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


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

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.
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 Colonnetta, 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.

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.


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 recalculate 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
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.
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 Colonnetta
  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

SAO Report No. 16-323
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 Colonnetta
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.

SAO Report No. 16-324
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
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.

<table>
<thead>
<tr>
<th>No.</th>
<th>Item</th>
<th>Comments</th>
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<tbody>
<tr>
<td>1</td>
<td>The Auditor’s Responsibilities Under Generally Accepted Auditing Standards</td>
<td>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.</td>
</tr>
<tr>
<td>2</td>
<td>Planned Scope and Timing of the Audit</td>
<td>We performed the audit according to the planned scope and timing previously communicated to you in our engagement letter dated March 19, 2015.</td>
</tr>
<tr>
<td>3</td>
<td>Corrected and Uncorrected Misstatements</td>
<td>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.</td>
</tr>
<tr>
<td>4</td>
<td>Management Representations</td>
<td>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.</td>
</tr>
<tr>
<td>5</td>
<td>Qualitative Aspects of the Entity’s Significant Accounting Practices</td>
<td>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.</td>
</tr>
<tr>
<td>6</td>
<td>Significant Difficulties Encountered During the Audit</td>
<td>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.</td>
</tr>
<tr>
<td>7</td>
<td>Other Audit Findings or Issues</td>
<td>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.</td>
</tr>
</tbody>
</table>
### 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**

<table>
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<th>No.</th>
<th>Item</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Disagreements with Management</td>
<td>We did not encounter any disagreements with management during the course of the audit.</td>
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<tr>
<td></td>
<td></td>
<td>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.</td>
</tr>
<tr>
<td>9</td>
<td>Management’s Consultations with Other Accountants</td>
<td>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.</td>
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<td></td>
<td>To our knowledge, there were no such consultations with other accountants.</td>
</tr>
<tr>
<td>10</td>
<td>Significant Findings or Issues Discussed, or Subject to Correspondence, with Management</td>
<td>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.</td>
</tr>
<tr>
<td>11</td>
<td>Independence</td>
<td>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.</td>
</tr>
<tr>
<td>12</td>
<td>Fraud, Abuse, or Noncompliance with Laws and Regulations, Contracts or Grant Agreements</td>
<td>Auditing standards require auditors to exercise professional skepticism and increased awareness to detect potential violations, fraud, and abuse.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>We did not find evidence that fraud, abuse, or noncompliance with laws and regulations, contracts or grant agreements, had, or might have, occurred.</td>
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</table>

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.
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.

SAO Report No. 16-034
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
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

<table>
<thead>
<tr>
<th>Business Objectives</th>
<th>1. Board Reports</th>
<th>2. Investment Selection and Approval</th>
<th>3. Other (IPS, SLP, wire transfers, other reporting)</th>
<th>4. Ethics Policies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All required information is reported to the TRS Board of Trustees</td>
<td>Investments made are within delegated limits and established selection criteria</td>
<td>Risk limits are followed for other investment programs and activities</td>
<td>Ethics filing and completion requirements are met</td>
</tr>
<tr>
<td>Business Risks</td>
<td>Board is not informed of key investment decisions or critical information</td>
<td>Approvals and fundings exceed delegated limits</td>
<td>Risks exceed Board-established tolerances or management policies and procedures</td>
<td>Ethics policy requirements are not completed or filed</td>
</tr>
<tr>
<td>Management Assertions</td>
<td>All required information is reported to the Board</td>
<td>Approvals and fundings are within delegated limits and made for qualified managers</td>
<td>Programs are within risk limits and activities follow established policies and procedures</td>
<td>Ethics policies and requirements are being followed</td>
</tr>
<tr>
<td>Agreed-Upon Procedures</td>
<td>• Compare Board reports to IPS requirements</td>
<td>• Trace investments approved by the Internal Investment Committee (IIC) to supporting documentation</td>
<td>• Obtain evidence of monitoring of the securities lending agent and the program performance</td>
<td>• Obtain evidence that employees filed required statements and completed annual ethics training</td>
</tr>
<tr>
<td></td>
<td>• Trace sample information included in Board reports to supporting documentation</td>
<td>• Compare approval limits of new investments, including emerging managers, with IPS</td>
<td>• Validate completeness of wires</td>
<td>• Obtain evidence that Trustees filed financial information and completed annual ethics training</td>
</tr>
<tr>
<td></td>
<td>• Obtain evidence that Placement Agent Questionnaires (PAQs) were received prior to investing</td>
<td>• Obtain evidence that Placement Agent Questionnaires (PAQs) were received prior to investing</td>
<td>• Test accuracy of Internal Public Markets PIP calculations for the quarter ended 3/31/2016.</td>
<td>• All requirements of the IPS, SLP, PIP, wire transfer procedures, and budget transfer procedures tested were met</td>
</tr>
<tr>
<td>Test Results</td>
<td>All reporting requirements were met</td>
<td>All investments tested were in compliance with approval limits</td>
<td>All requirements of the IPS, SLP, PIP, wire transfer procedures, and budget transfer procedures tested were met</td>
<td>All ethics filing and completion requirements tested were met</td>
</tr>
<tr>
<td></td>
<td>Documentation provided support for the reports tested</td>
<td>PAQs were obtained for all investments tested</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management Responses</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

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

August 22, 2016
Project #16-302
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

<table>
<thead>
<tr>
<th>STEP #</th>
<th>OBJ. #</th>
<th>TEST PURPOSE</th>
<th>TEST DESCRIPTION</th>
<th>TEST RESULT</th>
<th>MANAGEMENT RESPONSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>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</td>
<td>Obtain all information required to be reported to Board of Trustees and compare to reporting requirements per Investment Policy Statement (IPS)</td>
<td>Information required to be reported to Board of Trustees complied with IPS requirements.</td>
<td>No response required</td>
</tr>
</tbody>
</table>
| 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 | • 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 | • 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 |
<p>| 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 |</p>
<table>
<thead>
<tr>
<th>STEP #</th>
<th>OBJ. #</th>
<th>TEST PURPOSE</th>
<th>TEST DESCRIPTION</th>
<th>TEST RESULT</th>
<th>MANAGEMENT RESPONSE</th>
</tr>
</thead>
</table>
| 4      | 2      | IPS Article 7 – Obtain evidence that new investments in emerging managers meet requirements | Test sample of approved investments to verify:  
- 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 | 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 | 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 | Select sample of approved investments and obtain tearsheet for each, observe the approved amounts are within authorized limits  
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 |
<p>| 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 |</p>
<table>
<thead>
<tr>
<th>STEP #</th>
<th>OBJ. #</th>
<th>TEST PURPOSE</th>
<th>TEST DESCRIPTION</th>
<th>TEST RESULT</th>
<th>MANAGEMENT RESPONSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>3</td>
<td>Wire Transfers – Obtain evidence that TRS Investment Accounting’s record of processed investment funding was complete.</td>
<td>Obtain evidence that TRS Investment Accounting investment funding log reconciles to State Street outgoing wires log to determine if the funding log is complete.</td>
<td>The Investment Accounting funding log reconciled to the State Street Outgoing wires log for the period tested.</td>
<td>No response required</td>
</tr>
<tr>
<td>9</td>
<td>3</td>
<td>Securities Lending Policy – Obtain evidence that IMD reviews the securities lending program and performance of lender</td>
<td>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 Sec. 4.4 - On an annual basis, the lending agent will furnish a list of potential borrowers and corresponding loan limits Sec. 4.6 – Diversification requirements Sec. 4.7 – Investments in structured notes are prohibited</td>
<td>IMD staff monitored the progress of the securities lending program through monthly calls. Information about approved borrowers, including loan limits, is provided. Diversification requirements are met. No investments in structured notes are included in investment holdings.</td>
<td>No response required</td>
</tr>
<tr>
<td>10</td>
<td>3</td>
<td>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</td>
<td>Trace quarterly IPM individual component calculation spreadsheet to TRS financial performance application data and TRS custodian bank data. 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. Test whether formulas in the quarterly IPM individual component calculation spreadsheet are</td>
<td>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.</td>
<td>No response required</td>
</tr>
<tr>
<td>STEP #</td>
<td>OBJ. #</td>
<td>TEST PURPOSE</td>
<td>TEST DESCRIPTION</td>
<td>TEST RESULT</td>
<td>MANAGEMENT RESPONSE</td>
</tr>
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<td>---------------------</td>
</tr>
<tr>
<td>11</td>
<td>3</td>
<td>Budget Transfers and Expenditures – Obtain evidence that budget transfers and expenditures are supported by required documentation</td>
<td>Select a sample of budget transfers and expenditures for the quarter and trace them to supporting documentation.</td>
<td>Budget transfers and expenditures were supported by required documentation.</td>
<td>No response required</td>
</tr>
</tbody>
</table>
| 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:  
- 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. | • 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
## Tactical Asset Allocation (TAA):
Generate alpha by actively underweighting or overweighting assets relative to policy targets

