,076	\$	150,164,699
\$	163,887,375	\$	159,496,076
\$	1,377,973	\$	984,552
	2,576,024		2,357,686
	1,591,483		1,530,624
	(412,759)		19,434,430
	(8,935,112)		(8,548,643)
	(391,341)		(410,600)
	(35,557)		(41,904)
	(11,248)		84,954
\$	(4,240,537)	\$	15,391,099
\$	132,779,243	\$	117,388,144
\$	128,538,706	\$	132,779,243
\$	35,348,669	\$	26,716,833
	78.43%		83.25%
\$	38,448,124	\$	36,654,291
	91.94%		72.89%

Schedule of Employer and Non-Employer Contributing Entity Actuarially Determined Contributions (ADC)

Pension Trust Fund

For the Fiscal Years Ended August 31

Fiscal Year	Actuarially Determined Contribution	Actual Contribution	Contribution Deficiency (Excess)	Covered Payroll	Actual Contribution as a % of Covered Payroll
2014	\$ 3,177,927,012	\$ 2,515,176,220	\$ 662,750,792	\$ 36,654,290,800	6.86%
2015	3,171,970,234	2,969,455,641	202,514,593	38,448,124,045	7.72
2016	3,226,831,846	3,159,020,596	67,811,250	40,742,826,333	7.75
2017	3,343,622,950	3,286,271,953	57,350,997	42,111,120,273	7.80
2018	3,426,242,805	3,387,041,853	39,200,952	43,646,405,156	7.76
2019	4,288,000,650	3,499,674,404	788,326,246	45,232,074,364	7.74

This schedule will ultimately contain 10 years of information. Additional years will be presented on a prospective basis in accordance with GASB 67, paragraph 50.

Notes to the Schedule of Actuarially Determined Contributions

Valuation Date	August 31, 2018 (to determine contribution rate for fiscal year ending August 31, 2019)
Notes	Actuarially determined contribution rates are calculated as of August 31 of the preceding fiscal year. Members and employers contribute based on statutorily fixed rates.

Methods and Assumptions Used to Determine Contribution Rates

Actuarial Cost Method	Individual Entry Age Normal actuarial cost method
Amortization Method	Level Percentage of Payroll, Floating
Remaining Amortization Period	87 years based on rates contributed during the fiscal year. 30 years based on increased employer and member contribution rates to begin September 1, 2019 enacted during 86th legislative session.
Asset Valuation Method	5 year smoothed market
Inflation	2.30%
Salary Increases	3.05% to 9.05%, including inflation
Investment Rate of Return	7.25%
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition. Last updated for the 2018 valuation pursuant to an experience study conducted for the period ending on August 31, 2017.
Mortality	<p>The active mortality rates were based on 90% of the RP-2014 Employee Mortality Tables for males and females with full generational mortality.</p> <p>Post-Retirement: The post-retirement mortality rates for healthy lives were based on the 2018 TRS of Texas Healthy Pensioner Mortality Tables, with full generational projection using the ultimate improvement rates from the most recently published projected scale "U-MP".</p>
Benefit Improvements	A 13th check was paid during fiscal year 2019 with a supplemental appropriation made by the State.
Benefit Changes	None
Assumptions	The assumptions used to determine the ADC are those in effect for the August 31, 2018 actuarial valuation. Due to the lag between valuation date and the measurement date, they may not be the same as the assumptions used to measure the Net Pension Liability.

Schedule of Investment Returns
Annual Money-Weighted Rate of Return, Net of Investment Expense
Pension Trust Fund
 For the Fiscal Years Ended August 31
 Last Ten Fiscal Years

2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
5.1%	7.8%	13.0%	7.3%	(0.3)%	16.9%	9.0%	7.4%	15.6%	10.7%

Schedule of Employer's (TRS) Proportionate Share of ERS' Net OPEB Liability
Pension Trust Fund
 For the Fiscal Years Ended August 31
 Last Ten Fiscal Years*

Fiscal Year	Employer's (TRS) Proportionate Share of Collective Net OPEB Liability	Employer's (TRS) Proportionate Share of Collective Net OPEB Liability %	Employer's (TRS) Covered Employee Payroll	Employer's Proportionate Share of Collective Net OPEB Liability as a % of Employer's (TRS) Covered Employee Payroll	ERS Fiduciary Net Position as a % of Total OPEB Liability
2018	\$ 81,850,260	0.2402202%	\$ 53,125,065	154.07%	2.04%
2019	85,009,492	0.2868285	60,679,696	140.10	1.27

The amounts presented above are as of the measurement date of the collective Net OPEB Liability for the respective fiscal year.

*This schedule will ultimately contain 10 years of information. Additional years will be presented on a prospective basis in accordance with GASB 75, paragraph 245.

Schedule of Employer (TRS) Contributions to ERS' OPEB Plan
Pension Trust Fund
 For the Fiscal Years Ended August 31
 Last Ten Fiscal Years*

Fiscal Year	Statutory Employer (TRS) Contributions**	Actual Employer (TRS) Contributions**	Contributions Deficiency (Excess)	Employer's (TRS) Covered Employee Payroll	Employer (TRS) Contributions as a % of Covered Employee Payroll
2018	\$ 2,251,441	\$ 2,251,441	\$ —	\$ 53,125,065	4.24%
2019	8,954,706	8,954,706	—	60,679,696	14.76%

The amounts presented above are as of the employer's most recent fiscal year end.

*This schedule will ultimately contain 10 years of information. Additional years will be presented on a prospective basis in accordance with GASB 75, paragraph 245.

**ERS excluded Active Employee Health Insurance Contributions in fiscal year 2018 only.

Schedule of Changes in Employers' Net OPEB Liability and Related Ratios

TRS-Care

For the Fiscal Years Ended August 31

Last Ten Fiscal Years*

(Dollars in Thousands)

	2019	2018	2017**
Total OPEB Liability			
Service Cost	\$ 2,306,961	\$ 2,284,418	\$ 4,312,406
Interest on the Total OPEB Liability	1,904,512	1,524,880	2,356,367
Changes of Benefit Terms		—	(18,610,363)
Differences between Expected and Actual Experience	(7,950,584)	2,979,259	(1,027,634)
Changes of Actuarial Assumptions	2,133,219	936,862	(19,563,767)
Benefit Payments	(540,351)	(881,714)	(995,486)
Net Change in Total OPEB Liability	\$ (2,146,243)	\$ 6,843,705	\$ (33,528,477)
Beginning Total OPEB Liability	\$ 50,729,490	\$ 43,885,785	\$ 77,414,262
Ending Total OPEB Liability (a)	\$ 48,583,247	\$ 50,729,490	\$ 43,885,785
Plan Fiduciary Net Position			
Employer Contributions	\$ 305,363	\$ 296,098	\$ 215,361
Non-Employer Contributing Entity Contributions	482,056	789,870	324,662
Member Contributions	227,338	221,325	213,241
Net Investment Income	25,047	10,127	4,697
Benefit Payments ****	(540,351)	(881,714)	(995,486)
Administrative Expense	(6,006)	(6,672)	(4,954)
Other	—	(29,995)	529
Net Change in Plan Fiduciary Net Position***	\$ 493,447	\$ 399,039	\$ (241,950)
Beginning Plan Fiduciary Net Position	\$ 798,575	\$ 399,536	\$ 641,486
Ending Plan Fiduciary Net Position (b)	\$ 1,292,022	\$ 798,575	\$ 399,536
Ending Net OPEB Liability (a)-(b)	\$ 47,291,225	\$ 49,930,915	\$ 43,486,249
Plan Fiduciary Net Position as a Percentage of the Total OPEB Liability	2.66%	1.57%	0.91%
Covered Payroll	\$ 34,975,147	\$ 34,050,058	\$ 32,806,335
Net OPEB Liability as a Percentage of Covered Payroll	135.21%	146.64%	132.55%

*Total OPEB liability is presented on a prospective basis in accordance with GASB 74, paragraph 62.

**2017 was revised due to an amended GASB 74 report.

***Prior period adjustment is reported in Net Change in Plan Fiduciary Net Position.

****Benefit Payments are shown net of Health Care Premiums paid by Retirees

Schedule of the Net OPEB Liability

TRS-Care

For the Fiscal Years Ended August 31

Last Ten Fiscal Years*

Fiscal Year	Total OPEB Liability	Plan Net Position	Net OPEB Liability	Plan Net Position as a % of Total OPEB Liability	Covered Payroll	Net OPEB Liability as a % of Covered Payroll
2017	\$ 43,885,784,621	\$ 399,535,986	\$ 43,486,248,635	0.91%	\$ 32,806,335,231	132.55%
2018	50,729,490,103	798,574,633	49,930,915,470	1.57	34,050,058,000	146.64
2019	48,583,247,239	1,292,022,349	47,291,224,890	2.66	34,975,146,769	135.21

*This schedule is presented on a prospective basis in accordance with GASB 74, paragraph 62.

Other Supplementary Information

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Exhibit A
Statement of Changes in Assets and Liabilities
Agency Funds
 For the Fiscal Year Ended August 31, 2019

	Balances September 1, 2018	Additions	Deductions	Balances August 31, 2019
Child Support Employee Deductions				
Total Assets				
Cash in State Treasury	\$ 7,945	\$ 82,417	\$ 85,167	\$ 5,195
Total Assets	\$ 7,945	\$ 82,417	\$ 85,167	\$ 5,195
Total Liabilities				
Funds Held for Others	\$ 7,945	\$ 82,417	\$ 85,167	\$ 5,195
Total Liabilities	\$ 7,945	\$ 82,417	\$ 85,167	\$ 5,195

Schedule 1
Schedule of Administrative and Investing Activity Expenses
All Funds
For the Fiscal Year Ended August 31, 2019

	Pension Trust Fund	
	Benefits	Investments
Administrative Expenses		
Personnel Services		
Salaries and Wages		
Salaries	\$ 26,282,863	\$ 46,067,731
Longevity Pay	357,260	270,440
Benefit Replacement Pay	25,255	20,018
Payroll Related Costs	1,187,303	2,540,997
Total Personnel Services	\$ 27,852,681	\$ 48,899,186
Total Professional Fees and Services	\$ 8,343,491	\$ 2,614,269
Other Operating Expenses		
Travel	\$ 251,580	\$ 1,052,575
Materials and Supplies		
Consumable Supplies and Fuels	241,845	95,224
Subscriptions and Reference Information	716,260	533,909
Postage, Mailing and Delivery Services	1,794,106	132,956
Furniture and Equipment - Expensed	248,377	502,101
Communications and Utilities	1,500,412	1,341,623
Repairs and Maintenance		
Software Purchases and Maintenance	1,588,693	1,191,005
Computer Hardware Maintenance	711,118	516,576
Buildings and Equipment Maintenance	264,391	58,753
Rentals and Leases	377,732	4,485,506
Printing and Reproduction	201,508	10,400
Depreciation Expense	2,449,013	21,147
Amortization Expense	12,133,546	—
Gain/Loss on Capital Assets	(893)	—
Other Expenses		
Dues, Fees and Staff Development	215,427	293,769
Insurance Premiums	302,004	432,442
Miscellaneous Expenses	1,294,354	825,172
Total Other Operating Expenses	\$ 24,289,473	\$ 11,493,158
Total Administrative Expenses	\$ 60,485,645	\$ 63,006,613

(Continued)

TRS-Care	TRS-ActiveCare	403(b) Administrative Program	Total
\$ 2,886,290	\$ 2,045,902	\$ 57,052	\$ 77,339,838
56,720	25,100	1,200	710,720
4,125	1,031	—	50,429
567,941	379,775	11,735	4,687,751
\$ 3,515,076	\$ 2,451,808	\$ 69,987	\$ 82,788,738
\$ 2,213,622	\$ 1,197,891	\$ 35,000	\$ 14,404,273
\$ 51,695	\$ 14,170	\$ —	\$ 1,370,020
2,828	—	—	339,897
89	101	—	1,250,359
15,217	142	—	1,942,421
—	20	—	750,498
79,211	9,586	—	2,930,832
—	—	—	2,779,698
—	—	—	1,227,694
—	—	—	323,144
24,900	22,982	—	4,911,120
43,080	53	—	255,041
—	—	—	2,470,160
—	—	—	12,133,546
—	—	—	(893)
11,460	5,474	—	526,130
—	—	—	734,446
49,051	1,093	5	2,169,675
\$ 277,531	\$ 53,621	\$ 5	\$ 36,113,788
\$ 6,006,229	\$ 3,703,320	\$ 104,992	\$ 133,306,799

Schedule 1
Schedule of Administrative and Investing Activity Expenses
All Funds
For the Fiscal Year Ended August 31, 2019

	Pension Trust Fund	
	Benefits	Investments
Investment Fees		
Bank Fees	\$ —	\$ 16,453,271
Research Fees	—	9,643,681
External Manager Fees*	—	90,133,268
External Legal Fees	—	5,178,624
External Custodial Fees	—	22,000,000
Total Investment Fees	\$ —	\$ 143,408,844
Total Administrative Expenses and Investment Fees**	\$ 60,485,645	\$ 206,415,457

* For more information on External Manager Fees, including fees that are netted against returns, please refer to the Investment Section.

** Pension Trust Fund - Investments reported as Investing Activity Expenses under Investment Income on Exhibit II.

(Continued)

TRS-Care	TRS-ActiveCare	403(b) Administrative Program	Total
\$ —	\$ —	\$ —	\$ 16,453,271
—	—	—	9,643,681
—	—	—	90,133,268
—	—	—	5,178,624
—	—	—	22,000,000
\$ —	\$ —	\$ —	\$ 143,408,844
\$ 6,006,229	\$ 3,703,320	\$ 104,992	\$ 276,715,643

Schedule 2
Schedule of Professional and Consulting Services
All Funds
For the Fiscal Year Ended August 31, 2019

	Amount		Amount
Consulting Services			
Provaliant Holdings LLC	\$ 1,022,299	Carahsoft Technology Corporation	17,000
Addison Prof Financial Search LLC	267,015	Accelebrate Inc	13,495
Rhyan Technology Services LLC	159,866	Total IT Consulting Services	\$ 7,592,013
Focus Consulting Group Inc	134,500	Investment Research Fees	
Langrand and Company LLC	34,179	Wolfe Advisors LP	\$ 1,200,000
Reed Fire Protection Engineering LLC	15,771	JP Morgan Securities Inc.	1,144,295
Total Consulting Services	\$ 1,633,630	Credit Suisse	1,115,061
Financial & Accounting Services		Macquarie Group Limited	980,794
Gabriel Roeder Smith & Company	\$ 1,918,811	KPMG LLP	622,820
Ernst & Young LLP	1,708,936	Bank of America Merrill Lynch	437,257
Texas State Auditor's Office	289,000	Jefferies & Company Inc	416,517
CEM Benchmarking Inc	115,000	Deutsche Bank AG	376,556
Vertosoft LLC	72,661	CLSA Limited	347,944
Myers and Stauffer LC	64,698	SMBC Nikko Securities	274,302
Grant Thornton LLP	53,530	Nomura Group	237,500
Total Financial & Accounting Services	\$ 4,222,636	HSBC Bank PLC	220,059
Investment Consulting Services		Sanford C Bernstein & Co LLC	218,750
Albourne	\$ 1,279,450	Green Street Advisors LLC	205,000
Allied Consultants Inc.	951,881	Evercore ISI	162,500
Aon	850,000	Citigroup Global Markets Inc	159,538
Keith C Brown	80,000	Raymond James & Associates	127,423
CoStar UK Limited	40,625	RS Energy Group	125,000
Total Investment Consulting Services	\$ 3,201,956	Robert W Baird & Co Inc	109,848
IT Consulting Services		Exane BNP	97,073
Perspecta Inc	\$ 1,873,688	Gartner, Inc	81,667
Neos Consulting Group LLC	1,683,761	Redburn (Europe) Limited	75,000
Advanced Call Center Tech LLC	1,655,038	Stifel Nicolaus & Co Inc	70,527
Enterprise Services LLC	1,146,518	Mizuho Securities Co Ltd	65,943
Catapult Systems LLC	409,196	BCA Research Publications	62,500
Apex Systems Inc	343,518	BMO Capital Markets Corp	62,500
GTS Technology Solutions Inc	178,755	Cornerstone Macro LLC	62,500
Talend Inc	91,511	Keefe, Bruyette & Woods Inc	62,500
NF Consulting Services	52,110	Zelman & Associates LLC	62,500
Adjacent Technologies Inc	44,950	Gerson Lehrman Group	60,000
Presidio Networked Sol Group LLC	35,247	KeyBanc Capital Markets Inc	50,511
Bridgepoint Consulting LLC	28,015	Wolfe Research LLC	43,750
WorkQuest	19,211	RBC Capital Markets	40,213
		Piper Jaffray Companies	37,833

Schedule 2
Schedule of Professional and Consulting Services
All Funds
For the Fiscal Year Ended August 31, 2019

	Amount		Amount
Kepler Cheuvreux	37,500	ReEngine Consulting LLC	67,438
Reorg Research Inc	37,500	Texas A&M University	63,806
The Leuthold Group LLC	32,000	Customer Relationship Metrics LLC	58,610
ISI Group	31,250	LinkedIn Corporation	45,920
Macro Risk Advisors LLC	30,000	Emergent Execs	42,300
Yardeni Research Inc	25,000	Jordan-Markham	31,800
Renaissance Macro Research LLC	20,000	Studio8 Architects Inc	28,216
Total Investment Research Fees	\$ 9,629,431	ALP International Corporation	25,700
Legal Services		Harvard Business Publishing	20,346
Seyfarth Shaw LLP	\$ 1,496,277	ARPM	20,150
DLA Piper LLP US	1,177,627	University of Texas - Austin	16,300
Foster Pepper PLLC	832,153	Korn Ferry	15,440
Norton Rose Fulbright US LLP	432,374	Citibank	14,811
Jackson Walker LLP	416,207	OpenText Inc	13,500
Ice Miller LLP	295,564	Analyst Solutions	11,283
Katten Muchin Rosenman LLP	260,820	Aggregate Payees less than \$10,000	187,650
Squire Patton Boggs LLP	228,877	Total Other Professional Services	\$ 2,305,088
Reinhart Boerner Van Deuren SC	134,875	Research Services	
Foley & Lardner LLP	115,298	Info-Tech Research Group Inc	\$ 76,345
Morgan Lewis & Bockius LLP	81,255	AeroTek	10,685
Purrington Moody Weil LLP	71,025	Convergence Inc	40,000
BLA Schwartz, PC	41,003	Total Research Services	\$ 127,030
Securities & Exchange Board of India	18,000	Temporary Employment Services	
Total Legal Services	\$ 5,601,355	TEKsystems Inc	\$ 1,163,228
Medical Services		SOAL Technologies LLC	854,038
Alice D Cox MD	\$ 42,000	Total Temporary Employment Services	\$ 2,017,266
Larry Wilson MD	42,000	Total Professional and Consulting Services	\$ 36,456,405
David E Rothschild MD	28,000		
James Allen Reinarz MD	14,000		
Total Medical Services	\$ 126,000		
Other Professional Services			
Access Sciences Corporation	\$ 581,498		
International Business Machines Corp	273,994		
Valuation Search Corporation	176,303		
Amity Search Partners	150,000		
Guidehouse LLP	127,850		
International Center for Management	123,500		
Hudepohl & Associates Inc	114,793		
Diversified Search	93,880		

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CAFR 2019

INVESTMENT SECTION

WEST TEXAS



From the majestic mountain tops of Big Bend to the wide-open spaces of the prairies West Texas has some of the most diverse beauty in the state. Some of the major metropolitan areas in West Texas include El Paso, Pecos, Midland, and Odessa.





MAILING ADDRESS
1000 Red River Street
Austin, Texas 78701

Brian K. Guthrie
Executive Director

512.542.6460
www.trs.texas.gov

PHYSICAL ADDRESS
816 Congress Avenue

Jerry Albright
Chief Investment Officer

FY2019 presented an opportunity for the TRS Pension Fund (Trust) to demonstrate the effectiveness of its broad asset diversification framework. The framework is aimed at balancing underperforming sectors with higher returning asset classes in a global lower return environment. Overall, the Trust returned 5.2 percent, which is 41 basis points below the fund's benchmark. On a three-year annualized basis, the fund has returned 8.6 percent, 65 basis points above its benchmark. As a result, the total investment value of the fund as of August 31st was \$157.4 billion, or \$3.3 billion more than this time last year. Annual rates of return for the five- and 10-year periods ending Aug. 31, 2019, were 6.5 percent and 9.2 percent, respectively.

Focus continued in FY2019 on the priority of retaining key investment personnel and the institutional knowledge TRS relies on as it scales up for expected growth in the Trust's valuation toward \$200 billion in the next four to five years. Branded as *Building the Fleet and Reducing Investment Fees* (Fleet), the TRS Investment Management Division (IMD) embarked in 2018 on a multi-year initiative to strengthen the Trust's abilities to maintain total returns and a competitive advantage among peer funds. In FY2019, IMD embarked on hiring 120 investor and operational support positions by 2023. During FY2019, IMD refined the Trust's Strategic Asset Allocation to make it more balanced and efficient through increased allocations to Private Markets as well as the increased use of Risk Parity and Asset Allocation Leverage. The Board of Trustees approved the recommendations made as a result of the process at its July meeting and formal implementation began in October.

On the Private Markets side, IMD continued its focus on being a preferred global destination for attractive investments with a goal for 2019 of committing \$4.0 billion to Private Equity opportunities, \$1.8 billion to Energy, Natural Resources and Infrastructure investments, and \$4.4 billion to Real Estate. This goal is an integral part of the *Fleet* initiative. The current Private Markets' component of the asset allocation comprised 34.0 percent of the Trust and as of August 31, 2019 was valued at \$53.5 billion with current year return of 7.6 percent.

In Public Markets, investments generally reflected a risk-off market environment, especially during the last three months of calendar-year 2018. Among the Trust's more defensive Stable Value assets, the \$17.2 billion US Treasury portfolio was a standout, returning 25.6 percent for the fiscal-year ended August 31, 2019. Absolute Return investments, which includes credit strategies, returned 7.6 percent.

Global stock markets were less favorable, and the Trust's Public Equity investments had a negative return for the year at -2.0 percent. Within the portfolio, Directional Hedge Funds provided diversification with a slightly positive return of 0.8 percent. The Trust had \$61.7 billion in Public Equity investments as of August 31, including over \$29 billion in internally-managed strategies.

TRS continues to develop ongoing relationships with emerging managers as a key diversification component for the Trust's long-term growth. Since inception, \$3.7 billion has been committed with funds under four major asset classes. 2019 saw the implementation of the \$1 billion Emerging Manager Select program, with increased allocations to two existing Emerging Managers within Real Estate. This capital will promote and strengthen the relationships with these managers as they transition from the Emerging Manager Program (EMP) into the main Trust. In addition, the EMP built new relationships within Infrastructure, Private Equity and Real Estate via the \$2 billion EM Innovation program.

IMD's strategic partnerships remain a key component of the Trust's overall investment strategy and have been so for more than a decade. In mid-2008, the Strategic Partnership Network (SPN) concept was implemented with four well-known and highly qualified asset managers to invest \$1 billion each in global public assets that mirror the Trust's public asset allocation. As of August 31, 2019, the total Public SPN is valued at \$8.7 billion. The SPN model was replicated in private markets in 2012 with two high quality private markets partners and commitments over \$8 billion to invest in a diversified portfolio of traditional private markets strategies. This SPN-Strategic portfolio had a net asset value of \$4.6 billion as of August 31, 2019. In 2015, a second, more opportunistic portfolio was created with the private strategic partners to be directed towards quick deployment, tactical opportunities, including non-traditional credit investments. As of August 31, 2019, the SPN-Tactical Value portfolio has commitments of \$3 billion and a net asset value of \$1.9 billion. The SPN concept also includes many

collaborative “beyond Assets Under Management” activities to further enhance IMD capabilities. Examples include customized research as well as transparency and access to proprietary investment insights and opportunities to inform and enable multiple investment decision-making processes within IMD.

