

Audit Committee Meeting

September 2016



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

**TEACHER RETIREMENT SYSTEM OF TEXAS
BOARD OF TRUSTEES
AND
AUDIT COMMITTEE**

(Mr. Moss, Chairman; Ms. Charleston; Mr. Corpus; Dr. Gibson; and Ms. Palmer, Committee Members)

*All or part of the September 23, 2016, meeting of the TRS Audit 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 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

**September 23, 2016 – 8:00 a.m.
TRS East Building, 5th Floor, Boardroom**

1. Call roll of Committee members
2. Approve minutes of July 29, 2016 Audit Committee meeting
– Mr. Christopher Moss, Chair
3. Receive State Auditor’s Office presentation on the planned audit of TRS’ Comprehensive Annual Financial Report for Fiscal Year 2016 and results of the Audit of TRS’ Fiscal Year 2015 Employer Pension Liability Allocation Schedules –Michael Clayton and Kelley Ngaide, State Auditor’s Office
4. Receive final report on the TRS-ActiveCare Open Enrollment Readiness Review and results of TRS Open Enrollment – Amy Barrett, Toma Miller, and Katrina Daniel
5. Receive Investment Compliance reports – Heather Traeger
6. Receive Internal Audit reports
 - A. Quarterly Investment Compliance Testing (Agreed-Upon Procedures) – Hugh Ohn and Heather Traeger
 - B. Second-Half Test Results of Investment Controls (Tactical Asset Allocation) – Hugh Ohn
 - C. Overall Opinion on Investment Management Division Internal Controls – Hugh Ohn
 - D. Annual Testing of Benefit Payments (Agreed-Upon Procedures) – Amy Barrett and Dorvin Handrick
 - E. Employer Audits– Dinah Arce and Art Mata
7. Receive report on the status of prior audit and consulting recommendations - Amy Barrett
8. Consider recommendations to the Board of Trustees – Amy Barrett
 - A. Proposed revisions to the Internal Audit Charter
 - B. Proposed Audit Plan for Fiscal Year 2017

NOTE: The Board of Trustees (Board) of the Teacher Retirement System of Texas will not consider or act upon any item before the Audit Committee (Committee) at this meeting of the Committee. This meeting is not a regular meeting of the Board. However, because the full Audit 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.

9. 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 – Christopher Moss and Amy Barrett

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TAB 2

**TEACHER RETIREMENT SYSTEM OF TEXAS
AUDIT COMMITTEE MEETING MINUTES
JULY 29, 2016**

The Audit Committee of the Board of Trustees of the Teacher Retirement System of Texas met on Friday, July 29, 2016, in the boardroom located on the fifth floor of the East Building of TRS' offices located at 1000 Red River Street, Austin, Texas 78701. The following persons were present:

TRS Board Members

Christopher Moss, Audit Committee Chair
David Corpus, Audit Committee Member
Greg Gibson, Audit Committee Member
Anita Palmer, Audit Committee Member
R. David Kelly, Board Chair
Dolores Ramirez, Board Vice Chair
Joe Colonna, Board Member
John Elliott, Board Member

TRS Staff

Brian Guthrie, Executive Director
Ken Welch, Deputy Director
Amy Barrett, Chief Audit Executive
Lih-Jen Lan, Information Technology Audit Manager
Toma Miller, Senior Auditor, Internal Audit
Lan Zhu, Intern, Internal Audit
Jerry Albright, Deputy Chief Investment Officer

Carolina de Onís, General Counsel
Ronnie Bounds, Assistant General Counsel
Katrina Daniel, Chief Health Care Officer
Yimei Zhao, Assistant Director of Finance, TRS Health & Insurance Benefits
Edward Esquivel, Assistant Director, TRS Health & Insurance Benefits
Meaghan Bludau, Health Informatics and Communications Specialist
Janet Bray, Director, Human Resources
Chris Bailey, Manager of Talent Acquisition and Compensation
Jaime Pierce, Director, General Accounting

Other Attendees

Ann Fickel, Texas Classroom Teachers Association
Ted Melina Raab, Texas American Federation of Teachers
Greg Wood, Aetna
Neil Masterson, Ernst & Young
Joni Lozano, Caremark
Rose Pullen, Aetna
Patricia Del Rio, Aetna
Steven Huff, Reinhart Boerner Van Deuren s.c.

Audit Committee Chair Christopher Moss called the meeting to order at 10:36 a.m. with a quorum of committee members present.

1. Consider approval of the proposed minutes of the June 17, 2016 committee meeting – Christopher Moss, Chair.

On a motion by Ms. Palmer and seconded by Dr. Gibson, the proposed minutes for the June 17, 2016 Audit Committee meeting were approved as presented.

2. Consider recommending to the Board the selection of Grant Thornton as the auditor for a financial audit of the Teacher Retirement Investment Company of Texas Ltd. (TRICOT) and the State Auditor's Office as the auditor for a financial audit of the TRS Comprehensive Annual Financial Report – Amy Barrett.

Ms. Amy Barrett presented to the Committee the request to recommend Grant Thornton as the auditor for a financial audit of the Teacher Retirement Investment Company of Texas Ltd. (TRICOT). Ms. Barrett explained that TRICOT is TRS' London subsidiary and is considered a standalone corporation. Ms. Barrett noted TRICOT meets the small company exemption, so there is no regulatory requirement around having the audit. However, Ms. Barrett recommended it would be prudent to do a separate standalone financial audit and have separate standalone set of financial statements.

Ms. Barrett presented to the Committee the recommendation to have the State Auditors perform the Comprehensive Annual Financial Report. Ms. Barrett noted the State Auditor has performed this audit every single year, the State Auditor has served TRS very well, the fees are reasonable, and have brought staff back who are consistent and have knowledge of TRS.

Ms. Barrett noted that on a go-forward basis that instead of having a separate Board approval apart from the audit plan, this information would be included in the annual audit plan and approved through the audit plan approval process.

Ms. Barrett then explained the process for the selection of the TRICOT auditors. Last year a request for qualifications (RFQ) for audit services was issued. There were six respondents which were ranked by a cross-functional team. The team determined of the six vendors, three were qualified to conduct the TRICOT audit. The first vendor, ranked highest in qualifications declined to do the work. The remaining two vendors submitted information which was scored by a team which included investment ops, general accounting and internal audit. Based upon this evaluation, Grant Thornton was the best in experience and qualifications to perform this work.

On a motion by Ms. Palmer, and seconded by Dr. Gibson, the Committee voted unanimously to recommend that the Board approve the selection of Grant Thornton as the auditor for a financial audit of the Teacher Retirement Investment Company of Texas Ltd. (TRICOT) and the State Auditor's Office as the auditor for a financial audit of the TRS Comprehensive Annual Financial Report

3. Receive a Status Report on the TRS-ActiveCare Readiness Review – Amy Barrett, Toma Miller, and Katrina Daniel.

Ms. Amy Barrett provided a status report on the TRS-ActiveCare readiness review along with Ms. Toma Miller and Ms. Katrina Daniel. Ms. Barrett provided an overview of how the project was initiated due to complaints TRS received related to the TRS-ActiveCare open enrollment and billing processes. The work for those processes was subcontracted by Aetna to a group called WellSystems. TRS Staff from Internal Audit, Health Insurance Benefits, with Aetna's support, engaged EY (formerly known as Ernst & Young) to review the open enrollment and billing processes and to survey some school districts in order to be prepared to go into this next open enrollment. At the June Audit Committee meeting it was reported there were a number of findings and Aetna has been actively working on addressing those findings, some of which were quick wins and others are going to take time to implement. Additionally, Ms. Barrett stated that the report provided to the Committee is not the final report, it is 95 percent complete and the final report will be brought to the committee in September.

Mr. Neil Masterson with EY, reported that the first phase of field work was done in the spring. Mr. Masterson reported a steady improvement in a number of areas that were tested and in the feedback received from the districts. The single point of contact model that was set up with Aetna for the school districts has been very well received and continue to get improved feedback on that, as well as the open enrollment training, and the BA training. Mr. Masterson noted there were a combination of issues that were not fully remediated from the original phase of testing, as well as a few new items. Mr. Masterson reported the key takeaway is that the current items are not considered critical for the success of open enrollment or getting members access to care.

Ms. Katrina Daniel provided an update on how Health Benefits in an effort to step up oversight in this area participated heavily in the benefit administrator training. Health Benefits conducted 26 trainings in 20 regions. From a reporting perspective, they receive a weekly report called Pulse Report, and at least one call a week in order to keep an eye on the progress. Health Benefits is monitoring volume transfer activity, whether from third party administrators or the districts or Mesa activity and identifying where there are outlying issues. They are also watching closely the turnaround time for WellSystems and will identify when TRS needs to get involved. Ms. Daniel reported watching the call volume from the districts, how many calls and which districts are calling most often and identifying issues. Most of the issues are around eligibility. There has been a relatively low call volume from the districts. Ms. Daniel also reported Aetna is sending a "watch-out" report which captures outlying issues that do not fit into any of the metrics identified. For example, six districts are upgrading their software systems, and that creates a challenge for Aetna and WellSystems. Health Benefits are watching closely, communicating frequently, and will step up the communication frequency probably the last couple of weeks of open enrollment.

4. Receive a report on the testing of the executive performance incentive pay calculation – Amy Barrett and Toma Miller.

Ms. Barrett reported the testing of the executive performance incentive pay calculation as green. Ms. Barrett noted this was the first year of the plan and some interpretation was needed and provided by General Counsel as proscribed by the plan document. Ms. Barrett also noted this process was called an agreed-upon procedure which is different from an audit in that the auditors recalculated the results and compared them with management's calculation and found no errors. Had this been an audit, the auditors might have performed additional procedures. Also, no recommendations were included. However, Ms. Barrett stated that she provided informal feedback

to management that the plan be updated to include the interpretations, moving the testing of the calculation to September, but keeping the evaluation in July, and creating an inventory of categories that could be measured for consideration in future plan updates.

5. Evaluate recommendation compensation of the Chief Audit Executive and consider a recommendation to the Board regarding the performance appraisal and compensation of the Chief Audit Executive– Brian Guthrie; Keith Robinson, Focus Consulting

Mr. Moss at 11:04 a.m. adjourned the Audit Committee to enter into executive session pursuant to Section 551.074 of the Texas Government Code to deliberate confidential personnel matters such as the individual evaluation and salary of the Chief Audit Executive.

At 11:45 a.m., Mr. Moss reconvened in open meeting the Audit Committee.

On a motion by Ms. Palmer and seconded by Mr. Corpus, the Committee voted unanimously to recommend that the Board of Trustees approve the proposed performance appraisal of the chief audit executive for fiscal year 2016.

The Audit Committee adjourned at 11:46 a.m.

Approved by the Audit Committee of the Board of Trustees of the Teacher Retirement System of Texas on September 23, 2016.

Attested by:

Christopher Moss
Chair, Audit Committee
Board of Trustees
Teacher Retirement Systems of Texas

Date

TAB 3

Fiscal Year 2016 Teacher Retirement System Financial Statement Audit

State Auditor's Office Audit Team:

Michael O. Clayton, CPA, CISA, CFE, CIDA (Audit
Manager)

Kelley Ngaide, CIA, CFE (Project Manager)

Jackie Thompson, CFE (Asst. Project Manager)

New and returning team members

Kelley Ngaide, CIA, CFE
State Auditor's Office



Purpose and Scope of the Audit

Issue an opinion on the Teacher Retirement System's (System) fiscal year 2016 financial statements in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in Government Auditing Standards issued by the Comptroller General of the United States.



Reporting Timeline

- Independent auditor's report (opinion on the financial statements) – November 17, 2016 (estimated).
- Report on internal controls and on compliance and other matters (required for audits performed in accordance with generally accepted government auditing standards) – November 2016.
- Report to the Legislative Audit Committee – November 2016.





Administrative and Other Matters

- Audit work will be conducted from August 1, 2016, through November 17, 2016.
- Auditors will coordinate their work through the internal audit liaisons but will still have direct access to records, employees, and external service providers.
- Internal Audit will provide direct assistance through the performance of selected audit procedures as agreed upon between the State Auditor's Office and Internal Audit.
- The State Auditor's Office conducts all projects in an environment of full independence; that is, free of any personal, external, or organizational impairment.



Audit Opinion

- Auditors issued an unqualified opinion on the System's 2015 Schedule of Employer's Proportionate Shares (Allocations) and totals for the columns titled net pension liability, total deferred outflows of resources, total deferred inflows of resources and total pension expense on the Schedule of Pension Amounts by Employer.
- Auditors did not have any written findings for System management as part of this audit engagement.



New Standards

- Governmental Accounting Standards Board (GASB) statement No. 72, *Fair Value Measurement and Application*, implemented in fiscal year 2016. This statement establishes a hierarchy used to measure the fair value of investments, expands financial statement disclosures for investments and enhances the fair value measurement and definition.
- GASB statement No. 74, *Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans* is effective for fiscal year 2017. This statement addresses financial reports of defined benefit OPEB plans administered through a trust and requires more note disclosures and required supplementary information related to OPEB liabilities.
- GASB statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions* is effective for fiscal year 2018. This statement requires reporting the OPEB liability on the face of the financial statements and more note disclosures.



An Audit of the System's 2015 Schedule of Employer's Proportionate Shares (Allocations) and Schedule of Pension Amounts by Employer

Michael O. Clayton, CPA, CISA, CFE,
CIDA
Audit Manager
State Auditor's Office

Audit Considerations Related to
Implementation of
GASB Statement No. 68





Background/Overview

- Implementation of GASB 68 in the fiscal year 2014 has resulted in changes in what pension related information is reported and how that pension information is audited. This specifically impacts plan employers, which in the System's case is the State of Texas and the school districts, universities, charter schools, and education service centers.



American Institute of Certified Public Accountants (AICPA) Guidance

- The AICPA has issued audit guidance in the form of white papers (February 2014) and interpretations (April 2014) related to the implementation of GASB 68. Additional guidance was issued as a separate chapter of the *State and Local Governments Audit Guide* in March 2015.



Plan Controls Over Member Data

- The AICPA is emphasizing the consideration of plan controls over active member census data.
- Accuracy and completeness of census data provided to the actuary is a consideration.
- Plan management processes for verifying the underlying payroll records of the participating employers to determine accuracy and completeness of data are a consideration.



Schedules

- **Schedule of Employer Allocations (Proportionate Shares)** - This schedule calculates the pension contribution effort for each employer making contributions to the plan (percentage-based calculation).
- **Schedule of Pension Amounts by Employer** - This schedule shows the total change in pension amounts by change type for each employer contributing to the plan.



Audit Considerations for New Schedules

- The AICPA suggests that plan management should obtain auditor opinions on the **Schedule of Employer Allocations (Proportionate Shares)** and the **Schedule of Pension Amounts by Employer**.
- AICPA guidance requires auditors to audit the new schedules in accordance with AU-C Section 805 *Special Considerations-Audits of Single Financial Statements and Specific Elements, Accounts, or Items of a Financial Statement*.



Additional Considerations

- Plan employers will need the opinions on the schedules because they will need to rely on the information issued by the plan.
- If employer auditors cannot rely on work done by plan auditors, that could result in a situation in which employer auditors may want to do their own audit work on the plan.
- Issuance of the opinions increases the overall audit risk for plan auditors.



Communication with Reporting Entities

- AICPA guidance emphasizes the importance of communication with reporting entities (employers).
- Employer auditors will be relying on work done by plan auditors to issue their audit opinions.
- If employer auditors cannot rely on audit work done at the plan, that could result in employers not receiving unqualified opinions on their financial statements.



Key Items for Communication

- Ensuring that employers and their auditors know where to find the Schedule of Employer Allocations (Proportionate Shares) and Schedule of Pension Amounts by Employer after the audit opinion is issued on those schedules.



Questions



Independent Auditor's Report

Teacher Retirement System Board of Trustees:

Mr. R. David Kelly, Chairman
Ms. Dolores Ramirez, Vice Chair
Ms. T. Karen Charleston
Mr. Joe Colonna
Mr. David Corpus
Mr. John Elliott
Dr. Greg Gibson
Mr. Christopher Moss
Ms. Anita Smith Palmer

Report on the Schedules

We have audited the accompanying Schedule of Employer's Proportionate Shares (Allocations) of the Teacher Retirement System (System) Pension Plan as of and for the year ended August 31, 2015, and the related notes. We have also audited the total for all entities of the columns titled net pension liability, total deferred outflow of resources, total deferred inflow of resources, and total pension expense (specified column totals) included in the accompanying Schedule of Pension Amounts by Employer of the System Pension Plan as of and for the year ended August, 31, 2015, and the related notes.

Management's Responsibility for the Schedules

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

Auditor's Responsibility

Our responsibility is to express opinions on the Schedule of Employer's Proportionate Shares (Allocations) and the specified column totals included in the Schedule of Pension Amounts by Employer based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the Schedule of Employer's Proportionate Shares (Allocations) and specified column totals included in the Schedule of Pension Amounts by Employer are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the Schedule of Employer's Proportionate Shares (Allocations) and specified column totals included in the Schedule of Pension Amounts by Employer. The procedures

selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the Schedule of Employer's Proportionate Shares (Allocations) and specified column totals included in the Schedule of Pension Amounts by Employer, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the System's preparation and fair presentation of the Schedule of Employer's Proportionate Shares (Allocations) and specified column totals included in the Schedule of Pension Amounts by Employer in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the System's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the Schedule of Employer's Proportionate Shares (Allocations) and specified column totals included in the Schedule of Pension Amounts by Employer.

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

Opinions

In our opinion, the schedules referred to above present fairly, in all material respects, the employer's proportionate shares (allocations) and net pension liability, total deferred outflow of resources, total deferred inflow of resources, and total pension expense for the total of all participating entities for the System Pension Plan as of and for the year ended August 31, 2015, in accordance with accounting principles generally accepted in the United States of America.

Other Matter

We have audited, in accordance with auditing standards generally accepted in the United States of America, the financial statements of the System Pension Plan as of and for the year ended August 31, 2015, and our report thereon, dated November 18, 2015, expressed an unmodified opinion on those financial statements.

Restriction on Use

Our report is intended solely for the information and use of System management, Board of Trustees, and employers participating in the System Pension Plan and their auditors and is not intended to be and should not be used by anyone other than these specified parties.



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

July 29, 2016



Report on Internal Control Over Financial Reporting and on Compliance and Other Matters Based on an Audit of the Pension Schedules Performed in Accordance with *Government Auditing Standards*

Independent Auditor's Report

Teacher Retirement System Board of Trustees:

Mr. R. David Kelly, Chairman
Ms. Dolores Ramirez, Vice Chair
Ms. T. Karen Charleston
Mr. Joe Colonna
Mr. David Corpus
Mr. John Elliott
Dr. Greg Gibson
Mr. Christopher Moss
Ms. Anita Smith Palmer

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the Schedule of Employer's Proportionate Shares (Allocations) of the Teacher Retirement System (System) Pension Plan as of and for the year ended August 31, 2015, and the related notes. We have also audited the total for all entities of the columns titled net pension liability, total deferred outflow of resources, total deferred inflow of resources, and total pension expense (specified column totals) included in the Schedule of Pension Amounts by Employer of the System Pension Plan as of and for the year ended August 31, 2015, and the related notes, and have issued our report thereon dated July 29, 2016.

Internal Control Over Financial Reporting

In planning and performing our audit of the schedules, we considered the System's internal control relevant to the System's preparation and fair presentation of the schedules (internal control) to determine the audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the System's internal control. Accordingly, we do not express an opinion on the effectiveness of the System's internal control.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control such that there is a reasonable possibility that a material misstatement of the System's schedules will not be prevented, or detected and corrected on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the System's schedules are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of schedule amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Auditors communicated certain issues that were not material or significant to the audit objectives in writing to the System's management.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control relevant to the System's preparation and fair presentation of the schedules and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the System's internal control relevant to the System's preparation and fair presentation of the schedules or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the System's internal control relevant to the System's preparation and fair presentation of the schedules and compliance. Accordingly, this communication is not suitable for any other purpose.



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

July 29, 2016

Required Communication with Those Charged with Governance
Based on the Audit of the Teacher Retirement System’s Fiscal Year 2015 Employer Pension Liability
Allocation Schedules

We have audited the Schedule of Employer’s Proportionate Shares (Allocations) and the Schedule of Pension Amounts by Employer (Schedules) of the Teacher Retirement System (System) for the year ended August 31, 2015, and have issued our report thereon dated July 29, 2016. Professional standards require that we provide you with the following information related to our audit.

No.	Item	Comments
1	The Auditor’s Responsibilities Under Generally Accepted Auditing Standards	As stated in our engagement letter dated March 19, 2015, our responsibility, as described by professional standards, is to express an opinion about whether the Schedules prepared by management with your oversight are prepared, in all material respects, in accordance with generally accepted accounting principles. Our audit of the Schedules does not relieve management or those charged with governance of their responsibilities.
2	Planned Scope and Timing of the Audit	We performed the audit according to the planned scope and timing previously communicated to you in our engagement letter dated March 19, 2015.
3	Corrected and Uncorrected Misstatements	Professional standards require us to accumulate all known and likely misstatements identified during the audit, other than those the auditor believes are trivial, and communicate them to the appropriate level of management. Auditors identified no misstatements requiring correction during this audit.
4	Management Representations	We have requested certain representations from management that are included in the management representation letter dated July 15, 2016. We also requested a representation letter dated July 15, 2016, from the System’s general counsel regarding the existence of certain contingent liabilities that might require disclosure in the Schedules.
5	Qualitative Aspects of the Entity’s Significant Accounting Practices	Management is responsible for the selection and use of appropriate accounting policies. We noted no transactions entered into by the System during fiscal year 2015 for which there is a lack of authoritative guidance or consensus. There are no significant transactions that have been recognized in the Schedules in a period that differs from when the transaction occurred.
6	Significant Difficulties Encountered During the Audit	We did not encounter any restrictions in performing our procedures or gaining access to individuals or records. System management and staff provided us with all of the information and support we requested.
7	Other Audit Findings or Issues	We generally discuss a variety of matters, including the application of accounting principles and auditing standards, with management each year. These discussions occurred in the normal course of the audit.