- Financial loss
- Model risk, including:
  - Incomplete or inaccurate data inputs into models
  - Incorrect or erroneous outputs from models
- Proposed trades inconsistent with model outputs

## Derivatives:
Execute TAA trades in an efficient and economical manner

- Unauthorized use or types of derivatives
- Trading derivatives without approval
- Noncompliance with laws, regulations or policies
- Liquidity risk
- Counterparty risk
- Valuation risk

## Support Groups (Risk, Trading, Investment Ops):
Provide support for TAA trades and activities

- Risk limits exceeded
- Risk impact not measured or reported
- Trade execution risk
- Trading with unauthorized brokers
- Operational risk
- Insufficient collateral amount received or paid

### Business Risks

#### Financial loss
- Model risk, including:
  - Incomplete or inaccurate data inputs into models
  - Incorrect or erroneous outputs from models
- Proposed trades inconsistent with model outputs

#### Management Controls

- 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

#### Controls Tested

- Investment performance monitoring
- Data input exception report
- Z-score report
- Position report

#### Results

Management controls are operating effectively. However, team should enhance existing operating procedures for all steps in the process.

### Recommended Actions

- Develop detailed, written operating procedures for performing key tasks related to TAA models and strategies.

### Management Responses

- Management agrees with the recommendation.
- None

---

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

Project #: 16-301
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...
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:

<table>
<thead>
<tr>
<th>Derivative Type</th>
<th>Gross Notional (in billion)</th>
<th>Net Notional (in billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Futures</td>
<td>$13.1</td>
<td>$4.7</td>
</tr>
<tr>
<td>Forwards</td>
<td>10.3</td>
<td>-2.0</td>
</tr>
<tr>
<td>Swaps</td>
<td>2.1</td>
<td>-0.1</td>
</tr>
<tr>
<td>Options</td>
<td>0.2</td>
<td>0.1</td>
</tr>
<tr>
<td><strong>Total Notional Value =</strong></td>
<td><strong>$25.7</strong></td>
<td><strong>$2.7</strong></td>
</tr>
</tbody>
</table>
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.
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
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.
OVERALL OPINION OF IMD INTERNAL CONTROLS
August 26, 2016
TRS Internal Audit Department

In the past three fiscal years (2014-2016), IMD’s internal controls were tested in a total of 28 internal and external projects, including internal audits and quarterly investment compliance tests, and the audits completed by the State Auditor’s Office (SAO).

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. No significant control deficiencies were identified during our audits or quarterly compliance tests in the past three fiscal years.

- Effective models used for Tactical Asset Allocation (TAA) trades
- Adequate segregation of duties for derivatives trades generated from TAA models
- Risk information included in the reports to the Board of Trustees and management
- IIC approval of proposed deals and IMC monitoring of profit center performance
- Process for due diligence (for both External Public Markets and External Private Markets)
- Approval and reconciliation of trades (for both cash securities trades and derivatives trades)
- Qualitative award of the incentive pay supported by 360° annual evaluation
- Wire transfer controls, including authorization, review, callbacks, and reconciliation

Legend of Results:
Red - Unsatisfactory
Orange - Major Improvement Needed
Yellow - Some 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 COSO\(^1\) 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.

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\(^{1}\) 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

<table>
<thead>
<tr>
<th>Project Name (Project Number)</th>
<th>FY 16</th>
<th>FY 15</th>
<th>FY 14</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Internal Project</td>
<td>External Project</td>
<td>Internal Project</td>
</tr>
<tr>
<td>Semi-Annual Testing of Investment Controls of External Public Markets, Strategic Partnership &amp; Research, Tactical Asset Allocation, and Derivatives (16-301)</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>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)</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Testing of Performance Incentive Pay Calculations for the Plan Year Ended September 2015 (16-303)</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Semi-Annual Testing of Investment Controls of Private Equity and Real Assets (15-301)</td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Audit of Information Technology Controls at Third-Party Investment Service Providers (15-301)</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Quarterly Investment Compliance Testing – Compliance with IPS, SLP, Ethics Policies, Wire Transfer Procedures, and Incentive Comp Calculations (15-302)</td>
<td></td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Quarterly Test Results of Investment Controls (14-301)</td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Quarterly Investment Compliance Testing – Compliance with IPS and Wire Transfer Procedures (14-302)</td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Audit of the Teacher Retirement System’s Financial Statements, Fiscal Years 2015, 2014, and 2013 (State Auditor’s Office)</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>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)</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>SUBTOTAL</td>
<td>7</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>GRAND TOTAL</td>
<td>26</td>
<td>2</td>
<td>28</td>
</tr>
</tbody>
</table>

SUBTOTAL: 26 Internal, 2 External
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 360° 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.

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

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 controls\(^3\) 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 \textit{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

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

* Emerging managers are included in these portfolios.

TRedevelopment of text or any other content without proper attribution is not allowed.
## APPENDIX C