TRS is vitally aware of long-term risk in our capital markets. To that end, the IMD Risk Group collaborated on the Strategic Asset Allocation study to ensure the Trust has sufficient liquidity to make the required benefit payments through a downturn in the business cycle. The Risk Group further developed its innovative Identify, Prepare, Act process to develop contingency or battle plans to better prepare the Trust for potential future risk events. The Risk Parity portfolio provided the intended diversification this year with strong returns of 10.2 percent and the team was further able to reduce costs by insourcing 60 percent of the strategy.

Investment Staff of the System

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Report on Investment Activities

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A. Investment Policy

The Board of Trustees (Board) has the primary fiduciary responsibility for investing the Teacher Retirement System of Texas (TRS or System) trust assets in accordance with Article XVI, Section 67 of the Texas Constitution and with applicable law. The Board establishes investment objectives and policy, obtains expert advice and assistance, and oversees the employment of a qualified and competent investment staff, the Investment Management Division (IMD), and legal staff. The Board also monitors the actions of staff, consultants and advisors to ensure compliance with its policies. The Board has a Policy Committee of the Board, an Investment Management Committee of the Board and a Risk Management Committee of the Board, each of which is a standing committee of the Board charged with those responsibilities set forth in the Bylaws of the Board. The Board and the IMD are assisted by outside investment consultants and internal and external legal counsel.

The total or overall investment portfolio includes all assets invested by TRS to provide retirement, death, health, and disability benefits administered by the System, and is structured and managed to achieve the following objectives:

- a. Control risk through proper diversification of asset classes and by establishing long-term risk and return expectations; and
- b. As applicable to the pension plan, achieve a long-term rate of return that:
 - i. Exceeds the assumed actuarial rate of return adopted by the Board;
 - ii. Exceeds the long-term rate of inflation by an annualized 5%; and
 - iii. Exceeds the return of the Fund Policy Benchmark.

B. Portfolio Structure

TRS follows a diversified investment approach that focuses on the three most common economic

scenarios. Scenario One is characterized by favorable Gross Domestic Product (GDP) growth and moderate inflation as measured by the Consumer Price Index (CPI), which has been the prevailing economic condition 68 percent of the time since 1948. Scenario Two is one of low GDP growth and high inflation, which has occurred 18 percent of the time. Finally, Scenario Three is characterized by stagnant GDP growth and low inflation, which has occurred 14 percent of the time. TRS is positioned to take advantage of any of these various market scenarios.

TRS' long-term asset allocation target is 57 percent to Global Equity markets, which should perform well under Scenario One, 22 percent to Real Return, which should perform well in Scenario Two, 16 percent to a Stable Value portfolio, which should perform well and minimize downside risk in Scenario Three, and 5 percent to the Risk Parity strategy, which has a balanced exposure to all three economic scenarios.

C. Asset Allocation

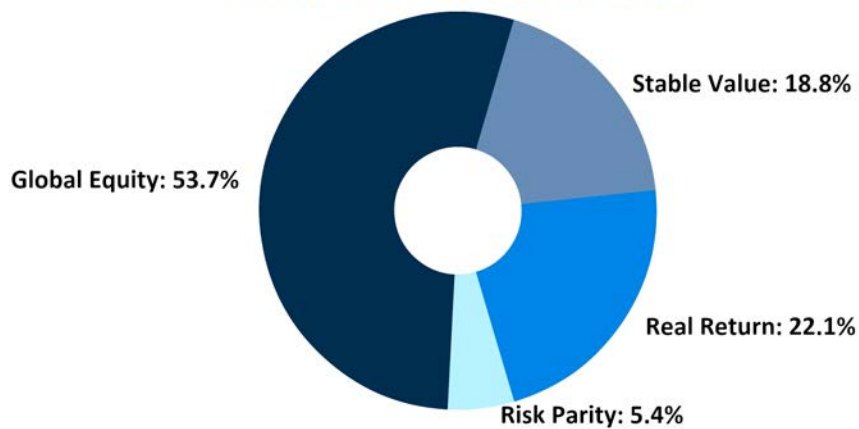
The normal portfolio mix represents the portfolio that is expected to meet the Board's actuarial return objectives for the Pension Trust Fund within the risk tolerances specified in the Investment Policy Statement. Each asset class allocation percentage has a "long-term target" position within the overall portfolio and a maximum and minimum range around that target allocation. All percentages refer to market value.

Generally Accepted Accounting Principles (GAAP) and the Governmental Accounting Standards Board (GASB) require that investments be reported at fair value in the basic financial statements (Exhibit 1 and Note 3). However, the System's asset allocation is based on market value, which includes investment-related cash, receivables, and payables and securities sold short. These items cannot be included as part of the fair value of investments under GAAP. Table 1 presents the asset allocation policy ranges and market values as of August 31, 2019. A reconciliation to fair value is provided following Table 1.

Table 1 | Asset Allocation as of August 31, 2019

Asset Class	Policy Range			Actual Value	
	Minimum Range	Maximum Range	Target	Market Value	% of Total Fund
Global Equity					
Public Equity					
USA	13%	23%	18%	\$ 22,812,547,140	14.5 %
Non-US Developed	8	18	13	19,825,112,967	12.6
Emerging Markets	4	14	9	13,187,440,046	8.4
Directional Hedge Funds	0	10	4	5,841,100,495	3.7
<i>Total Public Equity</i>	<i>39</i>	<i>49</i>	<i>44</i>	<i>61,666,200,648</i>	<i>39.2</i>
Private Equity	8	18	13	23,055,261,343	14.5
Total Global Equity	50%	64%	57%	\$ 84,721,461,991	53.7 %
Stable Value					
US Treasuries	0%	20%	11%	\$ 17,201,582,248	10.9 %
Stable Value Hedge Funds	0	10	4	6,588,234,635	4.2
Absolute Return	0	20	0	5,756,230,225	3.7
Total Stable Value	11%	21%	15%	\$ 29,546,047,108	18.8 %
Real Return					
TIPS	0%	8%	3%	\$ 4,161,125,436	2.6 %
Real Estate	9	19	14	21,533,423,702	13.7
Energy, Natural Resources & Infrastructure	0	10	5	8,933,341,546	5.7
Commodities	0	5	0	191,768,792	0.1
Total Real Return	17%	27%	22%	\$ 34,819,659,476	22.1 %
Total Risk Parity	0%	10%	5%	\$ 8,458,841,988	5.4 %
Asset Allocation Leverage					
Cash	0%	5%	1%	\$ 2,722,122,304	1.7 %
Asset Allocation Leverage			0	(2,834,793,690)	(1.8)
Net Asset Allocation			1%	\$ (112,671,386)	(0.1)%
Total Fund Market Value			100%	\$157,433,339,177	100.0%
Reconciling Items					
Investment Related Cash				\$ (109,212,455)	
Investment Related Receivables				(2,419,976,849)	
Investment Related payables				2,263,133,749	
Securities Sold Short				1,714,558,083	
Total Reconciling Items				\$ 1,448,502,528	
Total Fund Fair Value (Exhibit I)				\$158,881,841,705	

Pension Trust Fund Asset Allocation



D. Largest Holdings

Fixed Income Investments

Table 2 discloses the Fund's ten largest fixed income investments as of August 31, 2019 reported at GAAP fair value which constitute 34.9 percent of all fixed

income securities. A complete list of fixed income investments is available by contacting the TRS Communications Department.

Table 2 Largest Fixed Income Investments as of August 31, 2019

Rank	Fixed Income Securities	Par Value	GAAP Fair Value	% of Total Fixed Income Investments
1	U.S Treasury Bond 3.000% Due 11/15/2045	\$ 1,252,345,000	\$ 1,519,838,065	6.3%
2	U.S Treasury Bond 3.000% Due 5/15/2047	934,427,500	1,140,585,567	4.7
3	U.S Treasury Bond 3.000% Due 5/15/2045	892,830,000	1,081,021,823	4.5
4	U.S Treasury Bond 2.875% Due 11/15/2046	876,340,000	1,044,213,881	4.3
5	U.S Treasury Bond 3.000% Due 11/15/2044	645,265,000	779,459,955	3.2
6	U.S Treasury Bond 3.75% Due 11/15/2048	500,630,000	657,624,439	2.7
7	U.S Treasury Bond 3.625% Due 02/15/2044	486,095,000	645,670,874	2.7
8	U.S Treasury Bond 2.875% Due 08/15/2045	440,170,000	542,165,642	2.2
9	U.S Treasury Bond 2.875% Due 04/15/2045	437,900,000	519,253,609	2.1
10	U.S Treasury Bond 3.000% Due 02/15/2047	420,985,000	513,733,258	2.1
Total Top Ten		\$ 6,886,987,500	\$ 8,443,567,113	34.9%
Total Fixed Income Securities			\$ 24,173,126,105	

Equity Investments

Table 3 discloses the Fund's ten largest equity investments as of August 31, 2019 reported at GAAP fair value which constitute 7.4 percent of the Fund's total equity exposure.

A complete list of equity investments is available by contacting the TRS Communications Department.

Table 3 | Largest Equity Investments as of August 31, 2019

Rank	Equity Holdings	Total Shares	GAAP Fair Value	% of Total Equity Investments
1	TENCENT HOLDINGS LTD	10,879,040	\$ 450,970,562	1.0%
2	ALIBABA GROUP HOLDING SP ADR	2,327,755	407,426,958	0.9
3	MICROSOFT CORP	2,832,060	390,427,792	0.9
4	SAMSUNG ELECTRONICS CO LTD	9,516,202	345,686,595	0.8
5	APPLE INC	1,505,759	314,312,134	0.7
6	TAIWAN SEMICONDUCTOR MANUFAC	36,494,067	300,922,106	0.7
7	AMAZON.COM INC	162,028	287,808,716	0.7
8	NESTLE SA REG	2,401,833	269,446,120	0.6
9	ALPHABET INC CL C	182,266	216,550,235	0.5
10	VISA INC CLASS A SHARES	1,130,571	204,429,848	0.5
Total Top Ten		67,431,581	\$ 3,187,981,066	7.4%
Total Equity Holdings			\$ 43,357,913,826	

E. Investment Results

Performance Reporting

Each asset class is described by an associated benchmark that describes, in general terms, the opportunity set and return characteristics associated with the asset class. For certain private or more complex asset classes, the benchmark serves as a proxy for expected returns rather than an approximation of the actual investments that will characterize that component of the portfolio. Those benchmarks are identified in Table 4 and are referred to as the "Policy Benchmarks."

Table 4 | Policy Benchmarks

Asset Class	Benchmark Portfolio
Global Equity	
USA	MSCI USA Investable Market Index
Non-US Developed	MSCI EAFE + Canada Index
Emerging Markets	MSCI EM3
Directional Hedge Funds	Hedge Fund Research, Inc. (HFRI) Fund of Funds Composite
Private Equity	Customized State Street Private Equity Index – lagged one quarter
Stable Value	
US Treasuries	Barclays Capital (BarCap) Long Treasury Index
Absolute Return	3 Month LIBOR + 2%
Stable Value Hedge Funds	Hedge Fund Research, Inc. (HFRI) Fund of Funds Conservative
Real Return	
Global Inflation Linked Bonds	Barclays Capital (BarCap) US Treasury TIPS index
Real Estate	NCREIF ODCE – lagged one quarter
Energy, Natural Resources and Infrastructure	40% Cambridge Associates Natural Resources 40% Cambridge Associates Infrastructure 20% quarterly Consumer Price Index – lagged one quarter
Commodities	Goldman Sachs Commodity Index
Risk Parity	
Risk Parity	HFR Risk Parity Vol 10 Institutional Index
Asset Allocation Leverage	
Cash	Citigroup 90-day US Treasury
Asset Allocation Leverage	

Performance Results

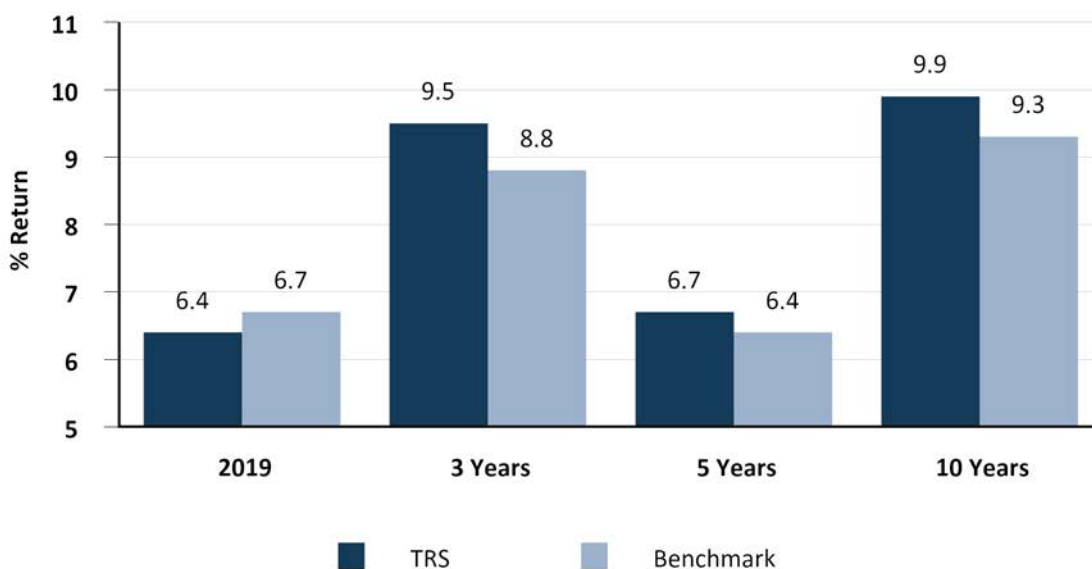
Investment performance is calculated using a time-weighted rate of return. Returns are calculated by State Street Bank and Trust Company, TRS' custodian bank, independently and using industry best practices. The total time-weighted rates of return have been adjusted for cash flows and are calculated net of bank fees, external manager fees, external legal fees, and external custodial fees. Administrative expenses for the IMD are not netted against or included in performance calculations.

Due to TRS' fiscal year ending on August 31, 2019, the most complete performance and benchmark information by asset class is available as of June 30, 2019, presented in Table 5. For a complete list of composite benchmark compositions, contact the TRS Communications Department.

Table 5 | Time-Weighted Returns as of June 30, 2019

Asset Class	2019	3 Years	5 Years	10 Years
Global Equity				
USA	7.0%	13.0%	8.5%	13.5%
USA Composite Benchmark	9.0	14.0	10.3	14.7
Non-US Developed	(0.1)	8.6	2.8	7.3
Non-US Developed Composite Benchmark	1.3	9.0	2.0	6.7
Emerging Markets	2.5	10.9	3.2	6.5
Emerging Markets Composite Benchmark	1.2	10.7	2.5	5.8
Directional Hedge Funds	2.1	6.1	1.9	NA
Directional Hedge Fund Composite Benchmark	1.1	4.2	2.2	NA
<i>Total Public Equity</i>	3.5	10.6	5.2	9.4
<i>Public Equity Composite Benchmark</i>	4.5	11.1	5.6	9.7
Private Equity	10.7	13.7	11.6	15.1
Private Equity Composite Benchmark	11.9	13.7	10.6	14.1
Total Global Equity	5.2%	11.4%	6.5%	10.5%
Global Equity Composite Benchmark	6.2%	11.8%	6.7%	10.6%
Stable Value				
US Treasuries	12.7%	1.3%	6.3%	7.1%
US Treasuries Composite Benchmark	12.3	1.3	5.7	6.5
Absolute Return	6.8	6.4	7.7	12.7
Absolute Return Composite Benchmark	4.6	3.8	3.3	2.8
Stable Value Hedge Funds	2.2	5.3	4.7	4.5
Stable Value Hedge Fund Composite Benchmark	2.1	3.8	2.1	3.0
Total Stable Value	8.8%	2.9%	6.3%	7.6%
Stable Value Composite Benchmark	9.8%	2.2%	4.8%	5.6%
Real Return				
Global Inflation Linked Bonds	4.9%	2.2%	1.9%	3.9%
Global Inflation Linked Bonds Composite Benchmark	4.8	2.1	1.8	3.7
Real Estate	7.7	10.7	11.4	12.2
Real Estate Composite Benchmark	6.5	7.0	9.2	8.1
Energy, Natural Resources & Infrastructure	7.9	NA	NA	NA
Energy, Natural Resources & Infrastructure Composite Benchmark	3.7	NA	NA	NA
Commodities	(46.0)	(16.5)	(21.1)	(11.4)
Commodities Composite Benchmark	(11.5)	1.6	(13.3)	(5.2)
Total Real Return	7.1%	9.2%	8.2%	9.1%
Real Return Composite Benchmark	5.4%	6.3%	6.6%	7.9%
Total Risk Parity	8.5%	8.6%	5.1%	NA
Risk Parity Benchmark	8.8%	7.7%	4.9%	NA
Asset Allocation Leverage				
Cash	1.7%	2.2%	2.4%	1.4%
Cash Composite Benchmark	2.3	1.4	0.9	0.5
Total Net Asset Allocation Leverage				
TRS	6.4%	9.5%	6.7%	9.9%
Custom Benchmark	6.7%	8.8%	6.4%	9.3%

Time-Weighted Returns as of June 30, 2019



F. Fees and Commissions

Investment Manager Fees

Management and Performance Fees that are paid from the Pension Trust Fund are charged by the manager or general partner to cover normal operating costs and the expenses of administering the partnership. The manager or general partner usually receives an annual management fee paid in quarterly, but sometimes in semi-annual or annual installments, from the limited partners. Management fees are typically 1.5 percent to 2 percent of the investment or the investment commitment during the investment period and are sometimes scaled down after the investment period. The management fee rate, basis for the calculation, and specific terms are agreed to in the Limited Partnership Agreement (LPA).

Performance fees/carried interest are accrued and paid based on the amount of profit or returns in excess of a benchmark or hurdle rate established in the LPA. Certain other management fees are charged by investment partnerships and netted against the investment earnings of the partnership. For investments in Private Equity, Real Assets, Energy, Natural Resources and Infrastructure, Performance Fees/Carried Interest represent the general partner's share of the partnership's profits, which is typically 20 percent, with 80 percent going to limited partners, such as TRS.

Carried interest is calculated and paid as partnership investments are realized, and carried interest on the unrealized investments is accrued over the life of the partnership based on the current valuation.

Fees paid from the Pension Trust Fund are booked as expenses on the income statement. Fees netted against returns are charged by investment partnerships and netted against the investment earnings of the partnership. Generally, the information for fees netted against returns are requested and received from Fund general partners on a quarterly basis. Due to the timing of information received from Fund general partners, fees paid or accrued in conjunction with investment activities, along with the related market value of assets under management, is presented for the calendar year ended June 30, 2019 in Table 6.

The amount of fees paid from the Pension Trust Fund and booked as expenses in Table 6 are for the calendar year ended June 30, 2019. The amount of fees paid from the Pension Trust Fund and booked as expenses for the fiscal year ended August 31, 2019, which appear in Exhibit II and Schedule 1 as External Manager Fees, amounted to \$90,133,268, which includes \$59,250,673.26 in management fees and \$30,882,595.15 in performance fees.

Table 6 Investment Manager Fees for the Period Ended June 30, 2019

Asset Class	Fees Paid from the Pension Trust Fund			Fees Netted Against Returns	
	Market Value of Assets Under Management	Management Fees	Performance Fees	Management Fees	Performance Fees/Carried Interest
Global Equity					
Public Equity					
USA	\$ 22,681,774,758	\$ 18,642,412	\$ 9,132,642	\$ 19,310,913	\$ 30,945,154
Non-US Developed	20,169,048,637	11,736,816	6,559,121	17,792,531	30,190,336
Emerging Markets	14,066,814,961	20,226,796	11,948,794	6,135,011	3,563,415
Directional Hedge Funds	5,725,357,897	2,458,723	—	45,383,619	24,569,064
<i>Total Public Equity</i>	<i>62,642,996,253</i>	<i>53,064,746</i>	<i>27,640,558</i>	<i>88,622,075</i>	<i>89,267,968</i>
Private Equity	22,847,685,529	—	—	190,868,668	293,356,410
Total Global Equity	\$ 85,490,681,782	\$ 53,064,746	\$ 27,640,558	\$ 279,490,743	\$ 382,624,378
Stable Value					
US Treasuries	\$ 15,906,748,009	\$ 2,948,755	\$ 969,452	\$ —	\$ —
Absolute Return	5,248,955,544	625,952	205,792	13,124,606	13,353,123
Stable Value Hedge Funds	6,677,623,797	—	—	93,495,260	101,775,067
Cash	2,058,931,483	—	—	—	—
Total Stable Value	\$ 29,892,258,833	\$ 3,574,707	\$ 1,175,244	\$ 106,619,866	\$ 115,128,190
Real Return					
Global Inflation Linked Bonds	\$ 4,230,549,374	\$ 1,221,555	\$ 401,606	\$ —	\$ —
Real Assets	20,658,490,969	663,955	1,665,187	149,219,138	85,122,040
Energy, Natural Resources & Infrastructure	9,051,020,770	1,162,185	—	74,456,889	9,719,509
Commodities	121,800,956	—	—	—	—
Total Real Return	\$ 34,061,862,069	\$ 3,047,695	\$ 2,066,793	\$ 223,676,028	\$ 94,841,549
Total Risk Parity	\$ 8,332,634,357	\$ 1,755,561	\$ —	\$ 10,178,848	\$ 182,778
Total Asset Allocation Leverage	\$ (1,374,441,700)	\$ —	\$ —	\$ —	\$ —
Total Fund	\$ 156,402,995,341	\$ 61,442,709	\$ 30,882,595	\$ 619,965,484	\$ 592,776,895

Broker Commissions

Broker commissions are the incremental direct costs incurred to purchase, sell, or transfer investment assets and liabilities. Table 7 presents the commissions paid to brokers for the fiscal year ended August 31, 2019. Over 36 trillion shares were traded by 205 brokers, and commissions paid amounted to over \$62.6 million.

For the fiscal year ended August 31, 2019, a portion of the total commissions was paid through various Commission Sharing Arrangements (CSA) and Commission Recapture Arrangements (CRA). CSA proceeds generated \$15,487,429 and were used in accordance with Section 28(e) of the Securities Exchange Act of 1934 to acquire research services from various investment-related firms, totaling \$12,697,578. CRA proceeds generated \$77,203 and

were used to acquire services totaling \$338,283. Unspent CSA proceeds, totaling \$7,518,252, and unspent CRA proceeds, totaling \$550,7061, were held by State Street Bank and Trust Company as the Fund's CSA and CRA Administrator.

Vendor paid expenses are legal arrangements that are used to acquire investment-related items other than those paid for with commission credit proceeds. Through contractual agreements with various firms, the Fund benefited from \$7,808,444 in vendor paid expenses and contractual allowances for the fiscal year ended August 31, 2019.