Required Communication with Those Charged with Governance
Based on the Audit of the Teacher Retirement System’s Fiscal Year 2015 Employer Pension Liability
Allocation Schedules

No.	Item	Comments
8	Disagreements with Management	<p>We did not encounter any disagreements with management during the course of the audit.</p> <p>For purposes of this letter, professional standards define a disagreement with management as a financial accounting, reporting, or auditing matter, whether or not resolved to our satisfaction, that could be significant to the Schedules or the auditor’s report.</p>
9	Management’s Consultations with Other Accountants	<p>In some cases, management may decide to consult with other accountants about auditing and accounting matters, similar to obtaining a “second opinion” on certain situations. If a consultation involves application of an accounting principle to the System’s Schedules or a determination of the type of auditor’s opinion that may be expressed on those Schedules, our professional standards require the consulting accountant to check with us to determine that the consultant has all the relevant facts.</p> <p>To our knowledge, there were no such consultations with other accountants.</p>
10	Significant Findings or Issues Discussed, or Subject to Correspondence, with Management	<p>Prior to and throughout our audit engagement, we had routine discussions, or engaged in correspondence, with management regarding the System and application of accounting principles and auditing standards.</p>
11	Independence	<p>The State Auditor’s Office is independent to conduct the audit of the System’s fiscal year 2015 Schedules. It is the State Auditor’s Office’s philosophy to conduct all projects in an environment free of any threats that impair independence.</p>
12	Fraud, Abuse, or Noncompliance with Laws and Regulations, Contracts or Grant Agreements	<p>Auditing standards require auditors to exercise professional skepticism and increased awareness to detect potential violations, fraud, and abuse.</p> <p>We did not find evidence that fraud, abuse, or noncompliance with laws and regulations, contracts or grant agreements, had, or might have, occurred.</p>

This information is intended solely for the use of the Board of Trustees and management of the System and is not intended to be and should not be used by anyone other than these specified parties.



A Report on
The Audit of the **Teacher Retirement System's**
Fiscal Year 2015 Employer Pension
Liability Allocation Schedules

August 1, 2016

Members of the Legislative Audit Committee:

In our audit report dated July 29, 2016, we concluded that the Schedule of Employer's Proportionate Shares (Allocations) and the Schedule of Pension Amounts by Employer as of August 31, 2015, for the Teacher Retirement System (System) are presented fairly, in all material respects in accordance with accounting principles generally accepted in the United States of America. The System intends to post the schedules and our audit report on its Web site at <http://www.trs.texas.gov/>.

We also issued a report on internal control over financial reporting of the schedules and on compliance and other matters as required by auditing standards. Our procedures did not identify any material weaknesses in internal control over financial reporting of the schedules or any noncompliance with laws or regulations that materially affected the schedules. In addition, the major internal controls that we tested for the purpose of forming our opinions on the schedules were operating effectively.

Our procedures were not intended to provide an opinion on internal control over financial reporting of the schedules or to provide an opinion on compliance with laws and regulations. Accordingly, we do not express an opinion on the effectiveness of the System's internal control over financial reporting of the schedules or on compliance with laws and regulations.

Auditors communicated certain issues that were not material or significant to the audit objectives in writing to the System's management.

As required by auditing standards, we will also communicate to the System's Board of Trustees certain matters related to the conduct of this audit.

We appreciate the System's cooperation during this audit. If you have any questions, please contact Michael Clayton, Audit Manager, or me at (512) 936-9500.

Pension Liability Reporting
Requirements

Governmental Accounting Standards Board Statement No. 68, *Accounting and Financial Reporting for Pensions* (GASB 68), which became effective for fiscal years beginning after June 15, 2014, requires governments to begin recording on the face of their financial statements a liability for pension plans administered through trusts, rather than disclosing those amounts in the notes to their financial statements. Specifically, a **government will incur a "net pension liability"** if the total obligation to members exceeds the value of the net assets the government has set aside to pay those benefits.

Employers in the plan will need to recognize their portion of the reported pension liability in the financial statements they produce.

The System prepared the Schedule of **Employer's Proportionate Shares (Allocations)** and the Schedule of Pension Amounts by Employer to help participating employers comply with requirements of GASB 68. Employers may use the pension liability schedules prepared by the System to aid them in determining their portion of the reported pension liability.

SAO Report No. 16-034

Members of the Legislative Audit Committee

August 1, 2016

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Sincerely,

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

cc: The Honorable Greg Abbott, Governor
Members of the Teacher Retirement System Board of Trustees
Mr. R. David Kelly, Chairman
Ms. Dolores Ramirez, Vice Chair
Ms. T. Karen Charleston
Mr. Joe Colonnetta
Mr. David Corpus
Mr. John Elliott
Dr. Greg Gibson
Mr. Christopher Moss
Ms. Anita Smith Palmer
Mr. Brian Guthrie, Executive Director, Teacher Retirement System



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TO: Audit Committee, TRS Board of Trustees
Brian Guthrie, Executive Director

FROM: Amy Barrett, Chief Audit Executive
Hugh Ohn, Director of Investment Audit Services

SUBJECT: EXTERNAL REVIEW OF TRS INVESTMENT PRACTICES AND PERFORMANCE

DATE: September 7, 2016

Background

Section 825.512 (a) of Government Code states that the Legislative Audit Committee (LAC) biennially shall select an independent firm with substantial experience in evaluating institutional investment practices and performance to evaluate the retirement system's investment practices and performance. In accordance with this statute, the State Auditor's Office (SAO), acting as an agent for the LAC, selected Funston Advisory Services LLC ("Funston"), through a Request for Proposal (RFP) process, to perform this review. A similar review was last completed in 2010.

Purpose and Scope of Work

For this year's review, the SAO, with input from TRS, initially considered a few TRS investment areas, but decided to focus on the following area due to cost constraints:

- **Investments in Real Assets** – To evaluate the effectiveness of TRS' real assets investment program to determine if it is achieving its goals and objectives – e.g., the program has been providing competitive returns through capital appreciation and contributing favorably to diversification of the Trust through exposure to real asset's low or negative correlation to the Public Markets portfolios.

The scope of this review will also include the TRS governance structure which encompasses the Board of Trustees' responsibilities such as policy-making, delegation of investing authority, and oversight over management decisions. Funston staff members plan to contact chairs of the Board of Trustees and the Investment Management Committee to obtain information about these responsibilities.

Key Milestone Dates

- Contract awarded to Funston – September 1, 2016
- Funston on-site interviews of TRS employees – September 19 - 20, 2016
- Funston follow-up onsite interviews and document reviews – October 2016 (Estimated)
- Funston draft report issued to the SAO – December 2, 2016 (Estimated)
- Final report to be issued to the SAO – December 17, 2016

TAB 4

The information for this agenda item is confidential.

TAB 5

The information for this agenda item is confidential.

TAB 6

TAB 6A

QUARTERLY INVESTMENT COMPLIANCE TESTING
INVESTMENT POLICY STATEMENT (IPS), SECURITIES LENDING POLICY (SLP), PERFORMANCE INCENTIVE PAY (PIP) PLAN, WIRE
TRANSFER PROCEDURES, BUDGET TRANSFER PROCEDURES, AND ETHICS POLICIES
 CALENDAR QUARTER ENDED JUNE 30, 2016, 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 completion requirements are met
Business Risks	Board is not informed of key investment decisions or critical information	Approvals and fundings exceed delegated limits	Risks exceed Board-established tolerances or management policies and procedures	Ethics policy requirements are not completed or filed
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, including emerging managers, with IPS Obtain evidence that Placement Agent Questionnaires (PAQs) were received prior to investing 	<ul style="list-style-type: none"> Obtain evidence of monitoring of the securities lending agent and the program performance Validate completeness of wires Test accuracy of Internal Public Markets PIP calculations for the quarter ended 3/31/2016. Trace budget transfers and expenditures to supporting documentation Obtain senior management disclosure about known compliance violations 	<ul style="list-style-type: none"> Obtain evidence that employees filed required statements and completed annual ethics training Obtain evidence that Trustees filed financial information and completed annual ethics training
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 	All requirements of the IPS, SLP, PIP, wire transfer procedures, and budget transfer procedures tested were met	All ethics filing and completion requirements tested were met
Management Responses	N/A	N/A	N/A	N/A

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



August 22, 2016

Carolina de Onis, TRS General Counsel

Subject: Report on Independent Testing of Compliance

We have completed the **Quarterly Investment Compliance Testing** for the quarter ended June 30, 2016, as included in the *Fiscal Year 2016 Audit Plan*. The scope of this engagement included the requirements of the Investment Policy Statement (IPS), Securities Lending Policy (SLP), Employee Ethics Policy, Board of Trustees Ethics Policy, Wire Transfer Procedures, Performance Incentive Pay (PIP) Plan, and Budget Transfer and Amendment Procedures.

We performed the procedures that were agreed to by the TRS Legal Services 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 the specified users of the 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**.

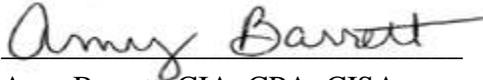
Internal Control Structure

We were not engaged to and did not perform an examination of the internal controls nor the operating effectiveness pertaining to the subject areas tested. Accordingly, we do not express an opinion on the suitability of the design of internal controls nor the operating effectiveness of the subject areas tested.

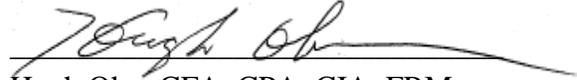
Had we performed additional procedures, or had we made an examination of the system of internal control, other matters might have come to our attention that would have been reported to you. This report relates only to the procedures specified below and does not extend to the internal control structure.

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.

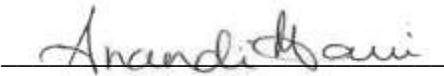
We express our appreciation to management and key personnel of the Investment Management Division, Investment Accounting, General Accounting, and Legal Services for their cooperation and professionalism shown to us during this quarterly testing.



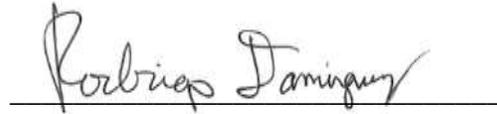
Amy Barrett, CIA, CPA, CISA
Chief Audit Executive



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



Anandhi Mani, CIA, CPA
Senior Investment Auditor



Rodrigo Dominguez
Internal Auditor

APPENDIX A
AGREED-UPON PROCEDURES AND RESULTS

STEP #	OBJ. #	TEST PURPOSE	TEST DESCRIPTION	TEST RESULT	MANAGEMENT RESPONSE
1	1	IPS Article 1.7a - 1.7o – Obtain evidence that all requirements were reported to Board of Trustees. Quarterly reporting requirements include investment performance, asset class exposures, and external investments under consideration. Semi-annual reports include outstanding derivatives, leverage, and liquidity positions, and risk limits	Obtain all information required to be reported to Board of Trustees and compare to reporting requirements per Investment Policy Statement (IPS)	Information required to be reported to Board of Trustees complied with IPS requirements.	No response required
2	2	IPS Article 1.8f – 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 	<ul style="list-style-type: none"> • Investment Compliance staff updated Sudan/Iran restricted lists. • TRS complied with the notification requirement • TRS complied with divestment requirements. • TRS complied with the annual report requirements. 	No response required
3	2	IPS Article 3.3f – 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, verified that the prudence letter from the advisor was included in the Internal Investment Committee (IIC) materials.	No response required

STEP #	OBJ. #	TEST PURPOSE	TEST DESCRIPTION	TEST RESULT	MANAGEMENT RESPONSE
4	2	IPS Article 7 – Obtain evidence that new investments in emerging managers meet requirements	<p>Test sample of approved investments to verify:</p> <ul style="list-style-type: none"> • Each is independent private investment management firm with less than \$2 billion • Each has a performance track record as a firm of less than 5 years, or both • TRS commitment did not exceed 40% of fund size 	All emerging managers tested during this time period were in compliance with these provisions.	No response required
5	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	<ul style="list-style-type: none"> • For each investment selected for testing, verify that IMD obtained responses to the questionnaire • Obtain evidence that IMD compiled responses to the questionnaires and reported all results to the Board at least semi-annually 	Each investment tested had a completed questionnaire and was included in the summary report to the Board.	No response required
6	2	IPS Appendix B – Obtain evidence that investments approved are within policy limits	<ul style="list-style-type: none"> • Select sample of approved investments and obtain tearsheet for each, 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
7	3	Quarterly Compliance Certification – Obtain evidence that all known compliance violations have been reported by IMD managers and Investment Legal staff	Confirm with the Chief Compliance Officer that she has received compliance certification from IMD profit center managers, Legal Investment staff, and CIO regarding any known compliance violations occurred 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

STEP #	OBJ. #	TEST PURPOSE	TEST DESCRIPTION	TEST RESULT	MANAGEMENT RESPONSE
8	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.	The Investment Accounting funding log reconciled to the State Street Outgoing wires log for the period tested.	No response required
9	3	Securities Lending Policy – Obtain evidence that IMD reviews the securities lending program and performance of lender	<p>Sec. 5 - Obtain evidence that staff reviewed the progress of the securities lending program, including an overall evaluation of the performance of the lender with the Board of Trustees</p> <p>Sec. 4.4 - On an annual basis, the lending agent will furnish a list of potential borrowers and corresponding loan limits</p> <p>Sec. 4.6 – Diversification requirements</p> <p>Sec. 4.7 – Investments in structured notes are prohibited</p>	<p>IMD staff monitored the progress of the securities lending program through monthly calls.</p> <p>Information about approved borrowers, including loan limits, is provided.</p> <p>Diversification requirements are met.</p> <p>No investments in structured notes are included in investment holdings.</p>	No response required
10	3	Performance Incentive Pay Plan (PIP) – Verify that investment performance results used in quarterly Internal Public Markets (IPM) 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>Trace quarterly IPM individual component calculation spreadsheet to TRS financial performance application data and TRS custodian bank data.</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</p>	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 managers for the IPM portfolio were correct for the quarter ended March 31, 2016.	No response required

STEP #	OBJ. #	TEST PURPOSE	TEST DESCRIPTION	TEST RESULT	MANAGEMENT RESPONSE
			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.		
11	3	Budget Transfers and Expenditures – Obtain evidence that budget transfers and expenditures are supported by required documentation	Select a sample of budget transfers and expenditures for the quarter and trace them to supporting documentation.	Budget transfers and expenditures were supported by required documentation.	No response required
12	4	Employee Ethics Policy – Obtain evidence that employees have filed required statements or completed annual ethics training	Select a sample of TRS employees and determine whether: <ul style="list-style-type: none"> • Key Employees filed disclosure statements. • New employees filed ethics compliance statements within 60 days of employment • Employees participated in annual ethics training 	Key employees filed disclosure statements, new employees filed ethics compliance statements, and employees participated in annual ethics training.	No response required
13	4	Board of Trustees Ethics Policy – Determine whether each Trustee filed financial information with the Executive Director. Determine whether all Trustees completed annually-required ethics training.	<ul style="list-style-type: none"> • Obtain evidence that each Trustee filed financial information with the Executive Director • Obtain evidence that all Trustees completed annually-required ethics training 	All Trustees filed financial information and completed annually-required ethics training.	No response required

Note: Testing procedures for the Investment Policy Statement (IPS), Securities Lending Policy (SLP), Employee Ethics Policy, Board of Trustees Ethics Policy, Wire Transfer Procedures, and Budget Transfer and Amendment Procedures are for the activities for the quarter ended June 30, 2016. Testing procedures for the Performance Incentive Pay Plan are for the quarter ended March 31, 2016.

TAB 6B

SEMI-ANNUAL TEST RESULTS OF INVESTMENT CONTROLS

August 24, 2016

TRS Internal Audit Department

Business Objectives	Tactical Asset Allocation (TAA): Generate alpha by actively underweighting or overweighting assets relative to policy targets	Derivatives: Execute TAA trades in an efficient and economical manner	Support Groups (Risk, Trading, Investment Ops): Provide support for TAA trades and activities
Business Risks	<ul style="list-style-type: none"> Financial loss Model risk, including <ul style="list-style-type: none"> Incomplete or inaccurate data inputs into models Incorrect or erroneous outputs from models Proposed trades inconsistent with model outputs 	<ul style="list-style-type: none"> Unauthorized use or types of derivatives Trading derivatives without approval Noncompliance with laws, regulations or policies Liquidity risk Counterparty risk Valuation risk 	<ul style="list-style-type: none"> Risk limits exceeded Risk impact not measured or reported Trade execution risk Trading with unauthorized brokers Operational risk Insufficient collateral amount received or paid
Management Controls	<ul style="list-style-type: none"> Investment performance monitoring Periodic review and changes to models Data input exception report Data quality checks (i.e., Z-score report) Position report Pre-trade compliance checks 	<ul style="list-style-type: none"> Review and approval needed prior to initiating a new derivative type Approval needed for each derivative trade Segregation of duties Daily stress liquidity report Counterparty credit quality monitoring Valuation by a third party 	<ul style="list-style-type: none"> Pre-trade risk calculation Risk monitoring report Reconciliation of trades executed Automated setup of approved brokers Access limits to systems and folders Daily reconciliation of investment holdings
Controls Tested	<ul style="list-style-type: none"> Investment performance monitoring Data input exception report Z-score report Position report 	<ul style="list-style-type: none"> Manager approval for derivative trades for TAA strategies Segregation of duties Daily stress liquidity report 	<ul style="list-style-type: none"> Risk monitoring report Reconciliation of TAA trades executed System access Daily reconciliation of investment holdings
Results	Management controls are operating effectively. However, team should enhance existing operating procedures for all steps in the process.	Management controls are operating effectively to achieve business objective.	Management controls are operating effectively to achieve business objective.
Recommended Actions	Develop detailed, written operating procedures for performing key tasks related to TAA models and strategies.	None	None
Management Responses	Management agrees with the recommendation.	NA	NA

Legend of Results:



Red - Significant to TRS
 Yellow - Other Reportable Issue



Orange - Significant to Business Objectives
 Green - Positive Finding or No Issue

MEMORANDUM

TO: Audit Committee Members, TRS Board of Trustees
Brian Guthrie, Executive Director

FROM: Amy Barrett, Chief Audit Executive
Hugh Ohn, Director of Investment Audit Services

SUBJECT: **Semi-Annual Test Results of Investment Controls – Tactical Asset Allocation**

DATE: August 24, 2016

The purpose of this memo is to report the interim results of Internal Audit's tests of Investment Management Division (IMD) controls for the second half of fiscal year 2016. The results of these tests are combined with prior results to express the overall opinion on IMD controls based on the tests performed in the past three years. The overall opinion is included in section 6.C of the Audit Committee Book. For the second half of fiscal year 2016, we tested controls related to the Tactical Asset Allocation (TAA) strategies, including the derivatives trades generated from TAA strategies. We also tested controls of the IMD groups that provide support for the TAA strategies, which include Risk Group, Trading Group, and Investment Operations.

OVERVIEW

Tactical Asset Allocation (TAA)

The business objective of the TAA team of the IMD is to generate annual alpha ("excess returns") of 25 basis points on total Trust (with a long-term tracking error target of 50 basis points) by actively underweighting or overweighting publicly-traded asset classes relative to their policy targets. To accomplish this objective, the TAA team pursues several strategies, including the Strategic Partner Network (SPN) Strategy, Quantitative Vector Fund (QVF) Strategy and Alternative Risk Premia (ARP) Strategy. To adjust asset allocations (usually on a monthly basis) based on capital market conditions and predictions, each of the strategies utilizes models to generate specific trades to execute. Most of the TAA trades and related risks are generated by the following two strategies:

A. Strategic Partner Network (SPN) Strategy

The SPN strategy within TAA magnifies allocation decisions from the Trust's four public Strategic Partners to increase the impact of their tactical allocation processes on Trust performance. Each of the four partners has a mandate to run a Tactical Asset Allocation process off of a similar benchmark to the total Trust with a return target of 200 bps and a tracking error target of 250 bps. Each partner reports its holdings weekly using the common language template in which they map their benchmark relative positions to a set of 50+ tradeable assets. The SPN strategy takes these holdings reports and matches the positions using assets usually traded by TAA to replicate the excess return of the Strategic Partners

**Second Half Investment Control Test Results
August 24, 2016 Memorandum**

attributable to their allocation decisions. Since the Strategic Partners are permitted to use net leverage, an additional allocation to U.S. 2-year Treasury futures is used in the SPN strategy to ensure the total weights sum to zero.