**IMD Internal Controls Mapped to COSO Principles**

<table>
<thead>
<tr>
<th>COSO Component</th>
<th>COSO Principle</th>
<th>Examples of IMD Controls Established</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Control Environment</strong>&lt;br&gt; <em>(The set of standards, processes, and structures that provide the basis for carrying out internal control across the organization)</em></td>
<td>The organization demonstrates a commitment to integrity and ethical values&lt;br&gt; The board of trustees demonstrates independence from management and exercises oversight of the development and performance of internal control&lt;br&gt; Management establishes - with board oversight - structures, reporting lines, and appropriate authorities and responsibilities in the pursuit of objectives</td>
<td>• Ethics policies&lt;br&gt; • Annual ethics compliance certifications from employees and contractors&lt;br&gt; • TRS Fraud and Ethics Hotline&lt;br&gt; • Conflict of interest disclosure, including placement agent disclosure&lt;br&gt; • Board approval of investment-related policies&lt;br&gt; • Board oversight of investment decisions&lt;br&gt; • Obtaining external reviews, including consultants’ and auditors’ reviews&lt;br&gt; • IMD organization chart&lt;br&gt; • Delegated investing authority&lt;br&gt; • Internal Investment Committee (IIC) and Investment Management Committee (IMC)&lt;br&gt; • Service level agreement with external service providers</td>
</tr>
<tr>
<td><strong>Risk Assessment</strong>&lt;br&gt; <em>(A dynamic and iterative process for identifying and assessing risks relating to objectives)</em></td>
<td>The organization specifies objectives with sufficient clarity to enable the identification and assessment of risks relating to objectives</td>
<td>• Target investment returns established&lt;br&gt; • Asset allocation targets with allowable ranges&lt;br&gt; • Risk target and limits established</td>
</tr>
<tr>
<td>COSO Component</td>
<td>COSO Principle</td>
<td>Examples of IMD Controls Established</td>
</tr>
<tr>
<td>----------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| 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 | • 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) | • 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 | • 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 organization selects and develops control activities that contribute to the mitigation of risks to the achievement of objectives to acceptable levels | • 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  
• Restrictions on information technology (IT) system access                                                                 |
<p>| (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 general control activities                                          |                                                                                                        |</p>
<table>
<thead>
<tr>
<th>COSO Component</th>
<th>COSO Principle</th>
<th>Examples of IMD Controls Established</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>COSO Component</strong></td>
<td><strong>COSO Principle</strong></td>
<td><strong>Examples of IMD Controls Established</strong></td>
</tr>
</tbody>
</table>
| **Information and Communication** | over technology to support the achievement of objectives | • 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  
• 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  

• 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  

• 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  

• 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  

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Overall Opinion on IMD Internal Controls  
Page 10
<table>
<thead>
<tr>
<th>COSO Component</th>
<th>COSO Principle</th>
<th>Examples of IMD Controls Established</th>
</tr>
</thead>
</table>
| **Monitoring Activities**  
(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) | The organization selects, develops, and performs ongoing and/or separate evaluations to ascertain whether the components of internal control are present and functioning | • 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) |

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

|  |  | • 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

<table>
<thead>
<tr>
<th>Report Number and Report Title</th>
<th>Recommendation</th>
<th>Implementation Status</th>
<th>Implementation Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>16-301 Second Half of Semi-Annual Testing Results of Tactical Asset Allocation (TAA), including Derivatives</td>
<td>Enhance written operating procedures for TAA process</td>
<td>In progress</td>
<td>12/31/2016 (planned)</td>
</tr>
<tr>
<td>16-301 First Half of Semi-Annual Testing Results of Investment Controls of External Public Markets (EPU) and public Strategic Partnership &amp; Research (SPR)</td>
<td>Improve the travel process by ensuring there is an appropriate justification for excess lodging expenses to be incurred for foreign travel.</td>
<td>In progress</td>
<td>12/31/2016 (planned)</td>
</tr>
<tr>
<td>16-303 Testing of Performance Incentive Pay Calculations</td>
<td>There are no procedures for Investment Accounting’s comparison of investment returns</td>
<td>Implemented</td>
<td>8/2016</td>
</tr>
<tr>
<td></td>
<td>There is no policy requiring performance appraisals for employees transferring from IMD.</td>
<td>In progress</td>
<td>10/31/2016</td>
</tr>
</tbody>
</table>
| 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:  
- 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) |
<p>| 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 |</p>
<table>
<thead>
<tr>
<th>Report Number and Report Title</th>
<th>Recommendation</th>
<th>Implementation Status</th>
<th>Implementation Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investment Service Providers</td>
<td>providers on TRS data security terms prior to signing a new or amended contract</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>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</td>
<td>Implemented</td>
<td>3/2016</td>
</tr>
<tr>
<td>15-301 First Half of Semi Annual Test of Results of Investment Controls of Private Equity</td>
<td>Continue efforts to increase general partners’ transparency on fees and expenses</td>
<td>Implemented</td>
<td>3/2016</td>
</tr>
<tr>
<td></td>
<td>Clarify policies to document private equity staff’s due diligence and monitoring activities</td>
<td>Implemented</td>
<td>8/2015</td>
</tr>
<tr>
<td></td>
<td>Provide clear guidelines for acceptable accounting and valuation standards for private equity investments</td>
<td>Implemented</td>
<td>5/2016</td>
</tr>
<tr>
<td>15-501 Audit of Records Management</td>
<td>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.</td>
<td>Implemented</td>
<td>9/2015</td>
</tr>
<tr>
<td></td>
<td>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.</td>
<td>Implemented</td>
<td>9/2015</td>
</tr>
<tr>
<td>Report Number and Report Title</td>
<td>Recommendation</td>
<td>Implementation Status</td>
<td>Implementation Date</td>
</tr>
<tr>
<td>-----------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------</td>
<td>-----------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>14-301 Fourth Quarter Test Results of Investment Controls</td>
<td>TRS should require terminating employees and contract workers to formally certify/verify they do not have any TRS records.</td>
<td>Implemented</td>
<td>3/2016</td>
</tr>
<tr>
<td></td>
<td>Tailor manager and investment certification questionnaires to address ENR-specific topics</td>
<td>Implemented</td>
<td>Q2 FY 2015</td>
</tr>
<tr>
<td></td>
<td>Consider leveraging consultants to a greater extent to supplement limited internal resources</td>
<td>Implemented</td>
<td>Q4 FY 2015</td>
</tr>
<tr>
<td>14-301 First Quarter Interim Test Results of Investment Controls</td>
<td>Include reasonableness checks on securities lending income as part of Investment Accounting’s monitoring activities</td>
<td>Implemented</td>
<td>2/2014</td>
</tr>
<tr>
<td></td>
<td>Consider other funding options to address long-term CSA revenue shortfall projections</td>
<td>Implemented</td>
<td>5/2014</td>
</tr>
<tr>
<td>14-302 First Quarter - Quarterly Investment Testing Investment Policy Statement (IPS), Wire Transfer Procedures Calendar Quarter Ended September 30, 2013</td>
<td>Test Result - IMD management identified and disclosed that one new investment in an Emerging Manager fund exceeded authorized limits</td>
<td>Implemented</td>
<td>11/2013</td>
</tr>
<tr>
<td>14-302 Second Quarter - Quarterly Investment Testing Investment Policy Statement (IPS), Wire Transfer Procedures Calendar Quarter Ended December 31, 2013</td>
<td>Two external managers purchased a stock newly added to the Sudan Restricted Companies List</td>
<td>Implemented</td>
<td>1/2014</td>
</tr>
</tbody>
</table>
TAB 6D
ANNUAL TESTING OF BENEFIT PAYMENTS
JULY 2015 – JUNE 2016
TRS Internal Audit Department

To deliver retirement and related benefits authorized by law for members and their beneficiaries.

**Fraud / Errors**
Benefit payments could be incorrect or fraudulent in these areas:
- Benefit payments to recent retirees
- Benefit payments with an expiration date

**Eligibility**
- 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

**Manual Voucher Payments**
Manual voucher payments could be processed incorrectly or without proper authorization

---

All benefit payments are valid and are paid in accordance with *TRS Laws and Rules*

- All active and retired members are assigned to the correct membership tier
- All retirees who received benefit payments are eligible

**Management Responses**
Management agrees with the test results and is taking corrective actions including correcting the annuity amount and paying the difference in underpayments already issued.

---

**Agreed-upon Procedures**
Match benefit payments to supporting documents in two areas:
1. Recent retiree benefit recalculations
2. Identified benefit payment expiration date exceptions

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
5. Match randomly selected manually processed voucher payments to supporting documentation

---

**Test Results**
One recent retiree’s annuity was understated by $12.30 per month due to an incorrect adjustment of one of the highest five salaries.