Table 7 | Broker Commissions for the Fiscal Year Ended August 31, 2019

Brokerage Firm	Shares Traded	Commissions Paid*
GOLDMAN SACHS	20,474,178,821,113	\$ 9,383,447
BANK OF AMERICA MERRILL LYNCH	224,699,645,984	7,387,375
J P MORGAN CHASE	659,293,091,490	5,280,739
MORGAN STANLEY	566,127,074,505	4,442,739
CREDIT SUISSE FIRST BOSTON	1,610,995,878,551	4,307,929
CITIBANK	7,248,829,873,554	4,015,315
UBS AG	593,870,439,060	2,689,634
CLSA	265,533,144,695	2,050,724
BANK OF NEW YORK	2,189,956,318	2,026,359
BARCLAYS BANK PLC	757,694,317,064	1,982,356
Summary of remaining 199 brokerage firms	4,487,768,465,619	18,988,782
Total	\$ 36,891,180,707,953	\$ 62,555,399

*Commissions paid per share is less than \$0.01.

CAFR 2019

ACTUARIAL SECTION

SOUTH TEXAS



The undeniable beauty of South Texas can be seen in its vibrant white sand beaches and lush tropical settings. Some of the major metropolitan areas in South Texas include Corpus Christi, Brownsville, Laredo, and Del Rio.



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Pension Trust Fund Actuarial Information

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November 9, 2018

Board of Trustees
Teacher Retirement System of Texas
1000 Red River Street
Austin, TX 78701-2698

Subject: Actuary's Certification of the Actuarial Valuation as of August 31, 2018

We certify that the information included herein and contained in the 2018 Actuarial Valuation Report is accurate and fairly presents the actuarial position of the Teacher Retirement System of Texas (TRS) as of August 31, 2018. This report was prepared at the request of the Board and is intended for use by the TRS staff and those designated or approved by the Board. This report may be provided to parties other than TRS staff only in its entirety and only with the permission of the Board.

All calculations have been made in conformity with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, the results presented comply with the requirements of the Texas statutes and, where applicable, the Internal Revenue Code, ERISA, and the Statements of the Governmental Accounting Standards Board. The undersigned are independent actuaries. Mr. Siblik and Mr. Newton are Enrolled Actuaries, members of the American Academy of Actuaries and are qualified to give a Statement of Opinion. All are experienced in performing valuations for large public retirement systems.

ACTUARIAL VALUATIONS

The primary purpose of the valuation report is to determine the adequacy of the statutory contribution rates through measuring the resulting funding period, to describe the current financial condition of the System, and to analyze changes in the System's condition. In addition, the report provides various summaries of the data. This report may not be appropriate for other purposes. The information required by the System in connection with Governmental Accounting Standards Board Statement No. 67 (GASB No. 67) will be provided under separate cover.

Valuations are prepared annually, as of August 31 of each year, the last day of the System's plan and fiscal year.

FINANCING OBJECTIVE OF THE PLAN

The employee, employer, and State contribution rates are established by Law that, over time, are intended to remain level as a percent of payroll and provide assets to cover benefits when due. The

Board of Trustees
November 9, 2018
Page 2

actuarially determined employer contribution rates determined in this actuarial valuation are intended to provide for the normal cost plus the level percentage of payroll required to amortize the unfunded actuarial accrued liability over a period not in excess of 30 years.

PROGRESS TOWARD REALIZATION OF FINANCING OBJECTIVE

The actuarial accrued liability, the unfunded actuarial accrued liability (UAAL), and the calculation of the resulting funding period illustrate the progress toward the realization of financing objectives. Based on this actuarial valuation as of August 31, 2018, the System's under-funded status has increased significantly at \$46.2 billion as of August 31, 2018 compared to \$35.5 billion as of August 31, 2017. The primary reason for the increase was the change to the actuarial assumptions adopted by the Board in July of 2018. The increase associated with the change in assumptions (\$10.6 billion) represents nearly all of the change in the UAAL from the previous year. The System's UAAL was expected to increase from the prior due to the interest on the UAAL being greater than the contributions towards the UAAL. However, the System experienced an actuarial gain on both the actuarial value of assets and on the demographic experience which would have offset this increase.

This valuation shows a normal cost equal to 11.58% of pay plus an addition to the normal cost of 0.11% of pay to cover the annual cost of administrative expenses. The State/employers began contributing the current contribution rate of 6.80% in fiscal year 2014 and it is assumed the rate will remain at that level. In addition, covered employers whose employees are not participating in Social Security began contributing 1.50% of salary (capped at the minimum salary schedule) in fiscal year 2015. These contributions are assumed to be approximately 0.91% of total payroll. Combined, these contributions are assumed to approximate 7.71% of total payroll. The member contribution began increasing in fiscal year 2015 and reached its ultimate rate of 7.70% in fiscal year 2017. In addition to these contributions, there are contributions made on behalf of members who are receiving a pension but who have also returned to work. These contributions are assumed to be approximately 0.05% of total payroll. As a result, for FY2019 and thereafter, the System is expected to receive a total contribution rate of 15.46% of pay.

Hence, there is expected to be 3.77% of pay available to amortize the UAAL (15.41% State/employer contributions plus 0.05% for return to work retirees less the normal cost of 11.58% less administrative expenses of 0.11%). If payroll grows as expected (3.0% per year), the contributions provided by this portion of the contribution rate are sufficient to amortize the current unfunded actuarial accrued liabilities of the System over a period of 87 years based on the smoothed asset value as the valuation date. Therefore, the financing objectives of the System are not currently being met.

The actuarial valuation report as of August 31, 2018 reveals that the funded ratio (the ratio of actuarial assets to actuarial accrued liability) is 76.9%. The funded status is one of many metrics used to show trends and develop future expectations about the health of the System. The funded status measure itself is not appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations or assessing the need for or the amount of future

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November 9, 2018
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contributions since it does not reflect normal cost contributions, the timing of amortization payments, or future experience other than expected.

The System earned less than the prior year's assumed rate of return during fiscal year 2018 (7.7% on market value compared to an assumed 8.00%). Even with the current year shortfall, the System experienced an actuarial gain on assets from the prior year's excess that was being deferred. The System is now deferring net investment excess of \$0.5 billion and the funded status using the market value of assets is 77.2%. If there are no significant investment shortfalls or other actuarial losses over the next several years, the funded status of the System would be expected to increase towards this number. This \$0.5 billion in net deferred excess compares to the last valuation when the System was deferring \$1.1 billion.

As stated previously, the System's UAAL is significantly increased from the prior year. The UAAL had been expected to increase by \$0.4 billion without any gains or losses thus the UAAL increased by \$10.3 billion more than expected during the year. Offsetting the gain of \$0.2 billion on the actuarial assets was a \$10.5 billion loss on the liabilities. This \$10.5 billion loss was split into the impact of the assumption changes, which increased the liabilities by \$10.6 billion, and a liability experience gain of \$0.1 billion. This \$0.1 billion represents a gain of 0.05% of total liabilities and was due to the liabilities growing slower than expected due to salary increases being slightly less than expected, more terminations than expected and fewer retirements than expected during the year.

Based on the actuarial (smoothed) value of assets, the number of years needed to amortize the UAAL will decrease annually if all assumptions are met. Please note that this annual decrease in the funding period will only occur if the currently scheduled contribution levels remain in place over the funding period. Any decrease in the contribution rates will result in higher funding periods. It should be noted that with the \$0.5 billion in deferred investment excess still to be recognized in the actuarial value of assets, future gains in the actuarial value of assets will result in a decrease in the funding period in future valuations until the gains are fully recognized.

Due to the current funding policy which utilizes level percentage of payroll amortization, the amortization payments will not be sufficient to cover all of the interest charges on the UAAL until the funding period reaches approximately 20 years. Table 11a provides a 10 year projection of various valuation results, including the UAAL, and that projection shows the UAAL is expected to increase to \$63.7 billion in 2028. Extending the projection further would show the UAAL increases each year until it starts to decrease in 2085 and is fully amortized 20 years after that (assuming all assumptions are exactly met including a 7.25% return on assets).

Please note these expectations are based on the current benefit provisions, assumptions, and contribution rates and a level active population. Any additional benefit enhancements (ad hoc Cost of Living Adjustments or "COLAs") granted without additional funding would increase the ultimate UAAL and extend the funding period before the funding status begins to improve. Thus, we continue to advise against any future benefit enhancements without additional sources of funding.



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Board of Trustees
November 9, 2018
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Furthermore, as discussed earlier, the current contributions are not sufficient to meet the financing goals (funding period of 30 years or less) of the System. We strongly recommend increases in the contribution rates (whether employers, members or both) to bring the funding period back down to a level that satisfies the System's financing goals.

PLAN PROVISIONS

The plan provisions used in the actuarial valuation are described in Appendix 1 of the valuation report. There have been no changes to the benefit and contribution provisions of the System since the prior valuation.

DISCLOSURE OF PENSION INFORMATION

Beginning with fiscal year 2014, the System began reporting financial information in accordance with Governmental Accounting Standards Board (GASB) Statement No. 67. The disclosure information for GASB No. 67 is provided in a separate report and is not contained herein.

This report should not be relied on for any purpose other than the purpose described above. Determinations of the financial results associated with the benefits described in this report in a manner other than the intended purpose may produce significantly different results.

ACTUARIAL METHODS AND ASSUMPTIONS

The actuarial methods and assumptions have been selected by the Board of Trustees of the Teacher Retirement System of Texas based upon our analysis and recommendations. These assumptions and methods are detailed in Appendix 2 of the valuation report. The Board of Trustees has sole authority to determine the actuarial assumptions used for the plan. The actuarial methods and assumptions are primarily based on a study of actual experience for the three year period ending August 31, 2017 and adopted on July 27, 2018. The investment return assumption being decreased from 8.00% to 7.25% was the most significant change although other assumptions were changed as well. Please see our experience study report dated July 27, 2018 for more information on the assumption changes. In our opinion, the actuarial assumptions and methods used in this funding valuation meet the parameters set by the Actuarial Standards of Practice issued by the Actuarial Standards Board for such purposes.

The results of the actuarial valuation are dependent on the actuarial assumptions used. Actual results can and almost certainly will differ, as actual experience deviates from the assumptions. Even seemingly minor changes in the assumptions can materially change the liabilities, calculated contribution rates and funding periods. To illustrate this point, on page 7 of this report we have shown illustrative results based on future investment experience deviating from the assumptions. Based on the scope of this engagement, we have not performed analysis on the potential range of future measurements based on other factors. The actuarial calculations are intended to provide information for rational decision making.



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In our opinion, the actuarial assumptions used are appropriate for purposes of the valuation and are internally consistent and reasonably related to the experience of the System and to reasonable expectations.

Data

Member data for retired, active and inactive members was supplied as of August 31, 2018 by the TRS staff. The staff also supplied asset information as of August 31, 2018. While GRS did not audit this data, but we did apply a number of tests to the data and concluded that it was reasonable and consistent with the prior year's data. It is also our understanding that TRS's auditor has attested to this information. GRS is not responsible for the accuracy or completeness of the information provided to us by TRS.

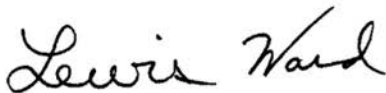
The following schedules in the Actuarial Section of the TRS CAFR were prepared by GRS:

- Actuarial Present Value of Future Benefits
- Schedule of Retirees and Beneficiaries Added to and Removed from Rolls
- Schedule of Funding Progress
- Post-Retirement Mortality
- Rates of Retirement
- Probability of Decrement due to Withdrawal
- Active Mortality

All other schedules shown in the actuarial section were prepared by TRS staff based upon our work. For further information please see the full actuarial valuation report.

This document and the PowerPoint presentation of the actuarial valuation results presented to the TRS Board in December 2018 comprise the full actuarial report.

Respectfully submitted,
Gabriel, Roeder, Smith & Company



Lewis Ward
Consultant



Daniel J. Siblik, ASA, EA, MAAA
Consultant



Joseph P. Newton, FSA, EA, MAAA
Pension Market Leader and Actuary
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Actuarial Disclosure

The Actuarial Section is based on a valuation as of August 31, 2018.

Table 1 | Actuarial Present Value of Future Benefits

(With Comparative Data as of August 31, 2017)

	2018	2017
Present Value of Benefits Presently Being Paid		
Service Retirement Benefits	\$ 97,778,733,445	\$ 88,265,853,858
Disability Retirement Benefits	1,262,559,579	1,159,723,275
Death Benefits	945,102,660	878,484,700
Present Survivor Benefits	294,529,850	267,992,457
Total Present Value of Benefits Presently Being Paid	\$ 100,280,925,534	\$ 90,572,054,290
Present Value of Benefits Payable in the Future to Present Active Members		
Service Retirement Benefits	\$ 117,752,030,618	\$ 106,686,289,188
Disability Retirement Benefits	2,473,609,365	1,390,485,196
Termination Benefits	11,614,967,251	9,104,608,213
Death and Survivor Benefits	2,253,693,291	1,873,738,711
Total Active Member Liabilities	\$ 134,094,300,525	\$ 119,055,121,308
Present Value of Benefits Payable in the Future to Present Inactive Members		
Inactive Vested Participants	\$ 4,931,520,979	\$ 4,591,531,545
Refunds of Contributions to Inactive Non-vested Members	501,473,614	444,096,753
Future Survivor Benefits Payable On Behalf of Present Annuitants	1,630,036,961	1,462,466,211
Total Inactive Liabilities	\$ 7,063,031,554	\$ 6,498,094,509
Total Actuarial Present Value of Future Benefits	\$ 241,438,257,613	\$ 216,125,270,107

Table 2 | Summary of Cost Items

(With Comparative Data as of August 31, 2017)

	2018	2017
Present Value of Future Benefits	\$ 241,438,257,613	\$ 216,125,270,107
Present Value of Future Normal Costs	(41,221,951,786)	(34,372,473,392)
Actuarial Accrued Liability	\$ 200,216,305,827	\$ 181,752,796,715
Actuarial Value of Assets	\$ (154,050,930,573)	\$ (146,282,044,842)
Unfunded Actuarial Accrued Liability	\$ 46,165,375,254	\$ 35,470,751,873

Financing Objective and Funding Policy

The financing objective and funding policy of the pension plan is the responsibility of the legislature. The contribution rates are established by the Legislature, that over time, are intended to remain level as a percent of payroll, and provide assets to cover benefits when due. The actuarially determined employer contribution rates determined by the actuarial valuation are expected to provide for the normal cost plus the level percentage of payroll required to amortize the unfunded actuarial accrued liability over a period not in excess of 30 years.

Contribution rates may not be reduced or eliminated, and benefits may not be improved, if as a result of the particular action, the time required to amortize the unfunded actuarial liabilities of the System, would be increased to a period that exceeds 31 years. For detailed information, see Note 11.

Plan Provisions

For plan provisions, see Note 11.

Actuarial Methods and Assumption

The actuarial valuation for TRS pension fund was prepared by Gabriel, Roeder, Smith & Company (GRS). The actuary relied on membership data and asset information provided by TRS staff. While GRS did not audit this data, a number of tests to the data were performed, and they concluded it was reasonable and consistent with the prior year's data.

The actuarial methods and assumptions have been selected by the TRS Board of Trustees based upon GRS analysis and recommendations. The Board has sole authority to determine the actuarial assumptions used for the plan. The actuarial methods and assumptions are primarily based on a study of actual experience for the three year period ending August 31, 2017 that was adopted on July 27, 2018.

The results of the actuarial valuation are dependent on the assumptions used. Actual results can and almost certainly will differ, as actual experience deviates from the assumptions. Seemingly minor changes in assumptions can materially change the liabilities, calculated contribution rates, and funding periods. The most significant change was the decrease in the investment return assumption from 8.0 percent to 7.25 percent. There were other assumption changes that were used and can be found in the experience study report mentioned above.

Actuarial Methods

The actuarial cost method used for both financial reporting purposes and funding purposes was the Individual Entry Age Normal method as prescribed by GASB 67. The Individual EAN cost method is used because it creates the most level funding requirement across the generations of members and stakeholders. Under Individual EAN, the normal cost for each member is based on the benefit tier for that member.

Actuarial Assumptions

The actuarial assumptions used for funding purposes were the same assumptions used for financial reporting purposes.

A. Investment Rate of Return

The investment rate of return for the fiscal year ending August 31, 2018 was 7.25 percent, compounded annually, which was composed of an assumed 2.30 percent inflation rate and a 4.95 percent real rate of return, net of investment expenses. This was the same rate used to discount the actuarial accrued liability. The rate of return for fiscal year 2018 was used because of the selection of the Roll Forward Method for GASB 67.

B. Post-Retirement Mortality, Assumed Retirement Age, Disability Retirement, Death, and Withdrawal from System

Rates and scales were developed in the actuarial investigation as of August 31, 2017, with values at specimen ages shown in the tables below.

Table 3 | Post-Retirement Mortality

Age	Male Members	Female Members
40	0.000615	0.000388
50	0.001652	0.001080
60	0.004651	0.002668
70	0.014356	0.008969
80	0.046716	0.032270
90	0.152340	0.116359
100	0.490265	0.422361
110	0.496658	0.496658
120	1.000000	1.000000

Rates for members younger than age 65 will be reduced by 15 percent to reflect anticipated behavior changes stemming from the modifications to TRS-Care in the 2017 legislature. 5 percent will be added to the rate at

age 65 for members who reach normal retirement age prior to age 65.

For members hired after August 31, 2007 and who are vested as of August 31, 2014, the retirement rates for members once they reach unreduced retirement eligibility at age 60 are increased 10% for each year the member is beyond the Rule of 80 (i.e. if the member reached the Rule of 80 at age 58 then the probability of retirement at age 60 is 120% of the rate shown in Table 4 below).

For members hired after August 31, 2007 and who are not vested as of August 2014 or for members hired after August 2014, the retirement rates for members once they reach unreduced retirement eligibility at age 62 are increased 10% for each year the member is beyond the Rule of 80 (i.e. if the member reached the Rule of 80 at age 58, then the probability of retirement at age 62 is 140% of the rate shown in Table 4 below). The following table shows the probability of retirement at the various age brackets.

Table 4 : Assumed Retirement Age					
Normal Retirement			Early Retirement		
Age	Male	Female	Age	Male	Female
50-54	0.13	0.14	45-59	0.01	0.01
55	0.13	0.15	60	0.01	0.02
56	0.14	0.16	61	0.02	0.02
57	0.15	0.17	62	0.04	0.04
58	0.16	0.18	63-65	0.05	0.05
59	0.17	0.19			
60	0.18	0.20			
61	0.19	0.21			
62	0.20	0.22			
63	0.21	0.23			
64	0.22	0.24			
65-74	0.25	0.25			
75	1.00	1.00			

The disability retirement rates for members once they reach the Rule of 80 but not eligible for unreduced retirement are adjusted by an additional 1 percent.

Table 5 below shows the rates of disability retirement by age.

Table 5 : Probability of Decrement Due to Disability				
Age	For Service >= 10		For Service < 10	
	Male	Female	Male	Female
20	0.000147	0.000262	0.000018	0.000028
30	0.000147	0.000262	0.000018	0.000028
40	0.000344	0.000446	0.000043	0.000047
50	0.001594	0.001726	0.000199	0.000182
60	0.002804	0.002616	0.000351	0.000275

The probability of decrement due to death is shown in Table 6 below.

Table 6 Active Mortality*		
Age	Male Members	Female Members
20	0.000351	0.000140
30	0.000391	0.000188
40	0.000543	0.000342
50	0.001458	0.000953
60	0.004053	0.002111
70	0.011977	0.005454
80	0.033554	0.015890
90	0.119209	0.089535

*RP-2014 Employee Mortality Tables for male and female multiplied by 90%, with full generational projection using the ultimate calendar of rates in the mortality projection scale MP-2014, 2D for male and female.

The probability of decrement due to termination is shown in Table 7 below.

Table 7 Probability of Decrement Due to Withdrawal		
Years of Service	Male Members	Female Members
1	0.155507	0.162296
2	0.124963	0.133070
3	0.100839	0.111030
4	0.075417	0.087064
5	0.065169	0.077625
6	0.057971	0.068467
7	0.049227	0.056290
8	0.043267	0.048891
9	0.038586	0.043639
10	0.035246	0.039995

C. Rates of Salary Increase

The rates of salary increase shown in Table 8 below reflects an inflation rate of 2.30 percent, plus productivity component of .75 percent, plus step-rate/promotional component as shown.

Table 8 Rates of Salary Increase Due to Merit and Promotion

Years of Service	Longevity	General	Total
1	6.00%	3.05%	9.05%
2	2.50	3.05	5.55
3	1.90	3.05	4.95
4	1.50	3.05	4.55
5	1.40	3.05	4.45
6	1.20	3.05	4.25
7	1.10	3.05	4.15
8-10	1.00	3.05	4.05
11-12	0.90	3.05	3.95
13	0.80	3.05	3.85
14	0.70	3.05	3.75
15	0.60	3.05	3.65
16-17	0.50	3.05	3.55
18	0.40	3.05	3.45
19-20	0.30	3.05	3.35
21-22	0.20	3.05	3.25
23-24	0.10	3.05	3.15
25 or more	—	3.05	3.05

D. Actuarial Value of Assets

The intent of the actuarial asset valuation method is to smooth out year-to-year fluctuations in market rates of return. The actuarial value of assets is equal to the market value of assets less a five year phase-in of the excess/(shortfall) between expected investment returns and actual income. The actual calculation is based on the difference between actual market value and the expected actuarial value of assets each year and recognizes the cumulative excess return (or shortfall) over a minimum rate of 20 percent per year. Each year a base is set up to reflect this difference. If the current year's base is of the opposite sign from the remaining deferred bases then it is offset against any prior deferred bases of the opposite sign. Any remaining bases are then recognized over the remaining number of years. This is intended to ensure the smoothed value of assets will converge towards the market value in a reasonable and finite amount of time.

This year's shortfall in investment income of \$389 million was completely offset with the prior years' remaining gains, with \$691 million remaining. After recognizing 20 percent of the amount (\$173 million) in this year's actuarial assets, \$518 million in deferred investment gains remain to be recognized in future valuations. The actuarial value of assets was \$154.1 billion.

Expected earnings are determined using the assumed investment rate of return and the beginning of year actuarial value of assets adjusted for receipts and disbursements during the year. The returns are computed net of investment expenses.

E. Funding of Unfunded Actuarial Accrued Liability

The Unfunded Actuarial Accrued Liability (UAAL) is funded by the excess of future State and employer contributions required by law over the amount of such contributions required to fund the normal cost of benefits.

The normal cost for the System is deemed to be equal to the average cost of benefits for active members. The normal cost to pay for the benefits earned under the retirement system is 11.58 percent of pay, this amount being inclusive of the amount contributed by the

employees. An estimated 0.11 percent of payroll is added for administrative expenses of the System, bringing the total normal cost to 11.69 percent (11.58 percent plus .11 percent) of pay. The net employer normal cost is 3.99 percent of pay (11.58 less the member contribution rate of 7.7 percent).

The actuarial accrued liability for benefits payable in the future to present active members is calculated as the present value of benefits payable in the future to present active members less the present value of future normal costs.

From an actuarial perspective, the goal is the contribution rate in excess of the System's normal cost should be sufficient to amortize the UAAL over a reasonable period of time. For TRS, the ultimate contribution rate in excess of the System's normal cost (3.77 percent) required a period of 87 years to amortize the System's UAAL, therefore the financing objective is not being met. This excessive amortization period was the basis for GRS' recommended changes that were made by the 86th legislature to make the pension fund actuarially sound.

The active member valuation data is shown in Table 9 below.