B. Quantitative Vector Fund (QVF) Strategy

The purpose of the QVF strategy is to generate alpha through country level asset allocation. It is an overlay strategy designed to be implemented with futures and FX forwards while maintaining a target volatility exposure and remaining dollar neutral. The portfolio construction process embedded in the strategy produces a portfolio of equity, government debt, commodities, and currency exposures that sum to zero. The QVF employs two types of models: a forecasting model and a portfolio construction model. The forecasting model takes data on asset returns, valuations, macroeconomics, and liquidity for each country and inputs that into a vector auto-regression estimation. This regression yields explicit views on the one month forward return to each of the 21 assets as well as a confidence level for each of the point forecasts. The portfolio construction model takes the forecast and the confidence level from the forecasting model and chooses weights through an optimization process. The weights are chosen so that the total net exposure of the assets is zero, and the predicted volatility of the portfolio is 10 percent annualized.

Derivatives

Derivatives are utilized by the TAA team to efficiently execute its strategies. Derivatives represent financial arrangements between parties whose payment or value is derived from the performance of some agreed-upon, underlying assets, such as stock index, currencies, commodities, and interest rates. Types of derivatives used by IMD groups like TAA and Risk are futures, forwards, swaps, and options. These derivative instruments are utilized to manage risk and/or modify asset allocation as part of portfolio overlay strategies, instead of investing in various asset classes using cash. IMD's uses of derivatives are guided by Article 8 of the Investment Policy Statement (IPS) adopted by the Board of Trustees. This Article includes information about the derivative applications permitted or not permitted, documentation and controls, and restrictions with regard to the uses of derivatives.

As of June 30, 2016, the notional values of different types of derivatives used by TRS and external managers are as follows:

Derivative Type	Gross Notional (in billion)	Net Notional (in billion)
Futures	\$13.1	\$4.7
Forwards	10.3	-2.0
Swaps	2.1	-0.1
Options	0.2	0.1
Total Notional Value =	\$25.7	\$2.7

Second Half Investment Control Test Results
August 24, 2016 Memorandum

Support Groups for TAA

As part of the audit, we also tested controls established by the following support groups for TAA strategies and trades:

- Risk Group – The Risk Group is responsible for monitoring and managing investment risk for the Trust, including absolute and relative risk exposures of the Trust. For the TAA strategies, the Risk Group runs a pre-trade risk report to check risk parameters on the positions that TAA plans to trade, including information on risk contributions by different TAA strategies. The Risk Group also prepare CUSUM (Cumulative Sum) reports which are used to detect changes in investment performance.
- Trading Group – The Trading Group is responsible for executing derivatives trades initiated and approved by the TAA team. The primary goal of the Trading Group is to effectively and efficiently execute TAA trades while minimizing potential market impact. The Trading Group’s responsibilities also include monitoring of total trading costs as well as ensuring that trades are executed only with approved brokers.
- Investment Operations (Ops) – The Ops group is responsible for managing the financial and information systems for the entire IMD. This group works closely with the custodian (State Street Bank) to ensure that the investment book of records is accurate, including information on TAA trades and derivatives executed. One of the responsibilities of the Ops group is to perform reconciliation of investment holdings between the trading system and the custodian’s records to ensure that daily trades are accurately reflected in investment holdings. Ops is also responsible for reviewing and approving daily collateral movements (resulting from the derivatives traded and/or held) managed by the custodian.

FINDINGS AND RECOMMENDED ACTIONS

Overall, we determined that management controls related to TAA, derivatives, and other supporting groups are operating effectively to achieve relevant business objectives. During the course of our testing, we observed several instances of effective controls. Examples of the positive results include the following:

- TAA models are working well as intended. For example, the SPN model has been replicating the investment positions of the strategic partners, exhibiting a high correlation of 0.8 (i.e., 80 percent) since May 31, 2015.
- Input controls for TAA models are strong. Specifically, the process for updating economic and financial data from multiple outside sources on a daily basis has been automated and includes many checks for data quality before accepting the values for inputs into TAA models.
- The process for generating specific trades as well as sending the trades to the Trading Group is automated without manual interventions. A system developed in-house called Derivatives Trade Automation Project (DTAP) is utilized for these purposes.

Second Half Investment Control Test Results
August 24, 2016 Memorandum

- Adequate segregation of duties exists for derivatives trades originated from TAA models. For examples, each TAA trade initiated by a TAA team member has to be approved by a manager, executed by a trader, and reconciled by Investment Ops staff.

We did not identify any significant issues or control deficiencies. However, we noted an opportunity to develop written operating procedures for performing complicated TAA processes.

Enhance Written Operating Procedures for TAA Process

Although the TAA team has a high-level checklist to use as an informal guideline for completing TAA processes and did not omit key steps involved in running TAA models, they do not have written operating procedures for completing several steps involved in the process. These procedures will be consistent with the ones maintained by other IMD groups, such as Risk Group and External Public Markets (EPU).

Due to the complicated nature of the TAA processes involved (including several models used, inputs into these models, and outputs from these models), these written procedures would be useful in providing detailed guidelines for existing staff. In addition, these procedures could be used to train new team members, especially in case of key staff turnovers, to ensure continuity of business.

Written operating procedures for TAA could include the following elements:

- Roles and responsibilities of key process participants
- Major steps involved in the process (including the goal of each major step)
- Description of different TAA models used and model governance topics (such as introduction of new modes, removal of models, any significant changes to be made to the models, approval for major changes to the models, and periodic model validation checks)
- Description of detailed steps involved in the data input process, including quality checks performed
- Description of review of model outputs, including reasonableness checks performed
- Adjustments made to individual strategy weights (e.g., deviations from targets generated from TAA models) and documentation of justifications
- Pre-trade checks, including risk and compliance
- Reports generated from each major step and how they are used for the next step
- Interaction with other groups, including Risk (e.g., risk attribution and risk report), Trading (e.g., trade tickets, trade instructions, trade errors, trading cost report), and Investment Ops (e.g., trade settlement and holdings reconciliation)
- Documentation requirements, including files or model outputs to be saved in a secure location

Second Half Investment Control Test Results
August 24, 2016 Memorandum

RECOMMENDATION

We recommend that the Asset Allocation Group of the IMD develop detailed, written operating procedures for performing key tasks involved in running its TAA models and strategies.

MANAGEMENT RESPONSE

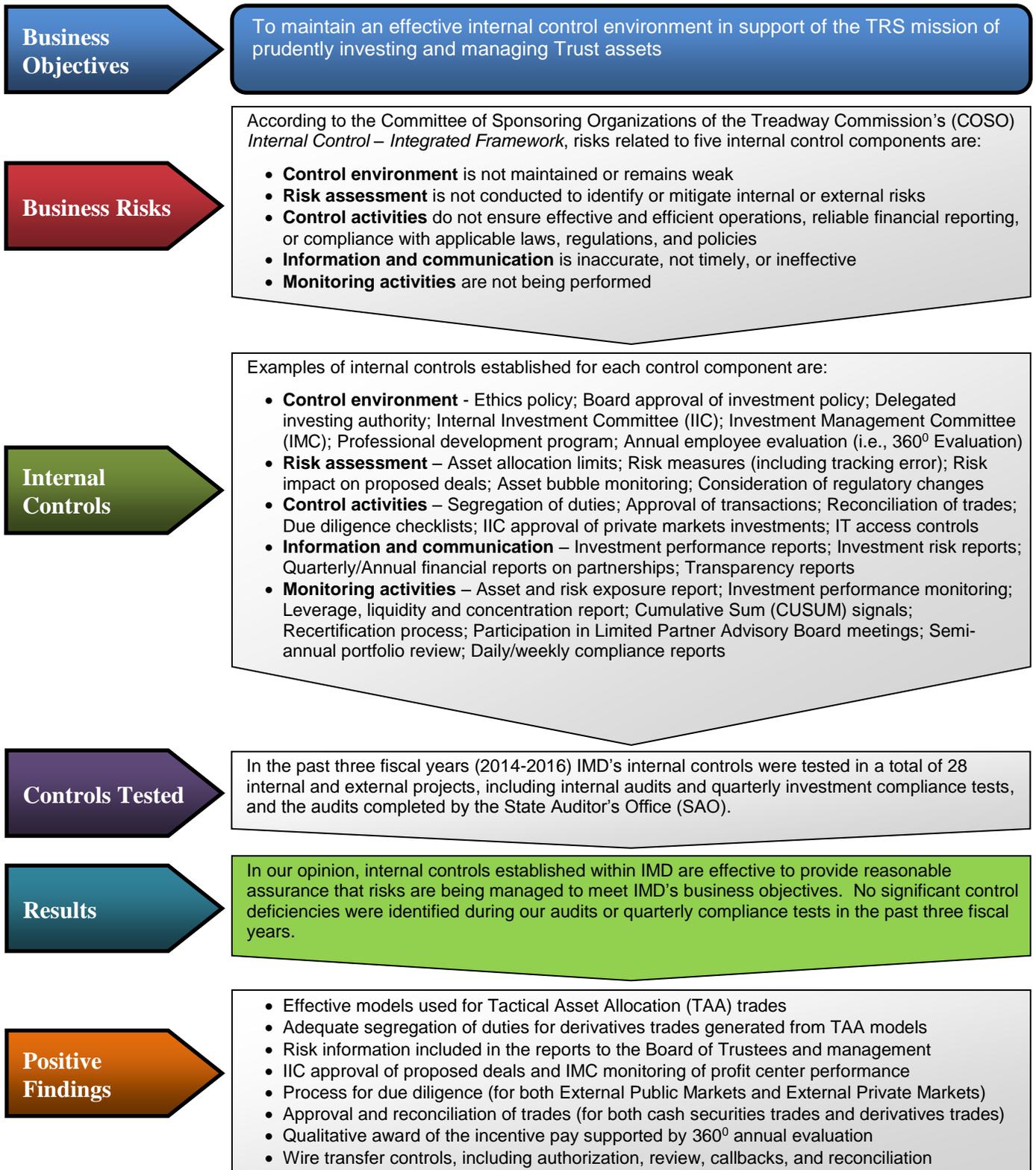
Management agrees with the recommendation. In addition to the checklist as Internal Audit mentioned, the TAA team maintains procedural documents. We will put these together and add further details to develop them into a comprehensive, written operating procedures manual. This will provide detailed instructions for TAA staff to follow in completing all steps involved in running the TAA models, including data inputs checks and output reviews. These procedures will also include the elements suggested by Internal Audit. Matt Talbert (Investment Manager) will be responsible for implementing this recommendation. The target implementation date is December 31, 2016.

TAB 6C

OVERALL OPINION OF IMD INTERNAL CONTROLS

August 26, 2016

TRS Internal Audit Department



Legend of Results:

Red - Unsatisfactory
Yellow - Some Improvement Needed
Orange - Major Improvement Needed
Green - Effective

August 26, 2016

Audit Committee, Board of Trustees
Brian Guthrie, Executive Director

EXECUTIVE SUMMARY

We have completed the **Overall Opinion of Investment Management Division (IMD) Internal Controls** as included in the *Fiscal Year 2016 Audit Plan*. IMD's business objectives include maintaining an effective internal control environment in support of TRS' mission of prudently investing and managing Trust assets.

The purpose of this report is to provide overall opinion on whether internal controls established within IMD are effective to provide reasonable assurance that risks are being managed to meet IMD's business objectives. This opinion is based on the results of the past three fiscal years' (FY 14 through FY 16) audits and quarterly compliance tests of IMD's groups, portfolios, operations, and activities.

In our opinion, internal controls established within IMD are effective to provide reasonable assurance that risks are being managed to meet the business objectives. Results of a total of 28 audits and quarterly compliance tests in the past three fiscal years did not identify any significant control deficiencies. Some opportunities to enhance controls were identified and management has implemented or is in the process of implementing all of the prior recommendations. The table in **Appendix B** lists the IMD areas where Internal Audit or external service providers tested controls during the previous three fiscal years. **Results and Recommendations** section provides information about Internal Audit's positive findings as well as information on prior recommendations.

Our evaluation of internal controls at IMD was based on the internal control framework ("*The COSO Internal Control – Integrated Framework*") updated by COSO¹ in 2013. The table in **Appendix C** provides information on five internal control components, 17 COSO principles, and examples of controls applicable to the IMD.

The audit objective, scope, methodology and conclusion are described in **Appendix A**.

¹ COSO stands for the Committee of Sponsoring Organizations of the Treadway Commission. COSO is a joint initiative of five private sector organizations dedicated to develop frameworks and guidance on enterprise risk management, internal control and fraud deterrence. The five participating organizations are the American Accounting Association, American Institute of Certified Public Accountants (AICPA), Financial Executives International (FEI), the Association of Accountants and Financial Professional in Business (IMA) and the Institute of Internal Auditors (IIA).

RESULTS AND RECOMMENDATIONS

During fiscal years 2014 through 2016, a total of 28 internal and external projects of IMD were completed, including quarterly investment compliance tests and the audits completed by the State Auditor’s Office (SAO).

The following table shows the breakdown of the number of projects (i.e., audits and quarterly compliance tests) by Internal Audit and external parties in the past three fiscal years:

Number of Internal and External Projects Completed During FY 2014–2016

Project Name (Project Number)	FY 16		FY 15		FY 14	
	Internal Project	External Project	Internal Project	External Project	Internal Project	External Project
Semi-Annual Testing of Investment Controls of External Public Markets, Strategic Partnership & Research, Tactical Asset Allocation, and Derivatives (16-301)	2					
Quarterly Investment Compliance Testing – Compliance with Investment Policy Statement (IPS), Securities Lending Policy (SLP), Ethics Policies, Wire Transfer Procedures, Budget Transfers and Amendment Procedures, and Performance Incentive Pay Procedures for Internal Public Markets (16-302)	4					
Testing of Performance Incentive Pay Calculations for the Plan Year Ended September 2015 (16-303)	1					
Semi-Annual Testing of Investment Controls of Private Equity and Real Assets (15-301)			2			
Audit of Information Technology Controls at Third-Party Investment Service Providers (15-301)			1			
Quarterly Investment Compliance Testing – Compliance with IPS, SLP, Ethics Policies, Wire Transfer Procedures, and Incentive Comp Calculations (15-302)			4			
Quarterly Test Results of Investment Controls(14-301)					4	
Quarterly Investment Compliance Testing – Compliance with IPS and Wire Transfer Procedures (14-302)					4	
Audit of the Teacher Retirement System’s Financial Statements, Fiscal Years 2015, 2014, and 2013 (State Auditor’s Office)		1		1		1
Incentive Compensation at the Teacher Retirement System, the Employees Retirement System, and the Permanent School Fund, Plan Year 2015, 2014, and 2013 (State Auditor’s Office)		1		1		1
SUBTOTAL	7	2	7	2	8	2
GRAND TOTAL	28					

OVERALL RESULTS

Based on the results of the past three fiscal years' (2014 through 2016) audits and quarterly investment compliance tests, we determined that internal controls are operating effectively to achieve IMD's business objectives. No significant control deficiencies were identified as a result of these test results.

POSITIVE RESULTS

The audits for the past three fiscal years included many positive audit results. Examples of specific positive results are:

- The Tactical Asset Allocation (TAA) models are working well as intended. For example, the SPN model has been replicating the investment positions of the strategic partners, exhibiting a high correlation of 0.8 (i.e., 80 percent) since May 31, 2015 (FY 16 IMD Control Tests, Second Half of Year).
- The process for generating specific trades as well as sending the trades to the Trading Group is automated without manual interventions. A system developed in-house called Derivatives Trade Automation Project (DTAP) is utilized for these purposes (FY 16 IMD Control Test, Second Half of Year).
- Adequate segregation of duties exists for derivatives trades originated from TAA models. For examples, each TAA trade initiated by a TAA team member has to be approved by a manager, executed by a trader, and reconciled by Investment Ops staff (FY 16 IMD Control Tests, Second Half of Year).
- External Public Markets (EPU) has recently started receiving reports from a hedge fund consultant which show comparisons of estimated fees and actual amounts of fees charged by each hedge fund (for both management fees and incentive fees). These reports enable EPU staff to assess whether hedge fund fees are reasonable (FY 16 IMD Control Tests, First Half of Year)
- The Strategic Partner Network Position Report ("Common Language Report") developed by the Strategic Partnership and Research (SPR) group provides a useful monitoring tool to find out and compare each strategic partner's asset allocation positions, exposures, and risk metrics on a weekly basis (FY 16 IMD Control Tests, First Half of Year)
- Risks defined by the Investment Policy Statement (IPS) are included in a semi-annual investment risk report to the Board and in other regular reports to management (*FY 15 Quarterly Agreed Upon Procedures Testing*)
- Monitoring of Bubble Risks is reported monthly to the Management Committee of the Investment Management Division and Risk Budget Impact Analysis is included in all new investments presented to the Internal Investment Committee (*FY 15 IMD Control Tests, Second Half of Year*)
- All approved Private and Public Markets investments were approved by the Internal Investment Committee (*Quarterly Investment Compliance Tests, FY 15*)
- Consultant's prudence letters were obtained before all External Private and External Public Markets deals were presented to the Internal Investment Committee for approval (*FY 14 IMD Control Tests, Q3 and Quarterly Investment Compliance Tests, FY 15*)

- Proposed asset allocations as well as the information presented to the Board of Trustees as part of the Strategic Asset Liability Study were well supported and documented (*FY 14 IMD Control Tests, Q4*)
- The process for due diligence of External Managers in TRS External Public Markets (EPU) is first rate. Controls we tested are appropriate and operating effectively (*Lenox Park LLC as part of FY 14 IMD Control Tests, Q3*)
- TRS investment trades were properly approved and timely reconciled for both cash securities trades and derivatives trades (*FY 14 IMD Control Test, Q3*)
- Qualitative award of the incentive compensation plan was supported by the results of 360⁰ annual evaluation (*State Auditor's Office Audit of Incentive Compensation at TRS, Plan Years 2012, 2013, and 2014*)
- Controls related to the complete and accurate execution of wire transfers were operating effectively. These controls include Investment Accounting's review of wire requests, signoff of requests by authorized individuals, and the ongoing reconciliation of completed wire transfers with the custodian (*Quarterly Investment Compliance Tests, FY 14, FY 15, and FY 16*)

SIGNIFICANT RESULTS²

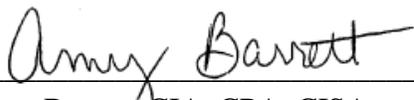
No significant issues and recommendations were identified.

OTHER REPORTABLE RESULTS

Some of the internal and external audit reports included recommendations to enhance internal controls. Management has implemented or is in the process of implementing all of these prior recommendations. Information about the recommendations and the implementation statuses for the past three fiscal years is included in **Appendix D**.

* * * * *

We appreciate IMD management and staff for their cooperation, courtesy, and professionalism extended to us during this audit. We especially appreciate audit coordination and facilitation provided by the Investment Operations management and staff.



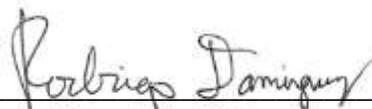
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Chief Audit Executive



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Director of Investment Audit Services



Anandhi Mani, CIA, CPA
Senior Investment Auditor



Rodrigo Dominguez
Internal Auditor

² A significant result is defined as a control weakness that is likely to create a high risk of not meeting business objectives if not corrected.

APPENDIX A

AUDIT OBJECTIVE, SCOPE, METHODOLOGY, AND CONCLUSION

We conducted the audits 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 controls³ are in place and are working effectively to achieve the business objectives of the Investment Management Division (IMD) of the Teacher Retirement System of Texas (TRS.)

SCOPE

The scope of the audits was limited to policies, processes and internal controls established within IMD during fiscal years 2014 through 2016.

The audit scope did not include TRS policies, processes, or internal controls not applicable to IMD or established by other TRS departments.

METHODOLOGY

Internal Audit examined the management control framework, the risk assessment strategy, policies, procedures and practices, information used for decision making, and reporting as applicable to IMD. The *COSO's Internal Control – Integrated Framework* was used as our criteria to identify different types of internal controls established at IMD and to assess whether these controls are effective. Effective controls mean that the controls exist and are operating as designed.

Our audit 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 within IMD.

³ According to the COSO, internal control is defined as a process, effective by an entity's board of directors, management, and other personnel, designed to provide reasonable assurance regarding the achievement of objectives relating to operations, reporting, and compliance.

To meet the audit objectives, we specifically performed the following procedures:

- Performed risk assessments to identify high risk areas within IMD to allocate audit resources
- Developed audit plans to determine audit coverage of IMD for fiscal years' 2014 through 2016
- Gained an understanding of business objectives, risks, business processes, and internal controls related to the scope of the relevant audit
- Reviewed investments-related policies and procedures
- Interviewed TRS executives, IMD management and staff, and external parties involved in the business processes
- Obtained IMD management's and staff's inputs in selecting key controls to test as well as sample managers, strategic partners, or investments
- Tested sample of investment transactions and established internal controls using the life of a trade methodology focusing on initial due diligence, investment monitoring, and investment exit
- Evaluated the effectiveness of Information Technology (IT) general controls, including access to systems and files
- Assessed the design of IT controls at two third-party service providers hosting critical IMD information systems

CONCLUSION

In our opinion, internal controls established within IMD are effective to provide reasonable assurance that risks are being managed to meet IMD's business objectives. This opinion is based on results of the past three fiscal years' (2014 through 2016) audits and quarterly investment compliance tests of IMD groups, portfolios, operations, and activities.