- No Exceptions
- No Exceptions

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

August 18, 2016
Project # 16-101
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.

Amy Barrett, CIA, CPA, CISA
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.
**Audit Objectives**

To determine the following:
- 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**

- 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**

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.

- To test completeness and accuracy of reports submitted to TRS:
  - 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:
  - Reviewed contracts/invoices/work agreements of five vendors/independent contract workers paid in the test month
- To test accuracy of census data information:
  - Assessed supporting documentation for each sample item to confirm date of birth, hire date/years of service, eligible compensation, gender, and dates of termination/retirement

**Conclusions**

- **Positive Finding:**
  - Socorro ISD officials were prompt in responding to questions and providing supporting documentation
  - Personnel files were well organized

- **Test Results:**
  - 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 details of testing results in Appendix B.

**Recommended Actions**

We recommend that the Reporting Official:

- Work with TRAQS coaches to correct reports by the October 2016 report
- Ensure personnel are knowledgeable of *TRS Laws and Rules*
- Maintain sufficient and accurate records of time worked for all substitutes and retirees

**Management Responses**

Reporting Entity management agrees with the recommendations.
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 entities\(^1\) 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.

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

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 following:

- 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

<table>
<thead>
<tr>
<th>REGULAR PAYROLL REPORT</th>
<th>GRAND TOTAL REPORTED</th>
<th>TOTAL TESTED</th>
<th>UNDER STATED</th>
<th>OVER STATED</th>
<th>REVISED TOTAL TESTED</th>
<th>% ERROR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Member Contributions to Pension Fund</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No exceptions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL 1,418,557.65</td>
<td>10,755.00</td>
<td>$ -</td>
<td>$ -</td>
<td>$ 10,755.00</td>
<td>0.00%</td>
<td></td>
</tr>
<tr>
<td><strong>Member Contributions to TRS-Care</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No exceptions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL 128,066.53</td>
<td>970.94</td>
<td>$ -</td>
<td>$ -</td>
<td>$ 970.94</td>
<td>0.00%</td>
<td></td>
</tr>
<tr>
<td><strong>RE Contributions to TRS-Care</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No exceptions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL 108,362.94</td>
<td>821.56</td>
<td>$ -</td>
<td>$ -</td>
<td>$ 821.56</td>
<td>0.00%</td>
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</table>

<table>
<thead>
<tr>
<th>NEW MEMBER REPORT</th>
<th>GRAND TOTAL REPORTED</th>
<th>TOTAL TESTED</th>
<th>UNDER STATED</th>
<th>OVER STATED</th>
<th>REVISED TOTAL TESTED</th>
<th>% ERROR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NEW MEMBER REPORT</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No exceptions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL $10,383.40</td>
<td>$ 72.53</td>
<td>$ -</td>
<td>$ -</td>
<td>$ 72.53</td>
<td>0.00%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FEDERAL FUND/PRIVATE GRANT REIMBURSEMENT TO STATE</th>
<th>GRAND TOTAL REPORTED</th>
<th>TOTAL TESTED</th>
<th>UNDER STATED</th>
<th>OVER STATED</th>
<th>REVISED TOTAL TESTED</th>
<th>% ERROR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Improperly included and paid contributions on one new member</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL $109,442.89</td>
<td>$ 682.21</td>
<td>$ -</td>
<td>$ 72.53</td>
<td>$ 609.68</td>
<td>10.63%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TRS-CARE FEDERAL GRANT REIMBURSEMENT TO STATE</th>
<th>GRAND TOTAL REPORTED</th>
<th>TOTAL TESTED</th>
<th>UNDER STATED</th>
<th>OVER STATED</th>
<th>REVISED TOTAL TESTED</th>
<th>% ERROR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>No exceptions</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL $16,099.46</td>
<td>$ 100.33</td>
<td>$ -</td>
<td>$ -</td>
<td>$ 100.33</td>
<td>0.00%</td>
<td></td>
</tr>
</tbody>
</table>
### STATUTORY MINIMUM REPORT

<table>
<thead>
<tr>
<th>Description</th>
<th>Grand Total Reported</th>
<th>Total Tested</th>
<th>Under Stated</th>
<th>Over Stated</th>
<th>Revised Total Tested</th>
<th>% Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incorrectly calculated and underpaid contributions on seven members</td>
<td>$211,277.95</td>
<td>$3,086.81</td>
<td>$323.89</td>
<td></td>
<td>$3,410.70</td>
<td>10.49%</td>
</tr>
</tbody>
</table>

### NON-OASDI REPORT

<table>
<thead>
<tr>
<th>Description</th>
<th>Grand Total Reported</th>
<th>Total Tested</th>
<th>Under Stated</th>
<th>Over Stated</th>
<th>Revised Total Tested</th>
<th>% Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>No exceptions</td>
<td>$239,235.49</td>
<td>$1,477.81</td>
<td></td>
<td></td>
<td>$1,477.81</td>
<td>0.00%</td>
</tr>
</tbody>
</table>

### EMPLOYMENT AFTER RETIREMENT AREA 1 AND 2 REPORT

<table>
<thead>
<tr>
<th>Description</th>
<th>Grand Total Reported</th>
<th>Total Tested</th>
<th>Under Stated</th>
<th>Over Stated</th>
<th>Revised Total Tested</th>
<th>% Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improperly excluded one retiree in Area 1 report</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improperly excluded one retiree in Area 2 report</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improperly reported one retiree in Area 2 instead of Area 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### PENSION SURCHARGE FOR RETIREES REPORT

<table>
<thead>
<tr>
<th>Description</th>
<th>Grand Total Reported</th>
<th>Total Tested</th>
<th>Under Stated</th>
<th>Over Stated</th>
<th>Revised Total Tested</th>
<th>% Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>No exceptions</td>
<td>$</td>
<td>$</td>
<td>$</td>
<td>$</td>
<td>$</td>
<td>0.00%</td>
</tr>
</tbody>
</table>

### TRS-CARE SURCHARGE FOR RETIREES REPORT

<table>
<thead>
<tr>
<th>Description</th>
<th>Grand Total Reported</th>
<th>Total Tested</th>
<th>Under Stated</th>
<th>Over Stated</th>
<th>Revised Total Tested</th>
<th>% Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>No exceptions</td>
<td>$</td>
<td>$</td>
<td>$</td>
<td>$</td>
<td>$</td>
<td>0.00%</td>
</tr>
</tbody>
</table>

### GRAND TOTAL DOLLAR ADJUSTMENTS

<table>
<thead>
<tr>
<th>Description</th>
<th>Total Adjusted</th>
<th>Under Stated</th>
<th>Over Stated</th>
<th>Revised Total Adjusted</th>
<th>% Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>$17,967.19</td>
<td>$323.89</td>
<td>$72.53</td>
<td></td>
<td>$18,218.55</td>
<td></td>
</tr>
</tbody>
</table>
### Audit Objectives

- 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

- 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

### Test Results and Conclusions

#### 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.

- To test completeness and accuracy of reports submitted to TRS:
  - 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:
  - Reviewed contracts/invoices/work agreements of five vendors/independent contract workers paid in the test month
- To test accuracy of census data information:
  - 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

#### Conclusions

- Positive Finding:
  - Ysleta ISD officials were prompt in responding to questions and providing supporting documentation
  - Personnel files were well organized

- Test Results:
  - 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 details of testing results in Appendix B.

