

Audit Committee Meeting

April 2013



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

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

MEETING AGENDA

**April 19, 2013 – 8:00 a.m.
TRS East Building, 5th Floor, Boardroom**

- 1. Approve Minutes of December 14, 2012 Audit Committee Meeting**
– Mr. Christopher Moss, Chair

- 2. Receive Ethics Reports**
 - A. State Auditor’s Office Report on Ethics Policies Follow-Up Audit – Mr. Ralph McClendon and Mr. Kels Farmer, State Auditor’s Office
 - B. TRS Ethics Ratings in the Survey of Employee Engagement – Ms. Amy Barrett

- 3. Receive Independent Audit Report on TRS-ActiveCare Service Providers**
– Mr. Bob Jordan; Ms. Sally Reaves, Sagebrush Solutions, LLC

- 4. Receive Internal Audit Reports**
 - A. Audit of Derivatives – Mr. Hugh Ohn; Mr. Rene Hernandez, Mr. Joe Wojkowski, Protiviti Inc.
 - B. Quarterly Investment Testing (Agreed-Upon Procedures) – Mr. Hugh Ohn and Mr. Brian Gomolski
 - C. Audit of Backup and Recovery – Ms. Lih-Jen Lan and Mr. T.A. Miller; Mr. Ron Franke, Myers and Stauffer LC (formerly CliftonLarsonAllen LLP)
 - D. Audit of Telephone Counseling Center Performance Measures – Ms. Jan Engler, Ms. Marianne Woods Wiley and Mr. Tom Guerin; Mr. Ron Franke, Myers and Stauffer LC
 - E. Semi-Annual Testing of Benefit Payments (Agreed-Upon Procedures)
– Mr. Dorvin Handrick

- 5. Receive Status of Prior Audit and Consulting Recommendations**
– Ms. Amy Barrett

- 6. Receive Internal Audit Administrative Reports** – Ms. Amy Barrett

TAB 1



**TEACHER RETIREMENT SYSTEM OF TEXAS
AUDIT COMMITTEE MEETING
December 14, 2012**

The Audit Committee of the Teacher Retirement System of Texas met on Friday, December 14, 2012 in the 5th floor Board room. The following persons were present:

TRS Board Members

Christopher Moss, Audit Committee Chair
Eric C. McDonald, Audit Committee Member
Nanette Sissney, Audit Committee Member
Anita Smith Palmer, Audit Committee Member
T. Karen Charleston, Audit Committee Member
R. David Kelly, Board Chair
Charlotte Clifton, Board Vice Chair
Todd Barth, Board Member
Joe Colonna, Board Member

TRS Staff

Brian Guthrie, Executive Director
Ken Welch, Deputy Director
Amy Barrett, Chief Audit Executive
Hugh Ohn, Director, Investment Audit & Compliance
Karen Morris, Senior Manager, Internal Audit
Jan Engler, Manager, Internal Audit
Lih-Jen Lan, Information Technology Manager, Internal Audit
Dinah Arce, Senior Auditor, Internal Audit
Terry Harris, Senior Investment Compliance Specialist, Internal Audit
Brian Gomolski, Senior Investment Auditor, Internal Audit
Toma Miller, Risk, Control, & Compliance Specialist, Internal Audit
Amy Morgan, Chief Information Officer
T.A. Miller, Deputy Information Officer
Chris Cutler, Manager, Network Infrastructure & Support, Information Technology
William Tompkins, Information Security Officer
Lissette Lopez, Programmer, Information Services Support, Information Technology
Kyle Weigum, Voice and Data Network Manager, Information Technology
Noel Sherman, Manager, Client Services and Support, Information Technology
Britt Harris, Chief Investment Officer
Jerry Albright, Deputy Chief Investment Officer
Sylvia Bell, Director, Administrative Center, Investments
Thomas Albright, Deputy Chief of Staff to the Chief Investments Officer, Investment Division
Dennis Gold, Assistant General Counsel
Beckie Smith, Assistant General Counsel

TRS Staff (cont'd)

