

Audit, Compliance & Ethics Committee Meeting

April 2018



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

**TEACHER RETIREMENT SYSTEM OF TEXAS
BOARD OF TRUSTEES
AND
AUDIT, COMPLIANCE AND ETHICS COMMITTEE**

(Mr. Moss, Chairman; Mr. Corpus; Dr. Gibson, Ms. Sissney, Mr. Nance, Committee Members)

*All or part of the April 19, 2018, meeting of the TRS Audit, Compliance and Ethics Committee and Board of Trustees may be held by telephone or video conference call as authorized under Sections 551.130 and 551.127 of the Texas Government Code. The Board intends to have a quorum and the presiding officer physically present at the following location, which will be open to the public during the open portions of the meeting: **1000 Red River, Austin, Texas 78701 in the TRS East Building, 5th Floor, Boardroom.***

AGENDA

**April 19, 2018 – 1:15 p.m.
TRS East Building, 5th Floor, Boardroom**

1. Call roll of Committee members
2. Approve minutes of December 15, 2017 Audit Committee meeting – Committee Chair
3. Receive TRS Compliance reports – Heather Traeger
4. Receive Internal Audit reports
 - A. Quarterly TRS compliance testing (Agreed-Upon Procedures) –Amy Barrett, Nick Ballard, and Heather Traeger
 - B. Incentive compensation for the plan year ending September 30, 2017 (Agreed-Upon Procedures) – Amy Barrett, Scot Leith, and Christine Bailey
 - C. Investment performance calculations audit –Kate Rhoden and Barbara Forssell
 - D. Prior audit and consulting recommendations - Amy Barrett
 - E. Employer Self-Audit Program – Amy Barrett
5. Discuss or consider Internal Audit administrative reports and matters related to governance, risk management, internal control, compliance violations, fraud, regulatory reviews or investigations, fraud risk areas, audits for the annual internal audit plan, or auditors' ability to perform duties – Committee Chair, Amy Barrett, Heather Traeger

NOTE: The Board of Trustees (Board) of the Teacher Retirement System of Texas will not consider or act upon any item before the Audit, Compliance and Ethics Committee (Committee) at this meeting of the Committee. This meeting is not a regular meeting of the Board. However, because the full Audit, Compliance and Ethics Committee constitutes a quorum of the Board, the meeting of the Committee is also being posted as a meeting of the Board out of an abundance of caution.

TAB 2

**TEACHER RETIREMENT SYSTEM OF TEXAS
AUDIT COMMITTEE MEETING MINUTES
DECEMBER 15, 2017**

The Audit Committee of the Board of Trustees of the Teacher Retirement System of Texas met on December 15, 2017, in the boardroom located on the fifth floor of the TRS East Building offices at 1000 Red River Street, Austin, Texas.

Committee Members present:

Mr. Chris Moss, Chair
Mr. David Corpus
Dr. Greg Gibson
Mr. James D. Nance
Ms. Nanette Sissney

Other Board Members present:

Mr. Joe Colonna
Mr. John Elliott
Mr. Jarvis V. Hollingsworth

Others present:

Brian Guthrie, TRS	Sylvia Bell, TRS
Ken Welch, TRS	Anandhi Mani, TRS
Carolina de Onis, TRS	Simin Pang, TRS
Amy Barrett, TRS	Art Mata, TRS
Don Green, TRS	Cari Casey, TRS
Barbie Pearson, TRS	Rodrigo Dominguez, TRS
Heather Traeger, TRS	Michael Clayton, SAO
Katherine Farrell, TRS	Kathy Ann Moe, SAO
Hugh Ohn, TRS	Anca Pinchas, SAO
Jan Engler, TRS	Dan Barron, GT, PwC
Lih-Jen Lan, TRS	Bhakti Patel, GT
Nick Ballard, TRS	John Meka, Truven
Yimei Zhao, TRS	Keith Call, Truven
Jeff Bain, TRS	Carol Hamilton, Truven
Chase Dierschke, TRS	Amy Quertermous, Truven
Katrina Daniel, TRS	Sharon Schneider, SAO
Sarah Puerto, SAO	
Richard Scheel, TRS	

Audit Committee Chair Mr. Moss called the meeting to order at 8:00 a.m.

1. Call roll of Committee members.

Ms. Farrell called the roll. A quorum was present.

2. Consider the approval of the proposed minutes of the September 22, 2017 committee meeting – Committee Chair Mr. Chris Moss.

On a motion by Dr. Gibson, seconded by Mr. Corpus, the proposed minutes for the September 22, 2017 Audit Committee meeting were approved as presented with Mr. Nance and Ms. Sissney abstaining.

3. Receive State Auditor’s Office reports – Michael Clayton, Anca Pinchas, Sarah Puerto, Kathy Ann Moe, and Sharon Schneider, State Auditor’s Office (SAO)
A. Audit of Comprehensive Annual Financial Report (CAFR) (for fiscal year ending August 31, 2017)

Ms. Anca Pinchas stated that the conclusion of the financial audit, their financial opinion is that the financial statement was presented fairly in all material respects the financial position of the Teacher Retirement System. She further stated the report on internal controls defined a significant deficiency, in that the system’s control over active employee census data was not sufficient to properly identify data that was complete or accurate. Ms. Pinchas highlighted information regarding the audit. She noted there were no misstatements identified that required correction during the audit. She reported no disagreements with management during the course of the audit. She reported there was no evidence of fraud abuse or noncompliance which slows a regulation contracts or grants agreement had or might have occurred.

B. Audit of Incentive Compensation at Selected Agencies (for TRS plan year ending September 30, 2016)

Ms. Sara Puerto reported the overall conclusion found that TRS calculated and paid incentive compensation for the non-executive performance incentive pay plan in accordance with policies and procedures for Plan Year 2016.

Ms. Puerto reported that TRS calculated and paid incentive compensation in accordance with its executive performance incentive pay plan with the recommendation that the controls over the executive performance incentive should be strengthened. She said TRS did not have formal detailed policies and procedures that required it to document the calculation and review process for this pay plan. She stated TRS did not verify the source documentation from the third party for one of the inputs into the calculation. Ms. Puerto said the auditors did determine that the input was accurately calculated. Mr. Guthrie noted steps have already been taken to address both of these issues with the Executive Performance Incentive Pay Plan.

C. Classification compliance audit of information technology positions at selected education agencies

Ms. Kathy Ann Moe stated the objective of the audit was to determine whether the selected education agencies conformed to the state’s position classification plan by ensuring proper classification of employees. She reported TRS received a low issue rating. She said for the information technology occupational categories, 97 employees at TRS were tested and 80 or 82.5 percent were correctly classified. She said TRS took appropriate actions to address the 17 misclassified employees, noting there was no cost associated with the reclassifications.

4. Receive Grant Thornton report for financial audit of TRS Investment Company (TRICOT) (for fiscal year ending August 31, 2017) – Bhakti Patel, Grant Thornton

Mr. Dan Barron stated this is the second year of the audit of TRS Investment Management Company of Texas (TRICOT). He said materiality is quite low due to the size of TRICOT. Mr. Barron reported there were no significant related party transactions that were not properly accounted for or disclosed in the financial statements. Mr. Barron stated they had an unmodified or clean opinion on the financial statements.

Ms. Bhakti Patel discussed the details of the audit. She said there were two adjustments. One was entries recorded at the TRS level but not at TRICOT. She reported management has subsequently made these entries. Ms. Patel reported there was one deficiency more focused around the entries that were not recorded. Ms. Patel reported their overall opinion on the financial statements was that they were not materially misstated.

Mr. Richard Scheel stated in response that TRICOT is relatively small. He reported controls were instituted correcting the two material findings.

5. Receive review reports for TRS health plan and pharmacy plan administration for TRS-Care and TRS-ActiveCare – Yimei Zhao, Jeff Bain, and Chase Dierschke; Amy Quertermous, John Meka, Keith Gall, and Carol Hamilton, Truven Health Analytics

- A. Results overview of TRS-Care and TRS-ActiveCare health plan and pharmacy benefit administration review reports for the most recent audit cycle**
- B. Review report of TRS-Care health plan administration by Aetna for September 1, 2015 to August 31, 2016**
- C. Review report of TRS-ActiveCare health plan administration by Aetna for September 1, 2015 to August 31, 2016**
- D. Review report of TRS-Care pharmacy plan administration by ESI for September 1, 2015 to August 31, 2016**
- E. Review report of TRS-Care drug benefit administration of the Employer Group Waiver Plan (EGWP) by ESI for January 1, 2015 to December 31, 2015**
- F. Review report of TRS-ActiveCare pharmacy plan administration by Caremark Rx for September 1, 2015 to August 31, 2016.**

Mr. John Meka stated TRS paid out over \$3.3 billion worth of claims to various administrators. He said almost 20 million claims were analyzed through their audit process. He reported their methodology is based on a 100 percent analysis of the claims. Mr. Meka said they reviewed several different areas: benefit determinations; payments coordinated properly between insurance companies, Medicare and administrators; and surgical payments. From these, Mr. Meka stated they take the exceptions and audit them onsite or remotely for pharmacy. Mr. Meka then reviewed the medical audit results. He reported for the TRS-Care plan, covering September 1, 2015 through August 31, 2016 Aetna performed above acceptable levels, noting a few opportunities for improvement. Mr. Meka reported Aetna for TRS-ActiveCare also performed very well, with a .04 percent finding.

Ms. Quertermous reported on the TRS-Care standard plan administration that is administered by Express Scripts (ESI). She said ESI performed above the overall benchmark of 1 to 2 percent of total dollars of exception. She noted a few opportunities for improvement. As for the TRS-Care EGWP plan, also administered by ESI, for calendar year 2015, ESI was performing above the acceptable levels. She then discussed TRS-ActiveCare pharmacy plan administered by Caremark. Ms. Quertermous said Caremark is performing above the acceptable levels and offered opportunities for improvement.

Ms. Yimei Zhao responded that all of the errors the auditor found in the claims sample have all been corrected and claim readjudicated.

6. Receive TRS Compliance reports – Heather Traeger

Ms. Heather Traeger reported there were four 541Cs, requests for conflict determinations from TRS vendors, last quarter. She said one was related to the prudent investment letters, a conflict did present but the circumstances were mitigated and could proceed. She noted two of the conflicts were with respect to the acquisition of Townsend by Aon.

Ms. Traeger noted there were eight items from the hotline report with an additional five since the report was filed. She said the issues were regarding TEAM transition, health plan changes, the phone lines and timeliness of distributions and refunds.

7. Receive Internal Audit reports

A. Quarterly TRS compliance testing (Agreed-Upon Procedures) – Hugh Ohn and Heather Traeger

Mr. Hugh Ohn reported on internal audits quarterly compliance testing which supplements the investment compliance monitoring performed by State Street as well as TRS' investment compliance team. He said this quarter they reviewed Board reporting, investment selection and approval, other policy items and ethics policy testing. Mr. Ohn reported no compliance violations were identified.

B. Prior audit and consulting recommendations - Amy Barrett

Ms. Barrett provided an update on the outstanding audit recommendations. She noted the only item was the issue with the state auditors on census data which involved implementing TEAM. She said for the IT security-related recommendations, a number of them came out of the HIPAA audit, are still in progress.

C. Internal Audit Annual Report – Amy Barrett

Ms. Barrett said the Internal Audit Annual Report, a State Auditor's requirement, was due November 1, 2017. The report was sent out and posted on our website prior to November 1.

8. Discuss or consider Internal Audit administrative reports and matters related to governance, risk management, internal control, compliance violations, fraud, regulatory reviews or investigations, fraud risk areas, audits for the annual internal audit plan, or auditors' ability to perform duties – Committee Chair and Amy Barrett

Ms. Barrett presented the Chief Audit Executive Goals mapped to the TRS strategic plan. She discussed the internal audit performance measures. Ms. Barrett then discussed that status of the audit plan. She reported they were on track.

Without further discussion, the meeting adjourned at 9:21 a.m.

APPROVED BY THE **AUDIT, COMPLIANCE AND ETHICS COMMITTEE** OF THE BOARD OF TRUSTEES OF THE TEACHER RETIREMENT SYSTEM OF TEXAS ON THE 19th DAY OF April 2018.

Greg Gibson
Acting Chair, Audit, Compliance and Ethics Committee
Board of Trustees
Teacher Retirement Systems of Texas

Date _____

TAB 3

TEACHER RETIREMENT SYSTEM OF TEXAS COMPLIANCE CHARTER

MISSION

The TRS Compliance function is an independent monitoring, advisory, review, and reporting activity established within the TRS Legal & Compliance division to assist TRS in fulfilling its mission and fiduciary responsibilities by complying with laws, regulations, and TRS policies, for which oversight has been assigned. The function strives to ensure, promote and support an organizational culture that builds compliance awareness into the daily business processes for TRS. TRS Compliance will accomplish this mission by monitoring business activities, policies and procedures, and by establishing an infrastructure that provides additional assurance to management that program areas are in compliance.