### Recommended Actions

We recommend that the Reporting Official:

- Work with TRAQS coaches to correct reports by the October 2016 report
- Ensure personnel are knowledgeable of *TRS Laws and Rules*
- Maintain sufficient and accurate records of time worked for all substitutes and retirees

### Management Responses

Reporting Entity management agrees with the recommendation.
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 entities\(^1\) 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 BACKGROUND

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 following:\(^3\):

- 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

<table>
<thead>
<tr>
<th>REGULAR PAYROLL REPORT</th>
<th>GRAND TOTAL REPORTED</th>
<th>TOTAL TESTED</th>
<th>UNDER STATED</th>
<th>OVER STATED</th>
<th>REVISED TOTAL TESTED</th>
<th>% ERROR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Member Contributions to Pension Fund</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>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</td>
<td>$1,637,778.04</td>
<td>$10,442.35</td>
<td>$59.51</td>
<td>-</td>
<td>$10,501.86</td>
<td>0.57%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$1,637,778.04</strong></td>
<td><strong>$10,442.35</strong></td>
<td><strong>$59.51</strong></td>
<td><strong>-</strong></td>
<td><strong>$10,501.86</strong></td>
<td><strong>0.57%</strong></td>
</tr>
</tbody>
</table>

| 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 | $147,854.62 | $942.71 | $5.37 | - | $948.08 | 0.57% |
| **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 | $125,108.24 | $797.68 | $4.55 | - | $802.23 | 0.57% |
| **TOTAL** | **$125,108.24** | **$797.68** | **$4.55** | **-** | **$802.23** | **0.57%** |

<table>
<thead>
<tr>
<th>NEW MEMBER REPORT</th>
<th>GRAND TOTAL REPORTED</th>
<th>TOTAL TESTED</th>
<th>UNDER STATED</th>
<th>OVER STATED</th>
<th>REVISED TOTAL TESTED</th>
<th>% ERROR</th>
</tr>
</thead>
<tbody>
<tr>
<td>No exceptions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$6,662.40</strong></td>
<td><strong>$912.89</strong></td>
<td><strong>$-</strong></td>
<td><strong>-</strong></td>
<td><strong>$912.89</strong></td>
<td><strong>0.00%</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FEDERAL FUNDS/PRIVATE GRANT REIMBURSEMENT TO STATE</th>
<th>GRAND TOTAL REPORTED</th>
<th>TOTAL TESTED</th>
<th>UNDER STATED</th>
<th>OVER STATED</th>
<th>REVISED TOTAL TESTED</th>
<th>% ERROR</th>
</tr>
</thead>
<tbody>
<tr>
<td>No exceptions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$155,326.22</strong></td>
<td><strong>$371.48</strong></td>
<td><strong>$-</strong></td>
<td><strong>-</strong></td>
<td><strong>$371.48</strong></td>
<td><strong>0.00%</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TRS-CARE FEDERAL GRANT REIMBURSEMENT TO STATE</th>
<th>GRAND TOTAL REPORTED</th>
<th>TOTAL TESTED</th>
<th>UNDER STATED</th>
<th>OVER STATED</th>
<th>REVISED TOTAL TESTED</th>
<th>% ERROR</th>
</tr>
</thead>
<tbody>
<tr>
<td>No exceptions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$22,884.18</strong></td>
<td><strong>$54.63</strong></td>
<td><strong>$-</strong></td>
<td><strong>-</strong></td>
<td><strong>$54.63</strong></td>
<td><strong>0.00%</strong></td>
</tr>
</tbody>
</table>

---

August 3, 2016

TRS Internal Audit
Audit of Ysleta ISD
<table>
<thead>
<tr>
<th>STATUTORY MINIMUM REPORT</th>
<th>GRAND TOTAL REPORTED</th>
<th>TOTAL TESTED</th>
<th>UNDER Stated</th>
<th>OVER Stated</th>
<th>REVISED TOTAL TESTED</th>
<th>% ERROR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incorrectly calculated and overpaid contributions on three members</td>
<td>$242,797.13</td>
<td>$2,682.24</td>
<td>-</td>
<td>$25.25</td>
<td>$2,656.99</td>
<td>0.94%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$242,797.13</td>
<td>$2,682.24</td>
<td>-</td>
<td>$25.25</td>
<td>$2,656.99</td>
<td>0.94%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NON-OASDI REPORT</th>
<th>GRAND TOTAL REPORTED</th>
<th>TOTAL TESTED</th>
<th>UNDER Stated</th>
<th>OVER Stated</th>
<th>REVISED TOTAL TESTED</th>
<th>% ERROR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incorrectly calculated and overpaid contributions on one member</td>
<td></td>
<td></td>
<td></td>
<td>$153.35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incorrectly calculated and improperly underpaid contributions on two members</td>
<td></td>
<td></td>
<td>$4.61</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improperly excluded one employee from the TRS Regular Payroll Report (see testing of Regular Payroll Report above) and therefore did not pay contribution</td>
<td></td>
<td></td>
<td>$12.40</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>$284,890.51</td>
<td>$1,570.80</td>
<td>$17.01</td>
<td>$153.35</td>
<td>$1,434.46</td>
<td>10.85%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EMPLOYMENT AFTER RETIREMENT AREA 1 AND 2 REPORT</th>
<th>GRAND TOTAL REPORTED</th>
<th>TOTAL TESTED</th>
<th>UNDER Stated</th>
<th>OVER Stated</th>
<th>REVISED TOTAL TESTED</th>
<th>% ERROR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improperly excluded 64 retirees from Area 1 and Area 2 Reports</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incorrectly reported one retiree on Area 2 instead of Area 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PENSION SURCHARGE FOR RETIREE REPORT</th>
<th>GRAND TOTAL REPORTED</th>
<th>TOTAL TESTED</th>
<th>UNDER Stated</th>
<th>OVER Stated</th>
<th>REVISED TOTAL TESTED</th>
<th>% ERROR</th>
</tr>
</thead>
<tbody>
<tr>
<td>No exceptions</td>
<td>$4,556.48</td>
<td>$4,556.48</td>
<td>-</td>
<td>-</td>
<td>$4,556.48</td>
<td>0.00%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$4,556.48</td>
<td>$4,556.48</td>
<td>-</td>
<td>-</td>
<td>$4,556.48</td>
<td>0.00%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TRS-CARE SURCHARGE FOR RETIREES REPORT</th>
<th>GRAND TOTAL REPORTED</th>
<th>TOTAL TESTED</th>
<th>UNDER Stated</th>
<th>OVER Stated</th>
<th>REVISED TOTAL TESTED</th>
<th>% ERROR</th>
</tr>
</thead>
<tbody>
<tr>
<td>No exceptions</td>
<td>$2,347.00</td>
<td>$2,347.00</td>
<td>-</td>
<td>-</td>
<td>$2,347.00</td>
<td>0.00%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$2,347.00</td>
<td>$2,347.00</td>
<td>-</td>
<td>-</td>
<td>$2,347.00</td>
<td>0.00%</td>
</tr>
</tbody>
</table>

| GRAND TOTAL DOLLAR ADJUSTMENTS | | $24,678.26 | $86.44 | $178.60 | $24,586.10 | |

August 3, 2016

TRS Internal Audit
Audit of Ysleta ISD

Page 6
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
<table>
<thead>
<tr>
<th>Report Type</th>
<th>Errors</th>
<th>Total Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regular Payroll Report</td>
<td>6</td>
<td>$874</td>
</tr>
<tr>
<td>New Member Report</td>
<td>5</td>
<td>$1,059</td>
</tr>
<tr>
<td>Federal Fund/Private Grant Report</td>
<td>6</td>
<td>$631</td>
</tr>
<tr>
<td>Federal Grant/TRS-Care Report</td>
<td>6</td>
<td>$136</td>
</tr>
<tr>
<td>Statutory Minimum Report</td>
<td>76</td>
<td>$4,928</td>
</tr>
<tr>
<td>Non-OASDI Report**</td>
<td>76</td>
<td>$1,207</td>
</tr>
<tr>
<td>Pension Surcharge Report***</td>
<td>32</td>
<td>$15,350</td>
</tr>
<tr>
<td>TRS-Care Surcharge Report***</td>
<td>15</td>
<td>$8,082</td>
</tr>
</tbody>
</table>