APPENDIX B

IMD Areas of Internal Controls Tested in Past Three Fiscal Years

COSO Component	FY 16	FY 15	FY 14
Control Environment	First and Second Half	All Quarters	2 nd Quarter
Risk Assessment	First and Second Half	Second Half	
Control Activities			
Securities Lending			1 st Quarter
Commission Sharing Arrangements			1 st Quarter
Internal Public Markets (IPM)			2 nd Quarter
Trade Management	Second Half		2 nd Quarter
Cash Securities			3 rd Quarter
Investment Performance			3 rd Quarter
Energy and Natural Resources			4 th Quarter
External Public Markets (EPU), including Hedge Funds *	First Half		3 rd Quarter
Strategic Partnership and Research (SPR)	First Half		
Strategic and Tactical Asset Allocation (including Derivatives)	Second Half		4 th Quarter
Private Equity *		First Half	
Real Assets *		Second Half	
Information and Communication			
Annual Financial Statements	All Year	4 th Quarter	4 th Quarter
Board and Management Reports	All Year	All Quarters	All Quarters
Information Systems (Access to IT Systems and Folders; Design of Controls at Two IMD IT Service Providers)	All Year	Second Half	
Monitoring Activities			
Quarterly Compliance Tests	All Quarters	All Quarters	All Quarters
State Street Compliance Monitoring	All Quarters	All Quarters	All Quarters
Investment Accounting	First Half	First and Second Half	

* Emerging managers are included in these portfolios.

APPENDIX C

IMD Internal Controls Mapped to COSO Principles

COSO Component	COSO Principle	Examples of IMD Controls Established
Control Environment (The set of standards, processes, and structures that provide the basis for carrying out internal control across the organization)	The organization demonstrates a commitment to integrity and ethical values	<ul style="list-style-type: none"> • Ethics policies • Annual ethics compliance certifications from employees and contractors • TRS Fraud and Ethics Hotline • Conflict of interest disclosure, including placement agent disclosure
	The board of trustees demonstrates independence from management and exercises oversight of the development and performance of internal control	<ul style="list-style-type: none"> • Board approval of investment-related policies • Board oversight of investment decisions • Obtaining external reviews, including consultants' and auditors' reviews
	Management establishes - with board oversight - structures, reporting lines, and appropriate authorities and responsibilities in the pursuit of objectives	<ul style="list-style-type: none"> • IMD organization chart • Delegated investing authority • Internal Investment Committee (IIC) and Investment Management Committee (IMC) • Service level agreement with external service providers
	The organization demonstrates a commitment to attract, develop, and retain competent individuals in alignment with objectives	<ul style="list-style-type: none"> • IMD career path • Continuing education requirement • Performance Incentive Pay Plan
	The organization holds individuals accountable for their internal control responsibilities in the pursuit of objectives	<ul style="list-style-type: none"> • Annual goal-setting and evaluation • 360 evaluation
Risk Assessment (A dynamic and iterative process for identifying and	The organization specifies objectives with sufficient clarity to enable the identification and assessment of risks relating to objectives	<ul style="list-style-type: none"> • Target investment returns established • Asset allocation targets with allowable ranges • Risk target and limits established

COSO Component	COSO Principle	Examples of IMD Controls Established
assessing risks to the achievement of objectives)	The organization identifies risks to achieve its objectives across the entity and analyzes risks to determine how they should be managed	<ul style="list-style-type: none"> • Different types of risks identified in the Investment Policy Statement • Various risk measures, including Value at Risk (VAR) and Tracking error (Limits on acceptable tracking error) established • Use of performance-to-risk measurements such as Sharpe Ratio
	The organization considers the potential for fraud in assessing risks to the achievement of objectives	<ul style="list-style-type: none"> • Personal Trading Policy, including preclearance requirements and restricted access to Material Non-Public Information (MNPI) • TRS Fraud and Ethics Hotline
	The organization identifies and assesses changes that could significantly impact the system of internal control	<ul style="list-style-type: none"> • Assessment of changing economic conditions and market forecasts • Identification of market dislocation • Bubble monitoring • Consideration of regulatory changes and their impact on IMD
Control Activities (The actions established through policies and procedures that help ensure that management’s directives to mitigate risk to the achievement of objectives are carried out)	The organization selects and develops control activities that contribute to the mitigation of risks to the achievement of objectives to acceptable levels	<ul style="list-style-type: none"> • Segregation of duties • Approval of transactions (e.g., hiring of managers, commitment of funds and execution of trades) • Reconciliation of trades • Checks on delegated investment limits • Minimum credit rating of counterparties • Due diligence checklists • IIC approval of investments • Premier List • Semi-annual portfolio review
	The organization selects and develops general control activities	<ul style="list-style-type: none"> • Restrictions on information technology (IT) system access

COSO Component	COSO Principle	Examples of IMD Controls Established
	over technology to support the achievement of objectives	<ul style="list-style-type: none"> Control tests on vendor-supported IT systems
	The organization deploys control activities through policies that establish what is expected and procedures that put policies into action	<ul style="list-style-type: none"> Investment-related policies, including Investment Policy Statement, Securities Lending Policy, Soft Dollar Policy and Proxy Voting Policy Operating procedures Process maps
Information and Communication (The continual, iterative process of providing, sharing, obtaining, and using relevant and quality information from internal and external sources)	The organization obtains or generates and uses relevant, quality information to support the functioning of internal control	<ul style="list-style-type: none"> Investment performance reports Investment risk reports Investment consultants' reports Industry research reports (Internal Public Markets) Leverage, liquidity and concentration reports (for hedge funds) Quarterly and annual financial statements (External Private Markets)
	The organization internally communicates information, including objectives and responsibilities for internal control, necessary to support the functioning of internal control	<ul style="list-style-type: none"> IMC meetings Monthly staff meetings Transparency reports to the Board of Trustees
	The organization communicates with external parties regarding matters affecting the functioning of internal control	<ul style="list-style-type: none"> Investment reports to legislative oversight bodies Participation in Cost Effectiveness Measurement (CEM) studies Communication to external managers (External Public Markets, External Private Markets) about changes in policy that affect controls

COSO Component	COSO Principle	Examples of IMD Controls Established
<p>Monitoring Activities</p> <p>(Ongoing evaluations, separate evaluation, or some combination of the two that are used to ascertain whether each of the five components of internal control is present and functioning)</p>	<p>The organization selects, develops, and performs ongoing and/or separate evaluations to ascertain whether the components of internal control are present and functioning</p>	<ul style="list-style-type: none"> • Weekly asset and risk exposure report • Monthly IMC meetings • Semi-annual risk reports to the Risk Management Committee of the Board • CUSUM (Cumulative Sum) signals • Daily and weekly compliance monitoring • Investment performance monitoring • Participation in Limited Partner Advisory Board meetings (External Private Markets) • Tracking of general partner financial reports (Investment Accounting)
	<p>The organization evaluates and communicates internal control deficiencies timely to those parties responsible for taking corrective action, including senior management and the board of trustees, as appropriate</p>	<ul style="list-style-type: none"> • Premier List Updates • Semi-annual portfolio review • Recertification process required for CUSUM signal generated (External Public Markets) • Daily and weekly investment compliance reports • Follow-up activities on compliance alerts • Compliance violation memo to the Board

APPENDIX D

Recommendations and Implementation Status for Audits and Compliance Testing Performed in Fiscal Years 2016, 2015, and 2014

Report Number and Report Title	Recommendation	Implementation Status	Implementation Date
16-301 Second Half of Semi-Annual Testing Results of Tactical Asset Allocation(TAA), including Derivatives	Enhance written operating procedures for TAA process	In progress	12/31/2016 (planned)
16-301 First Half of Semi-Annual Testing Results of Investment Controls of External Public Markets (EPU) and public Strategic Partnership & Research (SPR)	Improve the travel process by ensuring there is an appropriate justification for excess lodging expenses to be incurred for foreign travel.	In progress	12/31/2016 (planned)
16-303 Testing of Performance Incentive Pay Calculations	There are no procedures for Investment Accounting's comparison of investment returns	Implemented	8/2016
	There is no policy requiring performance appraisals for employees transferring from IMD.	In progress	10/31/2016
SAO 16-030 An Audit Report on Incentive Compensation at the Permanent School Fund, General Land Office, Employees Retirement System, and Teacher Retirement System	TRS should: <ul style="list-style-type: none"> • Strengthen controls over the incentive compensation calculation and review processes to prevent and detect calculation input errors. • Record all incentive compensation payments correctly in its general ledger. 	In Progress	12/31/2016 (planned)
15-301 Audit of Information Technology Controls at Third-Party	Refine IMD Contract Management checklist to ensure that TRS has engaged IT service	Implemented	10/2015

Report Number and Report Title	Recommendation	Implementation Status	Implementation Date
Investment Service Providers	providers on TRS data security terms prior to signing a new or amended contract		
	Request that key IT system providers produce a SOC 2 report to provide IMD with independent assurance that controls are in place and operating effectively	Implemented	3/2016
15-301 First Half of Semi Annual Test of Results of Investment Controls of Private Equity	Continue efforts to increase general partners' transparency on fees and expenses	Implemented	3/2016
	Clarify policies to document private equity staff's due diligence and monitoring activities	Implemented	8/2015
	Provide clear guidelines for acceptable accounting and valuation standards for private equity investments	Implemented	5/2016
15-501 Audit of Records Management	Records Management staff should perform routine enterprise-wide records retention schedule assessments to identify problems such as non-compliance or areas where focused training or consultation is needed.	Implemented	9/2015
	Records Management staff should ensure that management and staff receive the adequate records management training that includes well-defined guidelines for users of electronic record systems.	Implemented	9/2015

Report Number and Report Title	Recommendation	Implementation Status	Implementation Date
	TRS should require terminating employees and contract workers to formally certify/verify they do not have any TRS records.	Implemented	3/2016
14-301 Fourth Quarter Test Results of Investment Controls	Tailor manager and investment certification questionnaires to address ENR-specific topics	Implemented	Q2 FY 2015
	Consider leveraging consultants to a greater extent to supplement limited internal resources	Implemented	Q4 FY 2015
14-301 First Quarter Interim Test Results of Investment Controls	Include reasonableness checks on securities lending income as part of Investment Accounting's monitoring activities	Implemented	2/2014
	Consider other funding options to address long-term CSA revenue shortfall projections	Implemented	5/2014
14-302 First Quarter - Quarterly Investment Testing Investment Policy Statement (IPS), Wire Transfer Procedures Calendar Quarter Ended September 30, 2013	Test Result - IMD management identified and disclosed that one new investment in an Emerging Manager fund exceeded authorized limits	Implemented	11/2013
14-302 Second Quarter - Quarterly Investment Testing Investment Policy Statement (IPS), Wire Transfer Procedures Calendar Quarter Ended December 31, 2013	Two external managers purchased a stock newly added to the Sudan Restricted Companies List	Implemented	1/2014

TAB 6D

ANNUAL TESTING OF BENEFIT PAYMENTS JULY 2015 – JUNE 2016

TRS Internal Audit Department

Business Objectives	To deliver retirement and related benefits authorized by law for members and their beneficiaries.		
Business Risks	<p style="text-align: center;">Fraud / Errors</p> <p>Benefit payments could be incorrect or fraudulent in these areas:</p> <ul style="list-style-type: none"> Benefit payments to recent retirees Benefit payments with an expiration date 	<p style="text-align: center;">Eligibility</p> <ul style="list-style-type: none"> Wrong eligibility and benefit payment amount determination based on incorrect membership tier Member could retire with full normal-age retirement benefits without meeting the retirement eligibility requirements 	<p style="text-align: center;">Manual Voucher Payments</p> <p>Manual voucher payments could be processed incorrectly or without proper authorization</p>
Management Assertions	<p>All benefit payments are valid and are paid in accordance with <i>TRS Laws and Rules</i></p>	<ul style="list-style-type: none"> All active and retired members are assigned to the correct membership tier All retirees who received benefit payments are eligible 	<p>All manually processed voucher payments are valid</p>
Agreed-upon Procedures	<p>Match benefit payments to supporting documents in two areas:</p> <ol style="list-style-type: none"> 1. Recent retiree benefit recalculations 2. Identified benefit payment expiration date exceptions 	<ol style="list-style-type: none"> 3. Recalculate the member's tier for active and retired members 4. Recalculate the normal-age retirement eligibility for all recent normal-age service retirements 	<ol style="list-style-type: none"> 5. Match randomly selected manually processed voucher payments to supporting documentation
Test Results	<p>One recent retiree's annuity was understated by \$12.30 per month due to an incorrect adjustment of one of the highest five salaries.</p>	<p>No Exceptions</p>	<p>No Exceptions</p>
Management Responses	<p>Management agrees with the test results and is taking corrective actions including correcting the annuity amount and paying the difference in underpayments already issued.</p>	<p>N/A</p>	<p>N/A</p>

Legend of Results: Red - Significant to TRS
Yellow - Other Reportable Exception

Orange - Significant to Business Objectives
Green - Positive Test Result/No Exception



August 18, 2016

Barbie Pearson, Chief Benefit Officer

Subject: Report on Independent Annual Testing of Benefit Payments

We have completed the project, **Annual Testing of Benefit Payments**, for the period July 2015 through June 2016, as included in the *Fiscal Year 2016 Audit Plan*.

We performed the procedures agreed to by you. These procedures included five data-mining tests designed to identify anomalies in benefit payments during the current testing period and deviations from management's benefit processing controls. For this testing period, the tests included gross payment amounts made to recent retirees, manual benefit payments, normal-age retirement criteria, expiry dates for both five- or ten-year guaranteed period payments and disability retirement payment calculations for retirees with less than ten years of service, and tier verification for both active and retired members. We identified one exception as a result of the test procedures performed. The detailed procedures and results of our testing are explained in **Appendix A**.

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 the specified users of the report. Consequently, we make no representations regarding the sufficiency of the procedures described below either for the purpose for which this report has been requested or for any other purpose.

Internal Control Structure

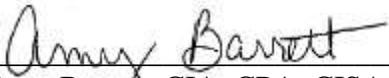
We were not engaged to and did not perform an examination of the internal controls nor the operating effectiveness pertaining to the subject areas tested. Accordingly, we do not express an opinion on the suitability of the design of internal controls nor the operating effectiveness of the subject areas tested.

Had we performed additional procedures, or had we made an examination of the system of internal control, other matters might have come to our attention that would have been reported to you. This report relates only to the procedures specified above and does not extend to the internal control structure.

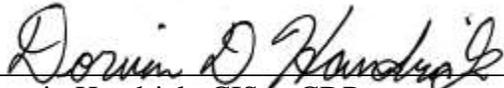
This report is intended solely for information and use by TRS management, the Board of Trustees, and oversight agencies, and is not intended to be and should not be used by anyone other than those specified parties. However, this report is a matter of public record and its distribution is not limited.

* * * * *

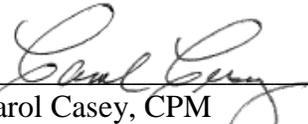
We express our appreciation to management and key personnel of Benefit Services, Information Technology, and Health and Insurance Benefits for their cooperation and professionalism shown to us during the testing.



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Chief Audit Executive



Dorvin Handrick, CISA, CDP
IT Audit Manager



Carol Casey, CPM
Internal Audit Consultant



Jan Engler, CIA, CISA, CFE
Director of Benefit Audits



Lan Zhu
Internal Audit Intern

APPENDIX A

AGREED UPON PROCEDURES AND RESULTS

1. Test Purpose: Identify gross annuity payments to recent retirees (June 2015 or later retirements) from July 2015 to June 2016 that are not calculated in accordance with *TRS Laws and Rules*.

Test Description: Select all gross annuity payments from the *July 2015 to June 2016 Benefit Payments Data File* that are related to recent member retirements since June 2015 and randomly select three service retirement sample items and two disability retirement sample items from each month for a total of 60 sample items. Recalculate the gross payment amount by recalculating the annuitant's standard annuity payment based on the member's number of years of service and the average salary amount at the time of retirement and adjusting the payment amount by the applicable option, Partial Lump Sum Option (PLSO), or early-age reduction factors. Agree the recalculations to the supporting documentation in the *TRS Imaging System* and identify any monthly gross payment discrepancies greater than five dollars.

Test Result: We identified one exception resulting in an underpayment of \$12.30 per month in the member's monthly annuity payment.

Management Response: Management agrees with the test results. The exception was due to the member moving from an August through July contract to a September through August contract. The retiree's gross annuity amount is being changed to the correct amount, and the retiree will be paid the difference of the underpayments already issued. This scenario will occur less frequently as we move forward due to the standardized school year.

2. Test Purpose: Identify expiration dates to stop the annuity payments timely that are not recorded in the system in accordance with TRS procedures.

Test Description: Identify expiration date exceptions for annuity payments from July 2015 to June 2016 and trace to supporting documentation for the two groups described below.

- a. Expiration date of guaranteed-period annuity options retirement
Select all payments from the *July 2015 to June 2016 Benefit Payments Data File* with guaranteed-period (5-year and 10-year) annuity options where TRS is paying the beneficiary because the retiree was deceased before the guaranteed period ended, and perform the following tests to identify exceptions. Trace all exceptions to the supporting documentation and report unsupported differences.
 - i.) Select all records where the expiration date is greater than the retirement date plus the guaranteed period.
 - ii.) Select all records where the payee is not the member.
 - iii.) Select all records where the member is not deceased.
 - iv.) Select all records where the beneficiary is receiving payments past the guarantee period.
- b. Expiration date of disability retirement with less than 10 years of service
A disability retiree with less than 10 years of service should receive a standard benefit amount of \$150 per month for the shortest period of the retiree's disability period, the retiree's life, or

the total number of creditable service months. Select all payments from the *July 2015 to June 2016 Benefit Payments Data File* to disability retirees with less than 10 years of service, and perform the following tests to identify exceptions. Trace all exceptions to the supporting documentation and report unsupported differences.

- i.) Select all records with a retiree death date where payment status is still active.
- ii.) Select all records where the gross payment amount is not the standard amount of \$150.
- iii.) Select all records where the expiration date has expired but the payment status is still active.
- iv.) Select all records where the member is not the payee.
- v.) Select all instances where the expiration date is greater than the retirement date plus the member's creditable service.

Test Results:

- a. Expiration date of guaranteed-period annuity options retirement
No exceptions identified.
 - b. Expiration date of disability retirement with less than 10 years of service
No exceptions identified.
3. Test Purpose: Identify the membership tiers that are not properly calculated in accordance with *TRS Laws and Rules* for active and retired members.

Test Description: Recalculate membership tiers for both active and retired members as described below.

- a. Active Members
Select all current active members from the *Member Records file as of June 20, 2016*, identify the member's tier for each record selected, stratify the selected records by the member's tier into tier groups, and select a random sample of ten sample items from each tier group for a total of 60 sample items. Recalculate the membership tier for each sample item and agree to the supporting documentation. Identify any exceptions.
- b. Retired Members
Select all recent retirees with gross annuity payments from the *July 2015 to June 2016 Benefit Payments Data File* that have retired since June 2015 and randomly select three service retirement sample items and two disability retirement sample items from each month for a total of 60 sample items. Recalculate the membership tier for each sample item and agree to the supporting documentation. Identify any exceptions.

Test Results:

- a. Active Members
No exceptions identified.
- b. Retired Members
No exceptions identified.

4. Test Purpose: Identify recent retirees who retired with normal-age service retirement benefits from July 2015 to June 2016 who did not meet the normal-age retirement eligibility requirements based on their membership tier.

Test Description: Select all payments from the *July 2015 to June 2016 Benefit Payments Data File* that are related to normal-age service retirements since June 2015. Exclude all proportionate retirements, early age retirements, and disability retirements. Calculate the annuitant's retirement age based on the year and month of the member's retirement date and birth date in the annuity system records. Identify the annuitant's membership tier by the TRS start date of their current membership, their "grandfathered" status, and by their amount of TRS service credit as of August 31, 2014. Recalculate the annuitant's normal-age retirement eligibility according to the eligibility requirements for their membership tier. Compare eligibility calculation with the following requirements:

- For all Tiers - Minimum retirement age of 65 with at least five years of service.
- For Tiers 1 and 2 - Meets Rule of 80 (member's age plus years of service credit total at least 80 years) with at least five years of service
- For Tiers 3 and 4 - Minimum retirement age of 60 and meets Rule of 80 with at least five years of service
- For Tiers 5 and 6 - Minimum retirement age of 62 and meets Rule of 80 with at least five years of service

Test Result: No exceptions identified.

5. Test Purpose: Identify manual voucher payments that are not paid in accordance with *TRS Laws and Rules* and that do not agree with supporting documentation.

Test Description: Select a random sample of 30 manual voucher payments from the *July 2015 to June 2016 Benefit Payments Data File*. Trace and agree these manual voucher payments to the supporting documents maintained in the *TRS Imaging System*.

Test Results: No exceptions identified. The 30 manual voucher payments randomly selected to test consisted of five premium refunds, four annuity pop-ups, eight qualified domestic relations order (QDRO) related payments, two payments re-issued due to returned payments, six retiree requests to re-issue payment, two payments re-issued due to retiree/beneficiary death, and three other related manual payments.