I. OBJECTIVES AND SCOPE OF WORK

A. Compliance Objectives

The compliance objectives of TRS Compliance include:

- Provide independent objective compliance monitoring and training services to ensure compliance with laws, regulations, and TRS policies, for which oversight has been assigned;
- Ensure the highest standards of ethical conduct through the implementation, monitoring, and periodic review of the Employee Ethics Policy, TRS Personal Trading Policy, Fraud, Waste, and Abuse Policy, Code of Ethics for Contractors, and Board of Trustees Ethics Policy;
- Identify potential areas of compliance vulnerability and risk, and assist with development, implementation of risk management, and mitigation for resolution of problematic issues, and provide guidance on how to avoid or address similar situations in the future;
- Obtain regular updates from management regarding compliance matters, and collaborate with other divisions to direct compliance issues to appropriate channels for investigation and resolution;
- Ensure that compliance issues and concerns within TRS are being appropriately evaluated, investigated, and resolved;
- Respond to alleged violations of rules, regulations, policies, and standards of conduct by evaluation, investigation, and recommending resolution;
- Review the findings and recommendations of any examinations by investment, ethics, or HIPAA oversight agencies;
- Report on a regular basis, and as directed or requested, to the Audit, Compliance, and Ethics Committee of the Board on the operation and progress of compliance efforts; and

- Ensure proper reporting of violations or potential violations to duly authorized enforcement agencies as appropriate and/or required.

B. Consulting and Advisory Objectives

The objectives of TRS Compliance's consulting and compliance services are to provide management and other division staff with assessments and advice for improving policies, procedures and practices that will advance the goals and objectives of TRS. To improve effectiveness, the objectives are assessments and advice on front-end projects so that risk may be identified and internal controls may be designed at the beginning of a project; advice or assessments may be provided on short notice, however, to assist with compliance in unexpected or last-minute situations. The objectives may also involve providing advice to TRS Contractors or other entities with which TRS has contracted. Examples of advisory services include participating in various committees in an ex-officio capacity, providing routine advice on policies, and providing input to management relevant to establishment of controls.

C. Scope

TRS Compliance helps the organization accomplish its objectives by bringing a systematic, disciplined approach to evaluate, monitor and improve the effectiveness of compliance and ethics activities. The primary scope of TRS compliance services are to establish, coordinate, and maintain the TRS Compliance program, including the Ethics Compliance program, the Investment Compliance program, and by fiscal year 2019, the HIPPA Compliance program, and to serve as a resource to staff and Trustees relating to compliance matters.

II. AUTHORITY

The TRS Compliance function operates as an organizational unit within the Legal & Compliance division. The Chief Compliance Officer reports administratively to the General Counsel and has certain direct reporting responsibility to the Executive Director and the Audit, Compliance, and Ethics Committee of the Board, as set forth in TRS policies and the Bylaws of the Board of Trustees. Section 3.1.1. of the Bylaws identifies certain responsibilities of the TRS Compliance function, including monitoring, reviewing and reporting on compliance with laws, regulations and TRS policies.

Sections 1.7(b), 9.9, and Appendix E (General Authority Resolution) of the Investment Policy Statement (IPS) sets forth the specific authority of the Chief Compliance Officer to monitor compliance with the requirements therein. It specifically authorizes the Chief Compliance Officer to require certifications regarding compliance violations; execute and deliver compliance-related disclosures, reports, filings and certifications on behalf of TRS; to develop, disseminate and collect disclosure forms to monitor policy requirements; and to use information systems and data from internal and external sources for compliance monitoring. It permits hiring external parties to obtain assistance regarding compliance monitoring, and requires the Chief Compliance Officer to participate in the determination as to whether certain violations of the IPS are material, the appropriateness of the remedy, and whether to report them to the Board.

Neither the Chief Compliance Officer nor TRS Compliance staff are authorized to trade securities, transfer funds or execute financial transactions on behalf of TRS. Compliance duties are not considered operational duties.

III. ACCESS

To fulfill the mission and objectives of the TRS Compliance function, the Chief Compliance Officer and Compliance staff, as appropriate, have unrestricted access to all TRS divisions, departments, personnel, activities, confidential and non-confidential data and records, information systems, physical property, and contractors relevant to the performance of compliance activities, subject to applicable state and federal laws. Further, the TRS Compliance function should be provided the necessary assistance of personnel in units of the organization where compliance activities are performed, as well as other specialized services from within or outside the organization. In addition, TRS Compliance should be provided timely reports from management on actions proposed and taken pertaining to compliance-related issues.

The Chief Compliance Officer may allocate resources, set frequencies, select subjects, determine scope of work, and apply the techniques required to accomplish the TRS Compliance function objectives.

The Chief Compliance Officer has free and unrestricted access to the chair of the Audit, Compliance, and Ethics Committee of the Board, and the Executive Director.

IV. INDEPENDENCE AND OBJECTIVITY

A. Organizational Placement

The TRS Compliance function operates as an organizational unit within the Legal & Compliance division and the Chief Compliance Officer reports administratively to the General Counsel. The Chief Compliance Officer also has certain direct reporting responsibility to the Executive Director, who in turn reports functionally to the Board of Trustees, and to the Audit, Compliance, and Ethics Committee of the Board. In addition, the Chief Compliance Officer may report on compliance matters to other committees of the Board. The Chief Compliance Officer is considered a Key Employee for purposes of the Employee Ethics Policy. This reporting structure provides the TRS Compliance function with independence.

The Chief Compliance Officer is also Compliance Counsel for TRS. As a licensed attorney, the Chief Compliance Officer must adhere to the Texas Disciplinary Rules of Professional Conduct. These standards are designed to result in trust, accountability, integrity and professional objectivity, among other behaviors. In addition, the Chief Compliance Officer consults the guidance issued by the Texas Ethics Commission, the Office of the Texas Attorney General, and various federal regulatory agencies overseeing financial entities.

B. Independence

In carrying out her responsibilities, the Chief Compliance Officer will:

- Ensure objectivity and independence;
- Remain free of actual or perceived conflicts of interest;
- Discharge professional responsibilities with due care, competence and diligence;
- Have access to all functions, records, property and personnel necessary to complete her responsibilities; and
- Have full and free access to the Board, the Audit, Compliance, and Ethics Committee, and the Executive Director.

To ensure independence in monitoring investment compliance, the Chief Compliance Officer does not have authority to trade securities or transfer funds on behalf of TRS.

C. Potential Impairment of Independence

The Chief Compliance Officer should discuss any potential issues regarding impairment of independence or conflicts of interest with the General Counsel or Executive Director, as necessary.

V. **RESPONSIBILITIES AND ACCOUNTABILITY**

TRS Compliance is responsible for establishing and maintaining appropriate internal controls and procedures designed to assure compliance with applicable laws, regulations, and TRS policies, and may be accountable to the General Counsel, the executive director or the Board of Trustees to:

- Establish and maintain the TRS Compliance program, which consists of monitoring, establishing and reporting on compliance with various ethics-related policies (including the Employee Ethics Policy, Board of Trustees Ethics Policy, Code of Ethics for Contractors, Fraud, Waste, and Abuse Policy, and TRS Personal Trading Policy), various investment-related policies (including the Investment Policy Statement, Securities Lending Policy, and Proxy Voting Policy), and by fiscal year 2019 various HIPAA-related policies.
- Provide interpretive guidance on the IPS.
- Establish and monitor compliance standards and procedures for TRS operations and activities within the scope of TRS Compliance functions, or as requested, to ensure adherence to applicable laws, directives from the Board of Trustees, and standard business practices; advise and inform affected personnel regarding compliance monitoring processes.
- Respond to alleged violations of rules, regulations or policies, and conduct by evaluation or recommending the initiation of investigative procedures.
- On a periodic basis, review and assess the effectiveness of the policies and procedures within the TRS Compliance program.

- Train staff on the compliance requirements of the policies within the scope of the TRS Compliance function.
- Provide input into TRS policies, procedures, and legislation developed by management.
- Participate in an advisory capacity in the planning, design, development and implementation of TRS initiatives, as related to compliance services or as requested.
- Act as a resource to TRS staff relating to compliance and regulatory matters.
- Coordinate with other divisions and offices, including Legal & Compliance, Internal Audit, Enterprise Risk Management, Operational Excellence, and Investment Management, to make recommendations for improving internal controls and risk mitigation relating to compliance at TRS.
- Participate in internal investigations, as appropriate, and advise or recommend on corrective actions.
- Interface with regulators, oversight bodies, and legislators, as appropriate.
- Interface with TRS Contractors and other third-party service or product providers.
- Coordinate and work with third-party compliance services.
- Coordinate with fiduciary counsel, as appropriate.
- Prepare and present written and oral reports to TRS management, the Audit, Compliance, and Ethics Committee, the Policy Committee, other Board committees, and Board of Trustees on compliance issues.
- Manage the TRS Ethics and Fraud Hotline.
- Coordinate with Internal Audit regarding any complaints to the State Auditor's Office.
- Report immediately any known incident of fraud in accordance with TRS' Fraud, Waste and Abuse Policy.
- Participate on applicable committees such as the Information Security Advisory Team, and the Fraud, Waste and Abuse Triage Committee.
- Participate in the TRS Risk Oversight Committee (ROC) and provide support to the development of the Enterprise Risk Management program.
- Attend Executive Committee meetings and provide updates, advice or guidance on compliance-related matters
- Attend Internal Investment Committee (IIC) meetings in the Investment Management Division.
- Participate in professional compliance, regulatory or risk management organizations by attending meetings, joining the governing boards, presenting speeches and papers, and networking with other professionals.

The TRS Compliance Charter shall be reviewed periodically, but no less frequently than every three years, and updated as required.

TAB 4

TAB 4A

QUARTERLY INVESTMENT COMPLIANCE TESTING
INVESTMENT POLICY STATEMENT (IPS), SECURITIES LENDING POLICY (SLP), PERFORMANCE INCENTIVE PAY (PIP) PLAN, WIRE
TRANSFER PROCEDURES, AND ETHICS POLICIES FOR EMPLOYEES AND CONTRACTORS
CALENDAR QUARTER ENDED DECEMBER 31, 2017, EXCEPT AS NOTED

Business Objectives	1. <u>Board Reports</u> All required information is reported to the TRS Board of Trustees	2. <u>Investment Selection and Approval</u> Investments made are within delegated limits and established selection criteria	3. <u>Other (IPS, SLP, wire transfers, other reporting)</u> Risk limits are followed for other investment programs and activities	4. <u>Ethics Policies</u> Ethics filing and reporting requirements are met
Business Risks	Board is not informed of key investment decisions and critical information	Approvals and fundings exceed delegated limits	Risks exceed Board-established tolerances or management policies and procedures	Ethics policy requirements are not filed or reported
Management Assertions	All required information is reported to the Board	Approvals and fundings are within delegated limits and made for qualified managers	Programs are within risk limits and activities follow established policies and procedures	Ethics policies and requirements are being followed
Agreed-Upon Procedures	<ul style="list-style-type: none"> Compare Board reports to IPS requirements Trace sample information included in Board reports to supporting documentation 	<ul style="list-style-type: none"> Trace investments approved by the Internal Investment Committee (IIC) to supporting documentation Compare approval limits of new investments with IPS, including Emerging Managers (EM) Obtain evidence that Placement Agent Questionnaires (PAQs) were received prior to investing 	<ul style="list-style-type: none"> Obtain evidence of IMD's reporting of managers/funds added or removed Check securities lending pool for compliance with investing guidelines Validate completeness of wires Recalculate Internal Public Markets staff's PIP alpha for the quarter ended 9/30/2017 Obtain senior management disclosure about known compliance violations 	<ul style="list-style-type: none"> Obtain evidence that employee disclosure statements were filed before the deadline Obtain evidence that contractors filed commencement of business, annual ethics compliance statements
Test Results	<ul style="list-style-type: none"> All reporting requirements were met Documentation provided support for the reports tested 	<ul style="list-style-type: none"> All investments tested were in compliance with approval limits PAQs were obtained for all investments tested One EM investment excluded non-discretionary accounts when determining AUM 	<ul style="list-style-type: none"> All policy and procedure requirements tested were met 	<ul style="list-style-type: none"> All ethics filing and reporting requirements tested were met
Management Responses	N/A	Agree	N/A	N/A

Legend: **Red** - Significant to TRS **Orange** - Significant to Business Objectives **Yellow** - Other Reportable Exception **Green** - Positive Test Result/ No Exception



Brian K. Guthrie
Executive Director

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Amy L. Barrett,
CIA, CISA, CPA
Chief Audit Executive

April 4, 2018

Carolina de Onis, TRS General Counsel

Subject: Report on Independent Testing of TRS Compliance

We have completed the **Quarterly TRS Compliance Testing** for the quarter ended December 31, 2017, as included in the *Fiscal Year 2018 Audit Plan*. The scope of this engagement included the requirements of the Investment Policy Statement (IPS), Securities Lending Policy (SLP), Employee Ethics Policy, Code of Ethics for Contractors, Wire Transfer Procedures, and Performance Incentive Pay (PIP) Plan.

We performed the procedures that were agreed to by the TRS Legal and Compliance division. These procedures include tests that supplement the current compliance monitoring procedures performed by State Street and the Chief Compliance Officer.

This agreed-upon procedures engagement was performed in accordance with generally accepted government auditing standards contained in the *Government Auditing Standards* issued by the Comptroller General of the United States.

The sufficiency of the agreed-upon procedures performed is solely the responsibility of those parties specified in this report. Consequently, we make no representations regarding the sufficiency of the procedures described in **Appendix A** either for the purpose for which this report has been requested or for any other purpose.

Our testing procedures and results are included in **Appendix A**.