Understatement (Due to TRS))
Overstatement (Due to Employer)

* 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.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Absolute Value of Contributions Over and Under Reported</strong></td>
<td>1%</td>
<td>26%</td>
<td>12%</td>
<td>18%</td>
<td>27%</td>
<td>8%</td>
<td>56%</td>
<td>62%</td>
</tr>
<tr>
<td><strong>Net Contributions (Over)/Under-Reported</strong></td>
<td>1%</td>
<td>(15%)</td>
<td>3%</td>
<td>9%</td>
<td>17%</td>
<td>(3%)</td>
<td>31%</td>
<td>33%</td>
</tr>
<tr>
<td><strong>Contributions/Surcharges Reported for Fiscal Year 15</strong></td>
<td>$ 2,774 M</td>
<td>$ 58 M</td>
<td>$ 215 M</td>
<td>$ 192 M</td>
<td>$ 334 M</td>
<td>$ 345 M</td>
<td>$ 16 M</td>
<td>$ 11 M</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Project</th>
<th>Recommendation</th>
<th>Status</th>
<th>Issue Type</th>
<th>Estimated Date</th>
<th>Revised / Actual Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>14-401</td>
<td>Purchasing and Contract Administration</td>
<td>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.</td>
<td>Implemented</td>
<td>Other Reportable</td>
<td>9/2015</td>
</tr>
<tr>
<td>15-402</td>
<td>Actuarial Data Controls</td>
<td>Include the required active and retired actuarial data file layouts in the contractual agreement with actuary</td>
<td>Implemented</td>
<td>Other Reportable</td>
<td>9/2016</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Develop a plan to perform routine enterprise-wide departmental records retention assessments</td>
<td>Implemented</td>
<td>Significant</td>
<td>10/2015</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Develop a plan to provide well-defined guidelines for users of electronic records systems and increase records management awareness</td>
<td>Implemented</td>
<td>Significant</td>
<td>10/2015</td>
</tr>
</tbody>
</table>

### Significant to Business Objectives
- Past original estimated completion date
- No management action plan or No progress on management action plan
- Past original estimated completion date
- Progress on management action plan
- Original estimated completion date has not changed
- Progress on management action plan
- Satisfactory implementation of management action plan or Acceptance of risk by management
- Implementation of management action plan pending Internal Audit validation

### Other Reportable
- Past original or first revised estimated completion date
- No management action plan or No progress on management action plan
- Past original or first revised estimated completion date
- Progress on management action plan
- Within original or first revised estimated completion date
- Progress on management action plan
- Satisfactory implementation of management action plan or Acceptance of risk by management
<table>
<thead>
<tr>
<th>Project</th>
<th>Recommendation</th>
<th>Status</th>
<th>Issue Type</th>
<th>Estimated Date</th>
<th>Revised / Actual Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>16-301</td>
<td>Overall IMD Opinion Audit</td>
<td>In Progress</td>
<td>Other Reportable</td>
<td>8/2016</td>
<td>12/2016</td>
</tr>
<tr>
<td></td>
<td>Improve the travel process to ensure justification for excess lodging expenses for foreign travel</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16-303</td>
<td>Performance Incentive Payment Calculations</td>
<td>Implemented</td>
<td>Other Reportable</td>
<td>9/2016</td>
<td>8/2016</td>
</tr>
<tr>
<td></td>
<td>Review of Profit Center Returns Prepared for Incentive Compensation Purposes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Qualitative Award for Transferred Employees</td>
<td>In Progress</td>
<td>Other Reportable</td>
<td>9/2016</td>
<td></td>
</tr>
<tr>
<td>16-602</td>
<td>Internal Audit Self-Assessment</td>
<td>Implemented</td>
<td>Other Reportable</td>
<td>8/2016</td>
<td>8/2016</td>
</tr>
<tr>
<td></td>
<td>Update TeamMate Template to include steps for documenting improvement opportunities and communications for suspected frauds</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Update steps in planning phase to assess ability in performing non-audit Services</td>
<td>Implemented</td>
<td>Other Reportable</td>
<td>8/2016</td>
<td>8/2016</td>
</tr>
<tr>
<td></td>
<td>Update steps for Agreed-Upon Procedures to include components enumerated and to include “Independence” in the report title</td>
<td>Implemented</td>
<td>Other Reportable</td>
<td>8/2016</td>
<td>8/2016</td>
</tr>
</tbody>
</table>
Status of Reporting Entity Audit Recommendations

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

**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
State Auditor’s Office (SAO) Audit Recommendations

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

External Quality Assurance Review – Fiscal Year 2016

<table>
<thead>
<tr>
<th>Project</th>
<th>Recommendation</th>
<th>Status</th>
<th>Issue Type</th>
<th>Estimated Date</th>
<th>Revised / Actual Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>External Quality Assurance Review Report of the Teacher Retirement System’s Internal Audit Department</td>
<td>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.</td>
<td>Implemented</td>
<td>Other Reportable</td>
<td>6/2016</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Develop a resource and succession plan in consideration of potential attrition and loss of critical skills required to sustain internal audit functions.</td>
<td>Implemented</td>
<td>Other Reportable</td>
<td>8/2016</td>
</tr>
<tr>
<td></td>
<td></td>
<td>There is an opportunity to realize an increase in revenue by increasing focus on employer audits.</td>
<td>Implemented</td>
<td>Other Reportable</td>
<td>8/2016</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Develop and implement completion of a crosswalk between audit standards and automated working paper templates.</td>
<td>Implemented</td>
<td>Other Reportable</td>
<td>8/2016</td>
</tr>
</tbody>
</table>
TAB 8
TAB 8A
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 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.

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- 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, ensure 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 23, 2016.
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

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
Executive Summary

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:

**Information Gathering and Scoping**

A. Gained understanding of industry trends and current environmental risks through discussions with industry personnel, reading publications, and attending relevant training
B. Read technical guidance from GASB and AICPA to identify changes to audit and accounting requirements
C. Gained understanding of TRS' strategic objectives and key initiatives by reading the strategic plan
D. Updated audit universe based upon changes in organizational structure, information from TEAM, and input from staff

**Risk Analysis**

A. Interviewed members of the TRS executive team to obtain various points of view on risks
B. Reviewed prior year surveys of executives and selected leadership team members on their assessment of risk in the categories of fraud, compliance, materiality, complexity, suspected concerns, and emerging risks
C. Obtained latest ERM Stoplight Report to identify additional areas of risk

**Development and Vetting of Internal Audit Plan**

A. Developed a proposed Audit Plan based on interviews, risk assessments, resource availability, budget, and division coverage
B. Met with Risk Oversight Committee to discuss proposed audit plan
C. Updated TRS Internal Audit Charter to ensure alignment with proposed audit activities and standards

**Next Steps**

A. Review and discuss the proposed Audit Plan with the Audit Committee
B. Obtain Audit Committee recommendation and Board approval of Audit Plan
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
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.