Don Green, Chief Financial Officer
Cindy Haley, Team Leader, Financial Reporting, General Accounting
Janet Bray, Director, Human Resources
Marianne Woods Wiley, Chief Benefit Officer
Tom Guerin, Manager, Benefit Counseling
Barbie Pearson, Assistant Manager, Benefit Counseling
Betsey Jones, Director, Health Care Policy and Administration
Howard Goldman, Director, Communications
Jay LeBlanc, Director, Risk Management & Strategic Planning
Michelle Pagán, ERM Specialist, Risk Management & Strategic Planning
Minerva Evans, Risk Management Specialist, Risk Management & Strategic Planning

Other Attendees

Leroy DeHaven, Texas Retired Teachers Association
Ann Fickel, Texas Retired Teachers Association
Greg Adams, State Auditor's Office
Angelica Ramirez, State Auditor's Office
Victor Ferreira, Hewlett Packard
Richard Tonkovich, Hewlett Packard
Joseph Newton, Gabriel, Roeder, Smith & Co.
Ron Franke, CliftonLarsonAllen LLP
Michael Dean, CliftonLarsonAllen LLP
Matt Snider, CliftonLarsonAllen LLP

Audit Committee Chair Christopher Moss called the meeting to order at 9:20 a.m. with a quorum of committee members present.

Chairman Moss stated that the meeting was being held by telephone conference call under Section 551.130 of the Texas Open Meetings Act with Mr. David Kelly joining the meeting by telephone. He asked that all speakers state their full name before speaking during the meeting so that Mr. Kelly will be able to identify speakers. Mr. Kelly asked that they dispense with this protocol as he is able to identify everyone's voice.

1. APPROVE MINUTES OF SEPTEMBER 14, 2012 AUDIT COMMITTEE MEETING

On a motion by Ms. Anita Palmer the proposed minutes of the September 14, 2012 Audit Committee meeting were approved as presented.

2. RECEIVE STATE AUDITOR'S OFFICE AND ACCOUNTING CHANGES REPORTS

A. State Auditor's Office Report on the Audit of Fiscal Year 2012 Comprehensive Annual Financial Report (CAFR)

Mr. Greg Adams, State Auditor's Office (SAO) Project Manager, stated that there are two objectives of the CAFR opinion audit. The first objective is to express an opinion on whether or

not TRS' fiscal year 2012 financial statements are fairly presented in all material aspects in conformity with U.S. Generally Accepted Accounting Principles. The second objective is to report on any significant deficiencies and material weaknesses in internal control over financial reporting and compliance with laws.

Mr. Adams stated that no material misstatements were found in the audit and no material weaknesses were identified. He indicated that one significant deficiency regarding change management was communicated to management and the Board in the report of internal control and compliance.

B. Changes to Governmental Accounting Standards Impacting Pension Accounting and Financial Reporting

Mr. Joseph Newton, Gabriel, Roeder, Smith & Co, gave a high level overview of upcoming changes to Governmental Accounting Standards and their possible impact to TRS.

Mr. Newton stated that the changes have to do with how TRS will report its liabilities in the CAFR. Whereas previously the accounting for pension plans was heavily tied to how the plan was funded, the two aspects are being separated going forward. The largest impact of this will be with the plan sponsors, either the state or the employers, because they will now have to include a line item on their balance sheets for their share of the net pension liability. This number is going to be much larger than ever before due to changes in the calculation. The overall result will be that pensions will appear to be underfunded by even greater amounts than previously reported. Mr. Newton said that the possible upside could be better funding policies for pension plans.

Mr. Newton stated that TRS will need to begin making changes in fiscal year 2014 and the state or employers would have to make changes in fiscal year 2015 as a result of the new standards. He noted that with two legislative sessions occurring prior to fiscal year 2015, it is possible that changes in legislation could impact the final effect of the new accounting standards.

After general discussion and in agreement with members of the Committee and Board of Trustees, Mr. Newton stated that after the current legislative session ends and state funding levels are determined, Gabriel, Roeder, Smith & Co would begin looking at accounting schedules and discussing possible impacts of these changes with TRS.

Mr. Don Green informed the Committee that TRS, in conjunction with the Employee Retirement System (ERS), has begun conversations with the Comptroller's Office in regards to how these changes will be handled by the State. In addition, he said that he has had meetings with the Texas Association of School Boards regarding their concerns with the accounting standards changes. Lastly, he noted that an internal work group has been formed at TRS to further examine the new accounting standards and their impact on TRS.