We were not engaged to and did not conduct an examination, the objective of which would be the expression of an opinion. Accordingly, we do not express an opinion. Had we performed additional procedures, other matters might have come to our attention that would have been reported to you.

This report is intended solely for information and use by TRS management, the Board of Trustees, and oversight agencies, and is not intended to be and should not be used by anyone other than those specified parties. However, this report is a matter of public record and its distribution is not limited.

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We express our appreciation to management and key personnel of the Investment Management Division, Investment Accounting, and Legal Services for their cooperation and professionalism shown to us during this quarterly testing.

Amy Barrett, CIA, CPA, CISA
Chief Audit Executive

Nick Ballard, CFA, CPA
Director of Investment Audit

Rodrigo Dominguez
Investment Auditor

APPENDIX A
AGREED-UPON PROCEDURES AND RESULTS

STEP #	OBJ. #	TEST PURPOSE	TEST DESCRIPTION	TEST RESULT	MANAGEMENT RESPONSE
1	1	<p>IPS Article 1.7a - 1.7o – Obtain evidence that requirements tested were reported to Board of Trustees.</p> <p>Quarterly: investment performance, policy compliance monitoring, asset class exposures, external investments under consideration, external investment activities, liquidity positions, and consultant engagements.</p> <p>Semi-annual: outstanding derivatives, risk limits, leverage, transparency reports, Placement Agent Disclosures.</p> <p>Annual: reports include staffing, Private Markets strategy review, and Governing Boards participation.</p>	<p>Obtain information required to be reported to Board of Trustees and compare to reporting requirements per Investment Policy Statement (IPS)</p>	<p>Information required to be reported to Board of Trustees complied with IPS requirements.</p>	<p>No response required</p>

STEP #	OBJ. #	TEST PURPOSE	TEST DESCRIPTION	TEST RESULT	MANAGEMENT RESPONSE
2	2	IPS Article 1.8d – Obtain evidence that TRS complied with Chapters 806 and 807 of the Government Code relating to prohibitions on investments in Sudan and Iran, respectively.	<ul style="list-style-type: none"> • Ensure that responsible staff have updated Sudan/Iran restricted lists • Obtain evidence that TRS complied with the following requirements: (a) to notify the Comptroller’s Office and the Pension Review Board regarding holdings of restricted company securities; (b) to divest holdings; and (c) to file annual report of Sudan/Iran investment activity to the Legislature and the Attorney General 	Postponed until next quarter	No response required
3	2	IPS Article 1.3c – Obtain evidence of existence of IMD’s prudent underwriting objectives for advisor’s due diligence.	Select sample of Private Market investments approved during testing period, obtain evidence of existence of advisor’s report stating investment opportunity meets prudent underwriting standards and merits inclusion within respective portfolios.	For selected Private Markets approved investments for the quarter, confirmed that the prudence letter from the advisor was included in the Internal Investment Committee (IIC) materials.	No response required
5	2	IPS Article 7 – Obtain evidence that new investments in emerging managers meet requirements.	<p>Test sample of approved investments to determine that:</p> <ul style="list-style-type: none"> • Each is an independent private investment management firm with less than \$2 billion or has a performance track record as a firm of less than 5 years, or both 	We noted that for one new investment, the private markets fund of funds investment manager (GCM Grosvenor) excluded \$1.1 billion in non-discretionary accounts from the assets under management (AUM) test. The assets were excluded because the accounts are controlled by their respective limited partners and not by the underlying investment manager. If the non-discretionary accounts had been included, total AUM for the new investment manager would increase from \$1.5 billion to \$2.6 billion.	We agree. TRS will ensure both discretionary and non-discretionary accounts are disclosed prior to our approval. If total AUM exceeds \$2 billion, TRS will seek to implement a waiver to justify the allocation. We will implement this immediately.

STEP #	OBJ. #	TEST PURPOSE	TEST DESCRIPTION	TEST RESULT	MANAGEMENT RESPONSE
6	2	IPS Article 12 – Obtain evidence of existence of placement agent questionnaire for each new investment selected for testing and test for inclusion in summary report to the Board.	<p>For each investment selected for testing, verify that IMD obtained responses to the questionnaire.</p> <p>Obtain evidence that IMD compiled responses to the questionnaires and reported all results to the Board at least semi-annually.</p>	Each investment tested had a completed questionnaire and was included in the summary report to the Board.	No response required
7	2	IPS Appendix B – Obtain evidence that investments approved are within policy limits.	<ul style="list-style-type: none"> • Select sample of approved investments, obtain tear sheet for each, and observe the approved amounts are within authorized limits <ul style="list-style-type: none"> a) Initial allocation – .50% b) Additional or follow-on – 1% c) Total Manager Limits – 3% d) Total limit each manager organization – 6% • Obtain documentation from IMD staff that supports the calculations of the authorized limits • Inquire if any “Special Investment Opportunities” were made for the quarter 	For the sample investments tested, no manager or partner organization exceeded the authorized limits and documentation existed for IMD staff calculations of authorized limits. There were no Special Investment Opportunities.	No response required
8	2	IPS Appendix G – Obtain evidence that participation in external advisory committees or boards meet the requirement of the IPS by requesting a sample of limited partnership agreements (LPA’s).	<p>For tested investments where TRS employees serve on advisory committees, obtain evidence that:</p> <ul style="list-style-type: none"> • TRS employees do not serve in positions with general liability to third parties • Agreement is in writing and addresses limitations on capacity and fiduciary duties • The external entity’s insurance/indemnification will be primary relative to TRS • Compensation and reimbursement of expenses must be paid directly to TRS 	For the sample of investments tested, confirmed that tested requirements relating to advisory committee participation were met.	No response required

STEP #	OBJ. #	TEST PURPOSE	TEST DESCRIPTION	TEST RESULT	MANAGEMENT RESPONSE
9	3	Quarterly Compliance Certification – Obtain evidence that all known compliance violations have been reported.	Confirm with the Chief Compliance Officer that compliance certifications have been received from IMD management, Legal Investment staff, and the CIO regarding any known compliance violations occurring during the testing period.	Obtained confirmation from the Chief Compliance Officer. No compliance exceptions were identified as a result of the quarterly compliance certification.	No response required
10	3	Wire Transfers – Obtain evidence that TRS Investment Accounting’s record of processed investment funding was complete.	Obtain evidence that TRS Investment Accounting investment funding log reconciles to State Street outgoing wires log to determine if the funding log is complete and accurate.	The Investment Accounting funding log reconciled to the State Street Outgoing wires log for the period tested.	No response required
11	3	Securities Lending Policy – Obtain evidence that IMD reviews the securities lending program and performance of lender	<p>Obtain evidence from the monthly securities lending program performance reviews conducted by the TRS Asset Allocation team and the Securities Lending Agent that investments in the securities lending program comply with the following policy requirements:</p> <p>Sec 3.4. Cash collateral collective investments authorized</p> <p>Sec 3.5. Cash collateral authorized portfolio investments</p> <p>Sec 3.6. Maturity limits of cash collateral</p> <p>Sec 3.7. Portfolio maturity limits for cash collateral</p> <p>Sec. 3.8. Minimum credit ratings for cash collateral investments</p>	The securities lending program monthly reports showed that TRS collateral pool investments met the investing guidelines tested.	No response required

STEP #	OBJ. #	TEST PURPOSE	TEST DESCRIPTION	TEST RESULT	MANAGEMENT RESPONSE
12	3	Proxy Voting Policy – Obtain evidence that at least on an annual basis, the Proxy Committee shall review any voting guidelines recommended by the independent advisory service to ensure that they are appropriate for TRS.	Obtain evidence that the Proxy Committee reviewed and discussed the voting guidelines provided by the independent advisory service firm.	The Proxy Committee reviewed and discussed the voting guidelines.	No response required
13	4	Employee Ethics Policy – Obtain evidence that Key Employees filed completed Disciplinary Action Disclosure Statements.	Select a sample of TRS Key Employees, and confirm that completed Disciplinary Action Disclosure Statements were filed within 60 days of the date of employment and when any action occurs that would cause any answers on the statement to change.	All employees tested submitted completed Disciplinary Action Disclosure Statements within the timeline, as required in the Employee Ethics Policy.	No response required
14	4	Code of Ethics for Contractors – Obtain evidence that each contractor signed and returned the TRS Code of Ethics for Contractors upon commencement of business with TRS. Obtain evidence that TRS contractors annually signed the Annual Ethics Compliance Statement and filed annual expenditure reports.	Select a sample of current TRS contractors, and obtain evidence that the selected contractors signed and returned a copy of the TRS Code of Ethics for Contractors to TRS upon commencement of business with TRS and whether the contractors signed the TRS Contractor Annual Ethics Compliance Statement annually and filed annual expenditure reports.	All tested TRS contractors signed and returned a copy of the TRS Code of Conduct for Contractors upon commencement of business with TRS. All sampled TRS contractors signed the TRS Contractor Annual Ethics Compliance Statement and filed expenditure reports annually.	No response required
15	3	Performance Incentive Pay Plan (PIP) – Obtain evidence that investment performance results used in the quarterly Internal Public Markets (IPM)	Trace quarterly IPM individual component calculation spreadsheet to TRS financial performance application data and TRS custodian bank data.	There were no data, employee assignment, or formula errors included in the quarterly IPM individual component calculation spreadsheet. Thus, excess return calculations for individual portfolio managers and sector	No response required

STEP #	OBJ. #	TEST PURPOSE	TEST DESCRIPTION	TEST RESULT	MANAGEMENT RESPONSE
		<p>portfolio matches data from TRS financial applications and custodian bank and that the excess return calculations for individual portfolio managers and sector managers are correct.</p>	<p>Test whether employee assignments were approved by Senior Director in TRS IPM prior to quarter start by obtaining approval email from Senior Director in TRS IPM to Investment Operations Performance Analyst. If any assignment changes are included in the approval, compare the approved changes to the assignments in the quarterly IPM individual component calculation spreadsheet.</p> <p>Test whether formulas in the quarterly IPM individual component calculation spreadsheet are correct by recalculating investment return totals by portfolio manager and sector manager, and comparing total investment returns to returns provided by the TRS Custodian Bank.</p>	<p>managers for the IPM portfolio were correct for the quarter ended September 30, 2017.</p>	

Note: Testing procedures for the Investment Policy Statement (IPS), Securities Lending Policy (SLP), Employee Ethics Policy, Code of Ethics for Contractors, and Wire Transfer Procedures are for the activities for the quarter ending December 31, 2017. Testing procedures for the Performance Incentive Pay Plan are for the quarter ended September 30, 2017.

TAB 4B

TESTING OF PERFORMANCE INCENTIVE PAY CALCULATIONS

Plan Year Covering October 1, 2016 through September 30, 2017

TRS Internal Audit Department

Business Objectives	To accurately calculate and award performance incentive compensation amounts in accordance with the Performance Incentive Pay Plan		
Business Risks	<u>Participant Eligibility</u> <ul style="list-style-type: none"> Ineligible employees included in the calculation Wrong salary amount used Incorrect job classification used Incorrect profit center used Incorrect proration percentage used for partial plan year participants 	<u>Three Award Components</u> <ul style="list-style-type: none"> Incorrect investment performance information or benchmarks used Wrong peer group or incorrect peer performance information used Qualitative scores not supported by employee performance appraisal 	<u>Calculation Worksheets (Without testing the automated incentive pay calculation system)</u> <ul style="list-style-type: none"> Incorrect formulas included in the worksheets Mathematical errors included Manual entries or overrides included Ability to access or edit by unauthorized staff
Management Assertions	Only eligible employees and their correct classifications, salaries, and profit centers are used for incentive pay calculations	Correct award percentages of alpha (i.e., excess returns over benchmarks), peer group performance, and qualitative scores are used for calculations	<ul style="list-style-type: none"> Calculation worksheets are free from mathematical errors and protected from unauthorized access
Agreed-upon Procedures	<ul style="list-style-type: none"> Compare eligible participants provided by Organizational Excellence (OE) to the people included in the calculations, including employee name, participation date, salary, profit center, and proration percentage Verify existence of personnel action forms for participants, including the employees with status changes during the year 	<ul style="list-style-type: none"> Verify whether investment performance results for profit centers and peer group were prepared by independent parties Trace investment performance and alpha targets to source data Compare qualitative scores used in the calculation to the information provided by IMD 	<ul style="list-style-type: none"> Verify whether calculation worksheets include correct formulas, without any manual entries or overrides Verify whether individual tabs correctly support the calculation worksheet Compare the people authorized to access calculation worksheets to their roles
Test Results	<ul style="list-style-type: none"> OE certified the participant list without IMD's review. Incorrect salary and profit center information was included in the certified participant list. 	The investment performance results, alpha targets and qualitative scores were independently prepared and reviewed. No exceptions are noted.	Calculation worksheets included correct formulas. However, staff who no longer required access remained for access to the IT folder where calculation files are stored (i.e., SharePoint).
Management Comment	Management has revised procedures to include: <ul style="list-style-type: none"> Review by OE manager and IMD prior to certification; System reconciliations 	None	Access to SharePoint will be restricted to appropriate staff and the owner will verify access at the beginning of each incentive year.