Table 9 | Active Member Valuation Data

Valuation Year	Active Members	Annualized Payroll in Thousands	Average Annual Salary	Annual % Increase in Average Salary
2009	817,537	\$ 35,096,863	\$ 42,930	3.5%
2010	834,060	36,628,579	43,916	2.3
2011	828,919	36,797,372	44,392	1.1
2012	815,155	36,309,449	44,543	0.3
2013	831,302	37,104,333	44,634	0.2
2014	857,342	39,195,104	45,717	2.4
2015	828,851	37,121,750	44,787	(2.0)
2016	847,631	39,281,763	46,343	3.5
2017	864,233	40,904,148	47,330	2.1
2018	872,978	42,105,475	48,232	1.9

The Schedule of retirees, beneficiaries and disabled participants added to and removed from the rolls is shown in Table 10.

Table 10 | Retirees, Beneficiaries, and Disabled Participants Added to and Removed from Rolls

Valuation as of August 31	Added to Rolls		Removed from Rolls		Rolls - End of Year			% Increase Average Annual Benefits
	Number	Annual Benefits	Number	Annual Benefits	Number	Annual Benefits	Average Annual Benefits	
2009	17,326	\$ 392,452,923	7,940	\$ 136,537,511	284,614	\$ 5,999,836,691	\$ 21,081	4.5%
2010	20,076	473,512,423	8,199	142,187,645	296,491	6,331,161,469	21,354	5.5
2011	24,688	620,038,676	8,499	147,985,004	312,680	6,803,215,141	21,758	7.5
2012	27,915	697,134,389	8,848	155,597,838	331,747	7,344,751,692	22,140	8.0
2013	25,825	743,998,946	9,344	165,231,795	348,228	7,923,518,843	22,754	7.9
2014	24,429	573,876,713	9,475	174,915,127	363,182	8,322,480,429	22,915	5.0
2015	25,134	604,436,264	10,578	191,966,951	377,738	8,734,949,742	23,124	5.0
2016	27,018	673,313,552	10,842	195,097,916	393,914	9,213,165,378	23,389	5.5
2017	24,739	613,145,920	10,885	203,792,399	407,768	9,622,518,899	23,598	4.4
2018	24,317	611,173,964	11,627	219,236,845	420,458	10,014,456,018	23,818	4.1

The analysis of financial trends is shown in Table 11.

Table 11 | Analysis of Financial Experience (Dollars in Billions)*

As of August 31	Investment Gains/ (Losses)	Contribution Experience	Assumption Changes	Liability Experience	Net Increase/ (Decrease)	Beginning UAAL	Ending UAAL
2009	\$ (10.321)	\$ 0.149	\$ —	\$ (0.347)	\$ 10.123	\$ 11.523	\$ 21.646
2010	(1.161)	0.797	—	(0.705)	1.253	21.646	22.899
2011	(1.958)	0.826	(0.271)	(1.350)	1.163	22.899	24.062
2012	(2.208)	1.258	—	(1.427)	2.039	24.062	26.101
2013	(2.045)	1.911	0.708	(1.829)	2.835	26.101	28.936
2014	1.095	1.157	2.282	0.358	2.702	28.936	31.638
2015	(1.237)	0.912	0.682	(1.501)	1.330	31.638	32.968
2016	(1.504)	0.525	—	(0.460)	2.485	32.968	35.453
2017	0.270	0.415	(0.701)	0.828	0.018	35.453	35.471
2018	0.173	0.371	(10.592)	0.095	0.011	35.471	46.165

*Resulting from differences between assumed experience and actual experience. Calculated on a 5-year smoothed market basis.

Solvency Test

A short-term solvency test is one means of checking a retirement System's progress under its funding program. The schedule below provides a historical illustration of a short-term solvency test for TRS wherein present assets are compared with:

- active member contributions on deposit
- the liabilities for future benefits to present annuitants (Retirees and Beneficiaries)
- the liabilities for active members under the entry age normal actuarial cost method including a projection of future salary increases and anticipated future service Active Members-State Financed Portion)

Under the level percent of payroll financing followed by TRS, liabilities for active member contributions on deposit and the liabilities for future benefits to present retirees and beneficiaries will be fully covered by present assets except in rare circumstances. In addition, liabilities for active member benefits earned

or to be earned in the future will be partially covered by the remainder of present assets. Generally, if the System has been using level cost financing, the funded portion of active member benefits will increase over time. The solvency test is shown in Table 12.

Table 12 | Solvency Test (Dollars in Millions)

Valuation as of August 31	Aggregate Actuarial Accrued Liabilities For			Valuation Assets	Portion of Aggregate Actuarial Accrued Liabilities Covered by Valuation Assets		
	Active Member Contributions (1)	Retirees and Beneficiaries (2)	Active Members (State Financed Portion) (3)		Active Member Contributions (1)	Retirees and Beneficiaries (2)	Active Members (State Financed Portion) (3)
2009	\$ 23,914	\$ 55,484	\$ 48,632	\$ 106,384	100%	100%	55.5%
2010	27,559	58,476	48,156	111,293	100	100	52.5
2011	28,911	63,470	46,934	115,253	100	100	48.7
2012	30,006	68,449	45,972	118,326	100	100	43.2
2013	31,365	73,841	45,460	121,730	100	100	36.3
2014	33,028	78,431	48,576	128,398	100	100	34.9
2015	33,856	82,535	50,062	133,485	100	100	34.1
2016	34,803	86,986	52,451	138,786	100	100	32.4
2017	36,513	90,583	54,667	146,282	100	100	35.1
2018	37,834	101,911	60,472	154,051	100	100	23.7

Schedule of Funding Progress

Taking into account only the dollar amounts of aggregate actuarial accrued liabilities and Unfunded Actuarial Accrued Liabilities (UAAL) can be misleading. The dollar amounts of these two items can be increasing at a time when their actual substance may be decreasing. Dividing valuation asset dollars by aggregate actuarial accrued liability dollars and dividing UAAL dollars by active member payroll dollars provide clarifying indices. The larger the ratio of valuation assets to aggregate actuarial accrued liabilities, the stronger the system. Observation of these relative indices over a period of years will give an indication of whether the System is becoming stronger or weaker. The schedule of funding progress is shown in Table 13.

Table 13 | Schedule of Funding Progress (Dollars in Millions)

Valuation as of August 31	Actuarial Value of Assets	Actuarial Accrued Liability (AAL)	Unfunded AAL (UAAL)	Funded Ratio Assets as a % of AAL	Covered Payroll	UAAL as a % of Covered Payroll
[1]	[2]	[3]	[4]	[5]	[6]	[7]
2009	\$ 106,384	\$ 128,029	\$ 21,646	83.1%	\$ 35,097	61.7%
2010	111,293	134,191	22,899	82.9	36,629	62.5
2011	115,253	139,315	24,062	82.7	36,797	65.4
2012	118,326	144,427	26,101	81.9	36,310	71.9
2013	121,730	150,666	28,936	80.8	37,104	78.0
2014	128,398	160,036	31,638	80.2	38,522	82.1
2015	133,485	166,453	32,968	80.2	39,620	83.2
2016	138,786	174,239	35,453	79.7	42,376	83.7
2017	146,282	181,753	35,471	80.5	43,164	82.2
2018	154,051	200,216	46,165	76.9	44,956	102.7

The 10-year Schedule of Actuarially Determined Contributions is located in the Required Supplementary Information section.

TRS-Care Actuarial Information

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Table 1	Retirees and Beneficiaries Added to and Removed from Rolls	132



November 16, 2018

Board of Trustees
Teacher Retirement System of Texas
1000 Red River Street
Austin, TX 78701-2698

Subject: Actuary's Certification of the GASB Statement No. 74 Actuarial Valuation as of August 31, 2018 for TRS-Care

Submitted in this report are the results of an Actuarial Valuation of the liabilities associated with the employer financed retiree health benefits provided through TRS-Care, a benefit program designed to provide post-retirement medical benefits for certain members of the Teacher Retirement System of Texas (TRS). The date of the valuation was August 31, 2017. Update procedures were used to roll forward the total OPEB liability to August 31, 2018. This report was prepared at the request of TRS.

The actuarial calculations were prepared for purposes of complying with the requirements of Statement No. 74 of the Governmental Accounting Standards Board (GASB). The calculations reported herein have been made on a basis consistent with our understanding of this accounting standard. Determinations of the liability associated with the benefits described in this report for purposes other than satisfying the financial reporting requirements of TRS-Care and participating employers may produce significantly different results. Actuarial valuations of the post-retirement benefits are performed annually.

The valuation was based upon information, furnished by TRS, concerning retiree health benefits, members' census, and financial data. Data was checked for internal consistency but was not otherwise audited. Certain demographic and economic assumptions were updated as a result of the 2017 Experience Study conducted for TRS. Assumptions applicable only to TRS-Care have also changed since the prior report, and they are disclosed in the assumptions section of this report.

The following CAFR schedules were prepared by GRS and can be found in Sections D and E of this report:

1. Key actuarial assumptions and methods
2. Analysis of Financial Experience
3. Schedule of Retirants and Beneficiaries Added and Removed from Rolls

GRS is not responsible for any trend data schedules not found in this report.

Board of Trustees
Teacher Retirement System of Texas
November 16, 2018
Page 2

The current objective is to fund the Trust in order to maintain benefits through individual biennial periods. There is no arrangement into which the participating employers would make contributions to advance-fund the obligation. However, a Trust does exist into which participating employers are making contributions based on the current funding policy.

Future actuarial measurements may differ significantly from the current measurements 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; and changes in plan provisions or applicable law.

To the best of our knowledge, this report is complete and accurate. The assumptions and methods used for financial reporting purposes are in accordance with generally accepted actuarial principles set by the Actuarial Standards of Practice (ASOPs). Joseph Newton and Mehdi Riazi are members of the American Academy of Actuaries and meet the Qualification Standards of the Academy of Actuaries to render the actuarial opinion herein. The signing individuals are independent of the plan sponsor.

Respectfully submitted,



Joseph P. Newton, FSA, EA, MAAA
Senior Consultant



Mehdi Riazi, FSA, EA, MAAA
Consultant

O:\2551\2018\OPEB\Report\2018 TRS OPEB Cover Letter.doc



Actuarial Disclosure

The Actuarial Section is based on a valuation as of August 31, 2018.

Funding Objective and Funding Policy

The current funding objective for the TRS-Care OPEB Trust fund is to provide sufficient funding through individual biennial legislative periods. There is no arrangement where the participating employers would make contributions to advance-fund the obligation. However, participating employers and the State are making contributions based on the current funding policy. The Texas Legislature is responsible for establishing and maintaining the funding policy.

There was not an actuarial valuation prepared for funding purposes because the TRS-Care plan is a pay-as-you-go-plan.

The actuarial valuation of TRS-Care for financial reporting purposes was prepared by Gabriel, Roeder, Smith & Company. The valuation was based on information provided by TRS concerning retiree health benefits, member census and financial data. While not auditing the data, the actuary checks for internal consistency.

The actuarial calculations were prepared for purposes of complying with the requirements of GASB Statement No. 74 for financial reporting purposes only. The calculation of the plan’s liability is not applicable for funding purposes of the plan. A calculation of the Plan’s liability for purposes other than satisfying the requirements of GASB Statement No. 74 may produce significantly different results.

The TRS-Care OPEB plan is discussed in detail in Note 9 and provides the following information.

- Plan provisions
- Identification of the Plan type
- Number of covered individuals

Table 1 | Retirees and Beneficiaries Added to and Removed from Rolls

Valuation as of August 31	Added to Rolls		Removed from Rolls		Rolls - End of Year			% Increase in Annual Allowances	Average Annual Allowances
	Number	Annual Allowances	Number	Annual Allowances	Number	Annual Allowances*			
2009	12,158	\$ 54,271,769	8,192	\$ 19,365,868	202,934	\$ 694,017,558	14.5%	\$ 3,420	
2010	14,996	71,136,696	7,924	21,837,784	210,006	757,979,912	9.2	3,609	
2011	20,467	109,331,023	8,019	24,802,618	222,454	898,001,599	18.5	4,037	
2012	19,407	92,279,848	8,220	28,700,248	233,641	768,682,199	(14.4)	3,290	
2013	19,798	98,603,255	10,176	25,946,471	243,263	824,715,257	7.3	3,390	
2014	18,916	97,956,524	10,656	27,648,497	251,523	933,885,969	13.2	3,713	
2015	19,171	106,177,651	11,116	31,400,277	259,578	1,050,329,854	12.5	4,046	
2016	20,883	120,035,127	12,250	48,462,388	268,211	1,132,169,358	7.8	4,221	
2017	19,121	105,535,109	13,113	59,695,737	274,219	986,039,302	(12.9)	3,596	
2018	11,101	79,394,032	48,958	150,243,653	236,362	955,490,192	(3.1)	4,042	

*Expected employer provided claims and expenses (net of retiree premiums). Annual allowances in Column (7) include increases due to health care inflation and the impact of plan changes. As a result, the annual allowances are not equal to the beginning of year allowances plus the "Added to Rolls" allowances minus the "Removed from Rolls" allowances.

CAFR 2019
STATISTICAL SECTION

NORTH CENTRAL TEXAS



North Central Texas is home to beautiful rural country set side-by-side with modern life. Some of the major metropolitan areas in North Central Texas include Dallas, Fort. Worth, Wichita Falls, and Abilene.



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Statistical Section Overview

The Statistical Section presents additional information to provide financial statement users with added historical perspective, context, and detail to assist in using the information in the Basic Financial Statements, Notes to the Financial Statements, and Required Supplementary Information to understand and assess the System's financial condition. Information is presented for the Pension Trust Fund, TRS-Care, TRS-ActiveCare, and the 403(b) Administrative Program.

Financial Trends Information

The financial trend schedules assist users in understanding and assessing how the System's financial position has changed over time and include:

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Operating Information

The operating information schedules provide information containing contextual data about the System's benefit operations, resources, and the benefit services it provides and include:

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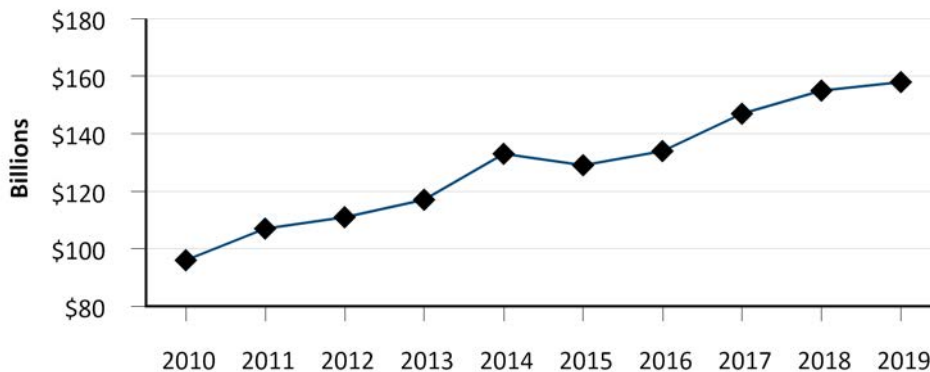
In addition, a complete list of participating employers has been included. The information was derived from internal sources.

Changes in Fiduciary Net Position
Pension Trust Fund
 For the Fiscal Years Ended August 31

	2019	2018	2017	2016
Additions				
Member Contributions	\$ 3,482,869,726	\$ 3,360,773,197	\$ 3,242,556,261	\$ 2,943,669,320
Non-Employer Contributing Entity Contributions	1,737,852,502	1,715,784,550	1,697,962,608	1,675,631,248
Employer Contributions	1,761,821,902	1,671,257,303	1,588,309,345	1,483,389,348
Purchase of Service Credit	42,205,185	41,538,371	55,092,741	37,389,534
Contributions from ERS	29,789,821	27,670,302	24,974,328	23,950,878
Net Investment Income	7,669,028,874	11,242,813,657	17,079,807,347	9,193,280,560
Other*	592,671,805	8,108,248	1,299,284	1,993,029
Total Additions	\$ 15,316,239,815	\$ 18,067,945,628	\$ 23,690,001,914	\$ 15,359,303,917
Deductions				
Benefits	\$ 11,256,781,486	\$ 10,176,447,093	\$ 9,778,497,039	\$ 9,382,696,876
Refunds of Contributions	486,460,902	422,335,740	420,421,056	373,418,687
Service Contributions Transferred to ERS	103,044,924	97,333,401	93,609,174	88,854,383
Other Post-Employment Benefit Expense	4,438,264	4,380,304	—	—
Administrative Expenses, Excluding Investing Activity Expenses	60,485,645	64,926,169	44,189,998	44,402,710
Total Deductions	\$ 11,911,211,221	\$ 10,765,422,707	\$ 10,336,717,267	\$ 9,889,372,656
Net Increase (Decrease)	\$ 3,405,028,594	\$ 7,302,522,921	\$ 13,353,284,647	\$ 5,469,931,261
Beginning Net Position	\$ 154,568,901,833	\$ 147,361,922,120	\$ 134,008,637,473	\$ 128,538,706,212
Prior Period Adjustments (Note 14)	4,268,648	(95,543,208)	—	—
Beginning Net Position, as Restated	\$ 154,573,170,481	\$ 147,266,378,912	\$ 134,008,637,473	\$ 128,538,706,212
Ending Net Position	\$ 157,978,199,075	\$ 154,568,901,833	\$ 147,361,922,120	\$ 134,008,637,473

*Supplemental Appropriation - Non-Employer Contributing Entity included in Other.

Pension Trust Fund
Net Position
Last Ten Years



(Continued)

	2015	2014	2013	2012	2011	2010
\$	2,576,024,311	\$ 2,357,686,000	\$ 2,252,094,934	\$ 2,188,020,423	\$ 2,243,954,725	\$ 2,205,017,425
	1,591,482,988	1,530,623,829	1,337,214,693	1,299,077,635	1,484,285,519	1,461,034,870
	1,377,972,653	984,552,391	925,693,992	760,837,633	856,219,491	835,605,159
	50,089,106	143,534,091	148,400,880	125,971,764	105,177,104	84,519,762
	21,205,594	19,714,145	18,885,872	17,423,597	14,379,300	12,672,282
	(412,759,100)	19,434,430,034	9,834,136,005	7,847,298,290	14,636,935,228	9,411,446,873
	3,733,133	4,143,449	2,629,383	1,867,389	1,576,613	788,787
\$	5,207,748,685	\$ 24,474,683,939	\$ 14,519,055,759	\$ 12,240,496,731	\$ 19,342,527,980	\$ 14,011,085,158
\$	8,937,328,045	\$ 8,550,916,357	\$ 8,077,729,314	\$ 7,726,105,535	\$ 7,175,255,376	\$ 6,618,901,884
	391,341,181	410,600,319	391,292,412	381,231,352	334,268,822	265,186,589
	84,059,353	80,163,847	75,513,146	70,985,963	64,772,079	61,570,750
	—	—	—	—	—	—
	35,556,979	41,904,190	36,264,062	33,073,740	35,849,819	29,992,608
\$	9,448,285,558	\$ 9,083,584,713	\$ 8,580,798,934	\$ 8,211,396,590	\$ 7,610,146,096	\$ 6,975,651,831
\$	(4,240,536,873)	\$ 15,391,099,226	\$ 5,938,256,825	\$ 4,029,100,141	\$ 11,732,381,884	\$ 7,035,433,327
\$	132,779,243,085	\$ 117,388,143,859	\$ 111,449,887,034	\$ 107,420,786,893	\$ 95,688,405,009	\$ 88,652,971,682
	—	—	—	—	—	—
\$	132,779,243,085	\$ 117,388,143,859	\$ 111,449,887,034	\$ 107,420,786,893	\$ 95,688,405,009	\$ 88,652,971,682
\$	128,538,706,212	\$ 132,779,243,085	\$ 117,388,143,859	\$ 111,449,887,034	\$ 107,420,786,893	\$ 95,688,405,009

Changes in Fiduciary Net Position

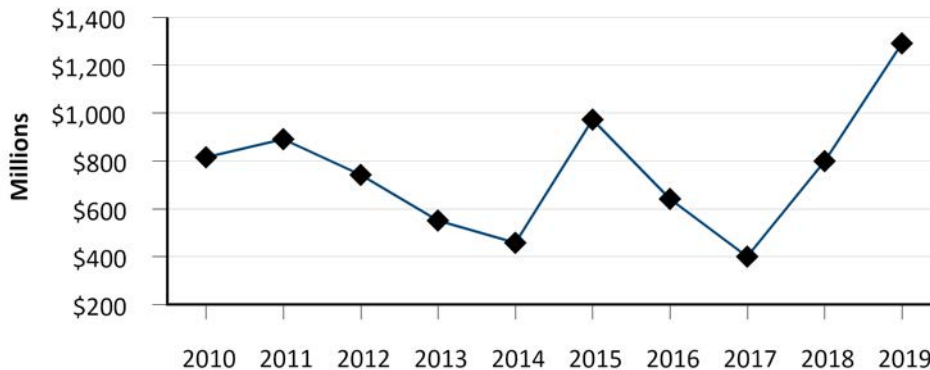
TRS-Care

For the Fiscal Years Ended August 31

	2019	2018	2017	2016
Additions				
Member Contributions	\$ 227,338,454	\$ 221,325,377	\$ 213,241,179	\$ 208,581,990
Non-Employer Contributing Entity - State Contributions	404,936,501	395,588,628	303,760,632	297,070,920
Employer Contributions	305,363,084	296,098,420	215,360,520	212,936,351
Fringe Benefits Paid by State's General Fund on Behalf of TRS Employees	—	—	—	—
Supplemental Appropriation - Non-Employer Contributing Entity	73,641,562	394,600,000	15,559,552	—
Federal Revenue	220,783,898	103,402,579	101,718,551	124,739,649
Rebate and Discount Income*	356,439,596	284,291,173	291,725,635	218,995,436
Investment Income	25,046,771	10,127,259	4,696,973	5,421,446
Miscellaneous Revenue	—	803,022	529,020	89,388
Total Additions	\$ 1,613,549,866	\$ 1,706,236,458	\$ 1,146,592,062	\$ 1,067,835,180
Deductions				
Health Care Claims	\$ 1,515,397,609	\$ 1,593,381,709	\$ 1,678,892,217	\$ 1,651,712,836
Less: Health Care Premiums Paid by Retirees	(517,965,033)	(488,069,004)	(404,027,710)	(374,736,269)
Health Care Claims Processing and Other Insurance Premium Payments	44,868,838	80,585,608	46,931,559	48,361,151
Administrative Expenses	71,794,507	83,828,910	61,792,671	69,228,872
	6,006,229	6,672,488	4,953,492	4,701,677
Total Deductions	\$ 1,120,102,150	\$ 1,276,399,711	\$ 1,388,542,229	\$ 1,399,268,267
Net Increase (Decrease)	\$ 493,447,716	\$ 429,836,747	\$ (241,950,167)	\$ (331,433,087)
Beginning Net Position	\$ 798,574,633	\$ 399,535,986	\$ 641,486,153	\$ 972,919,240
Prior Period Adjustments (Note 14)	—	(30,798,100)	—	—
Beginning Net Position, as Restated	\$ 798,574,633	\$ 368,737,886	\$ —	\$ —
Ending Net Position	\$ 1,292,022,349	\$ 798,574,633	\$ 399,535,986	\$ 641,486,153

*Prior to fiscal year 2013, rebates were offset within health care claims.