3. RECEIVE INTERNAL AUDIT REPORTS

A. Telephone Counseling Center Performance Measure Audit Project Status

Ms. Amy Barrett introduced Mr. Ron Franke of CliftonLarsonAllen LLP (CLA) and stated that

Internal Audit outsourced this audit by hiring CLA. Mr. Franke gave an update on the Telephone Counseling Center Performance Measure Audit. He stated that the audit includes analysis of the average speed to answer (ASA), often referred to as the average customer hold time, for calls to the TRS Telephone Counseling Center. He stated that this number is required to be reported to the legislature and therefore the accuracy is important. TRS currently tracks ASA using OpenScape software, an application TRS has contracted from Siemens Communications.

The audit has two objectives including the analysis of the ASA from September 1, 2011 – September 30, 2012. The first objective is to determine whether the calculation of the ASA measures were being done in accordance with the methodology presented in the TRS strategic plan, or some reasonable approximation of that methodology, and the second objective is to determine whether the Telephone Counseling Center governance is effective in managing the ASA.

Mr. Franke stated that a majority of the field work has been completed and indicated that some new issues have been identified towards the end of the audit that are still being reviewed. The preliminary results indicate that the ASA calculation as reported for TRS by OpenScape is possibly overstated by as much as two minutes. This issue may be connected to an OpenScape application upgrade that occurred in June 2011. He stated that TRS, in response to identified inaccuracies in the OpenScape data during 2011, implemented an alternate calculation method developed internally to measure ASA during fiscal year 2012. He reported that CLA looked at the approach and the methodology TRS used for fiscal year 2012, and found that it was a reasonable approach, a reasonable approximation, and a reasonable calculation for that performance measure.

In response to a question from Mr. Brian Guthrie, Mr. Franke said that Siemens has indicated that TRS was not the only customer reporting issues with calculations from OpenScape.

Mr. Franke said that fieldwork for the second audit objective has found that the tools and processes for managing the Telephone Counseling Center appear to be adequate and appropriate. Final audit results will be reported at the April Audit Committee meeting.

B. Internal Network Vulnerability Agreed-Upon Procedures

Ms. Lih-Jen Lan explained that this project was part of Internal Audit's on-going assessment of the information technology (IT) security program at TRS. She stated this project was outsourced by Internal Audit to CLA. She then turned the presentation over to Ron Franke, CLA, to present the test results.

Due to the confidential nature of this report, Mr. Franke gave a high level overview of the testing and the results. He stated that this was an agreed-upon procedures engagement in which CLA performed an automated assessment to identify potential vulnerabilities within TRS's internal network that could result in compromises or violation of confidential integrity or availability of TRS data and/or negatively impact business operations. He emphasized that this assessment occurred within TRS's internal network and did not assess the ability of individuals outside of the network to gain access to the internal network. That test is performed separately for TRS by the Department of Information Resources.

Test results indicated that 82% of the scanned devices had no critical or high vulnerabilities. Over 90% of the identified vulnerabilities could be mitigated by patching or upgrading software. One specific outdated patch accounted for 82% of the total identified critical vulnerabilities and 54% of the high vulnerabilities. Mr. Franke indicated that a detailed report with remediation recommendations was given to IT staff.

Mr. Chris Cutler stated that IT staff is working to address the identified vulnerabilities, not only the high and critical issues, but the medium vulnerabilities as well. He indicated that IT staff was able to very quickly eliminate a high percentage of the issues by addressing issues with a single work station and some server management software. He stated that ongoing analysis and work will be performed. He explained that due to the complex nature of the IT environment and the importance of not affecting the production networks, every time an upgrade occurs or a patch is announced, it takes considerable time to analyze and test the implementation before it can be rolled out.

C. Quarterly Testing of Investment Compliance

Ms. Barrett reviewed the results of the quarterly investment compliance testing. She stated that one exception was found this quarter regarding a tear sheet not being provided prior to an Internal Investment Committee meeting and that management has taken action to avoid this going forward.