Legend of Test Results: **Red** - Significant to TRS
Yellow - Other Reportable Exception
Orange - Significant to Business Objectives
Green - Positive Test Result/No Exception



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Amy L. Barrett,
CIA, CISA, CPA
Chief Audit Executive

December 14, 2017

Don Green, Chief Financial Officer

Subject: Report on Independent Testing of Performance Incentive Pay

We have completed the **Testing of Performance Incentive Pay Calculations** as included in the *Fiscal Year 2018 Audit Plan*.

We performed the procedures listed below that were agreed to by the Chief Financial Officer. These procedures include testing of participant's eligibility as well as accurate calculations of award amounts in accordance with the Performance Incentive Pay Plan ("Plan") effective for the period from October 1, 2016 through September 30, 2017. Management also agreed that any calculation differences below \$1 for any participant are not considered material and thus will not be reported.

This agreed-upon procedures engagement was performed in accordance with generally accepted government auditing standards contained in the *Government Auditing Standards* issued by the Comptroller General of the United States.

The sufficiency of the agreed-upon procedures performed is solely the responsibility of those parties specified in this report. Consequently, we make no representations regarding the sufficiency of the procedures described in **Appendix A** either for the purpose for which this report has been requested or for any other purpose.

Our testing procedures and results are included in **Appendix A**.

We were not engaged to and did not conduct an examination, the objective of which would be the expression of an opinion. Accordingly, we do not express such an opinion. Had we performed additional procedures, other matters might have come to our attention that would have been reported to you.

This report is intended solely for information and use by TRS management, the Board of Trustees, and legislative oversight agencies, and is not intended to be and should not be used by anyone other than those specified parties. However, this report is a matter of public record and its distribution is not limited, except as protected by statute.

* * * * *

We express our appreciation to management and key personnel of the Investment Accounting, Human Resources, Investment Management Division, and State Street Bank for their cooperation and professionalism shown to us during this testing.

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Chief Audit Executive

Hugh Ohn, CIA, CPA, CFA, FRM
Director of Investment Audit Services

Rodrigo Dominguez
Investment Auditor

Simin Pang, CIA, CISA
Senior IT Auditor

APPENDIX A

AGREED-UPON PROCEDURES AND RESULTS (Testing of Performance Incentive Pay Calculations)

Note: Management did not use the automated incentive pay system (i.e., Iconixx) for calculations this year, and thus our testing was performed on the calculation worksheets built in Excel although some of the testing procedures in the table below refer to the Iconixx system.

No	Test Area	Testing Procedure	Test Result	Management Comment
I. Testing of Participant Eligibility				
1.	<u>Participant Eligibility</u> (List of Eligible Participants)	Run a report from the automated Performance Incentive Pay (PIP) system (i.e., Iconixx) for the list of all eligible participants for the current plan year. Obtain from Organizational Excellence (OE – formerly called Human Resources) the SSRS Report generated from the USPS system. Compare these two reports to determine whether the eligible participants match.	No exceptions identified.	No comment required.
2.	<u>Participant Eligibility</u> (Confirmation of Eligible Participants)	Confirm that the final list of eligible participants (generated from either Iconixx or USPS) has been reviewed by IMD Director of Professional Development and/or Investment Management Committee members. Also confirm that OE certified to the Executive Director (ED) in writing.	OE certified the master Participants List in writing to the ED. However, IMD’s review of the participant list was not obtained prior to sending to ED.	Management revised operating procedures to include reviews by OE manager and IMD prior to certifying the participant list to the ED.
3.	<u>Participant Eligibility</u> (Participant Status Changes)	From the final list of eligible participants, select sample employees, including the ones with status changes (e.g., added, promoted, or transferred), obtain personnel action forms for these sample employees, and determine if information in personnel action form provides support for the status changes.	No additional exceptions identified but confirmed the exceptions noted in Procedures #4, #6, and #8 below.	No comment required.
4.	<u>Participant Eligibility</u> (Hire Date and Participation Date)	Compare the participant report from Iconixx with the participant information obtained from OE records for each employee for the following columns: <ul style="list-style-type: none"> • Hire date • Participation/Participant date Verify that: (a) all eligible participants are included in Iconixx and	One participant’s participation date was incorrect. However, this incorrect date had no impact on the award amount. Management subsequently made this correction.	See comment in #2 above.

No	Test Area	Testing Procedure	Test Result	Management Comment
		(b) Iconixx does not include any ineligible participants.		
5.	<u>Participant Eligibility</u> (Proration by Participation Date)	Recalculate the proration percentage (shown in Iconixx) to verify whether the correct percentage (e.g., 100%, 75%, 50%, or 25%) is used for each participant based on the participation date.	No exceptions identified.	No comment.
6.	<u>Participant Eligibility</u> (Proration by Profit Centers)	For the participants with proration percentages between different IMD profit centers, verify whether those proration percentages are correct in Iconixx based on the information provided by OE or OE system.	Two participants' profit centers assigned were incorrect. Management subsequently corrected the profit centers and thus the final award amounts for these employees were correct.	See comment in #2 above.
7.	<u>Participant Eligibility</u> (Reasonableness Checks on Position and Profit Center)	Quickly scan the list of participants to see if each participant's incentive compensation position and his/her assigned profit center appear to be correct based on Investment Audit Team's general knowledge of IMD.	No exceptions identified.	No comment required.
8.	<u>Participant Eligibility</u> (Salary Information)	Compare each participant's salary information (included in Iconixx) with the Financial Reporting database or OE information to verify if they match.	The same participant noted in Procedure #4 above has also an incorrect base salary amount. Management subsequently corrected the amount and thus the final award amount for this employee was correct.	Management revised operating procedures to require reconciliation of participant's salary information between OE system and PIP calculation system.
9.	<u>Participant Eligibility</u> (Maximum Award Opportunity)	Compare each participant's maximum incentive award opportunity (MAO) percentage information (included in Iconixx) with the information provided by OE the maximum and check the formulas included in the cells to determine if each participant's MAO amount was correctly calculated.	No exceptions identified.	No comment required.
10.	<u>Participant Eligibility</u>	Generate from Iconixx a list of participants who were terminated and type of termination during the current	No exceptions identified.	No comment required.

No	Test Area	Testing Procedure	Test Result	Management Comment
	(Terminated Employees)	plan year. Compare the list to the information provided by OE records to determine whether terminated employees are not included in the current year's award calculation.		
II. Testing of Three Award Components (Benchmark, Peer and Qualitative)				
11.	<u>Three Award Components</u> (Investment Return Information)	Obtain investment return information (for both one-year and three-years) broken down by IMD profit centers as of September 30, 2017, prepared by State Street.	No exceptions identified.	No comment required.
12.	<u>Three Award Components</u> (State Street's Investment Return Calculations)	Contact and/or meet with State Street representative in charge of TRS profit center performance calculations to confirm that investment returns for IMD profit centers were independently calculated.	No exceptions identified.	No comment required.
13.	<u>Three Award Components</u> (Investment Accounting's Checks on Investment Returns by Profit Centers)	Contact Director of Investment Accounting to confirm that he has completed comparison of PIP investment performance results (for select profit centers) with monthly State Street investment performance report ended 9/30/2017. Obtain evidence of his comparisons.	No exceptions identified.	No comment required.
14.	<u>Three Award Components</u> (Review of Investment Returns)	Contact IMD Investment Management Committee and/or Investment Operations to confirm whether they reviewed State Street's investment performance information for reasonableness.	No exceptions identified.	No comment required.
15.	<u>Three Award Components</u> (Alpha by Profit Center)	Trace the following investment performance numbers for each IMD profit center (for both one-year and three-years): <ul style="list-style-type: none"> Actual performance numbers to State Street's investment performance report Alpha target numbers to Addendum A of the Plan document Recalculate alpha for each profit center to determine whether it was accurately calculated.	No exceptions identified.	No comment required.
16.	<u>Three Award Components</u> (Performance)	Trace each profit center performance allocation percentage to the Addendum A of the Plan document to verify	No exceptions identified.	No comment required.

No	Test Area	Testing Procedure	Test Result	Management Comment
	Allocation among Profit Centers)	whether correct allocation percentages are used in the calculation worksheet.		
17.	<u>Three Award Components</u> (Internal Public Markets staff's Performance Attribution)	Trace performance numbers for each portfolio manager and sector analyst of Internal Public Markets to the performance summary prepared by Investment Operations (and tested by Internal Audit as part of Quarterly TRS Compliance Testing)	No exceptions identified.	No comment required.
18.	<u>Three Award Components</u> (Benchmark Alpha)	Trace each participant's alpha earned on benchmarks used in Iconixx to the information obtained from State Street to verify whether the correct earned-percentage number of the appropriate profit center was used for each participant's award percentage.	No exceptions identified.	No comment required.
19.	<u>Three Award Components</u> (Peer Group Performance)	Obtain a copy of the Trust Universe Composite Services (TUCS) report and trace Peer Group median performance numbers (for both one-year and three years) of Total Trust, Private Equity, and Real Assets to this report.	No exceptions identified.	No comment required.
20.	<u>Three Award Components</u> (Peer Group Performance – Trading Group)	Obtain peer group median performance information on TRS Trading Group from the report/summary provided by ITG.	No exceptions identified.	No comment required.
21.	<u>Three Award Components</u> (Peer Group Alpha Targets)	Compare alpha target numbers of the Total Trust, Private Equity, and Real Assets to the Addendum B of the plan document. Also, compare the performance allocation percentages among profit centers to the Addendum B of the Plan document to determine whether they match.	No exceptions identified.	No comment required.
22.	<u>Three Award Components</u> (Peer Group Alpha)	Recalculate whether excess returns from the Peer Group alpha targets are accurately calculated for each profit center.	No exceptions identified.	No comment required.
23.	<u>Three Award Components</u> (Peer Group Earned Percentages)	Trace peer group earned percentage of each participant to the information in Iconixx to verify whether correct earned percentage number of the appropriate profit center was used for each participant's award percentage.	No exceptions identified.	No comment required.
24.	<u>Three Award Components</u>	Obtain information about the policies and procedures (P&Ps) for producing	No exceptions identified.	No comment required.

No	Test Area	Testing Procedure	Test Result	Management Comment
	(Qualitative Award)	Qualitative Award scores for participants. Interview IMD managers and records to verify whether P&P were followed.		
25.	<u>Three Award Components</u> (Qualitative Award)	Obtain final Qualitative Award score for each participant and trace it to Iconixx to determine whether each person's percentage matches.	No exceptions identified.	No comment required.
26.	<u>Three Award Components</u> (Weight Used for Each of the Three Components)	Check the percentage numbers in Iconixx to determine whether the percentage of MAO earned for each participant is correctly calculated (by using the weights of 50% for passive award percentage, 30% for peer group award percentage, and 20% qualitative award percentage).	No exceptions identified.	No comment required.
27.	<u>Three Award Components</u> (Total Award Amount)	Generate reports in Iconixx which show all award amounts for PIP participants for the plan year. Compare each person's award amount with the amount calculated in the Excel calculation worksheet to determine if they match. If they do not match, identify reasons for the discrepancies, including from which components (passive performance, peer performance, or qualitative scores) these discrepancies resulted.	No exceptions identified.	No comment required.
28.	<u>Three Award Components</u> (Deferred Amounts from Prior year)	Obtain from OE or Payroll prior year's payment amount and deferred amount (i.e., 50% of the award amount) for each participant. Compare each participant's deferred amount with the remaining payout amount in Iconixx and the calculation worksheet to verify if they match, except for the prior year participants who have been terminated.	No exceptions identified.	No comment required.
29.	<u>Three Award Components</u> (Current Year Payout Amounts)	Check Iconixx to determine whether correct payout amount is calculated for each active participant (by adding the 50% of the current year's award amount to the remainder of the prior year's award amount).	No exceptions identified.	No comment required.
30.	<u>Three Award Components</u> (IMD Review of Award Amounts)	Confirm that Investment Accounting sent the preliminary PIP award amounts to the IMD (e.g., Investment Management Committee members) for review prior to finalizing them.	No exceptions identified.	No comment required.

No	Test Area	Testing Procedure	Test Result	Management Comment
III. Testing of Automated System, including Access				
31.	<u>Calculation Worksheets</u> (Independent Preparation of Source Data)	Confirm that information uploaded into Iconixx has been separately prepared and reviewed by responsible groups, such as OE, State Street, IMD and Investment Accounting.	No exceptions identified.	No comment required.
32.	<u>Calculation Worksheets</u> (Access to SharePoint Project Folder)	Contact Help Desk to obtain the list of people authorized to access the PIP calculation folder of the TRS Cross-Functional Projects in SharePoint and verify if people have appropriate level of access based on their job duties. Contact a sample of authorized users and observe their access to the folder based on the list. Contact a sample of non-authorized users and observe to confirm they can't access to the system. For example, none of the IMD employees covered by the PIP should have the right to edit (e.g., making changes and saving them) the files included in this folder.	Calculation worksheets included correct formulas. However, staff who no longer required access remained for access to the IT folder where calculation files are stored (i.e., SharePoint). Subsequently, management reviewed the current access list and properly removed or modified individual's access levels.	Going forward, access to the SharePoint site that contains sensitive data will be restricted to only appropriate staff. The SharePoint owner will also verify security access to the folder at the beginning of each incentive year.
33.	<u>Access Testing of Automated PIP System</u>	Generate a report on the list of users (includes privilege user accounts such as administrator accounts) in Iconixx, including the role assigned (role name & Description), email address (only TRS email address allowed?) start date, end date, creation date, change date, account status, role start date, role end date, and role status. Assess whether each active user's (including privilege account user) access level is appropriate for their job responsibilities. Assess whether terminated employee's account and role are disabled timely. Review process of the system user access list. Contact a sample of authorized and unauthorized users to test their access to the system. Testing security controls over the Iconixx. Such as single sign-on function is disabled, auto-log off users due to inactivity, auto-lock accounts	NA – Iconixx was not used for this year's calculations.	No comment required.