**TRS-Care
Net Position
Last Ten Years**



(Continued)

	2015	2014	2013	2012	2011	2010
\$	198,196,273	\$ 189,003,903	\$ 180,824,523	\$ 176,751,407	\$ 183,808,580	\$ 181,512,856
	281,098,358	267,497,910	139,095,786	271,925,242	282,782,431	279,250,547
	202,976,470	193,124,772	160,952,396	154,607,926	158,724,010	155,918,241
	—	139,422	117,770	103,676	108,440	101,511
	768,100,754	36,058,148	102,363,704	—	—	—
	126,806,652	78,589,415	74,511,473	68,633,946	136,887,805	70,795,686
	231,569,472	200,859,859	82,074,803	—	—	—
	1,495,680	2,061,745	3,041,001	5,189,934	8,168,640	11,679,229
	—	—	—	—	—	—
\$	1,810,243,659	\$ 967,335,174	\$ 742,981,456	\$ 677,212,131	\$ 770,479,906	\$ 699,258,070
\$	1,554,181,197	\$ 1,347,532,839	\$ 1,240,508,361	\$ 1,142,131,410	\$ 992,478,380	\$ 971,356,805
	(369,066,459)	(363,631,292)	(355,685,504)	(363,348,030)	(345,164,271)	(332,481,933)
	47,380,407	45,387,769	43,577,852	44,470,323	44,007,586	42,435,939
	59,000,081	27,507,106	1,148,013	101,060	108,286	99,662
	3,769,680	3,646,546	3,398,109	3,714,018	3,143,922	3,031,686
\$	1,295,264,906	\$ 1,060,442,968	\$ 932,946,831	\$ 827,068,781	\$ 694,573,903	\$ 684,442,159
\$	514,978,753	\$ (93,107,794)	\$ (189,965,375)	\$ (149,856,650)	\$ 75,906,003	\$ 14,815,911
\$	457,940,487	\$ 551,048,281	\$ 741,013,656	\$ 890,870,306	\$ 814,964,303	\$ 800,148,392
	—	—	—	—	—	—
\$	—	\$ —	\$ —	\$ —	\$ —	\$ —
\$	972,919,240	\$ 457,940,487	\$ 551,048,281	\$ 741,013,656	\$ 890,870,306	\$ 814,964,303

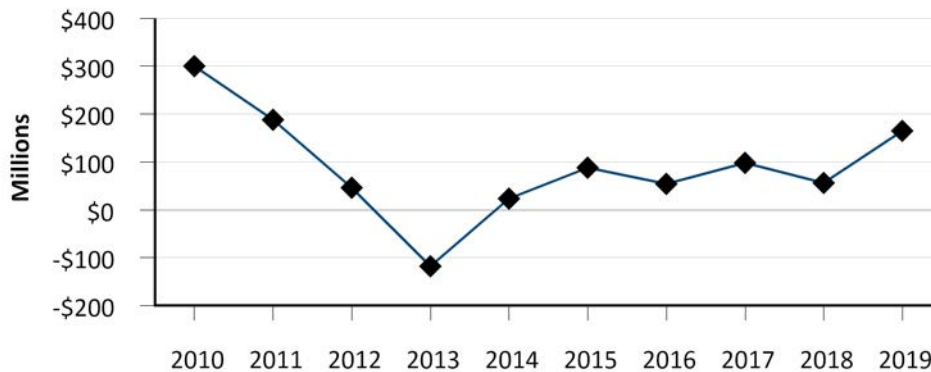
Revenues, Expenses, and Changes in Net Position

TRS-ActiveCare

For the Fiscal Years Ended August 31

	2019	2018	2017	2016
Revenues				
Health Care Premiums	\$ 2,170,132,057	\$ 2,171,125,097	\$ 2,119,959,039	\$ 2,055,658,822
COBRA Premiums and Other	157,307,700	144,543,929	120,049,492	17,904,885
Administrative Fees and Miscellaneous Revenue	685,623	259,417	321,030	356,054
Investment Income	10,623,456	6,883,872	4,668,888	3,079,039
Federal Revenue ARRA-COBRA Reimbursements	—	—	—	—
Fringe Benefits Paid by State's General Fund on Behalf of TRS Employees	—	—	—	—
Total Revenues	\$ 2,338,748,836	\$ 2,322,812,315	\$ 2,244,998,449	\$ 2,076,998,800
Expenses				
Health Care Claims	1,863,374,439	2,002,142,744	1,846,526,430	1,768,287,120
Health Care Claims Processing and Other	119,811,563	121,483,408	123,783,747	125,802,110
Premium Payments to HMOs	243,198,667	237,386,929	227,088,895	214,529,160
Administrative Expenses	3,703,320	3,311,679	3,345,442	2,644,792
Total Expenses	\$ 2,230,087,989	\$ 2,364,324,760	\$ 2,200,744,514	\$ 2,111,263,182
Net Increase (Decrease)	\$ 108,660,847	\$ (41,512,445)	\$ 44,253,935	\$ (34,264,382)
Beginning Net Position	56,292,384	97,804,829	53,550,894	87,815,276
Ending Net Position	\$ 164,953,231	\$ 56,292,384	\$ 97,804,829	\$ 53,550,894

**TRS-ActiveCare
Net Position
Last Ten Years**



(Continued)

2015	2014	2013	2012	2011	2010
\$ 1,938,621,262	\$ 1,919,557,855	\$ 1,797,745,785	\$ 1,738,705,410	\$ 1,540,604,828	\$ 1,322,426,709
5,328,003	9,337,610	10,775,898	11,199,707	8,926,063	6,744,702
236,749	139,608	137,630	136,324	135,917	125,321
1,537,408	940,022	746,936	1,697,553	3,387,062	6,421,269
—	—	—	29,706	667,746	1,225,158
—	79,792	75,664	72,094	67,373	64,328
\$ 1,945,723,422	\$ 1,930,054,887	\$ 1,809,481,913	\$ 1,751,840,794	\$ 1,553,788,989	\$ 1,337,007,487
1,565,255,957	1,521,834,989	1,785,069,768	1,718,903,645	1,510,090,981	1,313,114,197
135,073,416	109,925,954	84,903,101	83,346,223	76,960,951	67,906,654
178,192,468	154,913,859	100,905,702	89,706,406	76,270,706	64,532,253
2,225,417	2,569,850	2,351,802	2,176,610	2,207,051	1,883,148
\$ 1,880,747,258	\$ 1,789,244,652	\$ 1,973,230,373	\$ 1,894,132,884	\$ 1,665,529,689	\$ 1,447,436,252
\$ 64,976,164	\$ 140,810,235	\$ (163,748,460)	\$ (142,292,090)	\$ (111,740,700)	\$ (110,428,765)
\$ 22,839,112	\$ (117,971,123)	\$ 45,777,337	\$ 188,069,427	\$ 299,810,127	\$ 410,238,892
\$ 87,815,276	\$ 22,839,112	\$ (117,971,123)	\$ 45,777,337	\$ 188,069,427	\$ 299,810,127

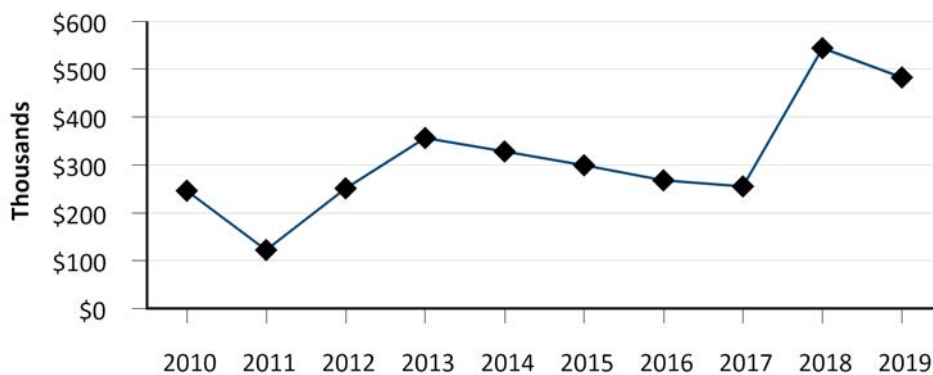
Revenues, Expenses, and Changes in Net Position

403(b) Administrative Program

For the Fiscal Years Ended August 31

	2019	2018	2017	2016
Revenues				
Certification Fees	\$ 10,000	\$ 44,000	\$ 135,000	\$ 12,000
Product Registration Fees	20,000	369,000	33,000	3,000
Investment Income	13,703	8,601	2,784	2,122
Fringe Benefits Paid by State's General Fund on Behalf of TRS Employees	—	—	—	—
Total Revenues	\$ 43,703	\$ 421,601	\$ 170,784	\$ 17,122
Expenses				
Administrative Expenses	\$ 104,992	\$ 132,031	\$ 183,745	\$ 48,638
Total Expenses	\$ 104,992	\$ 132,031	\$ 183,745	\$ 48,638
Net Increase (Decrease)	\$ (61,289)	\$ 289,570	\$ (12,961)	\$ (31,516)
Beginning Net Position	\$ 544,163	\$ 254,593	\$ 267,554	\$ 299,070
Ending Net Position	\$ 482,874	\$ 544,163	\$ 254,593	\$ 267,554

**403(b) Administrative Program
Net Position
Last Ten Years**



(Continued)

	2015	2014	2013	2012	2011	2010
\$	27,000	\$ 15,000	\$ 60,000	\$ 114,000	\$ 12,000	\$ 30,000
	21,000	15,000	81,000	63,000	3,000	21,000
	1,360	1,324	1,333	707	1,801	4,318
	—	3,131	2,890	2,772	7,898	8,034
\$	49,360	\$ 34,455	\$ 145,223	\$ 180,479	\$ 24,699	\$ 63,352
\$	78,446	\$ 62,636	\$ 40,194	\$ 51,203	\$ 148,444	\$ 172,835
\$	78,446	\$ 62,636	\$ 40,194	\$ 51,203	\$ 148,444	\$ 172,835
\$	(29,086)	\$ (28,181)	\$ 105,029	\$ 129,276	\$ (123,745)	\$ (109,483)
\$	328,156	\$ 356,337	\$ 251,308	\$ 122,032	\$ 245,777	\$ 355,260
\$	299,070	\$ 328,156	\$ 356,337	\$ 251,308	\$ 122,032	\$ 245,777

Benefit and Refund Deductions from Net Position by Type Pension Trust Fund

For the Fiscal Years Ended August 31

	2019	2018	2017	2016
Benefits				
Service Retirements*	\$ 10,503,570,237	\$ 9,495,487,665	\$ 9,059,855,790	\$ 8,633,505,859
Deferred Retirement Option	2,871,239	3,407,936	5,231,060	5,166,851
Partial Lump Sum Option	258,417,662	234,071,031	263,705,342	300,420,702
Disability Retirements	199,708,594	181,817,426	177,627,306	173,464,936
Death and Survivor Benefits:				
Annual Salary	45,133,662	35,735,208	44,398,830	44,952,730
Survivor Annuities	116,094,299	106,201,977	109,519,771	108,509,074
Life Annuities	102,595,155	94,809,551	93,714,871	92,087,967
60 Monthly Payments	17,326,148	16,184,228	15,518,472	15,523,059
Remainder of Contributions	8,011,977	5,281,986	6,204,030	5,491,553
Total Benefits	\$ 11,253,728,973	\$ 10,172,997,008	\$ 9,775,775,472	\$ 9,379,122,731
Refunds				
Death	\$ 6,060,703	5,574,637	6,371,748	7,379,576
Separation	480,400,199	416,761,103	414,049,308	366,039,111
Total Refunds	\$ 486,460,902	\$ 422,335,740	\$ 420,421,056	\$ 373,418,687

*For fiscal years 2010 and prior, service retirements changed due to the reclassification of transfers of service contributions with Employees Retirement System of Texas.

Benefit Deductions from Net Position by Type TRS-Care

For the Fiscal Years Ended August 31

	2019	2018	2017	2016
Claims				
Medical Claims and Insurance Premiums	\$ 688,148,610	\$ 840,420,584	\$ 807,831,048	\$ 858,985,138
Prescription Drugs**	648,749,351	669,082,905	734,805,874	716,536,786
Total Claims	\$ 1,336,897,961	\$ 1,509,503,489	\$ 1,542,636,922	\$ 1,575,521,924

** Note: For TRS-Care, 2013 and 2014 prescription claim amounts have been revised to reflect claims net of rebates. These two years were reported gross of rebates.

Benefit Deductions from Net Position by Type TRS-ActiveCare

For the Fiscal Years Ended August 31

	2019	2018	2017	2016
Claims				
Medical Claims and Insurance Premiums	\$ 1,702,719,298	\$ 1,826,632,040	\$ 1,653,483,496	\$ 1,644,795,868
Prescription Drugs	254,168,852	275,730,514	306,703,364	325,475,512
Total Claims	\$ 1,956,888,150	\$ 2,102,362,554	\$ 1,960,186,860	\$ 1,970,271,380

(Continued)

2015	2014	2013	2012	2011	2010
\$ 8,215,765,876	\$ 7,795,690,586	\$ 7,251,369,740	\$ 6,808,592,209	\$ 6,241,946,655	\$ 5,841,963,927
9,643,121	14,974,505	17,223,523	22,361,937	27,822,115	22,607,290
288,923,266	322,033,388	410,323,790	501,152,157	524,925,790	385,555,126
169,318,064	164,299,506	156,308,471	150,238,202	144,865,109	141,396,837
39,574,595	44,846,010	41,219,707	46,859,444	47,295,194	45,698,147
100,150,048	97,822,817	94,563,001	92,126,049	86,898,720	82,574,358
90,563,081	89,547,742	87,044,328	85,816,402	84,893,007	83,238,898
14,443,193	13,415,885	12,659,471	11,816,313	11,564,275	10,824,948
6,730,215	6,012,086	4,496,453	4,659,453	3,293,923	3,537,843
\$ 8,935,111,459	\$ 8,548,642,525	\$ 8,075,208,484	\$ 7,723,622,166	\$ 7,173,504,788	\$ 6,617,397,374
\$ 5,474,475	\$ 5,455,829	\$ 4,705,228	\$ 5,294,006	\$ 3,984,340	\$ 3,710,941
385,866,706	405,144,490	386,587,184	375,937,346	330,284,482	261,475,648
\$ 391,341,181	\$ 410,600,319	\$ 391,292,412	\$ 381,231,352	\$ 334,268,822	\$ 265,186,589

(Continued)

2015	2014	2013	2012	2011	2010
\$ 805,668,819	\$ 691,283,731	\$ 687,469,016	\$ 687,987,585	\$ 608,461,321	\$ 575,539,788
649,457,501	539,842,962	496,229,923	454,143,825	384,017,059	395,817,017
\$ 1,455,126,320	\$ 1,231,126,693	\$ 1,183,698,939	\$ 1,142,131,410	\$ 992,478,380	\$ 971,356,805

(Continued)

2015	2014	2013	2012	2011	2010
\$ 1,479,302,696	\$ 1,397,249,236	\$ 1,613,167,792	\$ 1,450,574,875	\$ 1,242,673,156	\$ 1,092,107,916
264,145,729	279,499,612	272,807,678	268,328,770	267,417,825	221,006,281
\$ 1,743,448,425	\$ 1,676,748,848	\$ 1,885,975,470	\$ 1,718,903,645	\$ 1,510,090,981	\$ 1,313,114,197

Average Benefit Payments Pension Trust Fund

Last Ten Fiscal Years

Retirements Effective	Years of Credited Service					
	5-10	11-15	16-20	21-25	26-30	30+
2019						
Average Monthly Benefit*	\$ 480	\$ 939	\$ 1,507	\$ 2,107	\$ 3,076	\$ 4,154
Average Final Average Salary	\$ 37,089	\$ 43,568	\$ 48,060	\$ 51,224	\$ 61,133	\$ 69,764
Number of Retirees	1,755	2,137	2,704	3,449	3,561	3,134
2018						
Average Monthly Benefit*	\$ 480	\$ 905	\$ 1,430	\$ 2,125	\$ 3,001	\$ 4,141
Average Final Average Salary	\$ 36,815	\$ 42,857	\$ 46,291	\$ 51,591	\$ 59,757	\$ 69,063
Number of Retirees	2,071	2,478	3,405	4,246	4,320	4,192
2017						
Average Monthly Benefit*	\$ 446	\$ 867	\$ 1,410	\$ 2,078	\$ 2,959	\$ 4,052
Average Final Average Salary	\$ 34,635	\$ 41,504	\$ 45,942	\$ 50,617	\$ 58,755	\$ 67,598
Number of Retirees	2,211	2,452	3,524	4,331	4,568	4,632
2016						
Average Monthly Benefit*	\$ 444	\$ 837	\$ 1,348	\$ 2,050	\$ 2,894	\$ 4,053
Average Final Average Salary	\$ 33,907	\$ 40,408	\$ 44,703	\$ 50,290	\$ 57,750	\$ 67,429
Number of Retirees	2,184	2,278	3,195	4,300	4,290	4,668
2015						
Average Monthly Benefit*	\$ 424	\$ 825	\$ 1,345	\$ 2,008	\$ 2,852	\$ 3,992
Average Final Average Salary	\$ 33,580	\$ 40,064	\$ 44,613	\$ 49,606	\$ 56,892	\$ 66,598
Number of Retirees	2,274	2,234	3,101	4,131	4,392	4,413
2014						
Average Monthly Benefit*	\$ 413	\$ 801	\$ 1,327	\$ 1,964	\$ 2,847	\$ 3,877
Average Final Average Salary	\$ 32,906	\$ 39,263	\$ 43,884	\$ 49,222	\$ 56,835	\$ 65,447
Number of Retirees	2,291	2,285	3,082	4,252	4,429	4,197
2013						
Average Monthly Benefit*	\$ 389	\$ 742	\$ 1,291	\$ 1,939	\$ 2,800	\$ 3,866
Average Final Average Salary	\$ 31,582	\$ 37,078	\$ 43,056	\$ 49,217	\$ 26,453	\$ 65,472
Number of Retirees	2,234	2,380	3,067	4,388	4,675	4,952
2012						
Average Monthly Benefit*	\$ 389	\$ 727	\$ 1,308	\$ 1,925	\$ 2,785	\$ 3,867
Average Final Average Salary	\$ 32,113	\$ 36,522	\$ 43,164	\$ 49,383	\$ 56,755	\$ 66,322
Number of Retirees	2,138	2,226	2,853	4,257	4,372	5,207
2011						
Average Monthly Benefit*	\$ 390	\$ 711	\$ 1,269	\$ 1,872	\$ 2,671	\$ 3,778
Average Final Average Salary	\$ 32,134	\$ 35,562	\$ 42,122	\$ 48,196	\$ 55,191	\$ 64,951
Number of Retirees	2,092	2,045	2,873	4,545	4,983	6,394
2010						
Average Monthly Benefit*	\$ 364	\$ 673	\$ 1,228	\$ 1,842	\$ 2,643	\$ 3,744
Average Final Average Salary	\$ 30,279	\$ 34,356	\$ 40,459	\$ 47,312	\$ 55,184	\$ 64,260
Number of Retirees	1,675	1,603	2,235	3,517	3,825	4,187

*Average monthly benefits have been reduced for Partial Lump Sum Option payments of \$385.6, \$524.9, \$501.2, \$410.3, \$322.0, \$288.9, \$300.4, \$263.7, \$234.1, and 258.4 million in fiscal years 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, and 2019 respectively.

Average Monthly Benefits

Pension Trust Fund

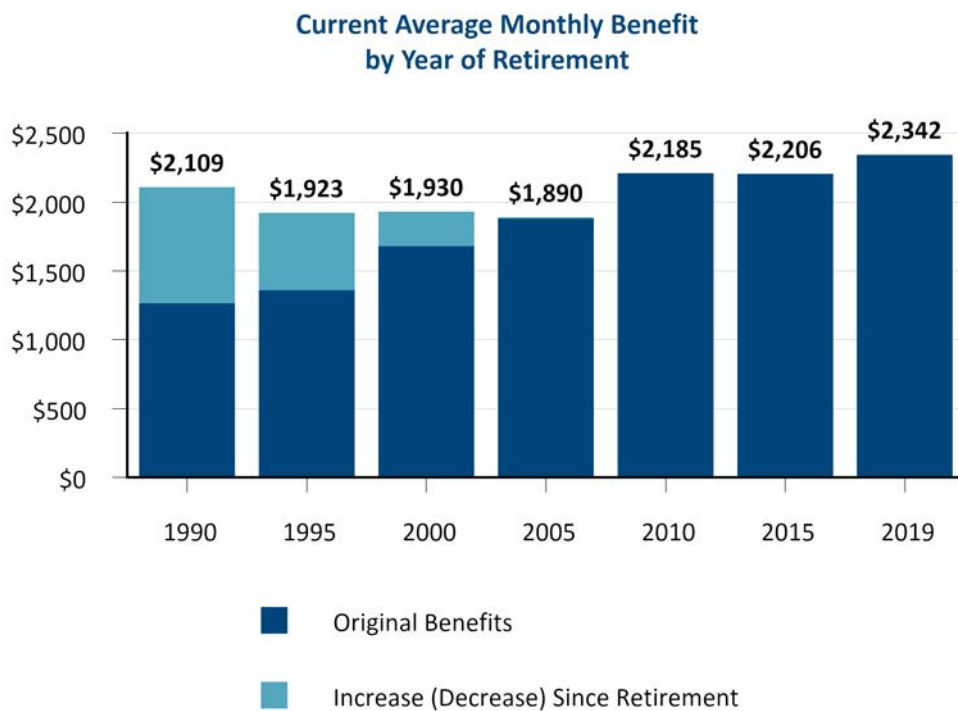
For the Fiscal Years Ended August 31

	1990	1995	2000	2005	2010	2015	2019
Benefits							
Original Benefits*	\$ 1,265	\$ 1,360	\$ 1,680	\$ 1,879	\$ 2,209	\$ 2,203	\$ 2,344
Increase (Decrease) Since Retirement	844	563	250	11	(24)	3	(2)
Current Benefits	\$ 2,109	\$ 1,923	\$ 1,930	\$ 1,890	\$ 2,185	\$ 2,206	\$ 2,342
Number of Retirees**	2,614	4,546	9,335	9,831	15,673	20,115	12,664

*Before adjustment for the Partial Lump Sum Option, average original benefits were \$1,818, \$2,055, \$2,387, \$2,313, and \$2,354 for fiscal years 2000, 2005, 2010, 2015, and 2019, respectively.

**For each of the retirement years shown, number of service retirees currently receiving benefits.

The following graph of service retiree accounts as of August 31, 2019 reflects benefit increases and decreases since retirement.