TAB 6E

AUDIT OF SOCORRO INDEPENDENT SCHOOL DISTRICT

August 3, 2016

TRS Internal Audit Department

Audit Objectives	<p>To determine the following:</p> <ul style="list-style-type: none"> • Completeness and accuracy of reports submitted to TRS by the Reporting Entity (RE) for the test month • TRS membership eligibility of contract workers performing services for the Reporting Entity • Accuracy of census data information (name, date of birth, gender, amount of salary, year of entry, years of service)
Risks	<ul style="list-style-type: none"> • Eligible members not included and/or ineligible employees are incorrectly included in reports • Ineligible compensation included in salary reported to TRS • Incorrect calculations of contributions and surcharges • Inaccurate actuarial data because census data provided to TRS is not correct
Scope and Tests	<p>Test month – March 2016</p> <p>With the exception of the superintendent's salary, we did not test whether salary amounts included in the reporting entity's payroll register were complete, accurate, and authorized. We did not test the eligibility to receive an annuity of those retirees who returned to work.</p> <ul style="list-style-type: none"> • To test completeness and accuracy of reports submitted to TRS: <ul style="list-style-type: none"> - Tested 30 of the 5,386 members reported to TRS and five employees not reported to TRS to determine eligibility by reviewing contract agreements, personnel files, third-party agreements, time reports, job descriptions, and compensation information - Tested all TRS Reporting and Query System (TRAQS) Reports submitted to TRS and verified totals reported to the RE detailed supporting documentation - Tested all retirees reported as having worked in the test month in a position other than a substitute to determine if time worked exceeded the TRS hour limit • To test membership eligibility of independent vendors/contract workers: <ul style="list-style-type: none"> - Reviewed contracts/invoices/work agreements of five vendors/independent contract workers paid in the test month • To test accuracy of census data information: <ul style="list-style-type: none"> - Assess supporting documentation for each sample item to confirm date of birth, hire date/years of service, eligible compensation, gender, and dates of termination/retirement
Test Results and Conclusions	<p>Conclusions</p> <ul style="list-style-type: none"> • Positive Finding: <ul style="list-style-type: none"> ○ Socorro ISD officials were prompt in responding to questions and providing supporting documentation ○ Personnel files were well organized • Test Results: <ul style="list-style-type: none"> ○ Some reports were incomplete and inaccurate ○ No vendor/independent contract workers were eligible for TRS membership and were therefore properly excluded from the TRS Regular Payroll Report ○ Census data information reported to TRS was accurate <p>See details of testing results in Appendix B.</p>
Recommended Actions	<p>We recommend that the Reporting Official:</p> <ul style="list-style-type: none"> • Work with TRAQS coaches to correct reports by the October 2016 report • Ensure personnel are knowledgeable of <i>TRS Laws and Rules</i> • Maintain sufficient and accurate records of time worked for all substitutes and retirees
Management Responses	<p>Reporting Entity management agrees with the recommendations.</p>



August 3, 2016

Superintendent of Schools
Socorro Independent School District
12440 Rojas Dr.
El Paso, TX 79928-5261

AUDIT REPORT OF SOCORRO INDEPENDENT SCHOOL DISTRICT

The Annual Audit Plan approved by the Teacher Retirement System of Texas (TRS) Board of Trustees includes audits of reporting entities¹ to confirm member eligibility and accuracy of contributions and fees. Also, in response to new requirements of the Governmental Accounting Standards Board (GASB), the American Institute of Certified Public Accountants (AICPA) issued a white paper indicating that reporting entities' census data should be audited. Subsequently, the AICPA reconfirmed this requirement when it issued the *State and Local Governments – Audit and Accounting Guide*. As a result, we have included testing of census data (name, date of birth, gender, amount of salary, year of entry, and years of service) in the scope of this audit. Separately, the State Auditor's Office is performing audits of reporting entities' census data as part of the audit of the TRS *Comprehensive Annual Financial Report*.

The population of reporting entities from which the sample was selected for testing included all Texas public schools. The reporting entities chosen for audit were selected based on criteria including frequency of adjustments and corrections to reports, complaints about the reporting entity, warrant holds, TRS management requests, etc.

We conducted this 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.

See Appendix A for the audit objective, scope, methodology, and conclusion.

See the table at Appendix B for details of testing results.

¹ A reporting entity (RE) is an employer, as defined in Texas Government Code, Title 8, Subtitle C, Chapter 821.001.

REPORTING ENTITY BACKGROUND²

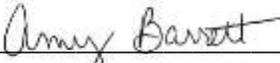
The Socorro Independent School District (SISD) is one of the fastest growing school districts in the state of Texas with 4,683 full-time employees serving more than 45,200 students with innovative instruction in state-of-the art facilities. SISD is an outstanding educational institution having been named a two-time Broad Prize finalist and having earned TEA Met Standards status three years in a row as well as surpassing the state average in all 17 STAAR exams during this same period. Recently, SISD has been recognized for numerous achievements to include being named Region 19 School Board of the Year and Texas Honor Board in 2015. In 2016, Dr. Jose Espinoza was named Region 19 Superintendent of the Year. Of particular note, SISD was the only West Texas school district to be named a finalist in the 2016 H-E-B Excellence in Education – Large School District category. Additionally, many other employee and student awards were earned at the district, regional and state level.

The District is dedicated to offering the best education in all 47 of its campuses focusing on student achievement for all students. SISD educators are highly qualified and work to ensure all students, including special populations such as low-income, bilingual, special education and military students, have the best resources and instruction to succeed.

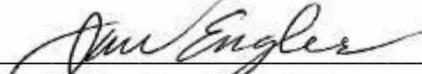
The District operates on a year-round calendar and has a long tradition of success. It is committed to "Achieve Success as a Team" so that all students are college and career-ready when they graduate from SISD schools.

* * * * *

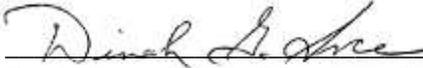
We appreciate Socorro ISD management and staff for their cooperation, courtesy, and professionalism extended to us during this audit.



Amy Barrett, CIA, CPA, CISA
Chief Audit Executive



Jan Engler, CIA, CISA, CFE
Director of Benefit Audits



Dinah G. Arce, CIA, CPA, CFE, CIDA
Senior Auditor



Art Mata, CEBS, CPM
Senior Internal Audit Consultant



Carol Casey, CPM
Internal Audit Consultant

² Information obtained from the ISD website and other internet sources.

APPENDIX A

AUDIT OBJECTIVE, SCOPE, METHODOLOGY, AND CONCLUSION

AUDIT OBJECTIVE

Our audit objectives were to determine the following³:

- Completeness and accuracy of the reports submitted to TRS by the Reporting Entity for the test month
- Eligibility of contract workers performing services for the Reporting Entity for the test month for TRS membership
- Accuracy of census data information (name, date of birth, gender, amount of salary, year of entry, years of service)

We performed tests to determine whether the following was complete and accurate:

- Eligible members
- Member contributions
- Employer contributions and surcharges
- Census data of eligible members

SCOPE

Payroll data was selected for a test month. We selected:

- Sample items from TRS Regular Payroll Report for the test month
- Retirees who worked in the test month
- Sample items from the Reporting Entity payroll register for employees who were not reported to TRS
- Vendor/independent contract workers paid for the test month for services performed

With the exception of the superintendent's salary, we did not test whether salary amounts included in the reporting entity's payroll register were complete, accurate, and authorized.

We did not test the eligibility to receive an annuity of those retirees who have returned to work.

METHODOLOGY

We specifically performed the procedures below.

1. To determine completeness and accuracy of reporting eligible members:

- Confirm eligibility through contract agreements, personnel files, third-party agreements, time reports, job descriptions, and compensation information
- Tested all TRS Reporting and Query System (TRAQS) Reports submitted to TRS and verified totals reported to the RE detailed supporting documentation

³ Assuming the completeness and accuracy of the official records maintained by the RE

- Tested all retirees reported as having worked in the test month in a position other than a substitute to determine if time worked exceeded the TRS hour limit
- 2. To test membership eligibility of independent vendors/contract workers**
- Reviewed contracts/invoices/work agreements of five vendors/independent contract workers paid in the test month
- 3. To determine accuracy of census data of eligible members:**
- Assess supporting documentation for each sample item to confirm date of birth, hire date/years of service, eligible compensation, gender, and dates of termination/retirement

CONCLUSION

- Some reports were incomplete and inaccurate
- No vendor/independent contract workers were eligible for TRS membership and were therefore properly excluded from the TRS Regular Payroll Report
- Census data information reported to TRS was accurate

See the table at **Appendix B** for detailed testing results.

**APPENDIX B
SOCORRO ISD
DETAIL OF TESTING RESULTS**

REGULAR PAYROLL REPORT	GRAND TOTAL REPORTED	TOTAL TESTED	UNDER STATED	OVER STATED	REVISED TOTAL TESTED	% ERROR
Member Contributions to Pension Fund						
No exceptions						
TOTAL	1,418,557.65	10,755.00	\$ -	\$ -	\$ 10,755.00	0.00%
Member Contributions to TRS-Care						
No exceptions						
TOTAL	128,066.53	970.94	\$ -	\$ -	\$ 970.94	0.00%
RE Contributions to TRS-Care						
No exceptions						
TOTAL	108,362.94	821.56	\$ -	\$ -	\$ 821.56	0.00%
NEW MEMBER REPORT						
No exceptions						
TOTAL	\$ 10,383.40	\$ 72.53	\$ -	\$ -	\$ 72.53	0.00%
FEDERAL FUND/PRIVATE GRANT REIMBURSEMENT TO STATE						
Improperly included and paid contributions on one new member				\$ 72.53		
TOTAL	\$ 109,442.89	\$ 682.21	\$ -	\$ 72.53	\$ 609.68	10.63%
TRS-CARE FEDERAL GRANT REIMBURSEMENT TO STATE						
No exceptions						
TOTAL	\$ 16,099.46	\$ 100.33	\$ -	\$ -	\$ 100.33	0.00%

STATUTORY MINIMUM REPORT		GRAND TOTAL REPORTED	TOTAL TESTED	UNDER STATED	OVER STATED	REVISED TOTAL TESTED	% ERROR
Incorrectly calculated and underpaid contributions on seven members				\$ 323.89			
TOTAL		\$ 211,277.95	\$ 3,086.81	\$ 323.89	\$ -	\$ 3,410.70	10.49%
NON-OASDI REPORT		GRAND TOTAL REPORTED	TOTAL TESTED	UNDER STATED	OVER STATED	REVISED TOTAL TESTED	% ERROR
No exceptions							
TOTAL		\$ 239,235.49	\$ 1,477.81	\$ -	\$ -	\$ 1,477.81	0.00%
EMPLOYMENT AFTER RETIREMENT AREA 1 AND 2 REPORT							
Improperly excluded one retiree in Area 1 report		Dollars not applicable					
Improperly excluded one retiree in Area 2 report							
Improperly reported one retiree in Area 2 instead of Area 1							
PENSION SURCHARGE FOR RETIREES REPORT		GRAND TOTAL REPORTED	TOTAL TESTED	UNDER STATED	OVER STATED	REVISED TOTAL TESTED	% ERROR
No exceptions							
TOTAL		\$ -	\$ -	\$ -	\$ -	\$ -	0.00%
TRS-CARE SURCHARGE FOR RETIREES REPORT		GRAND TOTAL REPORTED	TOTAL TESTED	UNDER STATED	OVER STATED	REVISED TOTAL TESTED	% ERROR
No exceptions							
TOTAL		\$ -	\$ -	\$ -	\$ -	\$ -	0.00%
GRAND TOTAL DOLLAR ADJUSTMENTS			\$ 17,967.19	\$ 323.89	\$ 72.53	\$ 18,218.55	

AUDIT OF YSLETA INDEPENDENT SCHOOL DISTRICT

August 3, 2016

TRS Internal Audit Department

Audit Objectives	<p>To determine the following:</p> <ul style="list-style-type: none"> • Completeness and accuracy of reports submitted to TRS by the Reporting Entity (RE) for the test month • TRS membership eligibility of contract workers performing services for the Reporting Entity • Accuracy of census data information (name, date of birth, gender, amount of salary, year of entry, years of service)
Risks	<ul style="list-style-type: none"> • Eligible members not included and/or ineligible employees are incorrectly included in reports • Ineligible compensation included in salary reported to TRS • Incorrect calculations of contributions and surcharges • Inaccurate actuarial data because census data provided to TRS is not correct
Scope and Tests	<p>Test month – March 2016 With the exception of the superintendent's salary, we did not test whether salary amounts included in the reporting entity's payroll register were complete, accurate, and authorized. We did not test the eligibility to receive an annuity of those retirees who returned to work.</p> <ul style="list-style-type: none"> • To test completeness and accuracy of reports submitted to TRS: <ul style="list-style-type: none"> - Tested 30 of the 6,185 members reported to TRS and five employees not reported to TRS to determine eligibility by reviewing contract agreements, personnel files, third-party agreements, time reports, job descriptions, and compensation information - Tested all TRS Reporting and Query System (TRAQS) Reports submitted to TRS and verified totals reported to the RE detailed supporting documentation - Tested all retirees reported as having worked in the test month in a position other than a substitute to determine if time worked exceeded the TRS hour limit • To test membership eligibility of independent vendors/contract workers: <ul style="list-style-type: none"> - Reviewed contracts/invoices/work agreements of five vendors/independent contract workers paid in the test month • To test accuracy of census data information: <ul style="list-style-type: none"> - Assess supporting documentation for each sample item to confirm date of birth, hire date/years of service, eligible compensation, gender, and dates of termination/retirement
Test Results and Conclusions	<p>Conclusions</p> <ul style="list-style-type: none"> • Positive Finding: <ul style="list-style-type: none"> ○ Ysleta ISD officials were prompt in responding to questions and providing supporting documentation ○ Personnel files were well organized • Test Results: <ul style="list-style-type: none"> ○ Some reports were incomplete and inaccurate ○ No vendor/independent contract workers were eligible for TRS membership and were therefore properly excluded from the TRS Regular Payroll Report ○ Census data information reported to TRS was accurate <p>See details of testing results in Appendix B.</p>
Recommended Actions	<p>We recommend that the Reporting Official:</p> <ul style="list-style-type: none"> • Work with TRAQS coaches to correct reports by the October 2016 report • Ensure personnel are knowledgeable of <i>TRS Laws and Rules</i> • Maintain sufficient and accurate records of time worked for all substitutes and retirees
Management Responses	<p>Reporting Entity management agrees with the recommendation.</p>



August 3, 2016

Superintendent of Schools
Ysleta Independent School District
9600 Sims Dr.
El Paso, TX 79925

AUDIT REPORT OF YSLETA INDEPENDENT SCHOOL DISTRICT

The Annual Audit Plan approved by the Teacher Retirement System of Texas (TRS) Board of Trustees includes audits of reporting entities¹ to confirm member eligibility and accuracy of contributions and fees. Also, in response to new requirements of the Governmental Accounting Standards Board (GASB), the American Institute of Certified Public Accountants (AICPA) issued a white paper indicating that reporting entities' census data should be audited. Subsequently, the AICPA reconfirmed this requirement when it issued the *State and Local Governments – Audit and Accounting Guide*. As a result, we have included testing of census data (name, date of birth, gender, amount of salary, year of entry, and years of service) in the scope of this audit. Separately, the State Auditor's Office is performing audits of reporting entities' census data as part of the audit of the TRS *Comprehensive Annual Financial Report*.

The population of reporting entities from which the sample was selected for testing included all Texas public schools. The reporting entities chosen for audit were selected based on criteria including frequency of adjustments and corrections to reports, complaints about the reporting entity, warrant holds, TRS management requests, etc.

We conducted this 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.

See Appendix A for the audit objective, scope, methodology, and conclusion.

See the table at Appendix B for details of testing results.

¹ A reporting entity (RE) is an employer, as defined in Texas Government Code, Title 8, Subtitle C, Chapter 821.001.

REPORTING ENTITY BACKGROUND²

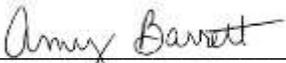
The Ysleta Independent School District (YISD) is the third largest school district in El Paso, Texas serving more than 42,500 students in a culturally diverse, family-friendly community. The district offers innovative instruction, state-of-the art facilities and a safe and secure educational environment. The Ysleta district has grown from its humble beginnings as a rural education district with one high school and a handful of middle and elementary schools into one of the major school districts in the state of Texas. YISD has 62 campuses, which sprawl through an urban area stretching from northeast El Paso to the east and southeast areas of the city. The district employs 6,000 administrators, teachers and support staff.

The small town of Ysleta was named after the Isleta Indians of northern New Mexico, a Pueblo Indian tribe that resided in the area for a thousand years. Over the next four centuries waves of immigration into the area cultivated the diverse town that was incorporated into the city of El Paso in the 1950s. The first school in Ysleta was opened in 1880 and, although records are sketchy, it seems Ysleta High School originated in 1900. The Ysleta school district was formally organized in 1915 and the first unit of Ysleta Elementary was opened in 1917. Ysleta's district boundaries contain nationally recognized areas of historic missions, homes and Indian settlements. Structures on the Mission Trail date back to the 1600s and represent some of the oldest examples of European colonization in the United States.

YISD is committed to providing students and educators' resources that will ensure academic success and prepare students to compete in the 21st century global society. YISD was named a national Broad Prize finalist for two consecutive years in 2010 and 2011. YISD remains committed to achieving student success being propelled by strong leadership and innovative instructional strategies.

* * * * *

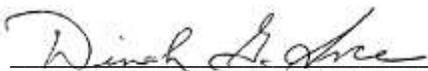
We appreciate Ysleta ISD management and staff for their cooperation, courtesy, and professionalism extended to us during this audit.



Amy Barrett, CIA, CPA, CISA
Chief Audit Executive



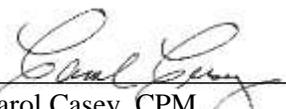
Jan Engler, CIA, CISA, CFE
Director of Benefit Audits



Dinah G. Arce, CIA, CPA, CFE, CIDA
Senior Auditor



Art Mata, CEBS, CPM
Senior Internal Audit Consultant



Carol Casey, CPM
Internal Audit Consultant

² Information obtained from the ISD website and other internet sources.

APPENDIX A

AUDIT OBJECTIVE, SCOPE, METHODOLOGY, AND CONCLUSION

AUDIT OBJECTIVE

Our audit objectives were to determine the following³:

- Completeness and accuracy of the reports submitted to TRS by the Reporting Entity for the test month
- Eligibility of contract workers performing services for the Reporting Entity for the test month for TRS membership
- Accuracy of census data information (name, date of birth, gender, amount of salary, year of entry, years of service)

We performed tests to determine whether the following was complete and accurate:

- Eligible members
- Member contributions
- Employer contributions and surcharges
- Census data of eligible members

SCOPE

Payroll data was selected for a test month. We selected:

- Sample items from TRS Regular Payroll Report for the test month
- Retirees who worked in the test month
- Sample items from the Reporting Entity payroll register for employees who were not reported to TRS
- Vendor/independent contract workers paid for the test month for services performed

With the exception of the superintendent's salary, we did not test whether salary amounts included in the reporting entity's payroll register were complete, accurate, and authorized.

We did not test the eligibility to receive an annuity of those retirees who have returned to work.

METHODOLOGY

We specifically performed the procedures below.

1. To determine completeness and accuracy of reporting eligible members:

- Confirm eligibility through contract agreements, personnel files, third-party agreements, time reports, job descriptions, and compensation information
- Tested all TRS Reporting and Query System (TRAQS) Reports submitted to TRS and verified totals reported to the RE detailed supporting documentation

³ Assuming the completeness and accuracy of the official records maintained by the RE

- Tested all retirees reported as having worked in the test month in a position other than a substitute to determine if time worked exceeded the TRS hour limit

2. To test membership eligibility of independent vendors/contract workers

- Reviewed contracts/invoices/work agreements of five vendors/independent contract workers paid in the test month

3. To determine accuracy of census data of eligible members:

- Assess supporting documentation for each sample item to confirm date of birth, hire date/years of service, eligible compensation, gender, and dates of termination/retirement

CONCLUSION

- Some reports were incomplete and inaccurate
- No vendor/independent contract workers were eligible for TRS membership and were therefore properly excluded from the TRS Regular Payroll Report
- Census data information reported to TRS was accurate

See the table at **Appendix B** for detailed testing results.