4. STATUS OF PRIOR AUDIT AND CONSULTING RECOMMENDATIONS

Ms. Barrett gave a brief overview of the outstanding audit recommendations. She stated that all but one outstanding significant recommendation has been implemented. The exception is an outstanding recommendation related to IT security and good progress is being made towards implementation. She noted that the outstanding product recommendations regarding a State Street change will be addressed with the contract renewal in January 2013. Ms. Barrett also noted that Internal Audit is continuing to track the progress of the backup generator.

5. RECEIVE INTERNAL AUDIT ANNUAL REPORT AND ADMINISTRATIVE REPORTS

A. Fiscal Year 2012 Internal Audit Annual Report

Ms. Karen Morris gave an overview of the Internal Audit Annual Report issued in accordance with the Texas Internal Auditing Act with copies given to the State Auditor's Office, Legislative Budget Board, Sunset Advisory Commission, and the Governor's Office.

Ms. Morris also provided an update on the employer audit project. She stated that since the last update in September, Internal Audit staff has met with the Executive Committee and management to identify top risk areas that could be reviewed during the employer audits. Audit tests were developed and consideration was given to potential audit issues that could arise.

These included possible impacts to employers, individuals, members and retirees, and to TRS operations. Staff will continue to gather feedback from executive management and business areas and further refine the types of audit tests that could be performed in the future.

She stated that the next steps will explore the possibility of employers using online self-assessment tools to assist them in assessing their compliance with TRS Laws and Rules and the related communication necessary to the use of those tools. In addition, staff will explore the possibility of piloting employer audits with two to three employers with the purpose of gathering more information to assist in further refining audit tests and processes.

B. Quarterly Internal Audit Status Reports

Ms. Barrett reviewed several standard administrative reports. She indicated that two new audit projects have been initiated in the areas of healthcare administration and investment derivatives.

The meeting adjourned at 10:54 a.m.

Approved by:

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

TAB 2

TAB 2A



John Keel, CPA
State Auditor

A Follow-up Audit Report on

**Ethics Policies for Trustee
Investing Practices at
the Employees Retirement
System, the Teacher Retirement
System, and the University of
Texas Investment Management
Company**

April 2013
Report No. 13-030



A Follow-up Audit Report on
Ethics Policies for Trustee Investing Practices at the Employees Retirement System, the Teacher Retirement System, and the University of Texas Investment Management Company

SAO Report No. 13-030
April 2013

Overall Conclusion

The Employees Retirement System (ERS), the Teacher Retirement System (TRS), and the University of Texas Investment Management Company (UTIMCO) have made progress in implementing recommendations from *An Audit Report on Ethics Policies for Trustee Investing Practices at the Employees Retirement System, the Teacher Retirement System, and the University of Texas Investment Management Company* (State Auditor's Office Report No. 09-031, April 2009).

Of the 47 recommendations in that report, auditors selected 38 for follow-up, including 12 at ERS, 13 at TRS, and 13 at UTIMCO. Auditors identified the following:

- ERS fully or substantially implemented 8 (66 percent) of the 12 recommendations tested. Those recommendations were related to identifying and resolving employees' and contractors' potential conflicts of interest, strengthening processes for monitoring employees' personal securities trades and safeguarding confidential investment information, and conducting employee background checks and annual ethics training.

ERS chose not to implement recommendations related to filing board members' and executive director's financial disclosure statements with the ERS ethics compliance officer, reviewing board members' financial disclosure statements for conflicts of interest, and requiring all employees involved in investment decisions to file financial disclosure statements. Additional information on ERS's implementation of the recommendations is available in Chapter 1.

Background Information

In April 2009, the State Auditor's Office issued *An Audit Report on Ethics Policies for Trustee Investing Practices at the Employees Retirement System, the Teacher Retirement System, and the University of Texas Investment Management Company* (State Auditor's Office Report No. 09-031). Auditors selected recommendations from that report for follow-up based on each entity management's original responses to the recommendations, the entities' subsequent self-reported implementation status and implementation dates, and the level of risk.

Implementation Status Definitions

Fully Implemented - Successful development and use of a process, system, or policy to implement a prior recommendation.

Substantially Implemented - Successful development but inconsistent use of a process, system, or policy to implement a prior recommendation.

Incomplete/Ongoing - Ongoing development of a process, system, or policy to address a prior recommendation.