No	Test Area	Testing Procedure	Test Result	Management Comment
		after certain times of failed login, password reset process, and system log to monitor all users activities.		
34.	<u>Limited Testing of Automated PIP System</u> (Accuracy of Data Inputs)	Generate reports in the automated system (i.e., Iconixx) which show all data inputs used in the PIP award calculations and compare them to the hard copy reports to verify whether accurate inputs were used for PIP award amount calculations in the system.	NA - Iconixx was not used for this year's calculations.	No comment required.

TAB 4C

INVESTMENT PERFORMANCE CALCULATIONS

Year ended September 30, 2017

TRS Internal Audit Department

Business Objectives	Investment returns are calculated accurately, completely, and consistently by State Street (SSB)	Investment returns are reasonable, timely, and explainable (performed by IMD and Aon)	IT systems and data are protected and produce accurate, complete and reliable information
Business Risks	<ul style="list-style-type: none"> Miscalculated investment returns due to errors Investment returns calculated with incomplete or inconsistent data Portfolios or accounts aggregated into wrong policy asset classes 	<ul style="list-style-type: none"> Miscalculated returns neither detected nor corrected timely Returns inconsistent with portfolio strategies or asset allocations Returns not reported completely or timely 	<ul style="list-style-type: none"> Inappropriate or unauthorized logical or physical access Insecure storage or transmission of confidential data Unavailability of critical data
Management Controls	<ul style="list-style-type: none"> Review by multiple parties Third-party pricing sources Daily and monthly review of performance calculation 	<ul style="list-style-type: none"> TRS approval required for new account setup Reasonableness checks by IMD staff and Aon 	<ul style="list-style-type: none"> IT policies and procedures at SSB including user access, data security, and business continuity
Controls Tested	<ul style="list-style-type: none"> Roll-up of accounts to correct policy asset class Daily & monthly checklists Reconciliation of return data to accounting data Calculation of 9/2017 return 	<ul style="list-style-type: none"> Approval of account setup and termination Comparison of investment results reported by IMD staff and consultant to TRS Board of Trustees 	<ul style="list-style-type: none"> User access approval, termination, and change process Independently audited IT general controls report for the period under audit
Results	No significant matters. We identified one opportunity to enhance controls, as described below.	Controls are operating effectively to achieve business objective.	No significant matters. We identified one opportunity to enhance controls, as described below.
Recommended Actions	Refresh daily data on online portal to ensure individual components add up to aggregate.	None	Implement user access review and enhance controls over user access in termination and access change areas.
Management Responses	Agree. SSB will implement reviews of online portal data to ensure all daily data is in line with the final monthly data by 4/30/18.	N/A	Agree. IMD will notify SSB of changes to user access needs and will implement semi-annual user roster review process by 9/30/18.

Legend of Results: Red - Significant to TRS Orange - Significant to Business Objectives
Yellow - Other Reportable Issue Green - Positive Finding or No Issue



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Chief Audit Executive

March 31, 2018

Audit, Compliance and Ethics Committee, Board of Trustees
Brian Guthrie, Executive Director

EXECUTIVE SUMMARY

We have completed the audit of Investment Performance Calculations, as included in the *Fiscal Year 2018 Audit Plan*. Business objectives related to investment performance measurement and reporting are as follows:

- Investment returns are calculated accurately, completely, and consistently for Investment Policy and Performance Incentive Pay purposes (performed by Performance Measurement Service Provider, State Street).
- Investment returns prepared by performance measurement service provider are reasonable, timely, and explainable (performed by TRS Investment Management Division).
- IT systems and data used to prepare investment performance are protected and produce accurate, complete and reliable information.

Results of our tests indicated that management controls are operating effectively to achieve the above business objectives. However, we identified opportunities to improve controls related to the preparation and review of investment returns. Specifically, we recommend that: (a) State Street implement a control to refresh daily data loaded to MyStateStreet portal to ensure individual components add up to the aggregate; and (b) IMD work with State Street to ensure that user access to TRS investment data is appropriate for all users. Neither of the issues associated with these recommendations is considered significant.

Results of our procedures are presented in more detail in the **Results and Recommendations** section. The audit objective, scope, methodology and conclusion are described in **Appendix A**.

BACKGROUND

Performance measurement is the process of calculating the rate of return of an investment portfolio, a manager, an asset class, or a fund. The goal of performance measurement is the calculation of investment return and risk stemming from the periodic change in market value of portfolio positions and transactions made into and within a portfolio, for use in the evaluation of historical fund or manager performance.

Performance measurement quantifies how much return an organization earned. Performance measurement is a backward-looking, or *ex-post*, process, although the results are used in making forward-looking, or *ex-ante*, decisions. With performance measurement, an organization measures the past but it is also interested in forecasting future risk and return, to some degree by using past results and observations as a guide.

The Importance of Accurate Measurement and Reporting of Investment Performance

Accurate measurement and reporting of investment performance are important in asset management for a few reasons. First, investment performance is used as a measure of a fund's or portfolio's progress toward investment goals and objectives. By measuring and comparing with target rates of return, an organization can assess how well a portfolio or fund is performing. Second, results of investment performance are used to evaluate performance of a portfolio manager or an investment program. For this purpose, investment returns are calculated and compared to the manager's or fund's strategy (which is usually represented by either performance benchmarks or a peer group.) Third, performance results provide input for future asset allocation and manager selection or termination decisions. Therefore, inaccurate measurement or reporting of investment results could lead to wrong or erroneous asset allocations or manager selection or termination decisions.

Investment Performance Calculations and Reporting Process at TRS

At TRS, the performance calculation and reporting process begins with the Board of Trustees' (Board) adoption of the Investment Policy Statement (IPS). The IPS not only establishes target allocations for specific asset classes, but also delegates investment responsibilities to Investment Management Division (IMD) staff. Based on this delegation, IMD staff internally manages assets or hires external managers to invest some of the TRS assets. The internal and external transactions are accounted for by an external performance measurement service provider (i.e., State Street) who independently values TRS assets and prepares investment performance reports on a daily basis. Daily investment results are linked to provide weekly and monthly investment performance reports. Monthly investment performance reports are in turn linked to produce quarterly, and annual investment performance reports. These performance reports are reviewed by Investment Operations staff for reasonableness before being finalized to be reported to the Board. These investment results are formally presented to the Board by a Board investment consultant (i.e., Aon Hewitt) on a quarterly basis. The high-level processes for investment performance measurement and reporting are summarized in the process map in **Appendix B**.

As specified in the IPS, investment performance for TRS is reported at three different levels as follows: (a) individual asset classes, including Emerging Market Equity, Absolute Return Assets, and Real Assets; (b) three major asset classes (i.e., Global Equity, Stable Value, and Real Return); and (c) total fund.

State Street's Investment Return Calculation Methodology

As an independent performance measurement service provider for TRS, State Street calculates investment rates of return based on daily valuation of securities TRS holds. The return for the portfolio is computed by determining the value added for that day, or change in market value adjusted for cash flows divided by day's beginning market value. Therefore, the daily return calculation formula is as follows:

$$\text{Return} = \frac{[(\text{Ending Market Value} - \text{Beginning Market Value} - \text{Net Cash Flows}) / \text{Beginning Market Value}] * 100}{}$$

Daily returns are geometrically linked to produce time-weighted monthly returns. Monthly returns are geometrically linked to produce quarterly and annual returns, and so forth. As of September 30, 2017, the number of TRS portfolios (or accounts) maintained at State Street was 795.

BUSINESS OBJECTIVES, RISKS, AND CONTROLS

For the audit of Investment Performance Calculation, we obtained information about the following three business objectives, as well as the related risks and the controls management established to mitigate these risks:

Business Objective	Business Risks	Management Controls	Control tested
1. Investment returns are calculated accurately, completely, and consistently for investment policy and performance incentive pay purposes (performed by performance measurement service provider, State Street)	(1) Portfolios or accounts are aggregated into wrong policy asset classes or profit centers as part of investment return calculations (i.e., aggregation risk related to accuracy assertion)	<ul style="list-style-type: none"> A) TRS approval required for a new account setup, modification, or removal of an existing account at State Street through New Fund Directional form or Termination Directional form B) Semi-annually TRS will review the list of accounts, and perform account maintenance as appropriate for futures, swaps reallocation, invested to total and world equity reallocation. C) Mapping of TRS accounts to policy asset classes and profit centers D) State Street’s market value report for policy asset classes and PIP profit centers E) Reconciliation between accounting IT system and performance IT system and TRS investment holdings; research and update exceptions. Analysis required for exceptions exceeding the agreed-upon threshold (e.g., +-10%) F) State Street’s internal quality control check G) Use of standardized checklists for daily and monthly preparation of investment performance H) IMD Performance Team’s review 	<ul style="list-style-type: none"> A) Yes B) Yes C) Yes D) Yes E) Yes F) No - walkthrough G) Yes H) No
	(2) Investment returns are calculated based on incorrect values of TRS investment holdings (i.e., valuation risk related to accuracy assertion)	<ul style="list-style-type: none"> A) Use of third-party pricing sources B) External validation of accounting system (e.g., SOC1 report) C) Reconciliation between accounting IT system and performance IT system, and TRS investment holdings; research and update exceptions. Analysis required for exceptions exceeding the agreed-upon threshold (e.g., +-10%) D) State Street’s internal quality control review E) Use of standardized checklists for daily and monthly preparation of investment performance 	<ul style="list-style-type: none"> A) Yes B) Yes C) Yes, see 1.1.E D) No E) Yes, see 1.1.G
	(3) Investment returns are not prepared in accordance with industry performance calculation standards or agreed-upon calculation methodology (i.e., calculation methodology risk related to accuracy assertion)	<ul style="list-style-type: none"> A) Policies on investment return calculation methodologies B) Relevant contract provisions C) Service Level Agreement D) State Street’s internal quality control check E) Reasonableness review by IMD Performance Team F) Aon Hewitt checks G) On a monthly basis, State Street will deliver a monthly plan level attribution report by investment policy asset class which will be reviewed by TRS. 	<ul style="list-style-type: none"> A) Yes B) Yes C) Yes D) No E) See 2.1.A and 2.1.B F) See 2.1.C and 2.2.A G) No. Outside of scope H) Yes

Business Objective	Business Risks	Management Controls	Control tested
		H) State Street will provide a daily reconciliation of the ISP accounts showing all underlying sleeves rolling up to the master market facing accounts <ul style="list-style-type: none"> a. Daily b. Monthly c. Invested to total I) For Custom Security Classification Hierarchy, TRS will review the classifications of securities and advise on changes as appropriate on a monthly basis J) Fees paid by TRS on behalf of managers (ex: legal and research) are charged to fund “expense” accounts and reduce calculated performance.	I) No J) Yes
	(4) Wrong performance benchmarks are used or benchmark returns are incorrectly calculated (i.e., benchmark risk related to accuracy assertion)	A) Board consultant’s review of TRS’ selection of benchmarks B) IPS specifying benchmarks for asset classes C) PIP Plan specifying benchmarks for profit centers D) Independent sourcing of benchmark data by State Street E) IMD Performance Team obtaining benchmark performance data from third parties F) Aon Hewitt obtaining benchmark performance data from third parties	A) No. Outside of scope B) Yes C) Yes D) No E) No F) No.
	(5) Investment returns are calculated with incomplete TRS accounts, or missing data, or double-counted data (i.e., data risk related to completeness assertion)	A) Mapping of TRS accounts to policy asset classes and profit centers B) State Street’s market value report for PIP profit centers C) State Street internal quality control check D) Use of standardized checklists for daily and monthly preparation of investment performance E) Reasonableness check on Investment performance by IMD Performance Team F) Automatic data load wherever possible and manual updates of data is flagged for approval. G) Special checks for backdated transactions, asset transfers and corporate actions	A) Yes, see 1.1.C B) Yes, see 1.1.D C) No (too broad) D) Yes, see 1.1.G E) Yes, see 2.1.B F) Yes, see objective 3. G) Yes
	(6) Investment returns are not calculated or reported in a consistent manner from one period to another (i.e., calculation or reporting risk related to consistency assertion)	A) State Street internal quality control check B) State Street’s day-to-day value/performance comparison C) Review by multiple parties (e.g., State Street, IMD, Aon Hewitt) and multiple reports issued on investment performance	A) No (too broad) B) Yes, see 1.1.C, 1.1.D, 1.1.F, and 1.1.G. C) Yes
	(7) Different investment returns are reported for the same period in different reports, such as quarterly Board reports	A) State Street internal quality control check B) Review by multiple parties (e.g., State Street, IMD, Aon Hewitt) and multiple reports issued on investment performance C) Reports stored at central location at State Street and same location is used for all parties. Restricted access to the FTP location to authorized users only.	A) No (too broad) B) Yes, see 1.1.6 C) Yes, see 3.2.C