APPENDIX B
YSLETA ISD
DETAIL OF ADJUSTMENTS TO REPORTS

REPORT TESTING DETAILS

REGULAR PAYROLL REPORT	GRAND TOTAL REPORTED	TOTAL TESTED	UNDER STATED	OVER STATED	REVISED TOTAL TESTED	% ERROR
Member Contributions to Pension Fund						
No exceptions for the 30 reported to TRS; however, one employee not reported to TRS was improperly excluded from the TRS Regular Payroll Report and contributions were not paid			\$ 59.51			
TOTAL	\$ 1,637,778.04	\$ 10,442.35	\$ 59.51	\$ -	\$ 10,501.86	0.57%
Member Contributions to TRS-Care						
No exceptions for the 30 reported to TRS; however, one employee not reported to TRS was improperly excluded from the TRS Regular Payroll Report and contributions were not paid			\$ 5.37			
TOTAL	\$ 147,854.62	\$ 942.71	\$ 5.37	\$ -	\$ 948.08	0.57%
RE Contributions to TRS-Care						
No exceptions for the 30 reported to TRS; however, one employee not reported to TRS was improperly excluded from the TRS Regular Payroll Report and contributions were not paid			\$ 4.55			
TOTAL	\$ 125,108.24	\$ 797.68	\$ 4.55	\$ -	\$ 802.23	0.57%
NEW MEMBER REPORT	GRAND TOTAL REPORTED	TOTAL TESTED	UNDER STATED	OVER STATED	REVISED TOTAL TESTED	% ERROR
No exceptions						
TOTAL	\$ 6,662.40	\$ 912.89	\$ -	\$ -	\$ 912.89	0.00%
FEDERAL FUNDS/PRIVATE GRANT REIMBURSEMENT TO STATE	GRAND TOTAL REPORTED	TOTAL TESTED	UNDER STATED	OVER STATED	REVISED TOTAL TESTED	% ERROR
No exceptions						
TOTAL	\$ 155,326.22	\$ 371.48	\$ -	\$ -	\$ 371.48	0.00%
TRS-CARE FEDERAL GRANT REIMBURSEMENT TO STATE	GRAND TOTAL REPORTED	TOTAL TESTED	UNDER STATED	OVER STATED	REVISED TOTAL TESTED	% ERROR
No exceptions						
TOTAL	\$ 22,884.18	\$ 54.63	\$ -	\$ -	\$ 54.63	0.00%

STATUTORY MINIMUM REPORT						
	GRAND TOTAL REPORTED	TOTAL TESTED	UNDER STATED	OVER STATED	REVISED TOTAL TESTED	% ERROR
Incorrectly calculated and overpaid contributions on three members				\$ 25.25		
TOTAL	\$ 242,797.13	\$ 2,682.24	\$ -	\$ 25.25	\$ 2,656.99	0.94%
NON-OASDI REPORT						
	GRAND TOTAL REPORTED	TOTAL TESTED	UNDER STATED	OVER STATED	REVISED TOTAL TESTED	% ERROR
Incorrectly calculated and overpaid contributions on one member				\$ 153.35		
Incorrectly calculated and improperly underpaid contributions on two members			\$ 4.61			
Improperly excluded one employee from the TRS Regular Payroll Report (see testing of Regular Payroll Report above) and therefore did not pay contribution			\$ 12.40			
TOTAL	\$ 284,890.51	\$ 1,570.80	\$ 17.01	\$ 153.35	\$ 1,434.46	10.85%
EMPLOYMENT AFTER RETIREMENT AREA 1 AND 2 REPORT						
Improperly excluded 64 retirees from Area 1 and Area 2 Reports	Dollars not applicable					
Incorrectly reported one retiree on Area 2 instead of Area 1						
PENSION SURCHARGE FOR RETIREES REPORT						
	GRAND TOTAL REPORTED	TOTAL TESTED	UNDER STATED	OVER STATED	REVISED TOTAL TESTED	% ERROR
No exceptions						
TOTAL	\$ 4,556.48	\$ 4,556.48	\$ -	\$ -	\$ 4,556.48	0.00%
TRS-CARE SURCHARGE FOR RETIREES REPORT						
	GRAND TOTAL REPORTED	TOTAL TESTED	UNDER STATED	OVER STATED	REVISED TOTAL TESTED	% ERROR
No exceptions						
TOTAL	\$ 2,347.00	\$ 2,347.00	\$ -	\$ -	\$ 2,347.00	0.00%
GRAND TOTAL DOLLAR ADJUSTMENTS		\$ 24,678.26	\$ 86.44	\$ 178.60	\$ 24,586.10	



EMPLOYER AUDIT RESULTS

FISCAL YEARS 2015-2016



Disclaimer: Results presented are for employers selected for audit based on risk. These results may not be representative of the total population.

AUDITS COMPLETED

7 audits in FY16 and 4 in FY15

GEOGRAPHIC LOCATIONS TESTED

Rio Grande Valley (1), Central and South Texas (3), West Texas (4), East Texas (2), and Northeast Texas (1)

REPORTS TESTED

All 8 contribution and surcharge reports submitted to TRS for the test month

MEMBER POPULATION RANGE REPORTED

150 - 13,559

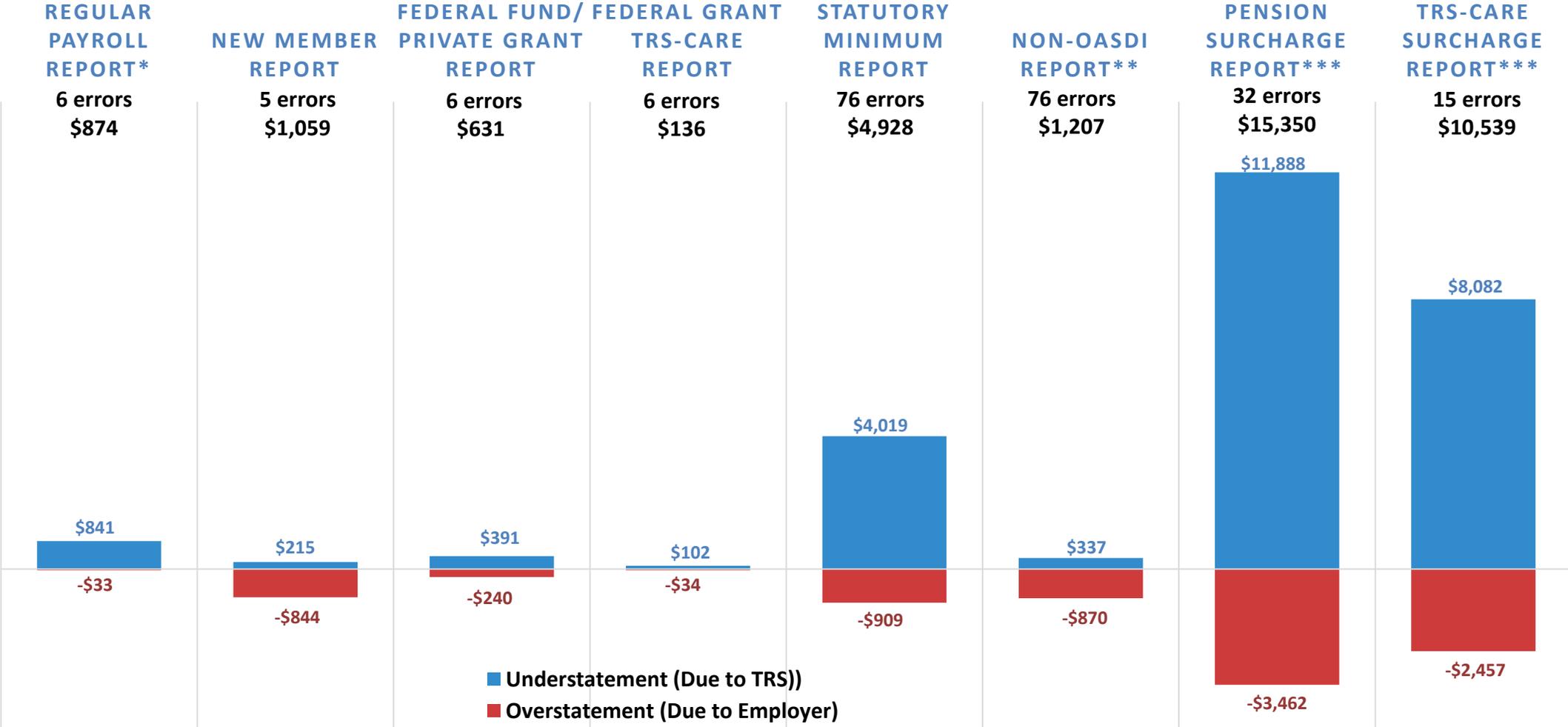
TOTAL CONTRIBUTION/SURCHARGE AMOUNT RANGE REPORTED FOR THE MONTH TESTED

\$58,121 - \$5,592,444

CORRECTIONS COMPLETED OR IN PROGRESS

7 employers have corrected errors and 4 employers are in the process of correcting errors

Errors by Report



* Regular Payroll Report includes member contribution to pension fund, TRS-Care, and employer contribution to TRS-Care.
 ** OASDI stands for old age, survivor and disability insurance, which is more commonly referred to as Social Security.
 *** Excludes one employer that is still researching and resolving errors.

Disclaimer: Results presented are for employers selected for audit based on risk. These results may not be representative of the total population.

Errors by Report

	Regular Payroll Report	New Member Report	Federal Fund/Private Grant Report	Federal Grant TRS-Care Report	Statutory Minimum Report	Non-OASDI Report	Pension Surcharge Report	TRS-Care Surcharge Report
Absolute Value of Contributions Over and Under Reported	1%	26%	12%	18%	27%	8%	56%	62%
Net Contributions (Over)/Under-Reported	1%	(15%)	3%	9%	17%	(3%)	31%	33%
Contributions/Surcharges Reported for Fiscal Year 15	\$ 2,774 M	\$ 58 M	\$ 215 M	\$ 192 M	\$ 334 M	\$ 345 M	\$ 16 M	\$ 11 M

Disclaimer: Results presented are for employers selected for audit based on risk. These results may not be representative of the total population.

TAB 7

**TRS Internal Audit
Summary of Audit Recommendations Status
August 2016**

Project	Recommendation	Status	Issue Type	Estimated Date	Revised / Actual Date
14-401 Purchasing and Contract Administration					
	TRS' Contract Administration Manual should have a monitoring component to ensure compliance with the revised Contract Administration Manual and a method for follow-up and/or escalation of non-compliance.	Implemented	Other Reportable	9/2015	8/2016
15-402 Actuarial Data Controls					
	Include the required active and retired actuarial data file layouts in the contractual agreement with actuary	Implemented	Other Reportable	9/2016	
15-501 Records Management Audit					
	Require Certification for Terminating Employee and Contract Workers	Implemented	Significant	12/2015	3/2016
	Develop a plan to perform routine enterprise-wide departmental records retention assessments	Implemented	Significant	10/2015	9/2015
	Develop a plan to provide well-defined guidelines for users of electronic records systems and increase records management awareness	Implemented	Significant	10/2015	9/2015

Significant to Business Objectives

	<ul style="list-style-type: none"> Past <i>original</i> estimated completion date 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 <i>original</i> <u>or</u> 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 <i>original</i> <u>or</u> 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
August 2016**

Project	Recommendation	Status	Issue Type	Estimated Date	Revised / Actual Date
16-301 Overall IMD Opinion Audit					
	Improve the travel process to ensure justification for excess lodging expenses for foreign travel	In Progress	Other Reportable	8/2016	12/2016
16-303 Performance Incentive Payment Calculations					
	Review of Profit Center Returns Prepared for Incentive Compensation Purposes	Implemented	Other Reportable	9/2016	8/2016
	Qualitative Award for Transferred Employees	In Progress	Other Reportable	9/2016	
16-602 Internal Audit Self-Assessment					
	Update TeamMate Template to include steps for documenting improvement opportunities and communications for suspected frauds	Implemented	Other Reportable	8/2016	8/2016
	Update steps in planning phase to assess ability in performing non-audit Services	Implemented	Other Reportable	8/2016	8/2016
	Update steps for Agreed-Upon Procedures to include components enumerated and to include "Independence" in the report title	Implemented	Other Reportable	8/2016	8/2016

**TRS Internal Audit
Summary of Audit Recommendations Status
August 2016**

Status of Reporting Entity Audit Recommendations

	Audit Project #	Audit Report Date	Reporting Entity (RE)	Status
1	16-401 A	1/15/2016	Manor ISD	In Progress
2	16-401 B	2/5/2016	Liberty Hill ISD	Closed
3	16-401 C	3/4/2016	Beaumont ISD	Closed
4	16-401 D	5/13/2016	Daingerfield-Lone Star 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

**TRS Internal Audit
Summary of Audit Recommendations Status
August 2016**

State Auditor's Office (SAO) Audit Recommendations

Project	Recommendation	Status	Issue Type	Estimated Date	Revised / Actual Date
15-305 SAO Audit of Fiscal Year 2014 Comprehensive Annual Financial Report					
	Strengthen controls over census data	In Progress	Significant	8/2016	9/2017
16-030 SAO Audit of Incentive Compensation					
	Strengthen Controls over Incentive Compensation Calculation and Review Processes	In Progress	Other Reportable	9/2016	

External Quality Assurance Review – Fiscal Year 2016

Project	Recommendation	Status	Issue Type	Estimated Date	Revised / Actual Date
External Quality Assurance Review Report of the Teacher Retirement System's Internal Audit Department					
	Establish appropriate balance between advisory/consulting engagements, assurance engagements to better assist in capacity management, resource planning, accounting for potential impairments to audit staff objectivity.	Implemented	Other Reportable	6/2016	8/2016
	Develop a resource and succession plan in consideration of potential attrition and loss of critical skills required to sustain internal audit functions.	Implemented	Other Reportable	8/2016	8/2016
	There is an opportunity to realize an increase in revenue by increasing focus on employer audits.	Implemented	Other Reportable	8/2016	8/2016
	Develop and implement completion of a crosswalk between audit standards and automated working paper templates.	Implemented	Other Reportable	8/2016	8/2016

TAB 8

TAB 8A

TEACHER RETIREMENT SYSTEM OF TEXAS

INTERNAL AUDIT CHARTER

ROLE OF INTERNAL AUDIT

Auditing is a cornerstone of good public sector governance. By providing unbiased, objective assessments of whether public resources are managed responsibly and effectively to achieve intended results, auditors help public sector organizations achieve accountability and integrity, improve operations, and instill confidence among citizens and stakeholders. The public sector auditor's role supports the governance responsibilities of oversight, insight, and foresight. Oversight addresses whether public sector entities are doing what they are supposed to do and serves to detect and deter public corruption. Insight assists decision-makers by providing an independent assessment of public sector programs, policies, operations, and results. Foresight identifies trends and emerging challenges. Auditors use tools such as financial audits, performance audits, investigations, and advisory services to fulfill each of these roles.¹

DEFINITION AND MISSION

The mission-definition of ~~the~~ Internal Audit ~~department~~ is to provide independent, objective assurance and consulting services designed to add value and improve the organization's operations. Internal Audit helps the organization accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control, and governance processes.

The mission of Internal Audit is to enhance and protect organizational value by providing risk-based and objective assurance, advice, and insight.

OBJECTIVES AND SCOPE OF WORK

Assurance Objectives of Assurance Services

The objectives of assurance services are to provide formal, independent assurance to management and the Audit Committee that the organization's assets are safeguarded, that operating efficiency is enhanced, and that compliance is maintained with prescribed laws, and management and TRS Board of Trustees (Board of Trustees) policies. The assurance services objectives also include independent assessment of the organization's risk awareness and management, reliability and integrity of the organization's data, and achievement of the organization's goals and objectives.

Objectives of Attestation Engagements: Agreed-Upon Procedures

Agreed-upon procedures consist of auditors performing specific procedures on the subject matter and issuing a report of findings based on the agreed-upon procedures. In an agreed-upon procedures engagement, the auditor does not express an opinion or conclusion, but

¹ The Institute of Internal Auditors *Supplemental Guidance: The Role of Auditing in Public Sector Governance*, 2nd Edition, January 2012

only reports on agreed-upon procedures in the form of procedures and findings related to the specific procedures applied.²

Objectives of Consulting and Advisory Services Objectives

The objectives of consulting and advisory services are to provide management with assessments and advice for improving processes that will advance the goals and objectives of the organization. No assurance is provided.

The objectives of consulting services are to provide formal assessments and advice on the front-end of projects so that risks may be managed and internal controls may be designed at the beginning of a project. The objectives and the scope of consulting projects are agreed to by management.

The objectives of advisory services are to provide informal advice to management. Examples of advisory services include participating in various committees in a non-voting capacity; providing routine advice on policies, internal controls, and audit recommendations; providing training and risk management tools; facilitating meetings; and collecting benchmarking information.

Scope of Work of Internal Audit

Internal Audit provides opinions on governance, risk management, and controls as the result of an individual assurance project or as an overall opinion of the adequacy of governance, risk management, and control within the organization. The scope of work of the Internal Audit department is to determine whether the organization's framework of risk management, control, and governance processes, as designed and represented by management, is functioning in a manner to ensure:

- Programs are operating within the highest fiduciary standards and are directed toward the requirements defined in the federal and state constitutions, laws, regulations, and TRS policies and procedures.
- Risks within and outside the organization are appropriately identified and managed.
- Risk and control information is effectively communicated throughout the organization.
- Ethics-related programs and activities are effective.
- Significant financial, managerial, and operating information is accurate, reliable, and timely.
- Significant legislative or regulatory issues impacting the organization are recognized and addressed appropriately.
- Interaction with appropriate internal committees occurs as needed.
- Employee actions are in compliance with policies, standards, procedures, and applicable laws and regulations.

² *Government Auditing Standards* of the United States Government Accountability Office, 2011 Revision

- Employer (reporting entity) data and contributions reported to TRS are accurate, complete, and in compliance with applicable laws and rules.
- Resources are acquired economically, used efficiently, and adequately protected.
- Programs, plans, and objectives are monitored and achieved in line with the TRS mission.
- Quality and continuous improvement are fostered in the organization's control process.
- Internal controls are in place and are functioning effectively to accomplish business and strategic objectives.
- Information technology controls including information systems security controls are in place and are functioning effectively.
- Contractors are meeting the obligations of their contracts while in conformance with applicable laws, regulations, policies, procedures, and best practices.
- Specific operations, processes and programs are reviewed at the request of management or the Audit Committee.

During the performance of professional services, recommendations for improvement in risk management, control, and governance processes may be identified. This information will be communicated to management and the Audit Committee.

AUTHORITY

Legal Basis for the Internal Audit Function

The Internal Audit department operates within the Teacher Retirement System of Texas under:

- Article 16, Section 67 of the Texas Constitution
- Title 8, Subtitle C, *Texas Government Code*
- Chapter 2102 (Texas Internal Auditing Act), *Texas Government Code*

Delegation of Authority Relevant to the Performance of Engagements

To fulfill the mission and objectives of the internal audit function, the chief audit executive and staff of the Internal Audit department are hereby authorized by the Board of Trustees to:

- 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 engagements, subject to applicable state and federal laws.
- Have access to contractor records and files in line with contract terms and specifically the "right to audit" section.
- Have unrestricted access to the chair of the Audit Committee, Audit Committee members, and the executive director.

- Allocate resources, set frequencies, select subjects, determine scope of work, and apply the techniques required to accomplish assurance and consulting objectives.
- Obtain the necessary assistance of personnel in units of the organization where audits are performed, as well as other specialized services from within or outside the organization.
- Obtain timely reports from management on actions proposed and taken pertaining to audit recommendations.

The chief audit executive and staff of the Internal Audit department are not authorized to:

- Perform any operational duties for the organization. Initiate or approve accounting transactions external to the Internal Audit department.
- Direct the activities of any organization employee not employed by the Internal Auditing department, except to the extent such employees have been appropriately assigned to auditing teams or to otherwise assist the internal auditors.

Section 3.1.1 of the Bylaws of the Board of Trustees states the purpose and responsibilities of the Audit Committee.

INDEPENDENCE AND OBJECTIVITY

Organizational Placement

The chief audit executive reports functionally to the Board of Trustees through the Audit Committee and administratively to the executive director of the Teacher Retirement System. This reporting structure provides for Internal Audit independence and objectivity as required by Texas State law and professional standards.

RESPONSIBILITIES AND ACCOUNTABILITY

The chief audit executive and staff of the Internal Audit department shall be accountable to the Board of Trustees, the Audit Committee, and the executive director to:

- Develop a flexible annual audit plan using an appropriate risk-based methodology, considering any risks or control concerns identified by management and the Board of Trustees, and submit that plan to the Audit Committee for review and recommendation for approval by the Board.
- Develop short-term and long-term strategic goals for Internal Audit.
- Implement the approved audit plan including appropriate plan amendments, and special projects requested by management and the Audit Committee.
- Provide quarterly reports comparing actual results to the annual audit plan.
- Assess the adequacy and effectiveness of the organization's processes for controlling its activities and managing its risks in the areas set forth under the mission and scope of work, including the effectiveness of the Enterprise Risk Management (ERM) and Investment Compliance programs.

- Report significant issues related to the processes for controlling the activities of the organization including potential improvements to those processes.
- Provide quarterly reports to the Audit Committee and management summarizing the results of audit activities including the implementation status of prior audit recommendations.
- Provide copies of audit reports to management, the Audit Committee, the Board of Trustees and oversight agencies specified in state law.
- Evaluate and assess significant new or changing functions, services, processes, operations, information systems and internal controls concurrent with their development, implementation, and/or expansion.
- Partner with management for all operations to understand the internal control environment, risks, and risk mitigation activities.
- Participate in a consulting or advisory capacity in the planning, design, development, implementation, and modification phases of major information systems to determine whether:
 - adequate controls are incorporated during the development phases of business processes and systems before implementation
 - adequate project and risk management processes are in place and functioning effectively to mitigate risks that may hinder achieving project goals and objectives
 - thorough systems testing is performed at appropriate development phases
 - information security is addressed at appropriate development phases and at implementation
 - processes are in place and functioning effectively to develop and maintain complete and accurate systems documentation
 - the intended purpose and objectives of the system implementation or modifications have been met
- Facilitate and coordinate activities of the TRS Enterprise Application Modernization (TEAM) program Independent Program Assessment vendor and ensure direct access to executive management and the Board of Trustees.
- Select, train, develop and retain professional audit staff members who collectively have the knowledge, skills, abilities, experience, expertise, and professional certifications to meet the requirements of this charter.
- Maintain an effective quality assurance and improvement program to include supervision, training, internal reviews, and external reviews.
- Keep management and the Audit Committee informed of emerging trends and successful practices in risk management, control, and governance through training and other forms of communication.
- Provide the Audit Committee a list of Internal Audit annual performance goals and results and the *Annual Internal Audit Report* required by state law.
- Provide the Audit Committee periodic reports on the sufficiency of Internal Audit resources.