Not Implemented - Lack of a formal process, system, or policy to address a prior recommendation.

- TRS fully or substantially implemented all 13 recommendations tested. Those recommendations were related to identifying and disclosing board members', employees', and contractors' potential conflicts of interest, strengthening monitoring of employees' personal securities trades, safeguarding confidential investment information, obtaining ethics training, and reporting ethics violations.

TRS considered a recommendation to conduct FBI criminal background checks for job applicants and certain employees, and it substantially implemented that recommendation by enhancing its criminal background checks to include FBI background checks on new employees. Additional information on TRS's implementation of the recommendations is available in Chapter 2.

- UTIMCO fully or substantially implemented 12 (93 percent) of the 13 recommendations tested. Six of those recommendations were related to identifying and resolving employees' and contractors' potential conflicts of interest and safeguarding confidential investment information. UTIMCO also considered and substantially implemented recommendations to verify information that board members and employees disclose, obtain affirmations regarding employees' undisclosed brokerage accounts, and conduct criminal background checks on all job applicants for positions covered by its ethics policies and all existing employees covered by its investment ethics policies. In addition, UTIMCO considered and fully implemented recommendations for enhancing its controls over gifts and travel for which its vendors pay.

UTIMCO did not implement a recommendation to enforce penalties for violations of personal trading policies. Additional information on UTIMCO's implementation of the recommendations is available in Chapter 3.

It is important to note that 11 of the 38 recommendations auditors selected for follow-up were recommendations that had been offered for the entities to consider, rather than to take a specific action. For each of those recommendations, auditors determined whether an entity considered the recommendation, as well as the implementation status of the recommendation. The entities considered each of those recommendations and took action on all of them.

Summary of Management's Response

The entities agreed with the recommendations issued in this follow-up report.

Summary of Information Technology Review

Auditors conducted follow-up work on prior recommendations regarding access to confidential investment information in Bloomberg systems at ERS, TRS, and

UTIMCO. All three entities fully implemented the prior audit recommendations related to the confidential investment information in their Bloomberg systems. However, auditors did not perform a comprehensive review of any of those systems during this follow-up audit.

Summary of Objective, Scope, and Methodology

The objective of this audit was to determine the implementation status of prior State Auditor's Office recommendations and evaluate whether management has taken corrective actions to address selected recommendations in *An Audit Report on Ethics Policies for Trustee Investing Practices at the Employees Retirement System, the Teacher Retirement System, and the University of Texas Investment Management Company* (State Auditor's Office Report No. 09-031, April 2009).

The scope of this audit included reviewing ERS's, TRS's, and UTIMCO's implementation of selected recommendations from the prior audit. Auditors selected 38 of 47 prior recommendations based on responses to those recommendations, each entity's self-reported implementation status, and the level of risk. The 38 recommendations were tested for the time period from September 2009 through August 2012.

The audit methodology included identifying and collecting information on the implementation of selected prior audit recommendations. To determine the implementation status of selected recommendations, auditors conducted interviews, reviewed each entity's ethics policies and procedures, performed selected tests and procedures related to investing practices at each entity, and selected samples using non-statistical sampling methods that cannot be projected to the populations. Auditors were not able to determine whether one source of data—UTIMCO's log of vendor-paid entertainment expenses—was complete because information on actual vendor expenses was not available at UTIMCO. However, auditors reviewed UTIMCO's processes for maintaining that log, including review and approval as described in the prior audit recommendation, and determined that all items on that log were approved in accordance with UTIMCO's policies.

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Detailed Results

Chapter 1

Employees Retirement System

The Employees Retirement System (ERS) fully or substantially implemented 8 (66 percent) of 12 recommendations in *An Audit Report on Ethics Policies at the Employees Retirement System, the Teacher Retirement System, and the University of Texas Investment Management Company* (State Auditor's Office Report No. 09-031, April 2009). Those eight recommendations were related to:

- Identifying and resolving employees' and contractors' potential conflicts of interest.
- Strengthening processes for monitoring employees' personal securities trades and safeguarding confidential investment information.
- Conducting employee background checks and annual ethics training.