Business Objective	Business Risks	Management Controls	Control tested
	and monthly Transparency Report (i.e., reporting risk related to consistency assertion)		
	(8) Investment performance information is not prepared or reported in a timely manner	<ul style="list-style-type: none"> A) Agreed-up accounting and reporting deadlines between TRS and State Street for both unaudited and audited returns (daily returns) B) Availability of data in MyStateStreet C) State Street internal quality control check D) Specific timelines established for investment return calculations E) Monthly reporting deadlines for IMD Management Committee and quarterly reporting deadlines for Board meetings F) State Street will communicate notable delays via email to TRS Help Desk for communication to TRS users. G) Agreed timelines with State Street for modifications to existing aggregate composition or new aggregate construction will be reviewed and addressed in a timely manner H) TRS' managers will send performance results to State Street by agreed deadline each month. TRS will advise all external IM's of reconciliation deadlines. I) Annually, TRS will define due dates of the reporting required of State Street. J) State Street will provide final audited performance results as of September 30th in accordance with the TRS Incentive Compensation Plan for their use in calculating their annual Incentive Compensation 	No. Timing is not considered a key control. Based on our previous experience and current year inquiry with IMD division, reports from SSB are received on a timely basis. We are not aware of any issues related to data and/or reports being late. Timing was scoped out.
	(9) Investment returns are miscalculated or misreported due to human errors, mistakes, or fraud (i.e., operational and fraud risk)	<ul style="list-style-type: none"> A) Use of an independent third-party service provider for calculation of investment returns (i.e., State Street) B) Segregation of duties, including supervisory review and approval, at State Street C) IT system controls at State Street <ul style="list-style-type: none"> a. Access to FTP site is restricted and reviewed periodically. D) Review and oversight of investment returns by multiple parties E) Written policies and procedures F) Staff training 	<ul style="list-style-type: none"> A) Yes B) Yes, see 1.1.G C) Yes, see 3.2.C D) No E) Yes, see 1.6.C F) No
2. To ensure that investment returns prepared by performance measurement	(1) Miscalculated or misreported investment returns (by performance measurement service provider) are neither	<ul style="list-style-type: none"> A) Preparation of daily investment returns (for internal and external public portfolios) by IMD Performance Team B) IMD Performance Team's comparison of investment returns with State Street's C) Review and reporting of investment returns by consultant (i.e., Aon Hewitt) D) Policies to follow up on material discrepancies in investment returns E) Annually, define due dates of the reporting required of State Street 	<ul style="list-style-type: none"> A) Yes B) Yes C) Yes, see 1.6.C D) Yes E) No

Business Objective	Business Risks	Management Controls	Control tested
service provider are reasonable, timely, and explainable	detected nor corrected in a timely manner		
(performed by IMD and Aon Hewitt)	(2) Miscalculated benchmark returns are neither detected nor corrected prior to reporting	<ul style="list-style-type: none"> A) Use of benchmark performance data from third parties (by State Street, IMD, and Aon Hewitt) B) Reasonableness checks by IMD Performance Team C) Reasonableness checks by Aon Hewitt D) Perform an semi-annual review in July of the inventory of benchmarks to determine whether they continue to be actively utilized or can be retired as needed 	<ul style="list-style-type: none"> A) Yes B) No C) No D) Yes
	(3) Investment returns at aggregate asset levels are not consistent with portfolio or account level performance, and vice versa	<ul style="list-style-type: none"> A) Asset allocation, including benchmarks, included in the Investment Policy Statement B) Mapping of TRS accounts to policy asset classes and profit centers C) TRS approval required for new account setup at State Street D) No direct access allowed for TRS staff to change account setup at State Street E) State Street’s market value report for policy asset classes and PIP profit centers F) IMD Performance Team’s knowledge of portfolio manager’s investment strategies and tactical asset allocation decisions G) IMD will review the classifications of securities and advise on changes as appropriate on a monthly basis H) Perform a review of the inventory of aggregates to determine whether they continue to be actively utilized or can be retired I) Semi-annually IMD will review the list of accounts, and perform account maintenance as appropriate. 	<ul style="list-style-type: none"> A) Yes B) Yes, see 1.1.C C) Yes, see 1.1.A D) Yes, see 3.1.F E) Yes, see 1.1.D F) No G) No H) No I) Yes, see 1.1.B
	(4) Investment returns are not prepared or reported in a timely manner (i.e., by IMD)	<ul style="list-style-type: none"> A) Timelines established for internal investment return calculations B) Monthly reporting deadlines for IMD Management Committee 	<ul style="list-style-type: none"> A) No B) No
	(5) Investment performance results are not consistent with portfolio strategies or tactical asset allocations and therefore, could not be explained	<ul style="list-style-type: none"> A) Reasonableness checks by IMD Performance Team B) IMD Performance Team’s knowledge of portfolio manager’s investment strategies and tactical asset allocation decisions C) Performance attribution analysis performed by IMD Performance Team D) Monthly performance review by Investment Management Committee E) Maintain and provide State Street all relevant documentation (Incentive Compensation Plan) and direction regarding periodic changes and updates made to the Plan F) For IPS changes, State Street will perform a system gap analysis to compare the capabilities of testing to the proposed guidelines set forth in the new IPS. 	Not within the scope of this audit.

Business Objective	Business Risks	Management Controls	Control tested
3. IT systems and data used to prepare investment performance are protected and produce accurate, complete and reliable information	(1) Inappropriate or unauthorized logical or physical access	A) TRS State Street's Service Level Agreement and Corporate Information Security Policy B) New user access control C) Administrative user access controls over create/modify/delete 1) user accounts, 2) user roles, and/or, 3) user access permissions D) Periodic user access reviews E) Timely access removal F) Read-only access is allowed for TRS staff to State Street IT systems G) SOC report, including exceptions noted	A) Yes B) Yes C) Yes D) Yes E) Yes F) Yes G) Yes
	(2) Insecure storage or transmission of confidential data	A) State Street's data protection policy B) Network security policy C) Access to FTP site is restricted and reviewed periodically.	A) Yes B) Yes C) Yes
	(3) Unauthorized, incomplete, or unintended system or database changes	A) System development or upgrade methodology B) Changes to SSB critical applications or databases are documented and appropriately approved by SSB management prior to implementation in production C) Policy on segregation of duties related to system changes (e.g., development, test, production) D) Quality assurance testing required before system changes. Evidence of testing is retained E) SOC report, including exceptions noted	A) No B) Yes C) Yes D) Yes E) Yes, see 3.1.G
	(4) Unavailability of critical data required by business or inability to timely resume operations timely, including disruption from disasters or emergencies	A) SSB enterprise-wide business continuity management and disaster recovery (BCP/DR) plan is reviewed on at least an annual basis. B) SSB enterprise-wide business continuity management and disaster recovery plan is tested on at least an annual basis. C) SOC report, including exceptions noted	A) Yes B) Yes C) Yes, see 3.1.G

RESULTS AND RECOMMENDATIONS

OVERALL RESULTS

Based on audit results, we determined that management controls are operating effectively at the external performance measurement service provider (i.e., State Street) and TRS to achieve business objectives related to the measurement and reporting of investment returns for the TRS policy asset classes. No significant issues were identified. The positive test results as well as opportunities for management to improve controls are described below.

Key controls, including the use of third-party pricing sources, mapping of TRS portfolios, use of standard checklists, and daily/monthly review of investment return calculations, are established at State Street. State Street's calculation methodology also appears to follow industry standards in measuring investment returns for TRS portfolios. In addition, TRS Investment Operations staff performed reasonableness checks on the investment performance results prepared by State Street to ensure that investment returns are reasonable, timely, and explainable. As a result of effective controls established at State Street and TRS, investment performance for TRS assets is calculated and reported accurately, completely, and consistently.

POSITIVE RESULTS

Controls for Accurate Calculation of Investment Returns

- Independent third-party agreed-upon pricing sources are utilized to value securities
- Performance calculations at the asset class level follow the recognized industry methodology in terms of the calculation of daily returns and the linking of daily returns to obtain monthly returns
- Account level returns correctly roll up to policy asset class returns.
- Daily and monthly checklists are completed. This process allows for timely recognition and corrections of errors
- State Street performs reasonableness checks on the rates of returns calculated for both the Investment Policy and Performance Incentive Pay
- State Street's Performance Group obtains data from the accounting module
- State Street's documentation shows that investment performance calculations are clear and follow the Service Level Agreement with TRS
- IT general controls policies and procedures reviewed by TRS Internal Audit appear to have been effectively designed

Controls for Ensuring Reasonableness of Investment Returns

- IMD Investment Operations staff performs reasonableness checks on the daily and monthly returns calculated by State Street. This allows for timely recognition and corrections of errors, if any
- New portfolio accounts are approved by TRS before State Street set them up within the information system.

- Investment Operations staff follows up with State Street to resolve significant discrepancies in investment returns
- Preliminary investment performance results are distributed to portfolio managers for their review
- An investment consultant (Aon Hewitt) independently presents investment returns to the Board on a quarterly basis

SIGNIFICANT RESULTS

No significant issues and recommendations were identified. However, we identified the opportunities to improve controls related to the preparation and review of investment returns and user access.

OTHER REPORTABLE RESULTS

1. State Street should implement a control to refresh daily data loaded to MyStateStreet portal to ensure individual components add up to the aggregate.

Data is typically released by State Street to the online MyStateStreet portal as updates are made and then those results are reviewed by State Street prior to finalizing reporting. Controls are in place to ensure the final monthly results match accounting data and roll-up appropriately into aggregates, for both State Street's Performance and Analytics system and data available online via MyStateStreet portal. However, there is currently a control gap ensuring that the online sum of all daily data matches the final monthly aggregated results. When old data from MyStateStreet portal was used for one day out of one month tested, monthly return differences of three to nine basis points were identified. While there is no effect on monthly and longer investment returns reporting, erroneous decisions could be made if daily data from MyStateStreet portal was utilized. Performance data reported to the Board at the December 2017 meeting was correct and State Street uploaded the correct version of the daily data to MyStateStreet portal once notified by TRS. In addition, State Street performance team will perform an analysis on all the MyStateStreet portal daily data for October 1, 2016 to September 30, 2017 to make sure all the daily data is updated.

Recommendation

State Street should implement a control of reconciling the sum of all daily data to the final monthly results for all aggregates.

Management Response

We agree. In the SSB Performance system, the daily performance data is used to calculate the final monthly performance results. In the above, internal audit noted that while the updated daily performance data was unavailable on the MyStateStreet portal, the daily data within the performance system was accurate and the final monthly performance results were reported appropriately. Effective 4/30/2018, State Street will run a process to ensure that the final daily performance data is posted to the MyStateStreet portal and is consistent with monthly results.

2. IMD should work with State Street to enhance controls over user access to TRS investment data that is appropriate for all users.

2.1. State Street System Access User Roster, which includes both TRS employees and TRS third parties, was not reviewed during the period under audit. According to TRS and State Street Master Service Level Agreement section 2.03 and Appendix B-8, TRS IMD should review the roster on a semi-annual basis and notify SS via email if access is no longer applicable. Lack of user access review may lead to inappropriate access to TRS investment data granted or retained by a third party. During the audit we learned that State Street automatically disables user ID after 60 days of inactivity and removes it after 120 days. However, the system resets the inactivity clock whenever there is a system change. As a result, two users from the State Auditor's Office have active access past the original 120 days window due to a system change.

Recommendation

IMD should enhance user access review requirements and have documentation to support semi-annual reviews of user access. Enhanced review and documentation requirements should include, but not limited to, increased frequency of external managers access review and written confirmation of appropriate access from their companies, defined relevant information of user access report provided by State Street, and utilization of employment status provided by TRS Organizational Excellence and IT in the user access review process.

2.2. During our testing we noted that one TRS IMD employee's access was not changed timely to match current job responsibilities. Currently, IMD does not notify State Street to change the type of system access needed when a user's job responsibilities evolve.

Recommendation

IMD should review MyStateStreet system access during onboarding, offboarding, and transfers.

Management Response

We agree. Note that a significant mitigating control includes the fact that access to State Street systems is done via adding or terminating TRS network access. Having said that, IMD Operations will establish a formal process to alert SSB of changes to User Roster as well as a semi-annual audit to ensure the User Roster is current. The scope will include periodic confirmation from third parties that access is current and appropriate. In addition, we will add a process to ensure those individuals that require temporary access will be terminated when they depart. We will add this process to the SSB Service Level Agreement. We will have this completed by September 30, 2018.

* * * * *

We appreciate Investment Management Division management and staff for their cooperation, courtesy, and professionalism extended to us during this audit. We also appreciate the support provided by State Street.

Amy Barrett, CIA, CPA, CISA
Chief Audit Executive

Kate Rhoden, CPA
Investment Audit Manager

Simin Pang, CIA, CISA
Senior IT Auditor

Rodrigo Dominguez
Investment Auditor

APPENDIX A

AUDIT OBJECTIVE, SCOPE, METHODOLOGY, AND CONCLUSION

We conducted this performance audit in accordance with generally accepted government auditing standards contained in the *Government Auditing Standards* issued by the Comptroller General of the United States and the *International Standards for the Professional Practice of Internal Auditing* issued by the Institute of Internal Auditors, Inc.

These standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our audit findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

AUDIT OBJECTIVE

The audit objective was to determine whether internal controls are in place and are working effectively to achieve the business objectives stated below and mitigate significant risks to meeting those objectives. Business objectives related to investment performance measurement and reporting are as follows:

- Investment returns are calculated accurately, completely, and consistently for Investment Policy and Performance Incentive Pay purposes (performed by Performance Measurement Service Provider, State Street).
- Investment returns prepared by performance measurement service provider are reasonable, timely, and explainable (performed by TRS Investment Management Division).
- IT systems and data used to prepare investment performance are protected and produce accurate, complete and reliable information.

SCOPE

The scope of the audit covered business objectives, risks, controls, and processes related to the calculation and reporting of investment performance. The scope included investment returns at the individual asset class level and at the aggregate level as specified in the Investment Policy Statement and Performance Pay Plan.

For the testing of investment return calculations and reporting, we focused on the daily, monthly, quarterly, and/or annual returns measured and reported for the period from October 1, 2016, to September 30, 2017.

As part of this audit, we did not test for valuation of the underlying securities, nor did we evaluate the timely submission of returns data and reports as provided by the Service Level Agreement between TRS and State Street. In addition, the scope of this audit did not include performance evaluation of a portfolio or portfolio manager which usually involves a process to identify the sources of outperformance or underperformance as compared to the benchmark or a peer group.

METHODOLOGY

This was a co-sourced audit, where we engaged an external service provider to obtain additional expertise. Therefore, several elements of the control tests were performed by the external service provider. Internal Audit assessed their qualifications and reviewed the results of their tests.

Our methodology included obtaining information on management's business objectives and risks, and focused on key processes and monitoring controls that management has established to address significant risks. To meet the audit objectives, Internal Audit and an external service provider performed the following procedures:

1) Controls for Accurate and Consistent Calculation of Investment Returns

- Review of service level agreement with performance measurement service provider (State Street)
- Interview with State Street personnel to gain a better understanding of their roles and responsibilities for investment performance measurement
- Confirmation of State Street's use of third-party pricing sources for valuation of TRS securities
- Review of the TRS Account Structure mapping diagram which maps TRS accounts/portfolios to the relevant asset classes
- Testing whether accounts/funds were correctly rolled up to the policy asset class return calculations, per the TRS Account Structure mapping diagram
- Recalculation of September 2017 performance returns for all Investment Policy Statement asset classes to ensure accurate calculations
- Verification of completion of sample daily and monthly checklists by State Street
- Verification of whether exceptions identified during the daily and monthly checklists were followed-up on for items that exceeded the threshold established
- Obtaining State Street's statement certifying that no TRS employees have access to State Street's accounting or performance systems
- Verification of existence of accounting data validations within our testing period
- Verification of existence of State Street's reasonableness checks performed on the rates of returns calculated
- Recalculation of Energy, Natural Resources and Infrastructure benchmark for the quarter, year-to-date, and annual benchmark as of September 30, 2017
- Verification and testing on a sample basis that legal and research expenses paid are reflected in the performance system and returns are reported on a net basis

2) IMD's Reasonableness Checks on Investment Returns Prepared by State Street

- Walk-through of Investment Operations staff's daily and monthly investment performance preparation process
- Verification of TRS approval of new account/portfolio creation in the State Street system

- Verification of TRS approval of account/portfolio termination in the State Street system
- Verification of existence of Investment Operations staff's reasonableness checks (including recalculations) on investment returns prepared by State Street
- Comparison of investment returns and benchmarks reported in IMD staff's report (Quarterly Transparency Report), Investment Consultant's report, and State Street's report for September 2017

3) Information systems controls

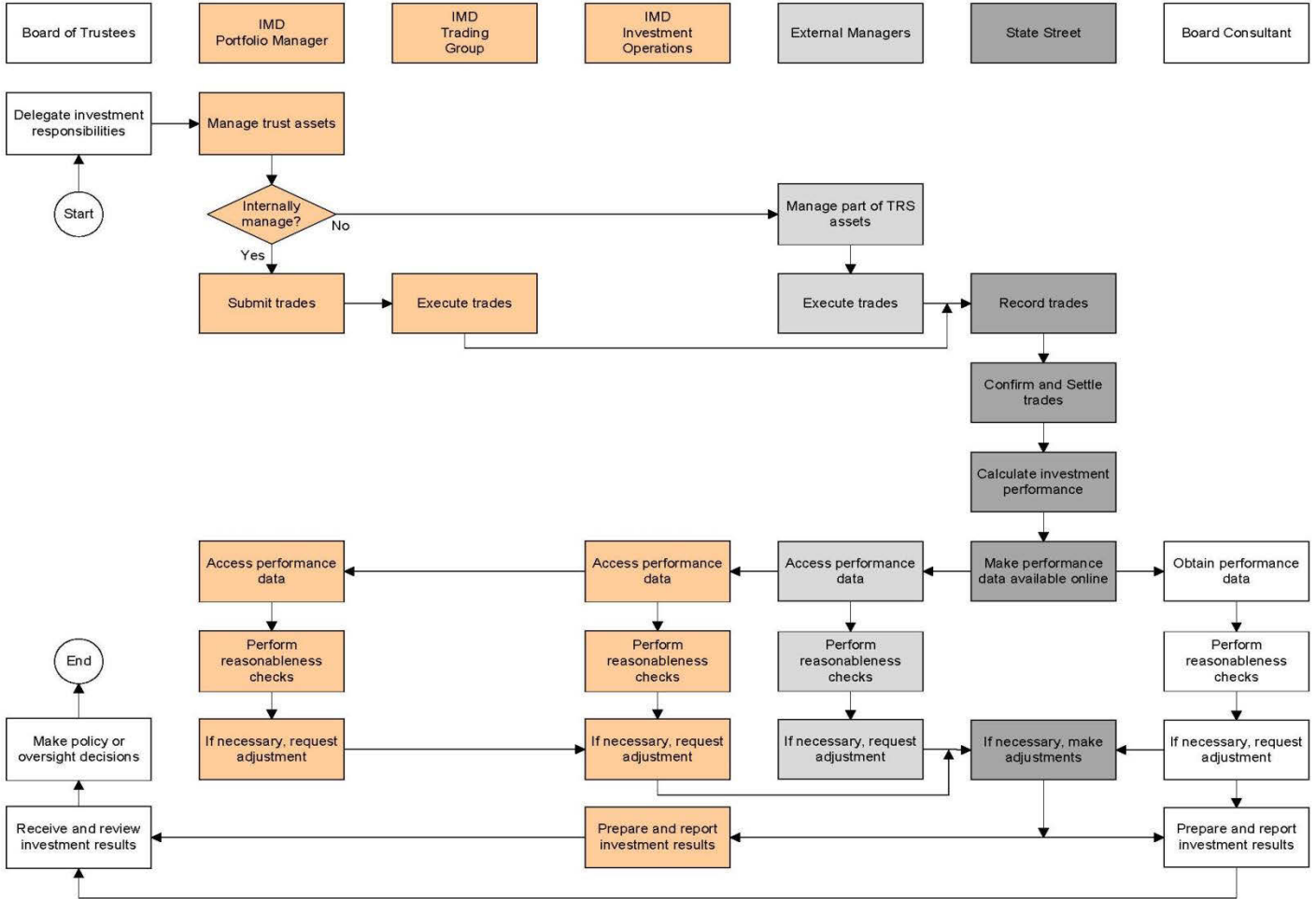
- Verified existence of user access policies and tested user access
- Tested TRS employees and TRS third parties user access to State Street systems
- Read Service Organization Control report for State Street Information Technology General Control for the period under audit
- Obtained an understanding of State Street policies related to data protection, network security, business continuity and disaster recovery

CONCLUSION

Based on the work performed by Internal Audit and an external service provider, we determined that management controls are operating effectively to achieve business objectives related to the accurate and consistent measurement of investment returns for policy asset classes. We also determined that management controls are working effectively to ensure that investment returns prepared by State Street are reasonable, timely, and explainable.

APPENDIX B

Investments Performance Reporting Process



TAB 4D

**TRS Internal Audit
Summary of Audit Recommendations Status
As of March 2018**

Project	Recommendation	Status	Issue Type	Estimated Date	Revised / Actual Date
17-305 Commission Credit (soft dollar) Audit					
	Strengthen monitoring of contractual allowance balances to ensure no available amounts are Lost	Implemented	Significant to Business	12/2017	12/2017
17-306 Funston Evaluation of TRS Real Assets Investment Program					
	Board should consider adopting a stand-alone Compliance Policy in order to place Board emphasis on the importance of compliance and greater clarity to the respective roles and responsibilities throughout TRS respecting this area.	In Progress	Other Reportable	12/2017	4/2018
	TRS Board should consider several options to improve reporting and coordination of compliance and other oversight activities: A. Consider whether the ability to use and comprehend the various investment information from all sources provided to trustees would be enhanced by developing a map, or guide, to the various sources and their purpose as a part of trustee training or in a manual. B. Although overall reporting is robust, TRS may benefit by shifting more regular reporting responsibilities to the Chief Compliance Officer and moving the Chief Audit Executive towards the role of assessing the effectiveness of the compliance function.	Implemented	Other Reportable	A - 5/2017	A - 9/2017
		Implemented	Other Reportable	B - 5/2017	B - 2/2018
	Real Assets should undertake a cost/benefit analysis of the potential for active direct real estate investing.	In Progress	Other Reportable	12/2017	6/2018

Significant to Business Objectives

	<ul style="list-style-type: none"> Past <i>original</i> estimated completion date, and No management action plan <u>or</u> No progress on management action plan
	<ul style="list-style-type: none"> Past <i>original</i> estimated completion date Progress on management action plan
	<ul style="list-style-type: none"> <i>Original</i> estimated completion date has not changed Progress on management action plan
	Satisfactory implementation of management action plan <u>or</u> Acceptance of risk by management
	Implementation of management action plan pending Internal Audit validation

Other Reportable

	<ul style="list-style-type: none"> Past first <i>revised</i> estimated completion date No management action plan <u>or</u> No progress on management action plan
	<ul style="list-style-type: none"> Past first <i>revised</i> estimated completion date Progress on management action plan
	<ul style="list-style-type: none"> Within <i>original</i> <u>or</u> first <i>revised</i> estimated completion date Progress on management action plan
	Satisfactory implementation of management action plan <u>or</u> Acceptance of risk by management

**TRS Internal Audit
Summary of Audit Recommendations Status
As of March 2018**

Project	Recommendation	Status	Issue Type	Estimated Date	Revised / Actual Date
17-503 Audit of Trust Expenses Allocation					
	Develop and implement a written, comprehensive, and approved cost allocation policy that emphasizes the fiduciary duty in the equitable allocation of fund expenses; and that includes definitions, defined roles and responsibilities, and the basis for each allocated cost	In Progress	Other Reportable	8/2018	
	Develop procedures to implement the new comprehensive cost allocation policy that include documented approvals to be obtained for methodologies used and final year-end calculations	In Progress	Other Reportable	8/2018	
	Develop procedures to implement the new comprehensive cost allocation policy that include materiality thresholds for determining whether a year-end adjusting journal entry is required to ensure equitable fund allocations	In Progress	Other Reportable	8/2018	
	Develop procedures to implement the new comprehensive cost allocation policy that include defined roles and processes for the initial and periodic assessment of new capital projects to determine the appropriate method of finance	In Progress	Other Reportable	8/2018	
	Develop procedures to implement the new comprehensive cost allocation policy that include a routinely reviewed and approved schedule of direct and indirect costs by TRS department	In Progress	Other Reportable	8/2018	
	Develop procedures to implement the new comprehensive cost allocation policy that include defined roles for department managers in the determination and approval of rates used for facilities costs	In Progress	Other Reportable	8/2018	
	Develop procedures to implement the new comprehensive cost allocation policy that include defined roles for department managers in the determination of rates used to allocate indirect costs and in the confirmation that the rates reflect current conditions	In Progress	Other Reportable	8/2018	
SAO Audits of FY 2014 - 2017 Comprehensive Annual Financial Report					
	Strengthen controls over census data	In Progress	Significant	8/2016	09/2018

**TRS Internal Audit
Summary of Audit Recommendations Status
As of March 2018**

Status of Reporting Entity Audit Recommendations

	Audit Project #	Audit Report Date	Reporting Entity (RE)	Status
1	17-401a	6/22/2017	Pleasanton ISD	Closed
2	17-401b	8/31/2017	Dallas ISD	In Progress

Statuses:

- Under Legal Services Review – TRS Benefits team has requested Legal Services review before taking any further action
- In Progress – TRS Benefits team is working with RE on corrections/adjustments
- Closed – TRS Benefits team has resolved all RE audit findings
- No Audit Findings – the audit resulted in no audit findings

TAB 4E

Teacher Retirement System of Texas

Employer Self-Audit Program for Independent School Districts, Open-Enrollment Charter Schools, Institutions of Higher Education, and Education Service Centers