Average Benefit Payments

TRS-Care

Last Ten Fiscal Years

2019		
Average Benefit Per Participant	\$	5,818
Benefit Payments	\$	1,336,897,961
Average Participants		229,775
2018		
Average Benefit Per Participant	\$	6,074
Benefit Payments	\$	1,509,503,489
Average Participants		248,515
2017		
Average Benefit Per Participant	\$	5,755
Benefit Payments	\$	1,542,636,922
Average Participants		268,066
2016		
Average Benefit Per Participant	\$	6,062
Benefit Payments	\$	1,575,521,924
Average Participants		259,889
2015		
Average Benefit Per Participant	\$	5,780
Benefit Payments	\$	1,455,126,320
Average Participants		251,758
2014		
Average Benefit Per Participant	\$	5,059
Benefit Payments	\$	1,231,126,693
Average Participants		243,336
2013		
Average Benefit Per Participant	\$	5,053
Benefit Payments	\$	1,183,698,939
Average Participants		234,277
2012		
Average Benefit Per Participant	\$	5,115
Benefit Payments	\$	1,142,131,410
Average Participants		223,287
2011		
Average Benefit Per Participant	\$	4,718
Benefit Payments	\$	992,478,380
Average Participants		210,353
2010		
Average Benefit Per Participant	\$	4,790
Benefit Payments	\$	971,356,805
Average Participants		202,778

Average Benefit Payments

TRS-ActiveCare

Last Ten Fiscal Years

2019		
Average Benefit Per Participant	\$	4,051
Benefit Payments	\$	1,956,888,150
Average Participants		483,113
2018		
Average Benefit Per Participant	\$	4,267
Benefit Payments	\$	2,102,362,554
Average Participants		492,746
2017		
Average Benefit Per Participant	\$	3,932
Benefit Payments	\$	1,960,186,861
Average Participants		498,462
2016		
Average Benefit Per Participant	\$	4,053
Benefit Payments	\$	1,970,271,380
Average Participants		486,139
2015		
Average Benefit Per Participant	\$	3,607
Benefit Payments	\$	1,743,448,426
Average Participants		483,299
2014		
Average Benefit Per Participant	\$	3,603
Benefit Payments	\$	1,676,748,847
Average Participants		465,330
2013		
Average Benefit Per Participant	\$	3,966
Benefit Payments	\$	1,885,975,470
Average Participants		475,508
2012		
Average Benefit Per Participant	\$	3,868
Benefit Payments	\$	1,718,903,645
Average Participants		444,382
2011		
Average Benefit Per Participant	\$	3,662
Benefit Payments	\$	1,510,090,981
Average Participants		412,385
2010		
Average Benefit Per Participant	\$	3,509
Benefit Payments	\$	1,313,114,197
Average Participants		374,201

**Retired Members by Type of Benefit
Pension Trust Fund**

For the Fiscal Year Ended August 31, 2019

Amount of Monthly Benefit	Number of Retired Members	Type of Retirement*						
		1	2	3	4	5	6	7
\$ 1-200	15,117	6,030	6,982	199	1,800	55	37	14
201-400	42,796	11,814	12,185	642	2,914	925	1,109	13,207
401-600	27,172	13,850	8,768	1,299	2,686	381	188	
601-800	24,998	15,257	5,591	1,299	2,200	440	211	
801-1,000	24,334	16,641	3,954	1,166	1,967	425	181	
1,001-1,200	22,245	16,320	2,722	964	1,749	354	136	
1,201-1,400	18,994	14,061	2,062	788	1,712	263	108	
1,401-1,600	18,985	14,121	2,195	704	1,620	274	71	
1,601-1,800	19,050	14,563	2,139	618	1,430	236	64	
1,801-2,000	20,004	16,256	1,755	527	1,195	234	37	
2,001-3,000	101,085	88,613	5,206	1,378	4,907	905	76	
3,001-4,000	62,204	58,109	1,065	216	2,391	415	8	
4,001-5,000	23,624	22,376	232	33	826	152	5	
Over 5,000	13,818	13,144	99	4	481	89	1	
Totals	434,426	321,155	54,955	9,837	27,878	5,148	2,232	13,221

*Type of Retirement	
1 Normal Retirement of Age and Service	5 Survivor Payment, Death in Service
2 Early Retirement	6 Survivor Payment, After Disability Retirement
3 Disability Retirement	7 Survivor Payment, After Service Retirement
4 Survivor Payment, Joint Life or Guarantee	

Amount of Monthly Benefit	Number of Retired Members	Option Selected**					
		1	2	3	4	5	6
\$ 1-200	15,117	6,583	5,222	1,584	570	1,109	49
201-400	42,796	12,264	9,110	3,096	1,253	2,188	14,885
401-600	27,172	12,158	8,321	3,517	1,263	1,913	
601-800	24,998	11,002	7,546	3,765	1,188	1,497	
801-1,000	24,334	10,794	7,196	3,880	1,194	1,270	
1,001-1,200	22,245	9,294	6,943	3,794	999	1,215	
1,201-1,400	18,994	7,515	6,306	3,464	805	904	
1,401-1,600	18,985	7,389	6,415	3,435	795	951	
1,601-1,800	19,050	7,355	6,469	3,557	723	946	
1,801-2,000	20,004	7,613	6,955	3,721	731	984	
2,001-3,000	101,085	36,767	36,821	19,170	3,390	4,937	
3,001-4,000	62,204	23,230	21,750	12,401	1,933	2,890	
4,001-5,000	23,624	9,222	7,679	5,185	663	875	
Over 5,000	13,818	5,104	4,816	3,140	311	447	
Total	434,426	166,290	141,549	73,709	15,818	22,126	14,934

**Option Selected	
Option 1 - Life Annuity	Option 4 - 5-year Guarantee
Option 2 - Joint to Survivor	Option 5 - 10-year Guarantee
Option 3 - Joint to Survivor 50% / Joint to Survivor 75%	Option 6 - Survivor Benefit

Health Benefit Payments by Range

TRS-Care

For the Fiscal Year Ended August 31, 2019

Benefit Range	Average Participants
\$ 0	9,707
1 - 5,000	162,061
5,001 - 10,000	29,168
10,001 - 20,000	15,264
20,001 - 30,000	4,156
30,001 - 40,000	2,181
40,001 - 50,000	1,539
50,001 - 100,000	3,444
Over 100,000	2,255
Total	229,775

Health Benefit Payments by Range

TRS-ActiveCare

For the Fiscal Year Ended August 31, 2019

Benefit Range	Average Participants
\$ 0	57,290
1 - 5,000	336,680
5,001 - 10,000	54,412
10,001 - 20,000	16,918
20,001 - 30,000	5,947
30,001 - 40,000	3,137
40,001 - 50,000	2,086
50,001 - 100,000	3,905
Over 100,000	2,737
Total	483,112

Principal Participating Employers

Pension Trust Fund

For the Fiscal Years Ended August 31

Participating Reporting Entity	2019			2010		
	Covered Employees	Rank	Percentage of Total Covered Employment	Covered Employees	Rank	Percentage of Total Covered Employment
Houston ISD	25,488	1	2.49%	24,748	1	3.09%
Dallas ISD	23,673	2	2.31	19,730	2	2.46
UT MD Anderson Cancer Center	21,734	3	2.13	15,506	3	1.93
Cypress Fairbanks ISD	16,611	4	1.62	13,380	4	1.67
Northside ISD	16,093	5	1.57	12,711	5	1.58
UT SW Medical Center	15,735	6	1.54			
UT at Austin	13,285	7	1.30	10,374	8	1.29
UT Med Branch at Galveston	12,754	8	1.25	9,026	9	1.13
Katy ISD	12,490	9	1.22			
Fort Worth ISD	12,466	10	1.22	10,878	7	1.36
Austin ISD				12,322	6	1.54
El Paso ISD				9,023	10	1.12
All Others	852,555		83.35	664,453		82.83
Total	1,022,884		100.00%	802,151		100.00%

Source: Information submitted to TRS by participating employers.

Principal Participating Employers

TRS-Care

For the Fiscal Years Ended August 31

Participating Reporting Entity	2019			2010		
	Covered OPEB Employees	Rank	Percentage of Total Covered OPEB Employment	Covered OPEB Employees	Rank	Percentage of Total Covered OPEB Employment
Houston ISD	25,488	1	3.09%	24,748	1	3.71%
Dallas ISD	23,673	2	2.88	19,730	2	2.96
Cypress Fairbanks ISD	16,598	3	2.02	13,380	3	2.01
Northside ISD	16,093	4	1.95	12,711	4	1.91
Katy ISD	12,490	5	1.52			
Fort Worth ISD	12,466	6	1.51	10,878	6	1.63
Austin ISD	12,096	7	1.47	12,322	5	1.85
Fort Bend ISD	11,236	8	1.36	8,550	10	1.28
North East ISD	10,555	9	1.28	8,906	8	1.34
Aldine ISD	9,957	10	1.21	8,749	9	1.31
El Paso ISD				9,023	7	1.35
All Others	672,919		81.71	537,686		80.65
Total	823,571		100.00%	666,683		100.00%

Source: Information submitted to TRS by participating employers.

List of Participating Employers

Public Schools		
Abbott ISD	Avery ISD	Borger ISD
Abernathy ISD	Avinger ISD	Bosqueville ISD
Abilene ISD	Axtell ISD	Bovina ISD
Academy ISD	Azle ISD	Bowie ISD
Adrian ISD	Baird ISD	Boyd ISD
Agua Dulce ISD	Ballinger ISD	Boys Ranch ISD
Alamo Heights ISD	Balmorhea ISD	Brackett ISD
Alba-Golden ISD	Bandera ISD	Brady ISD
Albany ISD	Bangs ISD	Brazos ISD
Aldine ISD	Banquete ISD	Brazosport ISD
Aledo ISD	Barbers Hill ISD	Breckenridge ISD
Alice ISD	Bartlett ISD	Bremond ISD
Alief ISD	Bastrop ISD	Brenham ISD
Allen ISD	Bay City ISD	Bridge City ISD
Alpine ISD	Beaumont ISD	Bridgeport ISD
Alto ISD	Beckville ISD	Broadus ISD
Alvarado ISD	Beeville ISD	Brock ISD
Alvin ISD	Bellevue ISD	Bronte ISD
Alvord ISD	Bells ISD	Brookeland ISD
Amarillo ISD	Bellville ISD	Brookesmith ISD
Amherst ISD	Belton ISD	Brooks County ISD
Anahuac ISD	Ben Bolt-Palito ISD	Brownfield ISD
Anderson-Shiro CISD	Benavides ISD	Brownsboro ISD
Andrews ISD	Benjamin ISD	Brownsville ISD
Angleton ISD	Big Sandy ISD - Big Sandy	Brownwood ISD
Anna ISD	Big Sandy ISD - Dallardsville	Bruceville-Eddy ISD
Anson ISD	Big Spring ISD	Bryan ISD
Anthony ISD	Birdville ISD	Bryson ISD
Anton ISD	Bishop CISD	Buckholts ISD
Apple Springs ISD	Blackwell CISD	Buena Vista ISD
Aquilla ISD	Blanco ISD	Buffalo ISD
Aransas County ISD	Bland ISD	Bullard ISD
Aransas Pass ISD	Blanket ISD	Buna ISD
Archer City ISD	Bloomburg ISD	Burkburnett ISD
Argyle ISD	Blooming Grove ISD	Burkeville ISD
Arlington ISD	Bloomington ISD	Burleson ISD
Arp ISD	Blue Ridge ISD	Burnet CISD
Aspermont ISD	Bluff Dale ISD	Burton ISD
Athens ISD	Blum ISD	Bushland ISD
Atlanta ISD	Boerne ISD	Bynum CISD
Aubrey ISD	Boles ISD	Caddo Mills ISD
Austin ISD	Boling ISD	Calallen ISD
Austwell-Tivoli ISD	Bonham ISD	Caldwell ISD
Avalon ISD	Booker ISD	Calhoun County ISD
	Borden County ISD	Callisburg ISD

Calvert ISD	Cleveland ISD	Crystal City ISD
Cameron ISD	Clifton ISD	Cuero ISD
Campbell ISD	Clint ISD	Culberson County-Allamore ISD
Canadian ISD	Clyde ISD	Cumby ISD
Canton ISD	Coahoma ISD	Cushing ISD
Canutillo ISD	Coldspring-Oakhurst CISD	Cypress-Fairbanks ISD
Canyon ISD	Coleman ISD	Daingerfield-Lone Star ISD
Carlisle ISD	College Station ISD	Dalhart ISD
Carrizo Springs CISD	Collinsville ISD	Dallas ISD
Carroll ISD	Colmesneil ISD	Damon ISD
Carrollton-Farmers Branch ISD	Colorado ISD	Danbury ISD
Carthage ISD	Columbia-Brazoria ISD	Darrouzett ISD
Castleberry ISD	Columbus ISD	Dawson ISD - Dawson
Cayuga ISD	Comal ISD	Dawson ISD - Welch
Cedar Hill ISD	Comanche ISD	Dayton ISD
Celeste ISD	Comfort ISD	De Leon ISD
Celina ISD	Commerce ISD	Decatur ISD
Center ISD	Community ISD	Deer Park ISD
Center Point ISD	Como-Pickton CISD	DeKalb ISD
Centerville ISD - Centerville	Comstock ISD	Del Valle ISD
Centerville ISD - Groveton	Connally ISD	Dell City ISD
Central Heights ISD	Conroe ISD	Denison ISD
Central ISD	Coolidge ISD	Denton ISD
Channelview ISD	Cooper ISD	Denver City ISD
Channing ISD	Coppell ISD	DeSoto ISD
Chapel Hill ISD - Mount Pleasant	Copperas Cove ISD	Detroit ISD
Chapel Hill ISD - Tyler	Corpus Christi ISD	Devers ISD
Charlotte ISD	Corrigan-Camden ISD	Devine ISD
Cherokee ISD	Corsicana ISD	Dew ISD
Chester ISD	Cotton Center ISD	Deweyville ISD
Chico ISD	Cotulla ISD	D'Hanis ISD
Childress ISD	Coupland ISD	Diboll ISD
Chillicothe ISD	Covington ISD	Dickinson ISD
Chilton ISD	Crandall ISD	Dilley ISD
China Spring ISD	Crane ISD	Dime Box ISD
Chireno ISD	Cranfills Gap ISD	Dimmitt ISD
Chisum ISD	Crawford ISD	Divide ISD
Christoval ISD	Crockett County School District	Dodd City ISD
Cisco ISD	Crockett ISD	Donna ISD
City View ISD	Crosby ISD	Doss Consolidated CSD
Clarendon ISD	Crosbyton CISD	Douglass ISD
Clarksville ISD	Cross Plains ISD	Dripping Springs ISD
Claude ISD	Cross Roads ISD	Driscoll ISD
Clear Creek ISD	Crowell ISD	Dublin ISD
Cleburne ISD	Crowley ISD	Dumas ISD

List of Participating Employers

Duncanville ISD	Floydada ISD	Goodrich ISD
Eagle Mountain-Saginaw ISD	Follett ISD	Goose Creek CISD
Eagle Pass ISD	Forestburg ISD	Gordon ISD
Eanes ISD	Forney ISD	Gorman ISD
Early ISD	Forsan ISD	Grady ISD
East Bernard ISD	Fort Bend ISD	Graford ISD
East Central ISD	Fort Davis ISD	Graham ISD
East Chambers ISD	Fort Elliott CISD	Granbury ISD
Eastland ISD	Fort Hancock ISD	Grand Prairie ISD
Ector County ISD	Fort Sam Houston ISD	Grand Saline ISD
Ector ISD	Fort Stockton ISD	Grandfalls-Royalty ISD
Edcouch-Elsa ISD	Fort Worth ISD	Grandview-Hopkins ISD
Eden CISD	Franklin ISD	Grandview ISD
Edgewood ISD - Edgewood	Frankston ISD	Granger ISD
Edgewood ISD - San Antonio	Fredericksburg ISD	Grape Creek ISD
Edinburg CISD	Freer ISD	Grapeland ISD
Edna ISD	Frenship ISD	Grapevine-Colleyville ISD
El Campo ISD	Friendswood ISD	Greenville ISD
El Paso ISD	Friona ISD	Greenwood ISD
Electra ISD	Frisco ISD	Gregory-Portland ISD
Elgin ISD	Frost ISD	Groesbeck ISD
Elkhart ISD	Fruitvale ISD	Groom ISD
Elysian Fields ISD	Gainesville ISD	Groveton ISD
Ennis ISD	Galena Park ISD	Gruver ISD
Era ISD	Galveston ISD	Gunter ISD
Etoile ISD	Ganado ISD	Gustine ISD
Eula ISD	Garland ISD	Guthrie CSD
Eustace ISD	Garner ISD	Hale Center ISD
Evadale ISD	Garrison ISD	Hallettsville ISD
Evant ISD	Gary ISD	Hallsburg ISD
Everman ISD	Gatesville ISD	Hallsville ISD
Excelsior ISD	Gause ISD	Hamilton ISD
Ezzell ISD	George West ISD	Hamlin ISD
Fabens ISD	Georgetown ISD	Hamshire-Fannett ISD
Fairfield ISD	Gholson ISD	Happy ISD
Falls City ISD	Giddings ISD	Hardin ISD
Fannindel ISD	Gilmer ISD	Hardin-Jefferson ISD
Farmersville ISD	Gladewater County Line ISD	Harlandale ISD
Farwell ISD	Glasscock County ISD	Harleton ISD
Fayetteville ISD	Glen Rose ISD	Harlingen CISD
Ferris ISD	Godley ISD	Harmony ISD
Flatonia ISD	Goldburg ISD	Harper ISD
Florence ISD	Goldthwaite ISD	Harrold ISD
Floresville ISD	Goliad ISD	Hart ISD
Flour Bluff ISD	Gonzales ISD	Hartley ISD

Harts Bluff ISD	Ingram ISD	Klondike ISD
Haskell CISD	Iola ISD	Knippa ISD
Hawkins ISD	Iowa Park CISD	Knox City-O'Brien CISD
Hawley ISD	Ira ISD	Kopperl ISD
Hays CISD	Iraan-Sheffield ISD	Kountze ISD
Hearne ISD	Iredell ISD	Kress ISD
Hedley ISD	Irion County ISD	Krum ISD
Hemphill ISD	Irving ISD	La Feria ISD
Hempstead ISD	Italy ISD	La Gloria ISD
Henderson ISD	Itasca ISD	La Grange ISD
Henrietta ISD	Jacksboro ISD	La Joya ISD
Hereford ISD	Jacksonville ISD	La Porte ISD
Hermleigh ISD	Jarrell ISD	La Pryor ISD
Hico ISD	Jasper ISD	La Vega ISD
Hidalgo ISD	Jayton-Girard ISD	La Vernia ISD
Higgins ISD	Jefferson ISD	La Villa ISD
High Island ISD	Jim Hogg County ISD	Lackland ISD
Highland ISD	Jim Ned CISD	Lago Vista ISD
Highland Park ISD - Amarillo	Joaquin ISD	Lake Dallas ISD
Highland Park ISD - Dallas	Johnson City ISD	Lake Travis ISD
Hillsboro ISD	Jonesboro ISD	Lake Worth ISD
Hitchcock ISD	Joshua ISD	Lamar CISD
Holland ISD	Jourdanton ISD	Lamesa ISD
Holliday ISD	Judson ISD	Lampasas ISD
Hondo ISD	Junction ISD	Lancaster ISD
Honey Grove ISD	Karnack ISD	Laneville ISD
Hooks ISD	Karnes City ISD	LaPoynor ISD
Houston ISD	Katy ISD	Laredo ISD
Howe ISD	Kaufman ISD	Lasara ISD
Hubbard ISD - DeKalb	Keene ISD	Latexo ISD
Hubbard ISD - Hubbard	Keller ISD	Lazbuddie ISD
Huckabay ISD	Kelton ISD	Leakey ISD
Hudson ISD	Kemp ISD	Leander ISD
Huffman ISD	Kenedy County Wide CSD	Leary ISD
Hughes Springs ISD	Kenedy ISD	Lefors ISD
Hull-Daisetta ISD	Kennard ISD	Leggett ISD
Humble ISD	Kennedale ISD	Leon ISD
Hunt ISD	Kerens ISD	Leonard ISD
Huntington ISD	Kermit ISD	Levelland ISD
Huntsville ISD	Kerrville ISD	Leveretts Chapel ISD
Hurst-Euless-Bedford ISD	Kilgore ISD	Lewisville ISD
Hutto ISD	Killeen ISD	Lexington ISD
Idalou ISD	Kingsville ISD	Liberty Hill ISD
Industrial ISD	Kirbyville CISD	Liberty ISD
Ingleside ISD	Klein ISD	Liberty-Eylau ISD

List of Participating Employers

Lindale ISD	Marlin ISD	Monahans-Wickett-Pyote ISD
Linden-Kildare CISD	Marshall ISD	Montague ISD
Lindsay ISD	Mart ISD	Monte Alto ISD
Lingleville ISD	Martins Mill ISD	Montgomery ISD
Lipan ISD	Martinsville ISD	Moody ISD
Little Cypress-Mauriceville CISD	Mason ISD	Moran ISD
Little Elm ISD	Matagorda ISD	Morgan ISD
Littlefield ISD	Mathis ISD	Morgan Mill ISD
Livingston ISD	Maud ISD	Morton ISD
Llano ISD	May ISD	Motley County ISD
Lockhart ISD	Maypearl ISD	Moulton ISD
Lockney ISD	McAllen ISD	Mount Calm ISD
Lohn ISD	McCamey ISD	Mount Enterprise ISD
Lometa ISD	McDade ISD	Mount Pleasant ISD
London ISD	McGregor ISD	Mount Vernon ISD
Lone Oak ISD	McKinney ISD	Muenster ISD
Longview ISD	McLean ISD	Muleshoe ISD
Loop ISD	McLeod ISD	Mullin ISD
Loraine ISD	McMullen County ISD	Mumford ISD
Lorena ISD	Meadow ISD	Munday CISD
Lorenzo CISD	Medina ISD	Murchison ISD
Los Fresnos CISD	Medina Valley ISD	Nacogdoches ISD
Louise ISD	Melissa ISD	Natalia ISD
Lovejoy ISD	Memphis ISD	Navarro ISD
Lovelady ISD	Menard ISD	Navasota ISD
Lubbock ISD	Mercedes ISD	Nazareth ISD
Lubbock-Cooper ISD	Meridian ISD	Neches ISD
Lueders-Avooca ISD	Merkel ISD	Nederland ISD
Lufkin ISD	Mesquite ISD	Needville ISD
Luling ISD	Mexia ISD	New Boston ISD
Lumberton ISD	Meyersville ISD	New Braunfels ISD
Lyford CISD	Miami ISD	New Caney ISD
Lytle ISD	Midland ISD	New Deal ISD
Mabank ISD	Midlothian ISD	New Diana ISD
Madisonville CISD	Midway ISD - Henrietta	New Home ISD
Magnolia ISD	Midway ISD - Woodway	New Summerfield ISD
Malakoff ISD	Milano ISD	New Waverly ISD
Malone ISD	Mildred ISD	Newcastle ISD
Malta ISD	Miles ISD	Newton ISD
Manor ISD	Milford ISD	Nixon-Smilely CISD
Mansfield ISD	Miller Grove ISD	Nocona ISD
Marathon ISD	Millsap ISD	Nordheim ISD
Marble Falls ISD	Mineola ISD	Normangee ISD
Marfa ISD	Mineral Wells ISD	North East ISD
Marion ISD	Mission CISD	North Hopkins ISD

North Lamar ISD	Pflugerville ISD	Redwater ISD
North Zulch ISD	Pharr-San Juan-Alamo ISD	Refugio ISD
Northside ISD - San Antonio	Pilot Point ISD	Ricardo ISD
Northside ISD - Vernon	Pine Tree ISD	Rice CISD
Northwest ISD	Pittsburg ISD	Rice ISD
Nueces Canyon CISD	Plains ISD	Richards ISD
Nursery ISD	Plainview ISD	Richardson ISD
Oakwood ISD	Plano ISD	Richland Springs ISD
Odem-Edroy ISD	Pleasant Grove ISD	Riesel ISD
O'Donnell ISD	Pleasanton ISD	Rio Grande City CISD
Oglesby ISD	Plemons-Stinnett-Phillips CISD	Rio Hondo ISD
Olfen ISD	Point Isabel ISD	Rio Vista ISD
Olney ISD	Ponder ISD	Rising Star ISD
Olton ISD	Poolville ISD	River Road ISD
Onalaska ISD	Port Aransas ISD	Rivercrest ISD
Orange Grove ISD	Port Arthur ISD	Riviera ISD
Orangefield ISD	Port Neches-Groves ISD	Robert Lee ISD
Ore City ISD	Post ISD	Robinson ISD
Overton ISD	Poteet ISD	Robstown ISD
Paducah ISD	Poth ISD	Roby CISD
Paint Creek ISD	Pottsboro ISD	Rochelle ISD
Paint Rock ISD	Prairie Lea ISD	Rockdale ISD
Palacios ISD	Prairie Valley ISD	Rocksprings ISD
Palestine ISD	Prairiland ISD	Rockwall ISD
Palmer ISD	Premont ISD	Rogers ISD
Palo Pinto ISD	Presidio ISD	Roma ISD
Pampa ISD	Priddy ISD	Roosevelt ISD
Panhandle ISD	Princeton ISD	Ropes ISD
Panther Creek CISD	Pringle-Morse CISD	Roscoe Collegiate ISD
Paradise ISD	Progreso ISD	Rosebud-Lott ISD
Paris ISD	Prosper ISD	Rotan ISD
Pasadena ISD	Quanah ISD	Round Rock ISD
Patton Springs ISD	Queen City ISD	Round Top-Carmine ISD
Pawnee ISD	Quinlan ISD	Roxton ISD
Pearland ISD	Quitman ISD	Royal ISD
Pearsall ISD	Rains ISD	Royse City ISD
Peaster ISD	Ralls ISD	Rule ISD
Pecos-Barstow-Toyah ISD	Ramirez Common SD	Runge ISD
Penelope ISD	Randolph Field ISD	Rusk ISD
Perrin-Whitt CISD	Ranger ISD	S&S CISD
Perryton ISD	Rankin ISD	Sabinal ISD
Petersburg ISD	Raymondville ISD	Sabine ISD
Petrolia ISD	Reagan County ISD	Sabine Pass ISD
Pettus ISD	Red Lick ISD	Saint Jo ISD
Pewitt CISD	Red Oak ISD	Salado ISD