<table>
<thead>
<tr>
<th>Title</th>
<th>Type</th>
<th>Preliminary Scope</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Benefits Testing</td>
<td>Agreed-Upon Procedures</td>
<td>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</td>
</tr>
<tr>
<td>Employer Audits (6-10 Independent School Districts)</td>
<td>Audit</td>
<td>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</td>
</tr>
<tr>
<td>Employer Audit of Pension and TRS-Care Surcharges</td>
<td>Audit</td>
<td>Conduct a desk audit across multiple entities targeted at surcharge reporting and collections with the goal of collecting significantly underreported amounts to the trust.</td>
</tr>
<tr>
<td>Employer Audit Follow-Up</td>
<td>Audit</td>
<td>Follow-up and report on the status of outstanding audit recommendations related to reporting entities</td>
</tr>
<tr>
<td>Higher Education Pilot and Audit Program Development</td>
<td>Advisory</td>
<td>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</td>
</tr>
<tr>
<td>TRS Reporting Entity Website Audit Information and Communication</td>
<td>Advisory</td>
<td>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.</td>
</tr>
</tbody>
</table>
### Audit Plan: Health Care

<table>
<thead>
<tr>
<th>Title</th>
<th>Type</th>
<th>Preliminary Scope</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Insurance Portability and Accountability Act (HIPAA) Gap</td>
<td>Audit</td>
<td>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.</td>
</tr>
<tr>
<td>Assessment and Validation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trust Expense Allocation Audit</td>
<td>Audit</td>
<td>Assess reasonableness of expenses allocated between pension and health care trusts</td>
</tr>
<tr>
<td>TRS-ActiveCare Open Enrollment Readiness Assessment Follow-Up</td>
<td>Audit</td>
<td>Follow up on outstanding action items significant to open enrollment</td>
</tr>
<tr>
<td>TRS-ActiveCare Eligibility Pilot and Audit Program Development</td>
<td>Advisory</td>
<td>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.</td>
</tr>
<tr>
<td>Health Care Vendor Update Meetings</td>
<td>Advisory</td>
<td>Attend quarterly meetings with health care vendors to understand results, issues, and TRS management’s monitoring controls</td>
</tr>
<tr>
<td>Health Care Vendor Selection Observation</td>
<td>Advisory</td>
<td>Observe selection process of large vendor and service providers, when applicable</td>
</tr>
</tbody>
</table>
### Audit Plan: Investment Management

<table>
<thead>
<tr>
<th>Title</th>
<th>Type</th>
<th>Preliminary Scope</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private Equity Fees</td>
<td>Audit</td>
<td>Verify the accuracy of private equity fees and compliance with investment management agreements for 1 – 2 private equity funds.</td>
</tr>
<tr>
<td>Soft Dollars and Commission Sharing Arrangements (CSA's)</td>
<td>Audit</td>
<td>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</td>
</tr>
<tr>
<td>Quarterly Investment and Ethics Policies Compliance Testing</td>
<td>Agreed-Upon Procedures</td>
<td>Assess compliance with TRS ethics policies and the Investment Policy Statement (IPS) requirements</td>
</tr>
<tr>
<td>Annual Testing of Investment Incentive Pay Plan</td>
<td>Agreed-Upon Procedures</td>
<td>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</td>
</tr>
<tr>
<td>Investment Fiduciary Audit Coordination</td>
<td>Advisory</td>
<td>Coordinate the audit of the auditors hired by the SAO to assess TRS' fiduciary activities around real assets</td>
</tr>
<tr>
<td>Investment Committees Attendance</td>
<td>Advisory</td>
<td>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</td>
</tr>
<tr>
<td>Title</td>
<td>Type</td>
<td>Preliminary Scope</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>-----------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Comprehensive Annual Financial Report (CAFR) testing of annuity payments</td>
<td>Audit</td>
<td>Conduct pension benefits testing on behalf of the State Auditor’s office (SAO) to be used in completion of the CAFR audit</td>
</tr>
<tr>
<td>CAFR Audit Coordination (SAO, auditors)</td>
<td>Advisory</td>
<td>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</td>
</tr>
<tr>
<td>Teacher Retirement Investment Company of Texas (TRICOT) Financial Audit Coordination (Grant Thornton, auditors)</td>
<td>Advisory</td>
<td>Coordinate a financial audit of TRICOT, a wholly-owned subsidiary of TRS in London</td>
</tr>
<tr>
<td>Title</td>
<td>Type</td>
<td>Preliminary Scope</td>
</tr>
<tr>
<td>---------------------------------------------------------</td>
<td>----------------------</td>
<td>-----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Records Management Audit Follow-Up</td>
<td>Audit</td>
<td>Follow up on outstanding action items significant to records management</td>
</tr>
<tr>
<td>403(b) Program Controls Assessment, including Provider Compliance</td>
<td>Audit</td>
<td>Assess the design and effectiveness of controls at TRS in meeting 403(b) program objectives, including 403(b) providers’ compliance with program requirements</td>
</tr>
<tr>
<td>Contractor Onboarding and Off-boarding Processes</td>
<td>Audit</td>
<td>Assess sufficiency of processes for onboarding and off-boarding contractors</td>
</tr>
<tr>
<td>Federal Labor Standards Act (FLSA) Compliance</td>
<td>Consulting</td>
<td>Analyze hourly and salaried employees and compare with requirements of the FLSA</td>
</tr>
<tr>
<td>Executive Incentive Pay</td>
<td>Agreed-Upon Procedures</td>
<td>Independent recalculate executive incentive pay in order to test the accuracy of the calculation by management</td>
</tr>
<tr>
<td>The University of Texas at Austin (UT) Student Project</td>
<td>Consulting</td>
<td>Assess a TRS policy and provide recommendations for enhancing it.</td>
</tr>
<tr>
<td>Enterprise Risk Management (ERM) Fraud Risk Assessment</td>
<td>Advisory</td>
<td>Partner with ERM to update the TRS fraud risk assessment and identify mitigating controls</td>
</tr>
<tr>
<td>Special Requests and Emerging issues</td>
<td>Advisory or Consulting</td>
<td>Set aside time to address special requests and emerging issues during the year as requested by management</td>
</tr>
<tr>
<td>Meetings Participation</td>
<td>Advisory</td>
<td>Participate (non-voting) in various TRS-wide meetings such as Executive Council, Leadership Team, and Risk Oversight Committee</td>
</tr>
</tbody>
</table>
### Audit Plan: TEAM and Technology

<table>
<thead>
<tr>
<th>Title</th>
<th>Type</th>
<th>Preliminary Scope</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEAM Independent Program Assessment (IPA) Vendor Support</td>
<td>Advisory</td>
<td>Coordinate and facilitate activities of the IPA vendor and ensure direct access to executive management and the board</td>
</tr>
</tbody>
</table>
| TEAM Committees, Projects, and Controls Assessment Participation      | Advisory | 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:  
- 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**