- Assist in the deterrence of fraud by examining and evaluating the adequacy and the effectiveness of the system of internal controls and administering the administration of the internal fraud and ethics hot line.
- In conjunction with the Executive Director, Rensure timely reporting immediately of any known incident of significant fraud to ~~executive management~~, the Audit Committee, the Board of Trustees, and the State Auditor's Office.
- Conduct or participate as appropriate in the investigation of suspected illegal or fraudulent activities within the organization and report results to executive management and the Audit Committee.
- Act as the primary point of contact related to audits, investigations, or inquiries of the State Auditor's Office and other external audit groups.
- Consider the scope of work of external auditor groups as appropriate for the purpose of providing optimal audit coverage to the organization at a reasonable overall cost.
- Coordinate with other control and monitoring functions (risk management, legal, accounting, ethics, investments compliance, and physical and information systems security).

STANDARDS OF AUDIT PRACTICE

The chief audit executive and staff members of the Internal Audit department will comply with the following professional standards:

- *Texas Government Code*, Chapter 2102 (Texas Internal Auditing Act)
- *International Standards for the Professional Practice of Internal Auditing* and the *Code of Ethics* of The Institute of Internal Auditors, Inc., see **Appendices A and B.**
- *Government Auditing Standards* of the United States Government Accountability Office and their Code of Ethics, see **Appendix A**
- *Information Systems Standards, Guidelines and Procedures for Auditing and Control Professionals* of the Information Systems Audit and Control Association, as applicable

SIGNATURE SECTION

The Internal Audit Charter revision was adopted by the Board of Trustees of the Teacher Retirement System of Texas on September ~~14~~ 23, 2014 2016.

Christopher Moss
Chair, Audit Committee
Board of Trustees

R. David Kelly
Chair
Board of Trustees

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

Brian Guthrie
Executive Director

APPENDIX A

Code of Ethics of The Institute of Internal Auditors, Inc.

Internal auditors are expected to apply and uphold the following principles:

- 1. Integrity** - The integrity of internal auditors establishes trust and thus provides the basis for reliance on their judgment.
- 2. Objectivity** - Internal auditors exhibit the highest level of professional objectivity in gathering, evaluating, and communicating information about the activity or process being examined. Internal auditors make a balanced assessment of all the relevant circumstances and are not unduly influenced by their own interests or by others in forming judgments.
- 3. Confidentiality** - Internal auditors respect the value and ownership of information they receive and do not disclose information without appropriate authority unless there is a legal or professional obligation to do so.
- 4. Competency** - Internal auditors apply the knowledge, skills, and experience needed in the performance of internal audit services.

Rules of Conduct

1. Integrity

Internal auditors:

- 1.1. Shall perform their work with honesty, diligence, and responsibility.
- 1.2. Shall observe the law and make disclosures expected by the law and the profession.
- 1.3. Shall not knowingly be a party to any illegal activity, or engage in acts that are discreditable to the profession of internal auditing or to the organization.
- 1.4. Shall respect and contribute to the legitimate and ethical objectives of the organization.

2. Objectivity

Internal auditors:

- 2.1. Shall not participate in any activity or relationship that may impair or be presumed to impair their unbiased assessment. This participation includes those activities or relationships that may be in conflict with the interests of the organization.
- 2.2. Shall not accept anything that may impair or be presumed to impair their professional judgment.
- 2.3. Shall disclose all material facts known to them that, if not disclosed, may distort the reporting of activities under review.

3. Confidentiality

Internal auditors:

- 3.1. Shall be prudent in the use and protection of information acquired in the course of their duties.
- 3.2. Shall not use information for any personal gain or in any manner that would be contrary to the law or detrimental to the legitimate and ethical objectives of the organization.

4. Competency

Internal auditors:

- 4.1. Shall engage only in those services for which they have the necessary knowledge, skills, and experience.
- 4.2. Shall perform internal audit services in accordance with the *International Standards for the Professional Practice of Internal Auditing*.
- 4.3. Shall continually improve their proficiency and the effectiveness and quality of their services.

Generally Accepted Government Auditing Standards (GAGAS) of the United States Government Accountability Office, Code of Ethics

The ethical principles that guide the work of auditors who conduct audits in accordance with GAGAS are:

- a. the public interest;
- b. integrity;
- c. objectivity;
- d. proper use of government information, resources, and positions; and
- e. professional behavior.

The Public Interest

The public interest is defined as the collective well-being of the community of people and entities the auditors serve. Observing integrity, objectivity, and independence in discharging their professional responsibilities assists auditors in meeting the principle of serving the public interest and honoring the public trust. The principle of the public interest is fundamental to the responsibilities of auditors and critical in the government environment.

A distinguishing mark of an auditor is acceptance of responsibility to serve the public interest. This responsibility is critical when auditing in the government environment. GAGAS embodies the concept of accountability for public resources, which is fundamental to serving the public interest.

Integrity

Public confidence in government is maintained and strengthened by auditors performing their professional responsibilities with integrity. Integrity includes auditors conducting their work with an attitude that is objective, fact-based, nonpartisan, and non-ideological with regard to audited entities and users of the auditors' reports. Within the constraints of applicable confidentiality laws, rules, or policies, communications with the audited entity, those charged with governance, and the individuals contracting for or requesting the audit are expected to be honest, candid, and constructive.

Making decisions consistent with the public interest of the program or activity under audit is an important part of the principle of integrity. In discharging their professional responsibilities, auditors may encounter conflicting pressures from management of the audited entity, various levels of government, and other likely users. Auditors may also encounter pressures to inappropriately achieve personal or organizational gain. In resolving those conflicts and pressures, acting with integrity means that auditors place priority on their responsibilities to the public interest.

Objectivity

The credibility of auditing in the government sector is based on auditors' objectivity in discharging their professional responsibilities. Objectivity includes independence of mind and appearance when providing audits, maintaining an attitude of impartiality, having intellectual honesty, and being free of conflicts of interest. Maintaining objectivity includes a continuing assessment of relationships with audited entities and other stakeholders in the context of the auditors' responsibility to the public. The concepts of objectivity and independence are closely related. Independence impairments impact objectivity.

Proper Use of Government Information, Resources, and Positions

Government information, resources, and positions are to be used for official purposes and not inappropriately for the auditor's personal gain or in a manner contrary to law or detrimental to the legitimate interests of the audited entity or the audit organization. This concept includes the proper handling of sensitive or classified information or resources.

In the government environment, the public's right to the transparency of government information has to be balanced with the proper use of that information. In addition, many government programs are subject to laws and regulations dealing with the disclosure of information. To accomplish this balance, exercising discretion in the use of information acquired in the course of auditors' duties is an important part in achieving this goal. Improperly disclosing any such information to third parties is not an acceptable practice.

Accountability to the public for the proper use and prudent management of government resources is an essential part of auditors' responsibilities. Protecting and conserving

government resources and using them appropriately for authorized activities is an important element in the public's expectations for auditors.

Misusing the position of an auditor for financial gain or other benefits violates an auditor's fundamental responsibilities. An auditor's credibility can be damaged by actions that could be perceived by an objective third party with knowledge of the relevant information as improperly benefiting an auditor's personal financial interests or those of an immediate or close family member; a general partner; an organization for which the auditor serves as an officer, director, trustee, or employee; or an organization with which the auditor is negotiating concerning future employment.

Professional Behavior

High expectations for the auditing profession include compliance with all relevant legal, regulatory, and professional obligations and avoidance of any conduct that might bring discredit to auditors' work, including actions that would cause an objective third party with knowledge of the relevant information to conclude that the auditors' work was professionally deficient. Professional behavior includes auditors putting forth an honest effort in performance of their duties and professional services in accordance with the relevant technical and professional standards.

APPENDIX B

Core Principles for the practice of Internal Auditing:

1. Demonstrates integrity
2. Demonstrates competence and due professional care
3. Is objective and free from undue influence (independent)
4. Aligns with the strategies, objectives, and risks of the organization
5. Is appropriately positioned and adequately resourced
6. Demonstrates quality and continuous improvement
7. Communicates effectively
8. Provides risk-based assurance
9. Is insightful, proactive, and future-focused
10. Promotes organizational improvement

TAB 8B



Fiscal Year 2017 Audit Plan

September 23, 2016

Fiscal Year 2017 Audit Plan

September 23, 2016

Amy Barrett, CIA, CISA, CPA
Chief Audit Executive

Christopher S. Moss
Chair, Audit Committee, Board of Trustees

Brian Guthrie
Executive Director

R. David Kelly
Chair, Board of Trustees



Professional and Statutory Requirements

This document provides the *Fiscal Year 2017 Audit Plan* (Audit Plan) as required by professional auditing standards, the *Texas Internal Auditing Act* (Act), and the *Texas Government Code 2102.008* for the Teacher Retirement System of Texas (TRS). The Act requires state agencies to conduct a program of internal auditing that includes an annual audit plan that is prepared using risk assessment techniques and identifies individual audit projects to be conducted during the year. The Audit Plan is required to be evaluated and updated annually for recommendation of approval by the TRS Audit Committee of the Board of Trustees (Audit Committee) to the TRS Board of Trustees (Board). Internal Audit is independent of management and provides objective assurance and consulting services designed to add value and improve TRS' operations.

Audit Plan Development and Scope

Our Audit Plan is designed to provide coverage of key risks, given the existing staff and approved budget. See the **Appendices** for information regarding the internal audit budget, performance measures, and audit universe.

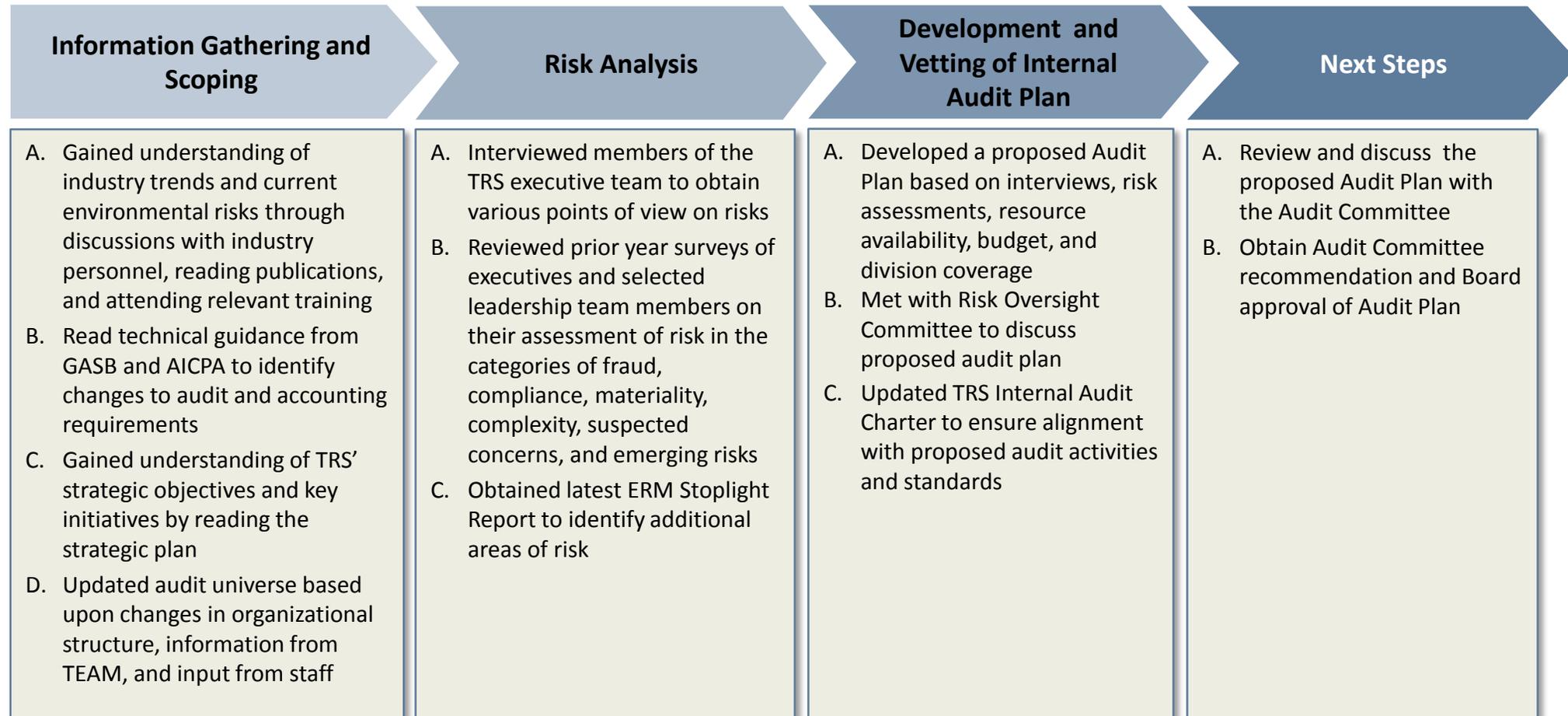
Changes Subsequent to Approval

Interim changes to the Audit Plan will occur from time to time due to changes in business risks, timing of TRS' initiatives, and staff availability. We will report Audit Plan changes to senior management and present changes to the Audit Committee at the following quarterly Audit Committee meeting. Amendments to the approved Audit Plan deemed to be significant (based on discussions with the executive director and audit committee chair) will be submitted to the Audit Committee for recommendation to the Board for approval. The State Auditor's Office also requires notification of material changes to the Audit Plan.



Risk Assessment & Audit Planning Approach

Interviews of TRS executives and external service providers, risk assessment surveys from the prior year, and the current Stoplight Report developed by the Enterprise Risk Management (ERM) team were used to identify areas of risk and potential internal audit projects. This information was combined into an overall audit plan designed to address critical risks to achieving TRS objectives while being sensitive to operational requirements. The Audit Plan also includes hours for ad hoc projects and special requests. The following approach was taken in creating the Audit Plan:





Types of Projects to Cover Risk Areas

An important part of the Audit Plan is that the identified processes, systems, and initiatives should receive differing types and levels of review based on their importance, perceived risk, and most efficient approach. Our suggested levels of review activities are as follows:

Audit

- Audit Focus: Assess evidence available in order to conclude on an audit objective
- Deliverable: Audit report for public distribution unless protected by statute
- Estimated level of effort per project: 400 - 500 hours

Agreed-Upon Procedures

- Agreed-Upon Procedures Focus: Determine specific steps to test with management's agreement and report on results; used for data analytics and quarterly testing of specific data and transactions
- Deliverable: Agreed-upon procedures report for public distribution (use is limited to those with understanding of procedures performed)
- Estimated level of effort per project: 100 - 300 hours

Formal Consulting

- Consulting Focus: Respond to requests for formal study or assessment with recommendations; no assurance provided
- Deliverable: Consulting report or memo for limited distribution; significant material weaknesses identified would be reported to executive management and the Audit Committee as required by professional auditing standards
- Estimated level of effort per project: 100 - 200 hours

Informal Consulting (Advisory)

- Advisory Focus: Participate in activities in a non-voting capacity, e.g., provide training and input on policies and procedures
- Deliverable: Verbal discussion or a brief memo to management
- Estimated level of effort per year: 10 – 100 hours



Audit Plan: Pension Benefits and Employer Audits

The tables on this page and the following pages provide the name of each project, type of project, and preliminary scope of work to be performed. Scope of work will be finalized as part of each project’s formal planning phase.

Title	Type	Preliminary Scope
Annual Benefits Testing	Agreed-Upon Procedures	Recalculate a sample of benefit payments annually and determine whether documentation on file supports the calculation; scope in other tests related to benefits as agreed-upon with management
Employer Audits (6-10 Independent School Districts)	Audit	Determine whether information reported to TRS is complete and accurate, especially in the areas of eligibility, compensation, contributions, surcharges (pension and healthcare), and premiums paid
Employer Audit of Pension and TRS-Care Surcharges	Audit	Conduct a desk audit across multiple entities targeted at surcharge reporting and collections with the goal of collecting significantly underreported amounts to the trust.
Employer Audit Follow-Up	Audit	Follow-up and report on the status of outstanding audit recommendations related to reporting entities
Higher Education Pilot and Audit Program Development	Advisory	Select a higher education institution to pilot an audit in order to develop an audit program for future audits and for requesting internal auditors at higher education institutions to conduct
TRS Reporting Entity Website Audit Information and Communication	Advisory	Update audit-related information and tools on the TRS employer (reporting entity) website. Information may include self-audits, audit programs, audit results, technical guidance, and frequently asked questions about reporting entity audits.



Audit Plan: Health Care

Title	Type	Preliminary Scope
Health Insurance Portability and Accountability Act (HIPAA) Gap Assessment and Validation	Audit	Conduct a gap assessment and validation of TRS' compliance with HIPAA, especially in the areas of privacy, breach notification, and IT security. Incorporate assessment of third party monitoring of business associates and their subcontractors and cybersecurity risks and controls.
Trust Expense Allocation Audit	Audit	Assess reasonableness of expenses allocated between pension and health care trusts
TRS-ActiveCare Open Enrollment Readiness Assessment Follow-Up	Audit	Follow up on outstanding action items significant to open enrollment
TRS-ActiveCare Eligibility Pilot and Audit Program Development	Advisory	Conduct a second pilot audit of a school district to determine whether any dependents are ineligible for participating in TRS-ActiveCare. Provide results to management to determine whether audits on a larger scale are beneficial.
Health Care Vendor Update Meetings	Advisory	Attend quarterly meetings with health care vendors to understand results, issues, and TRS management's monitoring controls
Health Care Vendor Selection Observation	Advisory	Observe selection process of large vendor and service providers, when applicable

Audit Plan: Investment Management

Title	Type	Preliminary Scope
Private Equity Fees	Audit	Verify the accuracy of private equity fees and compliance with investment management agreements for 1 – 2 private equity funds.
Soft Dollars and Commission Sharing Arrangements (CSA's)	Audit	Assess compliance with soft dollar policies; assess effectiveness and efficiencies of processes for accounting and reporting soft dollars and CSA's. Assess compliance with TRS travel policies
Quarterly Investment and Ethics Policies Compliance Testing	Agreed-Upon Procedures	Assess compliance with TRS ethics policies and the Investment Policy Statement (IPS) requirements
Annual Testing of Investment Incentive Pay Plan	Agreed-Upon Procedures	Prior to payment, recalculate the investment incentive compensation award amounts to determine if they are calculated in accordance with plan provisions; reconcile performance to the service provider, and calculated in accordance with plan provisions
Investment Fiduciary Audit Coordination	Advisory	Coordinate the audit of the auditors hired by the SAO to assess TRS' fiduciary activities around real assets
Investment Committees Attendance	Advisory	Stay current on Investment Management Division initiatives by attending the Internal Investment Committee, Derivatives Operations, monthly staff, and other meetings such as the Annual Town Hall meeting

Audit Plan: Finance

Title	Type	Preliminary Scope
Comprehensive Annual Financial Report (CAFR) testing of annuity payments	Audit	Conduct pension benefits testing on behalf of the State Auditor's office (SAO) to be used in completion of the CAFR audit
CAFR Audit Coordination (SAO, auditors)	Advisory	Coordinate activities of the SAO to ensure deadlines are met; coordinate quarterly update meetings with executive management and the SAO; maintain SAO document request SharePoint site
Teacher Retirement Investment Company of Texas (TRICOT) Financial Audit Coordination (Grant Thornton, auditors)	Advisory	Coordinate a financial audit of TRICOT, a wholly-owned subsidiary of TRS in LONDON



Audit Plan: Executive

Title	Type	Preliminary Scope
Records Management Audit Follow-Up	Audit	Follow up on outstanding action items significant to records management
403(b) Program Controls Assessment, including Provider Compliance	Audit	Assess the design and effectiveness of controls at TRS in meeting 403(b) program objectives, including 403(b) providers' compliance with program requirements
Contractor Onboarding and Off-boarding Processes	Audit	Assess sufficiency of processes for onboarding and off-boarding contractors
Federal Labor Standards Act (FLSA) Compliance	Consulting	Analyze hourly and salaried employees and compare with requirements of the FLSA
Executive Incentive Pay	Agreed-Upon Procedures	Independent recalculate executive incentive pay in order to test the accuracy of the calculation by management
The University of Texas at Austin (UT) Student Project	Consulting	Assess a TRS policy and provide recommendations for enhancing it.
Enterprise Risk Management (ERM) Fraud Risk Assessment	Advisory	Partner with ERM to update the TRS fraud risk assessment and identify mitigating controls
Special Requests and Emerging issues	Advisory or Consulting	Set aside time to address special requests and emerging issues during the year as requested by management
Meetings Participation	Advisory	Participate (non-voting) in various TRS-wide meetings such as Executive Council, Leadership Team, and Risk Oversight Committee

Audit Plan: TEAM and Technology

Title	Type	Preliminary Scope
TEAM Independent Program Assessment (IPA) Vendor Support	Advisory	Coordinate and facilitate activities of the IPA vendor and ensure direct access to executive management and the board
TEAM Committees, Projects, and Controls Assessment Participation	Advisory	<p>Participate in TEAM Executive Steering Committee (ESC) and other committees and requirements gathering sessions in a non-voting capacity, and provide advisory services related to TEAM project activities as outlined in the TEAM charter of internal audit activities. Provide input into controls identification projects. In FY 16, Internal Audit participated in the following TEAM committees and projects:</p> <ul style="list-style-type: none"> - Executive Steering Committee - TEAM Budget Committee - Organizational Change Management Advisory Groups - Business Procedures and Training Project - Decommissioning Project - Enterprise Security Team meetings - Monthly meetings with TEAM program manager and HPE executives
Disaster Recovery, Network Penetration Tests; Security Risk Assessment Review	Advisory	Obtain, read, and follow-up on any issues identified during the network disaster recovery, penetration tests, and the security risk assessment conducted by the TRS Information Security Officer

Audit Plan: Internal Audit Activities

Title	Project Description
Internal Quality Assurance Review	Assess Internal Audit's Quality Assessment and Improvement Program
ERS Audit Quality Assurance Review	TRS participates in a state program to receive and provide audit quality assessment reviews (QAR) required by auditing standards. ERS has requested that TRS lead its required QAR
Annual Internal Audit Report	Prepare annual report of audit activities in accordance with SAO instructions
Quarterly Audit Recommendations Follow-Up	Follow-up and report on the status of outstanding audit recommendations
Data Analysis Processes	Continue to build out data analysis skills of audit staff; incorporate into audit projects and annual audit plan development; and pilot analysis projects in various business units
Fiscal Year 2018 Audit Plan	Prepare annual audit plan based on a documented risk assessment in accordance with professional auditing standards and the Texas Internal Auditing Act
Internal Audit Strategic Plan Update	Bi-annual update of the Internal Audit Strategic Plan to consider changes in the department and continuing alignment with the TRS strategic plan
Audit Committee Meetings Preparation	Prepare communications and attend Audit Committee and Board Meetings



Audit Plan: High Risk Areas (High, Elevated, or Caution) and Areas of Interest to the SAO (Procurement and IT Security) excluded from the Audit Plan

Area	Reason for Exclusion
Purchasing Compliance Audit	Allow time for more health care procurements to be processed under new legislative requirements



Appendix A

Internal Audit Operating Budget



Appendix A

Internal Audit Operating Budget

Line Item	Budget FY 2017	Budget FY 2016
000 – Salaries	\$1,086,970	\$998,762
000 – Benefits	279,344	226,847
200 – Professional Fees (Increase due to investment fiduciary audit)	950,000	681,500
505 – Travel-In-State	13,500	14,500
510 – Travel-Out-of-State	23,000	18,000
705 – Dues, Fees, and Staff Development	25,000	22,500
710 – Subscriptions and Reference Materials	2,000	4,500
Total Operating Budget (excluding indirect costs such as computers, office space, and utilities)	\$2,379,814	\$1,966,609
Full Time Equivalent (FTE) Positions (excluding interns)	12.0	11.0

Resources are sufficient to complete the annual audit plan.