List of Participating Employers

Saltillo ISD	Simms ISD	Sweet Home ISD
Sam Rayburn CISD	Sinton ISD	Sweetwater ISD
San Angelo ISD	Sivells Bend ISD	Taft ISD
San Antonio ISD	Skidmore-Tynan ISD	Tahoka ISD
San Augustine ISD	Slaton ISD	Tarkington ISD
San Benito CISD	Slidell ISD	Tatum ISD
San Diego ISD	Slocum ISD	Taylor ISD
San Elizario ISD	Smithville ISD	Teague ISD
San Felipe-Del Rio CISD	Smyer ISD	Temple ISD
San Isidro ISD	Snook ISD	Tenaha ISD
San Marcos CISD	Snyder ISD	Terlingua CSD
San Perlita ISD	Socorro ISD	Terrell County ISD
San Saba ISD	Somerset ISD	Terrell ISD
San Vicente ISD	Somerville ISD	Texarkana ISD
Sands CISD	Sonora ISD	Texas City ISD
Sanford-Fritch ISD	South San Antonio ISD	Texhoma ISD
Sanger ISD	South Texas ISD	Texline ISD
Santa Anna ISD	Southland ISD	Thorndale ISD
Santa Fe ISD	Southside ISD	Thrall ISD
Santa Gertrudis ISD	Southwest ISD	Three Rivers ISD
Santa Maria ISD	Spearman ISD	Three Way ISD
Santa Rosa ISD	Splendora ISD	Throckmorton ISD
Santo ISD	Spring Branch ISD	Tidehaven ISD
Savoy ISD	Spring Creek ISD	Timpson ISD
Schertz-Cibolo-Universal City ISD	Spring Hill ISD	Tioga ISD
Schleicher County ISD	Spring ISD	Tolar ISD
Schulenburg ISD	Springlake-Earth ISD	Tom Bean ISD
Scurry-Rosser ISD	Springtown ISD	Tomball ISD
Seagraves ISD	Spur ISD	Tornillo ISD
Sealy ISD	Spurger ISD	Trent ISD
Seguin ISD	Stafford Municipal School District	Trenton ISD
Seminole Public Schools	Stamford ISD	Trinidad ISD
Seymour ISD	Stanton ISD	Trinity ISD
Shallowater ISD	Stephenville ISD	Troup ISD
Shamrock ISD	Sterling City ISD	Troy ISD
Sharyland ISD	Stockdale ISD	Tulia ISD
Shelbyville ISD	Stratford ISD	Tuloso-Midway ISD
Sheldon ISD	Strawn ISD	Turkey-Quitaque ISD
Shepherd ISD	Sudan ISD	Tyler ISD
Sherman ISD	Sulphur Bluff ISD	Union Grove ISD
Shiner ISD	Sulphur Springs ISD	Union Hill ISD
Sidney ISD	Sundown ISD	United ISD
Sierra Blanca ISD	Sunnyvale ISD	Utopia ISD
Silsbee ISD	Sunray ISD	Uvalde CISD
Silverton ISD	Sweeny ISD	Valentine ISD

Valley Mills ISD	White Settlement ISD	Aristoi Classical Academy
Valley View ISD - Pharr	Whiteface ISD	Arlington Classics Academy
Valley View ISD - Valley View	Whitehouse ISD	Arrow Academy
Van Alstyne ISD	Whitesboro ISD	Austin Achieve Public Schools
Van ISD	Whitewright ISD	Austin Discovery School
Van Vleck ISD	Whitharral ISD	Basis San Antonio
Vega ISD	Whitney ISD	Beatrice Mayes Institute Charter School
Venus ISD	Wichita Falls ISD	Ben Milam International Academy
Veribest ISD	Wildorado ISD	Beta Academy
Vernon CISD	Willis ISD	Bexar County Academy
Victoria ISD	Wills Point ISD	Big Springs Charter School
Vidor ISD	Wilson ISD	Bloom Academy Charter School
Vysehrad ISD	Wimberley ISD	Bob Hope School
Waco ISD	Windham School District	Brazos River Charter School
Waelder ISD	Windthorst ISD	Brazos School for Inquiry & Creativity
Walcott ISD	Wink-Loving CISD	Bridgeway Preparatory Academy
Wall ISD	Winnsboro ISD	Brooks Academy of Science & Engineering
Waller ISD	Winona ISD	Burnham Wood Charter School District
Walnut Bend ISD	Winters ISD	Calvin Nelms Charter Schools
Walnut Springs ISD	Woden ISD	Carver Center
Warren ISD	Wolfe City ISD	Cedars International Academy
Waskom ISD	Woodsboro ISD	Chaparral Star Academy
Water Valley ISD	Woodson ISD	Chapel Hill Academy
Waxahachie ISD	Woodville ISD	Cityscape Schools Inc
Weatherford ISD	Wortham ISD	Compass Academy
Webb CISD	Wylie ISD - Abilene	Compass Rose Education Inc
Weimar ISD	Wylie ISD - Wylie	Comquest Academy
Wellington ISD	Yantis ISD	Corpus Christi Montessori School
Wellman-Union ISD	Yoakum ISD	Crosstimbers Academy
Wells ISD	Yorktown ISD	Cumberland Academy
Weslaco ISD	Ysleta ISD	Dallas Community Charter School
West Hardin County CISD	Zapata County ISD	Democracy Prep Public Schools
West ISD	Zavalla ISD	Dr M L Garza-Gonzalez Charter School
West Orange-Cove CISD	Zephyr ISD	Draw Academy
West Oso ISD		Eagle Advantage School
West Rusk County CISD	Charter Schools	East Fort Worth Montessori School
West Sabine ISD	A Plus Academy	East Texas Advanced Academies
Westbrook ISD	A Plus Unlimited Potential	East Texas Charter School
Westhoff ISD	A W Brown Fellowship Charter School	Ector Success Academy Network
Westphalia ISD	Academy of Accelerated Learning Inc	Eden Park Academy
Westwood ISD	Academy of Dallas	Education Center International Academy
Wharton ISD	Accelerated Intermediate Academy	El Paso Academy East
Wheeler ISD	Alief Montessori School	El Paso Leadership Academy
White Deer ISD	Ambassadors Preparatory Academy	Eleanor Kolitz Hebrew Language Academy
White Oak ISD	Amigos Por Vida-Friends For Life Ch Sch	Elementary School for Education Innovation

List of Participating Employers

Erath Excels Academy	Meridian World School LLC	Texas College Preparatory Academies
Etoile Academy Charter School	Meyerpark Elementary Charter	Texas Education Center
Evolution Academy Charter School	Midland Academy Charter School	Texas Empowerment Academy
Excellence in Leadership Academy	Montessori For All	Texas Preparatory School
Faith Family Academy Waxahachie	Moody Early Childhood Center	Texas Serenity Academy
Fort Worth Academy Fine Arts	New Frontiers Public Schools	The Ehrhart School
Gateway Charter Academy	Newman International Academy	The Excel Center
George Gervin Academy	North Texas Elementary School of Arts	The Lone Star Language Academy
George I Sanchez Charter School	Nova Charter School	The Pro-Vision Academy
Golden Rule Charter School	Nova Charter Southeast	The Rhodes School
Goodwater Montessori School	NYOS Charter School	TLC Academy
Great Hearts Academy - San Antonio	Odyssey Academy	Treetops International
Gulf Coast Trades Center	Orenda Charter School	Trinity Basin Preparatory
Harmony School of Excellence - Houston	Panola Charter School	Trinity Charter School
Harmony School of Science - Houston	Pegasus School of Liberal Arts & Science	Trinity Environmental Academy
Harmony Science Academy - Austin	Pineywoods Academy	Triumph Public High Schools - El Paso
Harmony Science Academy - El Paso	Pioneer Technology & Arts Academy	Triumph Public High Schools - Laredo
Harmony Science Academy - Houston	Por Vida Academy	Triumph Public High Schools - Lubbock
Harmony Science Academy - San Antonio	Premier High Schools	Triumph Public High Schools - Rio Grande Valley
Harmony Science Academy - Waco	Priority Charter Schools	Trivium Academy
Henry Ford Academy Alameda School	Promesa Academy Charter School	Two Dimensions Prep Academy
Heritage Academy	Promesa Public Schools	Ume Preparatory Academy
High Point Academy	Promise Community School	Universal Academy
Houston Gateway Charter School	Ranch Academy	Uplift Education
Houston Heights High School	Rapoport Academy	Valor Public Schools
Idea Public Schools	Raul Yzaguirre School	Vanguard Academy
Inspired Vision Academy	REACH Network	Varnett Charter School
International Leadership of Texas	Relay Lab Schools Texas	Village Tech Schools
Jean Massieu Academy	Reve Preparatory Charter School	Vista Del Futuro Charter School
John H Wood Charter School	Richard Milburn - Killeen	Waco Charter School
Jubilee Academies	Rise Academy	Walipp Academy
Katherine Anne Porter School	Rural Schools Innovation Zone	Westlake Academy
Kauffman Leadership Academy	School of Excellence in Education	Winfree Academy Charter Schools
Ki Charter Academy	School of Science & Tech-Discovery	Yellowstone College Preparatory
Kipp Austin College Prep	School of Science & Technology	YES Prep Public Schools
La Academia De Estrellas	Seashore Charter Schools	
La Fe Preparatory School	Ser-Ninos Charter School	Community and Junior Colleges
Leadership Prep School	South Texas Educational Tech	Alamo Community College District
Legacy Preparatory	Southwest High School	Alvin Community College
Legacy School of Sport Sciences	Southwest Preparatory School	Amarillo College
Life School	St Anthony School	Angelina College
Lighthouse Charter School	St Marys Charter School	Austin Community College
Lubbock Partnership Network	Stepping Stones Charter Elementary	Blinn College
Manara Academy	Tekoa Academy	Brazosport College
Meadowland Charter District	Texans Can Academies	Central Texas College

Cisco Junior College
 Clarendon College
 Coastal Bend College
 College of the Mainland
 Collin County Community College
 Dallas County Community College District
 Del Mar College
 El Paso Community College
 Frank Phillips College
 Galveston College
 Grayson County College
 Hill College
 Houston Community College System
 Howard County Junior College District
 Kilgore College
 Laredo Community College
 Lee College
 Lone Star College System
 McLennan Community College
 Midland College
 Navarro College
 North Central Texas College
 Northeast Texas Community College
 Odessa College
 Panola College
 Paris Junior College
 Ranger Junior College
 San Jacinto College District
 South Plains College
 South Texas College
 Southwest Texas Junior College
 Tarrant County College District
 Temple College
 Texarkana College
 Texas Southmost College
 Trinity Valley Junior College
 Tyler Junior College
 Vernon College
 Victoria College
 Weatherford College
 Western Texas College
 Wharton County Junior College

Senior Colleges and Universities

Angelo State University
 Lamar Institute of Technology
 Lamar State College - Orange
 Lamar State College - Port Arthur
 Lamar University - Beaumont
 Midwestern State University
 Prairie View A&M University
 Sam Houston State University
 Stephen F Austin State University
 Sul Ross State University
 Tarleton State University
 Texas A&M Agrilife Extension Service
 Texas A&M Agrilife Research
 Texas A&M Engineering Experiment Station
 Texas A&M Engineering Extension Service
 Texas A&M Forest Service
 Texas A&M International University
 Texas A&M Transportation Institute
 Texas A&M University
 Texas A&M University - Central Texas
 Texas A&M University - Commerce
 Texas A&M University - Corpus Christi
 Texas A&M University - Galveston
 Texas A&M University - Kingsville
 Texas A&M University - San Antonio
 Texas A&M University - Texarkana
 Texas A&M University Systems Office
 Texas Southern University
 Texas State Technical College
 Texas State University - San Marcos
 Texas State University System
 Texas Tech University
 Texas Woman's University
 University of Houston
 University of North Texas
 University of North Texas at Dallas
 University of North Texas System Admin
 University of Texas at Arlington
 University of Texas at Austin
 University of Texas at Dallas
 University of Texas at El Paso
 University of Texas at Permian Basin
 University of Texas at Rio Grande Valley
 University of Texas at San Antonio

University of Texas at Tyler
 University of Texas System
 West Texas A&M University

Medical Schools

Texas A&M University System HSC
 Texas A&M Vet Medical Diagnostic Lab
 Univ of Texas MD Anderson Cancer Center
 Univ of Texas Medical Branch at Galveston
 Univ of Texas Southwestern Medical Center
 University of North Texas HSC at Fort Worth
 University of Texas Health Center at Tyler
 University of Texas HSC at Houston
 University of Texas HSC at San Antonio

Regional Service Centers

Region 01 Education Service Center
 Region 02 Education Service Center
 Region 03 Education Service Center
 Region 04 Education Service Center
 Region 05 Education Service Center
 Region 06 Education Service Center
 Region 07 Education Service Center
 Region 08 Education Service Center
 Region 09 Education Service Center
 Region 10 Education Service Center
 Region 11 Education Service Center
 Region 12 Education Service Center
 Region 13 Education Service Center
 Region 14 Education Service Center
 Region 15 Education Service Center
 Region 16 Education Service Center
 Region 17 Education Service Center
 Region 18 Education Service Center
 Region 19 Education Service Center
 Region 20 Education Service Center

Other Educational Districts

Anderson County Special Education Co-Op
 Bowie County School District
 Harris County Dept of Education


Other Entities

Teacher Retirement System of Texas

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BENEFITS SECTION

HIGH PLAINS



Vast grasslands, rolling plains and the rugged Palo Duro Canyon are all part of the majestic High Plains. Some of the major metropolitan areas in the High Plains include Amarillo, Lubbock and Plainview.



Changes in State Law

A. Investments

House Bill 4171, 86th Legislature, Regular Session, 2019 moves the Texas Securities Act to a new Title 12, Government Code. The bill also modifies Section 825.301(a) to reference new Section 4001.068 in Title 12 instead of the Securities Act effective as of January 1, 2022.

House Bill 1612, 86th Legislature, Regular Session, 2019 repealed Section 825.3012(b-1), Government Code, which included a sunset date for authorization to invest up to 10 percent of the total investment portfolio in hedge funds. After the sunset date, the limit would have been 5 percent under Section 825.3012(b). House Bill 1612 amended Section 825.3012(b) to permanently increase the hedge fund limit to 10 percent.

Senate Bill 322, 86th Legislature, Regular Session, 2019 added Section 802.109 to Chapter 802, Government Code. The new provision requires a public retirement system, including TRS, to select an independent firm to evaluate institutional investment practices and performance with the objective of evaluating the appropriateness, adequacy and effectiveness of the system's investment practices and recommending improvements. Each evaluation must analyze investment policies and policy compliance, and include a review of investment allocations (including selection and valuation of alternative and illiquid assets), fees and commissions, investment activities governance processes, and investment manager selection and monitoring processes. TRS must be evaluated every 3 years and submit the performance report to the governor, lieutenant governor, house speaker, and appropriate legislative committees. A TRS report under Section 802.109 satisfies the requirement for a TRS report under Section 825.512, Government Code.

TRS continued to apply the contracting restrictions in Government Code 2271 (prohibition on contracts for goods and services with companies boycotting Israel) and the investment restrictions contained in Government Code Chapters 808 (relating to prohibition on investment in companies that boycott Israel) and 2270 (relating to prohibition on investment in listed companies with certain scrutinized business operations in or with Sudan, Iran, and designated foreign terrorist organizations). The Comptroller of Public Accounts issues the lists of companies boycotting Israel, scrutinized companies doing

business in Sudan or Iran, and designated foreign terrorist organizations.

B. Health Care Benefits

Rider 20, page III-38, House Bill 1, 86th Legislature, Regular Session, 2019 (the General Appropriations Act) directs the Teacher Retirement System of Texas to put in place a program that incentivizes enrollees of TRS-Care and TRS-ActiveCare to shop for lower cost care in order to achieve shared savings.

Senate Bill 1264, 86th Legislature, Regular Session, 2019, in Chapter 1467 of the Texas Insurance Code, the Legislature expanded the existing mediation program with regard to certain types of claims, established an arbitration process with regard to other types of claims, and prohibited providers from sending surprise billings (*i.e.*, balance billings) to participants in TRS-Care and TRS-ActiveCare.

Chapter 1467 prohibits balance billing (1) by out-of-network health care providers for emergency care, (2) by out-of-network providers providing services at in-network facilities (such as a hospital or surgery center), unless the enrollee elects in advance to receive nonemergency health care or medical service from these providers, and (3) by out-of-network diagnostic imaging providers or out-of-network laboratory service providers if the provider performed the service in connection with a health care or medical service performed by an in-network provider, unless the enrollee elects in advance to receive nonemergency health care or medical service from these providers.

With regard to the resolution of a dispute concerning the payment of an unpaid balance of a medical bill, SB 1264 treats bills from facilities differently than bills from providers who are not a facility. For unpaid bills from out-of-network providers that are not facilities (such as physicians, diagnostic imaging providers, and laboratory service providers), TRS and the physician will either settle claims in an informal teleconference or in a process called arbitration. Balance bills from out-of-network facilities (such as hospitals and surgery centers) will either be settled in an informal teleconference or in a process called mediation. Active employees and retirees will no longer need to request either of the above dispute resolution mechanisms.

The changes in law made by this Act apply only to a health care or medical service or supply provided on or after January 1, 2020.

Senate Bill 1682, 86th Legislature, Regular Session, 2019 directs TRS to estimate for an average 60-day period during the upcoming biennium the expenditures from the TRS-Care fund, considering projected claims and administrative expenses. TRS is to place this estimated amount into a contingency reserve account to provide for adverse fluctuations in claims or administrative expenses. TRS shall include in each request for legislative appropriations for TRS-Care the amount that TRS determines to be necessary to maintain the contingency reserve account.

During the 86th Texas legislative session, in addition to bills that are specifically referenced herein, there were a number of bills passed that mandate additional health care coverages under TRS-Care and TRS-ActiveCare. However, none of these mandates has a substantial impact upon the funding of either health care program. Accordingly, for the sake of brevity, these bills are not specifically noted herein.

C. Pension

Senate Bill 12, 86th Legislature, Regular Session, 2019 provides for gradual increases to contribution rates for the state, participating employers, and active employees to make the pension fund actuarially sound. Senate Bill 12 also provides most members who retired on or before Dec. 31, 2018 and certain beneficiaries a one-time supplemental payment in either the amount of their monthly annuity payment or \$2,000, whichever is less. Lastly, Senate Bill 12 extended the employer contribution under Section 825.4035 to apply to all TRS covered employers regardless of whether they contribute to Old-Age, Survivors, Disability Insurance program, except for higher education employers.

Senate Bill 500, 86th Legislature, Regular Session, 2019 appropriates additional dollars to fund the state's pension contribution increase and the one-time supplemental payment. Specifically, the bill provides \$524 million to fund the increases for the state's contribution to the pension fund from 6.80% to 7.50% in fiscal years 2020 and 2021 and \$589 million to fund the supplemental payment.

House Bill 3, 86th Legislature, Regular Session, 2019 is a comprehensive school finance bill. Though most of its changes do not directly affect TRS, House Bill 3 modified Section 825.405 which relates to state and employer contributions for compensation above statutory minimum salary requirements. Specifically, House Bill 3 expanded the application of the employer contribution under Section 825.405 to open

enrollment charter schools and school districts that have adopted a local innovation plan. It also eliminated the cost of education index, which previously modified the amount of the employer contribution in Section 825.405.

Senate Bill 2224, 86th Legislature, Regular Session, 2019 requires all public retirement systems to adopt a written funding policy that details the governing body's plan to achieve a funding ratio that is equal to or greater than one hundred percent.

House Bill 2629, 86th Legislature, Regular Session, 2019 requires the TRS Board of Trustees, in adopting rules governing the appeal of a final administrative decision of TRS, to ensure that rules establishing deadlines for the filing of an appeal afford a member or retiree at least the same amount of time to file an appeal as TRS has to issue a decision. The new law applies to all administrative appeals that TRS receives after January 1, 2020.

D. Procurement and Contracts

Senate Bill 65, 86th Legislature, Regular Session, 2019 repeals section 825.103(g), Government Code, and removes certain TRS exemptions from state procurement laws, including exemptions from certain competitive selection, conflict of interest, and contract monitoring requirements, as well as an exemption from compliance with the Comptroller's *Contract Management Guide* requirements.

House Bill 793, 86th Legislature, Regular Session, 2019 modifies existing statutory language which provided that a governmental body may not enter into a contract with a company for goods and services, unless the contract contains a written verification from the company that it does not boycott Israel and will not boycott Israel during the term of the contract. HB 793 exempts sole proprietorships from the prohibition and makes the prohibition applicable only to a contract with a company that has 10 or more full-time employees and that has a value of \$100,000 or more to be paid from public funds.

Senate Bill 22, 86th Legislature, Regular Session, 2019 prohibits a governmental entity from entering into a taxpayer resource transaction with an abortion provider or an affiliate of an abortion provider, with some limited exceptions. SB 22 also authorizes the attorney general to bring an action in the name of the state to enjoin a violation of this prohibition and waives TRS' sovereign immunity as to such an action.

Senate Bill 943, 86th Legislature, Regular Session, 2019 requires that, for certain contracts, a governmental body must require the contractor to (1) preserve all contracting information related to the contract in accordance with the governmental body's records retention requirements for the duration of the contract, (2) promptly provide to the governmental body any such contracting information in the custody of the contractor upon request, and (3) on termination or expiration of the contract, either provide at no cost to the governmental body all such contracting information or preserve it in accordance with the governmental body's records retention requirements. With limited exceptions, SB 943 also requires that the contract include a specific provision regarding certain requirements of the Public Information Act and the contractor's agreement that the contract can be terminated if the contractor knowingly or intentionally fails to comply with those requirements.

E. Open Government

Public Information Act

Senate Bill 943, 86th Legislature, Regular Session, 2019 amends certain exceptions available under the Public Information Act, clarifies that most contracting information is public and is not subject to an exception, and provides a process for requesting contracting information held by a third party.

Senate Bill 944, 86th Legislature, Regular Session, 2019 clarifies that "protected health information", as defined by section 181.006 of the Health and Safety Code, is not public information. Further, SB 944 clarifies that current or former officers or employees of governmental bodies who maintain public information on privately owned devices must forward the information to the governmental body to be preserved or preserve the information in its original form in a backup/archive and on the privately held device. Finally, section 552.234 specifies the methods by which members of the public can make a request for information and section 552.235 requires the attorney general to develop a form which can be used by a requestor to exclude confidential information from a request.