<table>
<thead>
<tr>
<th>Title</th>
<th>Project Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Quality Assurance Review</td>
<td>Assess Internal Audit’s Quality Assessment and Improvement Program</td>
</tr>
<tr>
<td>ERS Audit Quality Assurance Review</td>
<td>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</td>
</tr>
<tr>
<td>Annual Internal Audit Report</td>
<td>Prepare annual report of audit activities in accordance with SAO instructions</td>
</tr>
<tr>
<td>Quarterly Audit Recommendations Follow-Up</td>
<td>Follow-up and report on the status of outstanding audit recommendations</td>
</tr>
<tr>
<td>Data Analysis Processes</td>
<td>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</td>
</tr>
<tr>
<td>Fiscal Year 2018 Audit Plan</td>
<td>Prepare annual audit plan based on a documented risk assessment in accordance with professional auditing standards and the Texas Internal Auditing Act</td>
</tr>
<tr>
<td>Internal Audit Strategic Plan Update</td>
<td>Bi-annual update of the Internal Audit Strategic Plan to consider changes in the department and continuing alignment with the TRS strategic plan</td>
</tr>
<tr>
<td>Audit Committee Meetings Preparation</td>
<td>Prepare communications and attend Audit Committee and Board Meetings</td>
</tr>
<tr>
<td>Area</td>
<td>Reason for Exclusion</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Purchasing Compliance Audit</td>
<td>Allow time for more health care procurements to be processed under new legislative requirements</td>
</tr>
</tbody>
</table>
Appendix A

Internal Audit Operating Budget
# Appendix A
## Internal Audit Operating Budget

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

Resources are sufficient to complete the annual audit plan.
Appendix B

Internal Audit
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
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, SAIAF, 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

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

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

(FY #) - indicates last year audited
## Appendix C
### Audit Universe

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

### Information Technology (IT) Processes and TEAM

<table>
<thead>
<tr>
<th>Governance - IT</th>
<th>IT Processes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Change &amp; Configuration Management</strong></td>
<td>Applications (FY12)</td>
</tr>
<tr>
<td>IT risk management</td>
<td>Databases</td>
</tr>
<tr>
<td><strong>IT Strategy &amp; Planning</strong></td>
<td>Infrastructure</td>
</tr>
<tr>
<td>Asset management</td>
<td>Data Center Operations</td>
</tr>
<tr>
<td>Human resources</td>
<td></td>
</tr>
<tr>
<td><strong>IT Security and Confidentiality</strong></td>
<td>Technology Management</td>
</tr>
<tr>
<td>Identity and access management (FY14)</td>
<td>Technology upgrades</td>
</tr>
<tr>
<td>Threat and vulnerability management (FY16)</td>
<td></td>
</tr>
<tr>
<td>Security awareness and training (FY11)</td>
<td>User and Vendor Support</td>
</tr>
<tr>
<td>Security configuration management</td>
<td></td>
</tr>
<tr>
<td>Virtualization</td>
<td></td>
</tr>
<tr>
<td>Cloud based computing (FY14 Consulting)</td>
<td></td>
</tr>
<tr>
<td>Mobile device security (FY14 Consulting)</td>
<td></td>
</tr>
<tr>
<td><strong>Disaster Recovery Plan</strong></td>
<td></td>
</tr>
<tr>
<td>Co-location (FY14 Consulting)</td>
<td></td>
</tr>
<tr>
<td>Disaster Recovery Management (FY09)</td>
<td></td>
</tr>
</tbody>
</table>

(FY #) - indicates last year audited
TAB 9
## Teacher Retirement System of Texas
### September 2016 Audit Committee Agenda Items Mapped to TRS Stoplight Report

<table>
<thead>
<tr>
<th>Category</th>
<th>Agenda Item</th>
<th>Budget</th>
<th>Business Continuity</th>
<th>Communications &amp; External Relations</th>
</tr>
</thead>
<tbody>
<tr>
<td>403(b)</td>
<td><strong>Accounting &amp; Reporting</strong>&lt;br&gt;<strong>Agenda Items 3</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Credit</strong></td>
<td><strong>Customer Service</strong></td>
<td><strong>Employer Reporting</strong></td>
<td><strong>Ethics &amp; Fraud Prevention</strong></td>
<td><strong>Facilities Management &amp; Planning</strong></td>
</tr>
<tr>
<td><strong>Agenda Item 6B-C</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Governmental / Association Relations &amp; Legislation</td>
<td><strong>Health Care Plans Administration</strong>&lt;br&gt;<strong>Agenda Item 4</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Legacy Information Systems</td>
<td><strong>Liquidity / Leverage</strong>&lt;br&gt;<strong>Agenda Item 6B-C</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pension Funding</td>
<td>Purchasing &amp; Contracts</td>
<td>Records Management</td>
<td><strong>Regulatory, Compliance &amp; Litigation</strong>&lt;br&gt;<strong>Agenda Item 5 &amp; 6A</strong></td>
<td><strong>Talent Continuity</strong></td>
</tr>
<tr>
<td>TEAM Program</td>
<td><strong>TRS-ActiveCare Affordability</strong></td>
<td><strong>TRS-Care Funding</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Title and Project #</td>
<td>Type</td>
<td>Status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------------</td>
<td>------</td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Executive and Finance</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Actuarial Data Controls (15-402)</td>
<td>Audit</td>
<td>Complete</td>
<td></td>
<td></td>
</tr>
<tr>
<td>State Auditor’s Office (SAO) Financial (CAFR) Audit Coordination</td>
<td>Advisory</td>
<td>Complete</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal Ethics and Fraud Hotline Administration</td>
<td>Advisory</td>
<td>Complete. Transferred to Compliance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meetings Participation</td>
<td>Advisory</td>
<td>Ongoing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special Requests and Emerging Issues</td>
<td>Audit/Consulting/Advisory Consulting</td>
<td>Complete</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Innovation Best Ideas (16-605) - Board Chair Request</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Testing of Executive Performance Incentive Pay Calculations</td>
<td>Agreed-Upon Procedures</td>
<td>Complete</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TEAM Program</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TEAM Program Internal Controls Assessment</td>
<td>Advisory</td>
<td>In Progress</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TEAM Security and Access Controls Assessment</td>
<td>Advisory</td>
<td>In Progress</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TEAM Independent Program Assessment (IPA) Vendor Support</td>
<td>Advisory</td>
<td>Ongoing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TEAM Committees and TEAM Projects Participation</td>
<td>Advisory</td>
<td>Ongoing</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Pension Benefits</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual Benefits Testing (16-101)</td>
<td>Agreed-Upon Procedures</td>
<td>Complete (Completed 7 REs)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reporting Entity Audits (6-8) and Investigations (16-401)</td>
<td>Audit</td>
<td>Complete</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRS Reporting Entity Website Audit Information</td>
<td>Advisory</td>
<td>Complete</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benefits Data Analysis Pilot Project</td>
<td>Advisory</td>
<td>Deferred to FY17</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Health Care</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health Care Audit Risk Assessment Follow Up</td>
<td>Consulting</td>
<td>Complete</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Open Enrollment and Billing Readiness Review</td>
<td>Consulting</td>
<td>Complete</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health Care Vendor Selection Observation</td>
<td>Advisory</td>
<td>Complete</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health Care Vendor Update Meetings</td>
<td>Advisory</td>
<td>Ongoing</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# Fiscal Year 2016 Audit Plan Status
## As of August 2016

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

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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

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

<table>
<thead>
<tr>
<th>Target Performance</th>
<th>Activity</th>
<th>Status</th>
</tr>
</thead>
</table>
| 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. | Internal Audit staff has provided support and coordination for the following SAO audits:  
- 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

<table>
<thead>
<tr>
<th>Activity</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>10. Participate in professional organizations (APPFA, IIA, ISACA, ACFE, SAIAF, CFA Institute) through monthly chapter meetings and participate in leadership roles in at least one professional organization.</td>
<td>Achieved</td>
</tr>
<tr>
<td>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.</td>
<td>Achieved</td>
</tr>
<tr>
<td>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.</td>
<td>Achieved</td>
</tr>
<tr>
<td>Staff attended professional development training throughout the fiscal year</td>
<td>Achieved</td>
</tr>
</tbody>
</table>

### 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 an 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.