Appendix B

Internal Audit Performance Measures



Appendix B

Internal Audit Goals and Performance Measures

For the internal audit function, the FY 2017 goals and performance measures are as follows:

Goal 1: Ensure Effectiveness of Internal Audit Organization

Performance Measures

- a. Spend a minimum of 75% of total available department hours (excludes uncontrollable leave) for professional staff on direct assurance, consulting, and advisory services
- b. Complete an internal assessment and report the results of the Quality Assurance and Improvement Program

Goal 2: Develop and Implement Internal Audit Annual Audit Plan based on Formal Risk Assessment

Performance Measures

- a. Prepare an annual audit plan based on a documented risk assessment and obtain input from trustees and staff
- b. Execute 80% of audit and agreed-upon procedures projects (80% allows for flexibility due to changes in TRS business practices and special requests)
- c. Update the formal reporting entity risk assessment to identify reporting entities for audit

Goal 3: Enhance Internal Audit Staff Skills and Knowledge in Assurance Practices

Performance Measures

- a. Update data analytics roadmap identified by external advisor and complete year 2 activities
- b. Collaborate with an institution of higher education to pilot a reporting entity audit program; develop and distribute the audit program to other higher education auditors and request that they conduct these audits



Appendix B

Internal Audit Goals and Performance Measures

(continued)

Goal 4: Support Activities of External Service Providers

Performance Measures

- a. Facilitate coordination of TEAM Independent Program Assessment (IPA) Vendor by coordinating meetings with Executive Director, Executive Steering Committee (ESC) and Core Management Team (CMT), quarterly presentations to the TRS Board of Trustees, and other contractual activities
- b. Facilitate timely completion and success of State Auditor's Office (SAO) audits, fiduciary audits, and Grant Thornton financial audit of TRICOT in fiscal year 2017 by effectively providing audit support, coordinating meetings, reserving facilities and gathering schedule and documentation requests

Goal 5: Enhance Participation in Professional and Peer Organizations

Performance Measures

- a. Participate in professional organizations (APPFA, IIA, ISACA, ACFE, SAIAP, CFA Institute) through monthly chapter meetings and participation in leadership roles in at least one professional organization
- b. Support staff in obtaining additional certifications such as the CFA, CPA, and CIA certifications and have all staff obtain a minimum of 24 continuing professional education hours in a fiscal year and a minimum of 80 hours for a two year period



Appendix C

Audit Universe

Appendix C

Audit Universe



Executive and Finance Divisions; Records Management		
Governance, Strategy, and Risk Management	Workforce Continuity	Accounting & Reporting
Board governance (FY13)	Employee recruiting and hiring practices (FY10)	Accounts receivable
Strategic planning and performance measures (FY13)	Employee training compliance (FY11)	Accounts payable (FY15)
Enterprise Risk Management	Internal policy setting and monitoring	Travel (FY16)
Information technology governance (FY10)	Communications and External Relations	Federal withholdings/tax compliance
Open Government		Social media
Open meetings compliance	Information and communication	Budget
Open records request compliance	403(b)	Budget process and reporting (FY10)
Ethics and Fraud Prevention	403(b) certification process	Purchasing and Contracts
Employee ethics policies (FY16)	Records Management	Vendor file, encumbrance, purchasing (FY14)
Fraud risk detection and prevention controls (FY15)		Records retention (FY15)
Regulatory, Compliance, & Litigation	Accounting & Reporting	Contract administration and monitoring (FY14)
Compliance: Pension Trust (FY15)	Financial/CAFR reporting including, new accounting pronouncements, reconciliations, general ledger, closing process (FY16)	Contract worker onboarding, monitoring and compliance (FY14)
Compliance: Health Care Trusts (FY13)	Other reporting (non-financial / CAFR)	HUB program compliance and reporting
Litigation risk management		Facilities and Facilities Planning
Business Continuity	Employee leave, timekeeping, and payroll (FY12)	Facility planning and maintenance
Business continuity plan (FY09)	Cashier (FY10)	Mail room operations (FY10)
Risk management (health and safety, insurance) (FY12)		Government Relations and Legislation
		Security (FY12)

IMD Processes
Governance - IMD
Investment Governance and Management (FY16)
IMD Processes
Internal Public Markets (FY14)
External Public Markets (FY16)
Private Equity (FY15)
Real Assets (FY15)
Trade Management (FY14)
Emerging Manager Program (FY13)
Energy/Natural Resources (ENR) (FY14)
Strategic Partners (FY14)
Strategic Asset Allocation/Stable Value (FY14)
Tactical Asset Allocation (FY16)
Risk Management (FY16)
Performance Analytics and Operations (FY14)
Information Systems (FY15)
Business Center, Reporting, HR, Incentive Pay (FY16)
Investment Accounting (FY16)

(FY #) - indicates last year audited





Appendix C Audit Universe

Benefits and Customer Service	
Pension Benefit Administration	Pension Benefit Administration and Customer Service
1099R	Statistical reporting (actuarial) (FY15)
Annuity payroll (FY16)	Web self service
Benefit adjustments (FY16)	Work flow (Imaging)
Benefit calculations (FY16)	TRS employee benefit administration (administered separately from non-TRS employees)
Benefit estimates	
Cash receipts (FY10)	
Check payments (FY16)	Telephone Counseling Center (FY14)
Contact management	Employer Reporting
Death benefits (FY16)	Employer setup, enrollment, and reporting (FY16)
Disability benefits (FY16)	Health Care Administration
Legal orders (FY13)	TRS-Care vendor selection and contract monitoring (FY13)
Member account maintenance (FY09)	TRS-Care TRS Administration (FY13)
Member statements	TRS-ActiveCare vendor selection and contract monitoring
Optional Retirement Plan	TRS-ActiveCare TRS Administration (FY16)
Refunds (FY15)	TRS-Care Funding
Retirement application process	TRS-Care Finance (FY10)
Retirement system transfer	TRS-ActiveCare Affordability
Service credit calculation and purchase	TRS-ActiveCare Finance (FY10)

Information Technology (IT) Processes and TEAM	
Governance - IT	IT Processes
Project prioritization (FY10)	Change & Configuration Management
IT risk management	Applications (FY12)
IT Strategy & Planning	Databases
Asset management	Infrastructure
Human resources	Data Center Operations
IT Security and Confidentiality	Archive management (FY13)
Identity and access management (FY14)	Facilities management (TAC202) (FY12)
Threat and vulnerability management (FY16)	Technology Management
Security awareness and training (FY11)	Standards
Security configuration management	Technology upgrades
Virtualization	User and Vendor Support
Cloud based computing (FY14 Consulting)	Problem management
Mobile device security (FY14 Consulting)	Incident response
Disaster Recovery Plan	TEAM
Co-location (FY14 Consulting)	Independent Program Oversight (FY16)
Disaster Recovery Management (FY09)	Internal Controls Assessment, including security controls

(FY #) - indicates last year audited



TAB 9

Teacher Retirement System of Texas
September 2016 Audit Committee Agenda Items Mapped to TRS Stoplight Report

403(b)	Accounting & Reporting Agenda Items 3	Budget	Business Continuity	Communications & External Relations
Credit Agenda Item 6B-C	Customer Service	Employer Reporting Agenda Items 6 E	Ethics & Fraud Prevention	Facilities Management & Planning
Governmental / Association Relations & Legislation	Health Care Plans Administration Agenda Item 4	Information Security & Confidentiality	Investment Accounting Agenda Items 6A-B	Investment Operations Agenda Items 6A-C
Legacy Information Systems	Liquidity / Leverage Agenda Item 6B-C	Market Agenda Item 6B-C	Open Government Agenda Items 7, 8 & 9	Pension Benefit Administration Agenda Items 6D
Pension Funding	Purchasing & Contracts	Records Management	Regulatory, Compliance & Litigation Agenda Item 5 & 6A	Talent Continuity
TEAM Program	TRS-ActiveCare Affordability	TRS-Care Funding		

Fiscal Year 2016 Audit Plan Status As of August 2016

Title and Project #	Type	Status
Executive and Finance		
Actuarial Data Controls (15-402)	Audit	Complete
State Auditor's Office (SAO) Financial (CAFR) Audit Coordination	Advisory	Complete
Internal Ethics and Fraud Hotline Administration	Advisory	Complete. Transferred to Compliance
Meetings Participation	Advisory	Ongoing
Special Requests and Emerging Issues	Audit/Consulting/Advisory	
<ul style="list-style-type: none"> • Innovation Best Ideas (16-605) - Board Chair Request 	Consulting	Complete
Testing of Executive Performance Incentive Pay Calculations	Agreed-Upon Procedures	Complete
TEAM Program		
TEAM Program Internal Controls Assessment	Advisory	In Progress
TEAM Security and Access Controls Assessment	Advisory	In Progress
TEAM Independent Program Assessment (IPA) Vendor Support	Advisory	Ongoing
TEAM Committees and TEAM Projects Participation	Advisory	Ongoing
Pension Benefits		
Benefits Testing for State Auditor's Office (SAO) Audit of Comprehensive Annual Financial Report (CAFR) (16-100)	Audit	Complete
Annual Benefits Testing (16-101)	Agreed-Upon Procedures	Complete
Reporting Entity Audits (6-8) and Investigations (16-401)	Audit	Complete (Completed 7 REs)
TRS Reporting Entity Website Audit Information	Advisory	Complete
Benefits Data Analysis Pilot Project	Advisory	Deferred to FY17
Health Care		
Health Care Audit Risk Assessment Follow Up	Consulting	Complete
Open Enrollment and Billing Readiness Review	Consulting	Complete
Health Care Vendor Selection Observation	Advisory	Complete
Health Care Vendor Update Meetings	Advisory	Ongoing

Fiscal Year 2016 Audit Plan Status As of August 2016

Title and Project #	Type	Status
Information Technology		
SharePoint Governance and Security Audit (16-501)	Audit	Complete
Wireless Network Security Assessment (16-502)	Agreed-Up Procedures	Complete
Data Protection Project	Advisory	Complete
Disaster Recovery, Network Penetration Tests; Security Risk Assessment Review	Advisory	Ongoing
Investment Management		
Overall Internal Control Opinion on Investment Activities (16-301)	Audit	Complete
Quarterly Investment Compliance, Incentive Pay, Ethics Policies and Budget Testing (16-302)	Agreed-Up Procedures	Complete
Annual Incentive Compensation Plan Testing (16-303)	Agreed-Up Procedures	Complete
Coordination of SAO Audit of Incentive Pay	Advisory	Complete
Investments Data Analysis Pilot Project	Advisory	Complete
Investment Committees Attendance	Advisory	Ongoing
Coordinate the TRICOT Financial Audit	Advisory	In Progress
Internal Audit Department		
Annual Internal Audit Report (16-603)	Audit	Complete
Data Analytic Development Project	Advisory	In Progress
Quarterly Audit Recommendations Follow-up	Audit	Ongoing
External Quality Assurance Review	Audit	Complete
Internal Quality Assurance Review (16-602)	Advisory	Complete
Fiscal Year 2017 Audit Plan	Advisory	Complete
Internal Audit Vendor Request for Qualifications (RFQ)	Advisory	Complete
Audit Committee Meetings Preparation	Advisory	Ongoing

Internal Audit Advisory Services¹
Fiscal Year 2016 – 4th Quarter

BENEFIT SERVICES

Participated in the TEAM Program

- Executive Steering Committee
- Organizational Change Management Advisory Group
- Business Procedures and Training
- Monthly meetings with TEAM Program Manager and vendor personnel
- Independent Program Assessment (IPA) Vendor Coordination
- Reporting Entity Outreach (REO) Core Team
- TRS Website Redesign Committee
- Participated in TEAM Enterprise Security Team meetings

HEALTH INSURANCE BENEFITS (HIB)

- Attended the Health Plan Administrator (HPA) and Pharmacy Benefit Manager (PBM) Vendor Quarterly Update Meetings
- Participated in the Open Enrollment and Billing Readiness Review Phase 2 Project

INVESTMENT MANAGEMENT DIVISION (IMD)

- Attended Internal Investment Committee (IIC) meetings
- Participated in Proxy Voting Committee meeting
- Participated in Securities Lending monitoring calls
- Provided feedback on the proposed revisions to the Investment Policy Statement
- Reviewed and discussed the Investment Policy Statement proposed changes
- Facilitated State Auditor’s Office’s procurement process to select a firm to perform a fiduciary review of TRS’ investment practices and performance

FINANCIAL SERVICES

- Coordinated hiring of an external audit firm for financial statement audit of London Office
- Served as liaison for the State Auditor’s Office (SAO) Fiscal Year 2015 TRS Comprehensive Annual Financial Report (CAFR) audit

EXECUTIVE

- Facilitated SAO’s Quarterly Update Meetings
- Supported Hot Line Call administration
- Participated in the Risk Oversight Committee
- Participated in Safety Committee Quarterly Committee Meetings
- Collaboration with Enterprise Risk Management on the upcoming enterprise-wide fraud risk assessment

INFORMATION TECHNOLOGY (IT)

- Participated in the Enterprise Risk Management (ERM) Data Protection Project

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 Goals and Performance Measures - Fiscal Year 2016
4th Quarter Ending August 2016**

Target Performance	Activity	Status
Goal 1: Enhance Effectiveness of Internal Audit Organization		
1. Spend a minimum of 75% of total available department hours (excludes uncontrollable leave) for professional staff on direct assurance, consulting, and advisory services.	Achieved 82% for fiscal year 2016.	Achieved
2. Complete an independent external assessment and report the results of the Quality Assurance and Improvement Program.	The external assessment was completed in April 2016.	Achieved
Goal 2: Develop and Implement Internal Audit Annual Audit Plan based on Formal Risk Assessment		
3. Prepare an annual audit plan based on a documented risk assessment and obtain input from trustees and staff.	FY17 Annual Audit Plan is presented for Approval.	Achieved
4. Execute 80% of audit and agreed-upon procedures projects (80% allows for flexibility due to changes in TRS business practices and special requests).	100% of planned assurance and agreed-upon procedures projects were executed.	Achieved
5. Update a formal reporting entity risk assessment to identify reporting entities for audit.	The reporting entity risk assessment has been updated.	Achieved
Goal 3: Enhance Internal Audit Staff Skills and Knowledge in Emerging Risks and Controls with Emphasis on Information Technology, Investment, and Health Care		
6. Enhance staff knowledge of services provided to the Investment Management Division by visiting one TRS asset manager or service provider.	Amy Barrett and Hugh Ohn visited Aon Hewitt in April 2016	Achieved
7. Engage a service provider for developing data analytics capabilities.	Engaged a firm to develop data analytics capabilities and proposed a roadmap for Internal Audit	Achieved
Goal 4: Deliver Value-Added Consulting and Advisory Activities		
8. Facilitate coordination of TEAM Independent Program Assessment (IPA) vendor by coordinating meetings with Executive Director, Executive Steering Committee (ESC) and Core Management Team (CMT), quarterly presentations to the TRS Board of Trustees, and other contractual activities.	Coordination and support of IPA vendor is accomplished as planned.	Achieved

**Internal Audit Goals and Performance Measures - Fiscal Year 2016
4th Quarter Ending August 2016**

Target Performance	Activity	Status
9. Facilitate timely completion and success of State Auditor's Office (SAO) audits in fiscal year 2016 by effectively providing audit support, coordinating meetings, reserving facilities and gathering schedule and documentation requests.	<p>Internal Audit staff has provided support and coordination for the following SAO audits:</p> <ul style="list-style-type: none"> • Audit of FY 2015 Comprehensive Annual Financial Report (CAFR) • Audit of Benefits Proportionality at the Office of the Comptroller of Public Accounts, the Teacher Retirement System, and the Employees Retirement System • Audit of Incentive Compensation at Selected Agencies 	Achieved
Goal 5: Enhance Participation in Professional and Peer Organizations		
10. Participate in professional organizations (APPFA, IIA, ISACA, ACFE, SAIAP, CFA Institute) through monthly chapter meetings and participate in leadership roles in at least one professional organization.	The CAE is secretary for APPFA and IT Audit Manager is the web administrator for APPFA. One audit manager is on the Board of Governors for the Austin Chapter of the IIA. Participation in professional organizations is ongoing.	Achieved
11. Support staff in obtaining additional certifications such as the CFA, CPA, and CIA certifications and have all staff obtain a minimum of 40 continuing professional education hours.	Staff attended professional development training throughout the fiscal year	Achieved

Legend: Target Status

	Target not achieved
	Behind in achieving target or partially complete
	On task to achieve target
	Achieved target

Internal Audit Staff Quarterly Accomplishments

- In July, Toma Miller participated in the onsite Aetna/WellSystems Readiness Review Follow-up Project in Tampa, Florida
- Cari Casey attended the training class “Essential Audit Skills” by Leita Hart, Yellowbook-CPE.com company
- The TRS Employer Audit team, Jan Engler, Dinah Arce, Art Mata, and Cari Casey, participated in an onsite all-day retreat in August to plan for the Fiscal Year 2017 employer audits. The topics included refining testing and risk assessment scope and methodology, developing better employer communication tools such as presentations at Texas Association of School Business Officials (TASBO) and informational webinars and videos, as well as identifying upcoming changes in reporting requirements. The team also invited a subject matter expert from the TRS Financial Reporting department to provide additional insight on Higher Education reporting requirements.
- Anandhi Mani joined Internal Audit as a Senior Investment Auditor effective June 1, 2016. She majored in Accounting and received a bachelor-equivalent degree from the University of London Examinations and Assessment Council, and holds CPA and CIA certifications. Her previous work experience includes work at the Texas Attorney General’s Office, Travis County District Attorney’s Office, and Deloitte.
- Simin Pang joined Internal Audit as a Senior Auditor effective August 15, 2016. She received a MBA with concentration in Internal Auditing from Louisiana State University (LSU CIA Program). She holds CIA and CISA certifications. Her previous work experience includes work at the Louisiana State Employee Retirement System (LASERS) and other internal auditing and accounting experiences.
- Lan Zhu, Internal Audit Intern, passed the first part (Auditing and Attestation) of the Certified Public Accountant (CPA) exam in August 2016.
- Jan Engler was recognized by the Austin Chapter of the Institute of Internal Auditors for her service as a member of the Board of Governors during 2015-2016 for the Chapter.
- Toma Miller participated as an instructor in TRS’ *Take “10 Hands Only” CPR* training event while Jan Engler attended as a student.

Internal Audit