Senate Bill 988, 86th Legislature, Regular Session, 2019 specifies that, in a suit brought by a governmental body seeking to withhold information, the court may not assess costs of litigation or fees to the prevailing party unless the court finds the action or defense of the action was groundless in fact or law.

Senate Bill 494, 86th Legislature, Regular Session, 2019 provides that a governmental body may elect to suspend the provisions of the PIA during a "suspension period" if the governmental body is impacted by a catastrophe.

Open Meetings Act

Senate Bill 494, 86th Legislature, Regular Session, 2019 modifies existing statutory language to reduce the notice requirement for an emergency addition to a meeting agenda and clarifies that the governmental body may not deliberate or act on a matter unrelated to responding to the emergency or urgent public necessity unless the agenda item was properly noticed.

House Bill 2840, 86th Legislature, Regular Session, 2019 adds section 551.007 of the Government Code which provides that a governing body shall allow each member of the public who desires to address the governing body regarding an item on an open meeting agenda to do so at the meeting before or during the body's consideration of the item.

Senate Bill 1640, 86th Legislature, Regular Session, 2019 addresses the Court of Criminal Appeals decision in *State v. Doyal*, No. PD-0254-18 (Tex. Crim. App., 2019) which held that section 551.143 of the Government Code is unconstitutionally vague on its face. SB 1640 addressed this issue by amending section 551.143 to provide greater clarity regarding the manner in which members of a governmental body can communicate with one another.

F. Cybersecurity

Senate Bill 64, 86th Legislature, Regular Session, 2019 amended Texas Government Code Section 815.103 to require TRS to comply with cybersecurity and information security standards established by the Department of Information Resources (DIR) under Texas Government Code Chapter 2054. Previously, TRS was exempt from this requirement but had the option to work with the DIR at its discretion.

G. 403(b)

House Bill 2820, 86th Legislature, Regular Session, 2019 eliminates the TRS certification process for 403(b) products offered to TRS active members. Disclosures for those products and laws regulating market conduct will be overseen by the Texas Department of Insurance and the State Securities Board and applicable federal agencies.

H. Sunset Review

Senate Bill 619, 86th Legislature, Regular Session, 2019 amended Section 825.006 to provide that TRS shall be reviewed by the Sunset commission during the period in which state agencies abolished in 2021 are reviewed.

Changes in Federal Law

A. Investments

Implementation of Rulemaking Under the Dodd-Frank Wall Street Reform and Consumer Protection Act (2010) (Dodd-Frank)

During this fiscal year, TRS continued monitoring the second implementation phase of the new margin requirements for uncleared swaps, which will address initial margin, for example requiring two-way posting and segregation of initial margin. The initial-margin regulations should apply to TRS effective September 2021. Ahead of that deadline, TRS will amend its International Swaps and Derivatives Association agreements to account for the new requirements and also put into place arrangements for third-party custody of initial margin.

B. Health Care Benefits

Federal Patient Protection and Affordable Care Act of 2010 (PPACA)

During this fiscal year, in a continued effort to identify any impact upon the health benefit plans administered by TRS, TRS continued to monitor regulations issued with regard to the PPACA.

TRS continues to allow certain participating employers in TRS-ActiveCare to designate TRS, acting in its capacity as trustee of TRS-ActiveCare, to fulfill the reporting requirements under Internal Revenue Code Section 6055 for months of enrollment in calendar year 2019. Section 6055 addresses the reporting of health care coverage selected by active employees and COBRA qualified beneficiaries (and their dependents) who are enrolled in one of the PPO plans offered under TRS-ActiveCare.

TRS also continues to make efforts to ensure that the coverage it offers under TRS-ActiveCare meets the PPACA's minimum value and affordability standards, in order to assist the participating entities' efforts to avoid the PPACA's shared responsibility penalties.

TRS also continues to monitor the litigation related to the constitutionality of the PPACA. On December 14, 2018, Judge Reed O'Connor of the U.S. District Court for the Northern District of Texas ruled that the PPACA

was unconstitutional. Judge O'Connor delayed the effective date of his ruling; therefore, the PPACA remains in effect. The case is now on appeal to the U.S. Court of Appeals for the Fifth Circuit. TRS will continue to follow this litigation and assess its impact on the plans it offers and upon its operations.

High Deductible Health Plans

TRS continues to monitor changes that affect TRS-ActiveCare 1-HD (a high deductible health plan). For example, the IRS annually releases cost-of-living increases related to the minimum deductibles and maximum out-of-pocket amounts allowed under a high deductible health plan. TRS ensures ActiveCare 1-HD meets those requirements. In addition, the Department of Health and Human Services released guidance in 2019 that allows TRS-ActiveCare 1-HD to expand the preventive care services to treat certain chronic conditions that it may offer on a "first-dollar" basis before a participant reaches a deductible.

C. Pension

Tax Laws, Regulations, and Guidance

During this fiscal year, TRS continued to monitor the status of proposed regulations regarding the applicability of normal retirement age regulations and the determination of governmental plan status.

D. Other Developments

Data Privacy

The General Data Protection Act ("GDPR") went into effect on May 25, 2018. This Regulation restricts the use and storage of the personal information of individuals in the European Union, and restricts the international transfer of such data. TRS is continuing to implement and apply the GDPR restrictions as it applies to the operations of TRS' subsidiary in the UK.

Market Abuse Regulation

MAR took effect on July 3, 2016, and contains the rules on insider dealing, unlawful disclosure of inside information and market manipulation that applies in the European Union. It effects any firm that trades on an in-scope European Economic Area (EEA) market, regardless of whether the firm is within the EEA. MAR includes compliance and legal provisions that are similar to U.S insider trading laws as well as additional requirements such as "market soundings" that involve the communication of potentially insider information by the sell side to the buy side.

Markets in Financial Instruments Directive II

MiFID II took effect on January 3, 2018 and regulates certain investment services across the EEA. In particular, it requires unbundling of trading costs between research and execution services and fees such that EEA managers must either pay for research themselves or set up a research payment account, where the budget has been agreed with the client. Many managers have determined to pay for research themselves, which has led to a drop in research budgets. Some US managers have adopted a similar approach.

Summary of Benefits

The Teacher Retirement System of Texas (TRS) administers the TRS Pension Trust Fund, a defined benefit retirement plan that is a qualified pension trust under Section 401(a) of the Internal Revenue Code. The Pension Trust Fund provides service retirement, disability retirement, death and survivor benefits to eligible employees of public and higher education in Texas. The TRS Benefits Handbook, a general information booklet, is available to TRS members, annuitants, and the public on the TRS website, www.trs.texas.gov.

TRS also administers two separate health care related trust funds:

- TRS-ActiveCare is the statewide health benefits program for eligible active public education employees of participating employers and their eligible dependents.
- TRS-Care is the statewide health benefits program for eligible retired public education employees and their eligible dependents.

TRS also administers an optional long-term care insurance program for eligible retirees, public school employees, their dependents, and other family members. The Plan is available on an enrollee-pay-all-basis.

Retirement Plan Benefits

This summary of benefits is based on statutory provisions of the plan, effective for fiscal year 2019.

A. Service Retirement

Normal Retirement Eligibility

For members whose membership began prior to September 1, 2007, who had at least five years of service credit as of August 31, 2014, and who maintained membership until retirement:

- Age 65 with at least five years of credited service, or
- The sum of the member's age and years of credited service equals or exceeds 80 with at least five years of credited service.

For members whose membership began on or after September 1, 2007 but prior to September 1, 2014, who had at least five years of service credit as of August 31, 2014, and who maintained membership until retirement:

- Age 65 with at least five years of credited service, or
- Age 60 and the sum of the member's age and years of credited service equals or exceeds 80 with at least five years of credited service.

For members who did not have at least five years of service credit as of August 31, 2014, who established TRS membership on or after September 1, 2014, or who had at least five years of service credit as of August 31, 2014 but terminated membership in TRS by withdrawal of accumulated contributions and later resumed TRS membership:

- Age 65 with at least five years of credited service, or
- Age 62 and the sum of the member's age and years of credited service equals or exceeds 80 with at least five years of credited service.

Standard Annuity

A monthly benefit payable at retirement throughout the retiree's lifetime and calculated according to the statutory benefit formula.

Benefit Formula

The annual standard annuity is based on the average of the five highest annual creditable salaries multiplied by the years of credited service multiplied by 2.3 percent. For members who are grandfathered, the three highest annual salaries are used in the benefit formula.

Minimum Benefit

\$150 per month less any reduction for early age retirement or optional annuity selection.

Early Age Retirement Eligibility

For members whose membership began prior to September 1, 2007, who had at least five years of service credit as of August 31, 2014, and who maintained membership until retirement:

- At least 55 with five or more years of service credit, but the sum of the member's age and years of service credit total less than 80, or
- 30 or more years of service credit, but the sum of the member's age and years of service credit total less than 80.

For members whose membership began on or after September 1, 2007 but prior to September 1, 2014, who had at least five years of service credit as of August

31, 2014, and who maintained membership until retirement:

- At least 55 with five or more years of service credit, but the sum of the member's age and years of service credit total less than 80, or
- 30 or more years of service credit, but the sum of the member's age and years of service credit total less than 80, and the member is less than age 60, or
- The sum of the member's age and years of service credit total at least 80, but the member is less than age 60.

For members who met the requirements to be grandfathered before September 1, 2005, there is no reduction to their benefit based on actuarial tables if they are at least age 55, the sum of their age and years of service credit total at least 80, and they are below age 60. These members are still considered early-age retirees.

For members who did not have at least five years of service credit as of August 31, 2014, who established TRS membership on or after September 1, 2014, or who had at least five years of service credit as of August 31, 2014 but terminated membership in TRS by withdrawal of accumulated contributions and later resumed TRS membership:

- At least 55 with five or more years of service credit, but the sum of the member's age and years of service credit total less than 80, or
- 30 or more years of service credit, but the sum of the member's age and years of service credit total less than 80, and the member is less than age 62, or
- the sum of the member's age and years of service credit total at least 80, but the member is less than age 62.

For members who met the requirements to be grandfathered before September 1, 2005, there is no reduction to their benefit based on actuarial tables if they are at least age 55, have at least 20 years of service credit, the sum of their age and years of service credit total at least 80, and they are below age 62. These members are still considered early-age retirees.

Early Age Retirement Benefit

The standard annuity amount calculated under the benefit formula (or the minimum benefit, if applicable) and used to determine the amount of any optional

retirement annuity is reduced for early age retirement. The amount of the reduction varies depending on age, years of service credit, and whether a member is grandfathered.

B. Disability Retirement

Eligibility

Physical or mental disability precludes the member's continued performance of current duties and the disability is probably permanent, as certified by the TRS Medical Board.

Benefit

For disabled members with at least 10 years of credited service, the greater of the standard annuity unreduced for early age or \$150 per month minimum benefit, less any reduction for the selection of an optional annuity. For disabled members with fewer than 10 years of credited service, \$150 per month. The minimum benefit amounts are subject to reduction for the selection of an optional retirement annuity.

Duration

For retirees with 10 or more years of credited service, payments continue for as long as the disability continues. For those with fewer than 10 years of credited service, payments continue for the life of the retiree, the duration of the disability, or the number of months of credited service, whichever is shorter.

Earnings Limit

Disability retirees who applied and retired after August 31, 2007 are subject to an annual limit on earnings from any employment. The current limit is the greater of the highest annual salary before retirement or \$40,000. Excess earnings will cause benefits to be forfeited until such time as the excess earnings cease or are reduced to an allowable amount.

C. Annuity Payment Options

All service and eligible disability retirees may select an optional form of payment that reduces the standard annuity by application of actuarial reduction factors in order to continue payment to a beneficiary after the retiree's death. Actuarial factors for disability retirees are different from those for service retirees because of different assumptions about life expectancy for the two groups. The available options include 100, 75, and 50 percent joint and survivor annuities, and five and ten year guaranteed period annuities. Selection of a 100 or 75 percent joint and survivor annuity and a five or ten year guaranteed period annuity may not be

allowed in certain situations based on the minimum distribution provisions of federal tax law.

D. The Pop-Up Provision

If a designated beneficiary under any of the joint and survivor options dies while the retiree is still living, the retiree's future monthly payment increases to the amount of the standard annuity.

E. Partial Lump Sum Option

Under the Partial Lump Sum Option (PLSO), available for election at the time of retirement, eligible members may elect to receive an actuarially reduced service retirement annuity plus a lump sum distribution.

Members may elect to receive a PLSO if they are eligible for service retirement, meet the Rule of 90 (age and years of service credit equal at least 90), are not participating in the Deferred Retirement Option Plan (DROP), and are not retiring with disability retirement benefits. Grandfathered members may elect PLSO at retirement if they are eligible for normal age service retirement under the pre-September 1, 2005 law (age 65 with at least five years of credited service, or the sum of the member's age and years of credited service equals or exceeds 80 with at least five years of credited service), are not participating in DROP, and are not retiring with disability retirement benefits. Members retiring under the proportionate retirement program are not eligible to elect the PLSO.

Partial lump sum distributions equal to 12, 24, or 36 months of a standard service retirement annuity may be selected. When a member selects this option, the monthly annuity is actuarially reduced to reflect the lump sum distribution. Flexible annual distribution options are available, including rollovers to another eligible retirement plan.

F. Deferred Retirement Option Plan

The TRS Pension Plan permitted eligible members to participate in a Deferred Retirement Option Plan (DROP) by enrolling no later than December 31, 2005. DROP participants continued employment while accumulating a portion of their standard retirement annuity in a special account that is disbursed beginning at the time of their retirement or death.

Members who elected DROP chose to participate in 12-month increments for up to five years. During DROP participation, the member did not accrue additional service credit for their pension annuity, nor is any compensation earned during DROP participation considered in calculating the standard pension annuity.

During DROP participation, the member's statutory contributions to TRS continue. However, contributions were not credited to the member's contribution account and are not refundable.

Interest on the DROP account balance prior to September 1, 2014 was computed at an annual rate of five percent. Subsequent to that date, the interest rate changed to two percent.

Members who participated in DROP but continued working in membership eligible employment after the close of their participation period earn post-DROP retirement benefits based solely on creditable compensation received and service credit earned after their DROP participation period ended. Post-DROP benefits are distributed with the retirement and DROP benefits.

G. Minimum Service Credit Required for Service Retirement Benefits

Under current law, a member who has completed at least five years of credited service has earned a right to service retirement benefits after reaching eligible retirement age, provided that the member's accumulated contributions are not withdrawn from the system.

Service credited in another retirement system that participates in the Proportionate Retirement Program may be combined with TRS service credit to determine eligibility for TRS service retirement benefits. Any qualifying USERRA military service, up to a maximum of five years, may also be counted in determining eligibility for TRS service retirement benefits. The USERRA service and/or compensation credit may also be purchased to increase the amount of the retirement benefit or may simply be verified and used to establish eligibility.

An eligible member must apply for benefits and meet other requirements, such as termination of Texas public education employment, in order to begin receiving benefits.

H. Death and Survivor Benefits

Active Members

The beneficiary of an active member may elect to receive one of the following benefits in the event of the member's death before retirement in any of the following situations:

- if the member dies during a school year in which the member performed service, or
- if the member was absent from service because of sickness, accident or another reason TRS determines is involuntary, or
- in furtherance of the objectives or welfare of the public school system, or
- if the member dies when eligible to retire, or
- would have become eligible without further service before the fifth anniversary of the member's last day of service as a member
- if the member dies while performing qualified military service as defined by applicable federal law
- when the member is absent from service as described by law, such as when the absence is due to sickness, accident, or other involuntary cause
- when the member is within five years of being eligible to retire when leaving employment.

Benefit Options

- A lump sum payment equal to twice the member's annual rate of compensation or \$80,000, whichever is less, or
- Sixty monthly payments equal to the member's standard annuity without reduction for early age, provided the member had at least five years of service credit at the time of death, or
- Lifetime payments equal to a 100 percent joint and survivor annuity, provided the member had at least five years of service credit, and is subject to any reduction applicable for early age. This benefit is only available when there is a sole beneficiary, or
- An amount equal to a return of the member's contributions with accumulated interest, or
- Survivor benefits of \$2,500 lump sum payment plus a monthly benefit to eligible beneficiaries. For example, \$350 per month to a beneficiary spouse with minor children, continuing until the youngest child reaches age 18. When the spouse turns age 65, or when the youngest child reaches age 18, whichever is later, the spouse would begin receiving \$250 per month for life.

In addition to these five options, a lump sum death benefit of \$160,000 is available if the active member is employed in a TRS-covered position and dies as the result of a physical assault during the performance of the employee's regular job duties.

Also, the beneficiary of a DROP participant will receive the accumulated DROP account balance, payable as a lump sum or in periodic installments.

Retirees

In addition to any joint and survivor or guaranteed period annuity that may be payable under an optional form of payment a retiree elected, the beneficiary of a service or disability retiree is entitled to a \$10,000 lump sum payment. Eligible survivors may select alternate payment options in lieu of the lump sum benefit. The alternate payment options include a lump sum payment of \$2,500 plus an applicable monthly survivor benefit.

If total payments made before death to a retiree and, when applicable, to a beneficiary for an optional service retirement annuity, are less than accumulated contributions at retirement, an amount equal to the remainder of the balance of accumulated contributions is paid to the beneficiary or as otherwise provided by law. Should a retiree die prior to receiving all PLSO payments that are due, TRS will pay any remaining PLSO payments in a single lump sum payment to the beneficiary. If the retiree participated in DROP and died before receiving all DROP distributions, any unpaid DROP payments are paid to the beneficiary designated by the retiree.

I. Grandfathered Provisions

A person who, as a member, met any one of the following criteria on or before Aug. 31, 2005, is grandfathered under plan provisions repealed with respect to non-grandfathered members:

- the member was at least 50 years old, or
- the member's age and years of service credit equaled at least 70 ("Rule of 70"), or
- the member had at least 25 years of service credit.

Members who are grandfathered will have their benefits determined in the following manner:

- Final Average Salary at retirement will be determined by the highest three years (instead of five years) of salary.

- Preservation of certain retirement reduction factors means that members age 55 or older with 20 to 24 years of credited service who take early retirement will receive a lesser reduction to their annuities than those members who are not grandfathered.
- Partial Lump Sum Option eligibility will require either age 65 with at least five years of service credit, or a combined age plus years of credited service that equals at least 80 ("Rule of 80") instead of 90.

supervision or verbal direction from another person in order to protect the member or others from serious injury.

Health Benefits

A. Health Benefits for Active Public School Employees

TRS-ActiveCare, the statewide health benefits program for eligible full-time and part-time employees of participating employers of public schools, open enrollment charter schools, regional service centers, and other educational districts, went into effect on September 1, 2002. The program initially focused on smaller districts, where affordable health coverage was often harder to find, and later expanded to include larger school districts. In fiscal year 2019, 1,088 entities participated in the program.

Employees can choose from three plan options and in certain areas, employees also have the option of enrolling in a health maintenance organization.

For information on TRS-ActiveCare, please refer to the TRS website.

B. Retiree Health Coverage

TRS administers TRS-Care, a health benefits program for eligible retired public education employees and their eligible dependents that was established in 1985. TRS-Care is the source of health benefits coverage which a substantial portion of retired public education employees rely upon. Details of the plan can be found in Note 9.

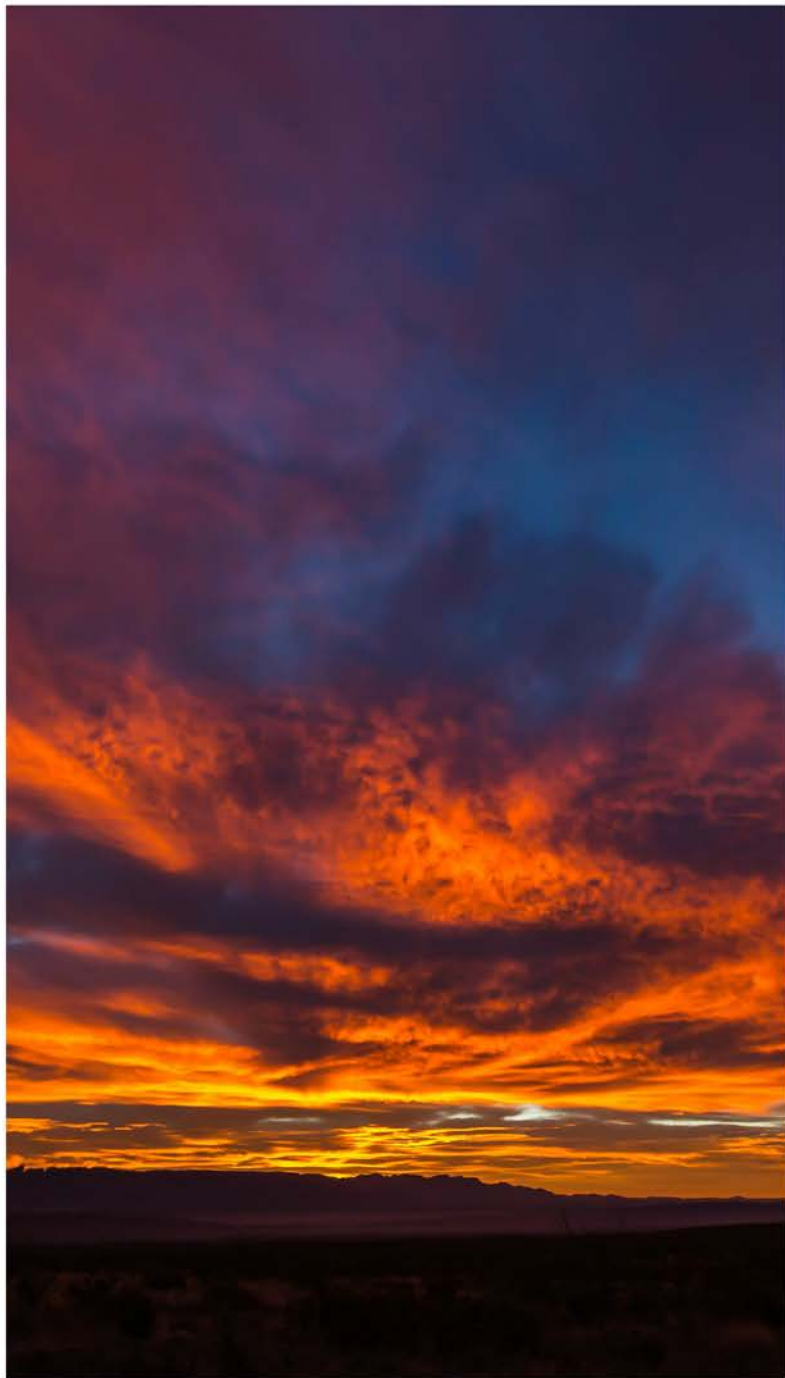
For information on TRS-Care eligibility, please refer to the TRS website.



C. Long-Term Care Insurance Program

Eligible retirees and eligible public school employees, their eligible dependents, and certain other family members may participate in the TRS long-term care insurance program. The plan pays benefits if the participant becomes unable to perform at least two activities of daily living without substantial assistance from another person. The plan also pays benefits as a result of a severe cognitive impairment that requires

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THANK YOU




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EXTREMELY
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WHO ALLOW US
THE PRIVILEGE OF
EARNING THEIR
TRUST EVERY DAY.**






Teacher Retirement System of Texas

1000 Red River Street

Austin, Texas
78701-2698

1-800-223-8778

www.trs.texas.gov