January 2018



TAB 5

Chief Audit Executive Goals for FY 2018 *

Goal 1

Sustain a Financially Sound Pension System

Provide assurance on performance calculations

Coordinate CAFR and TRICOT financial audits

Test compliance with investment policies

Provide assurance on private equity fees

Provide assurance on TRICOT cost benefit

Goal 2

Continuously Improve Our Benefit Delivery

Coordinate TEAM program assessment vendor activities

Review key TEAM Phase I controls and participate in TEAM activities

Test benefit annuity payments

Analyze full payroll data and provide assurance on employer reports

Consult on benefit disbursements

Goal 3

Facilitate Access to Competitive, Reliable, Health Care Benefits

Test implementation of select TRS-Care legislative changes


Provide assurance on TRS procurement

Provide assurance on TRS-ActiveCare billing, procurement and administrative fees

Follow-up on outstanding HIPAA audit recommendations

 -- Complete

 -- In Progress

 -- Planned

Chief Audit Executive Goals for FY 2018

Goal 4

Align People to Achieve the TRS Mission

Test investment incentive compensation

Participate in the management continuity program and nominate staff for leadership program

Develop new auditor training modules and revisit career paths

Test executive incentive compensation

Goal 4

Align Processes to Achieve the TRS Mission

Consult on board reporting timeliness

Communicate on reporting entity audit issues found

Measure and trend internal audit activities and present on audit value add

Participate in Executive Council & Risk Oversight Committees

Re-engineer reporting entity audit processes

Participate in hotline triage team

Implement department records management changes

Participate in TRS rules review related to reporting entities

Goal 4

Align Technology to Achieve the TRS Mission

Follow up on innovation top 10

Advise on the CAPPs project

Review info security tests and risk assessments

Observe disaster recovery and business continuity tests

**Internal Audit Goals and Performance Measures
Fiscal Year 2018 – 2nd Quarter Ending February 2018**

Target Performance	Annual Target	Cumulative Score	Activity / Comment	Status
Goal 1: Facilitate Audit Committee Governance				
1. 80% or more of audit and agreed-upon procedures projects are completed in the fiscal year (80% allows for flexibility due to changes in TRS business practices and special requests)	80%	28%		On Task
2. 70% or more of total available department hours (excluding uncontrollable leave) are spent for internal audit staff on direct assurance, consulting, and advisory services	70%	75%		On Task
3. 100% of internal audit processes are in accordance with internal auditing standards as reported in the annual quality assurance and improvement (QAIP) report	100%	N/A	QAIP to be completed in June 2018	N/A
4. 80% (4.0/5.0) or higher score received for audit project client surveys in overall satisfaction	80%	98%		On Task
5. 76% (3.8/5.0) or higher score on staff 360 evaluations in accountability, critical thinking, and initiative	76%	79%	Score based on staff 360 evaluations completed in October 2017	Achieved
6. 90% (4.5/5.0) or higher score received for CAE 360 evaluation in “Leads the Agency” (aka Firm Leadership) and “Leads the Team” (aka Managerial Leadership)	90%	N/A	CAE 360 evaluation to be completed in July 2018	N/A
7. 80% (4.0/5.0) or higher score received for audit project client surveys regarding communication of the audit purpose, results, and reports	80%	98%		On Task
8. 80% (4.0/5.0) or higher score on staff 360 evaluations in the area of verbal and written communication and collaborative audit perspective	80%	81%		Achieved
9. 100% of relevant current “Tone at the Top” articles uploaded to Diligent	100%	50%		On Task
10. One speaker on the topic of the benefits of an effective audit function presents at the February board meeting	1	1	Jim Pelletier from the IIA presented at the February 2018 board meeting	Achieved

**Internal Audit Goals and Performance Measures
Fiscal Year 2018 – 2nd Quarter Ending February 2018**

Target Performance	Annual Target	Cumulative Score	Activity / Comment	Status
Goal 2: Support TRS Initiatives				
1. 86% (4.3/5.0) or higher score for CAE 360 evaluation in contribution goals	86%	N/A	CAE 360 evaluation to be completed in July 2018	N/A
2. 80% (4.0/5.0) or higher score received for audit project client surveys in TEAM-related projects, when applicable	80%	N/A	No formal projects scheduled	N/A
3. 80% (4.0/5.0) or higher score on staff 360 evaluations in the area of organizational awareness	80%	81%	Score based on staff 360 evaluations completed in October 2017	Achieved
4. 83% (5.0/6.0) or higher score for departmental organizational health on the annual Workplace Dynamics Survey	83%	N/A	Survey results to be reported in September 2018	N/A
Goal 3: Enhance Internal Audit Staff Competence and Expertise				
1. 80% (4.0/5.0) or higher score received for audit project client surveys regarding the usefulness of audit recommendations in improving business processes and controls	80%	92%		On Task
2. 80% (4.0/5.0) or higher score on staff 360 evaluations in the area of audit acumen	80%	79%	Result due to turnover of experienced staff	Not Achieved
3. 92% (4.6/5.0) or higher score for CAE 360 evaluation in “Leads the Self” (aka Technical Leadership)	92%	NA	CAE 360 evaluation to be completed in July 2018	N/A
4. 100% of audit staff complete annual training plans and obtain a minimum of 40 hours of continuing education credits	100%	42%	Staff expected to complete 40 hours/each towards year end	On Task
5. 100% of audit staff maintain professional certifications or actively pursue certifications and related eligibility requirements	100%	100%		On Task
6. 100% of audit staff participate in professional organizations	100%	100%		On Task
7. 100% of audit staff acknowledge an understanding of their career path	100%	91%	Survey results indicate that one staff member is	Below Target

**Internal Audit Goals and Performance Measures
Fiscal Year 2018 – 2nd Quarter Ending February 2018**

Target Performance	Annual Target	Cumulative Score	Activity / Comment	Status
			uncertain of their career path	
8. 92% or more of audit staff remain in internal audit or TRS (excluding retirements and transfers)	92%	93%	One staff member left TRS in FY 2018	On Task

Legend: Target Status

- Target not achieved
- Below target but expect to achieve
- On task to achieve
- Achieved target

Fiscal Year 2018 Audit Plan Status As of February 2018

Title and Project #	Type	Status
Executive and Finance		
Board Reporting Process and Materials Review	Consulting	Complete
General Accounting Change in Management Audit	Audit	Cancel
Capital Improvement Planning Process	Consulting	Defer
Coordination for State Auditor’s Office (SAO) Comprehensive Annual Financial Report (CAFR) Audit for Fiscal Year 2017	Advisory	Complete
Teacher Retirement Investment Company of Texas (TRICOT) Financial Audit Coordination (Grant Thornton)	Advisory	Complete
Executive Incentive Pay Testing	Agreed-Upon Procedures	
New Financial System – CAPPs Implementation Meeting Participation	Advisory	Ongoing
Committee and Workgroup Meetings Participation	Advisory	Ongoing
TRS Investment Company of Texas (TRICOT) Cost-Benefit Audit	Audit	
Special Requests and Emerging Issues (TBD)	Advisory or Consulting	
TEAM Program		
TEAM Independent Program Assessment (IPA) Vendor Support	Advisory	Ongoing
TEAM Committees, Projects and Controls Assessment Participation	Advisory	Ongoing
Pension Benefits		
Annuity Payment Testing for SAO CAFR Audit of FY 2017	Audit	Complete
Annual Benefits Testing	Agreed-Upon Procedures	In Progress
Employer Data Analysis Testing	Agreed-Upon Procedures	In Progress
Employer Audits	Audit	
TRS Reporting Entity Website Audit Information and Communication Activities	Advisory	In Progress
Benefit Disbursement Review	Consulting	

Fiscal Year 2018 Audit Plan Status As of February 2018

Health Care		
TRS-Care Legislative Change Management Review	Consulting	Complete
TRS-ActiveCare Eligibility, Enrollment, and Billing Process Pre-implementation Audit	Audit	In Progress
Vendor Procurement Audit	Audit	Complete
Health Care Administrative Expenses Audit	Audit	Defer
Health Care Vendor Update Meetings Attendance	Advisory	Ongoing
Information Technology		
Disaster Recovery, Network Penetration Tests, Security Risk Assessment Review	Advisory	
Investment Management		
Private Equity Management Fees and Carried Interest Desk Audits	Audit	
Performance Calculations Audit	Audit	Complete
Quarterly Investment and Ethics Policies Compliance Testing	Agreed-Upon Procedures	2 nd Quarter Complete
Annual Testing of Investment Incentive Pay Plan	Agreed-Upon Procedures	Complete
Investment Committees Attendance	Advisory	Ongoing
Internal Audit Department		
Annual Internal Audit Report	Administrative	Complete
Data Analysis Process Buildout	Administrative	
Quarterly Audit Recommendations Follow-up	Administrative	Ongoing
Internal Quality Assurance Review	Administrative	
Fiscal Year 2019 Audit Plan	Administrative	
Employer Audit Process Re-engineering	Administrative	Complete
Internal Audit Staff Training Initiative	Administrative	In Progress
Audit Committee Meetings Preparation	Administrative	Ongoing

Internal Audit Advisory Services¹
Fiscal Year 2018 – 2nd Quarter

BENEFIT SERVICES
<ul style="list-style-type: none"> • Participated in the TEAM Program <ul style="list-style-type: none"> ○ Enterprise Projects Oversight Committee (EPOC) ○ Organizational Change Management Advisory Group (OCM) ○ Monthly meetings with TEAM Program Manager and vendor personnel ○ Independent Program Assessment (IPA) Vendor Coordination • Facilitated discussions on observations around TRUST access controls and segregation of duties controls
HEALTH INSURANCE BENEFITS (HIB)
<ul style="list-style-type: none"> • Attended the Health Plan Administrator (HPA) and Pharmacy Benefit Manager (PBM) Vendor Quarterly Update Meetings • Attended weekly meetings on the development of the Health Insurance Line of Business (HILOB) application
INVESTMENT MANAGEMENT DIVISION (IMD)
<ul style="list-style-type: none"> • Attended Internal Investment Committee (IIC) meetings • Participated in quarterly Proxy Voting Committee meeting • Participated in monthly Securities Lending monitoring calls • Reviewed Risk Management presentation for Audit, Compliance and Ethics (ACE) Committee
FINANCIAL SERVICES
<ul style="list-style-type: none"> • Liaison for the State Auditor’s Office (SAO) Fiscal Year 2018 Comprehensive Annual Financial Report (CAFR) Audit and associated Census Data and Allocation Schedule Audits • Participated in project team meetings for Centralized Accounting and Payroll/Personnel System (CAPPS)
EXECUTIVE
<ul style="list-style-type: none"> • Facilitated SAO’s Quarterly Update Meetings • Participated in the Risk Oversight Committee • Participated in Health and Safety Committee Quarterly Meetings • Monthly collaboration meetings with Enterprise Risk Management (ERM) management • Participated in the Records Management Cross-functional Workgroup
INFORMATION TECHNOLOGY (IT)
<ul style="list-style-type: none"> • Tracking outstanding audit recommendations from HIPAA Gap Assessment Project and Audit of On/Off Boarding Processes of Non-TRS Workers • Participated in the Information Security Advisory Team (ISAT) meetings

¹ Advisory Services (non-audit services) - The scope of work performed does not constitute an audit under Generally Accepted Government Auditing Standards (GAGAS).

Internal Audit Staff Accomplishments

Promotions and Certifications

- Kate Rhoden passed the Certified Internal Audit (CIA) Exam Parts I and II
- Nick Ballard passed the Certified Internal Audit (CIA) Exam Part II
- Rodrigo Dominguez was promoted to Auditor III in February. He has successfully led many investment compliance agreed-upon procedures projects, actively participated in the investment audits, and assisted with the SharePoint conversion. He is also responsible for compiling the quarterly departmental statistics.
- Nick Ballard was promoted to Director of Investment Audit Services in April. Previously, he was an audit manager in the benefits area and senior investment auditor. Nick has demonstrated strong project management skills, excellent people skills, and an ability to synthesize complex information.

Professional Organization Activities and Conferences

- Art Mata and Amy Barrett made a presentation to the Texas Association of College and University Auditors (TACUA) entitled, Auditing Information Submitted to the Teacher Retirement System. The presentation was designed to encourage higher education auditors to audit TRS eligibility, contributions, and surcharges, and to follow the new audit guide published by TRS Internal Audit and available on the TRS internet.
- Amy Barrett participated on a panel regarding the intersections of budget, accounting, and internal audit at the Texas State Agency Business Administrators Association (TSABAA) Mid-Winter Conference
- Art Mata and Cari Casey conducted an Employer Audit presentation for the Texas Association of School Business Officials in Ft. Worth, TX. Topics included: The Audit Process, Results of Prior Audits, Tools and Resources.
- Kate Rhoden serves as the President of the Austin Chapter of Certified Public Accountants and as a Board Member on the state level for the Texas Society of Certified Public Accountants
- Kate Rhoden, representing the Austin CPA Chapter, made several presentations to promote the accounting profession and certifications. She spoke to an Austin Community College Accounting class and a Park University Accounting class.
- Kate Rhoden delivered in-house training for the Internal Audit Department on coaching and leadership

New Hire

- New IA Staff – Kate Rhoden, CPA, joined the Internal Audit Department on January 1, 2018.

Kate comes to TRS with more than ten years of public accounting experience. She was a Senior Audit Manager at a public accounting firm where she specialized in the audits of privately held companies. She also served as an outsourced CFO for various non-profit and governmental entities. Kate is involved with the local CPA community by currently serving as the President of the Austin Chapter of Certified Public Accountants, an organization of approximately 2,200 local CPAs and CPA candidates. She has a passion for education that she fulfills by serving on the Advisory Committee for the Austin Community College Accounting Department. She speaks to local college and university students about accounting careers and the importance of certifications. Kate is currently in the process of obtaining her Certified Internal Auditor designation.