ERS chose not to implement four audit recommendations. ERS cited existing statutory protections, functions performed by the Texas Ethics Commission, and the fiduciary loyalty of the board members and executive director for its decision not to implement two recommendations for board members and the executive director to file financial disclosure statements with the ERS ethics compliance officer.

ERS also chose not to implement a recommendation to review board members' financial disclosure statements for conflicts of interest, citing the protections provided by the Texas Ethics Commission's review of those filings. In addition, ERS chose not to implement a recommendation to require all employees involved in investment decisions to file financial disclosure statements because employees annually affirm their compliance with the ERS investment policy and the Chartered Financial Analyst Institute's standards of professional conduct and code of ethics.

While ERS has made progress in implementing a majority of the prior audit recommendations, it should continue its efforts to conduct recurring FBI background checks for all employees covered by its investment ethics policies. ERS considered conducting those checks as the State Auditor's Office had recommended. ERS also modified its background check policies to conduct FBI criminal background checks on applicants for positions covered by its investment ethics policies. ERS chose not to conduct FBI background checks on all employees covered by its ethics policies and not to

conduct recurring FBI background checks on existing employees covered by its investment ethics policies.

Table 1 provides additional details on ERS’s implementation of prior State Auditor’s Office recommendations.

Table 1

Status of Implementation of Prior Audit Recommendations at ERS				
No.	Recommendation	Implementation Status as Reported by ERS	Implementation Status as Determined by Auditors	Auditor Comments
1	ERS should require board members to simultaneously file copies of their financial disclosure statements with both the Texas Ethics Commission and with the ERS ethics compliance officer.	Not Implemented	Not Implemented	In its management responses to the 2009 audit report, ERS stated that it did not plan to implement this recommendation. ERS stated that management did not believe it was necessary for the financial disclosure statements to be filed with the ERS ethics compliance officer because of (1) other protections offered through financial disclosure statements filed with the Texas Ethics Commission, (2) the fiduciary duty of loyalty that board members owe to ERS, and (3) the affirmations regarding conflicts of interest that board members submit. ERS also asserted that it accepts the risk associated with not implementing this recommendation.
2	ERS should regularly review board members’ financial disclosure statements for potential conflicts of interest.	Not Implemented	Not Implemented	In its management responses to the 2009 audit report, ERS stated that it did not plan to implement this recommendation. ERS stated that protections afforded by the Texas Ethics Commission’s review of the annual financial disclosure filings serve to ensure that board members fully disclose any possible issues that might create a conflict of interest. In addition, ERS cited the affirmations regarding conflicts of interest that board members submit. ERS also asserted that it accepts the risk associated with not implementing this recommendation.
3	ERS should require all employees covered by its investment ethics policies to sign annual statements affirming that they have disclosed and received approval for any outside employment or business activities.	Fully Implemented	Fully Implemented	ERS requires all members of its board of trustees and all employees covered by its investment ethics policies to annually affirm that they have disclosed and received approval for any outside employment or business activities. All 6 members of the ERS board of trustees, 7 members of the ERS investment advisory committee, and all 84 employees covered by ERS’s investment ethics policies completed the required affirmations for fiscal year 2013.

Status of Implementation of Prior Audit Recommendations at ERS

No.	Recommendation	Implementation Status as Reported by ERS	Implementation Status as Determined by Auditors	Auditor Comments
4	ERS should require the executive director to file a financial disclosure statement with the ERS ethics compliance officer at the same time that the executive director submits that statement to the Texas Ethics Commission.	Not Implemented	Not Implemented	In its management responses to the 2009 audit report, ERS stated that it did not plan to implement this recommendation. ERS stated that management did not believe it was necessary for the financial disclosure statements to be filed with the ERS ethics compliance officer because of (1) other protections offered through financial disclosure statements filed with the Texas Ethics Commission, (2) the fiduciary duty of loyalty that the executive director owes to ERS, (3) the requirements for the executive director under ERS's investment policies, and (4) an affirmation regarding conflicts that the executive director submits. ERS also asserted that it accepts the risk associated with not implementing this recommendation.
5	ERS should require all employees who are involved in investment decisions to file financial disclosure statements internally.	Not Implemented	Not Implemented	In its management responses to the 2009 audit report, ERS stated that it did not plan to implement this recommendation. ERS stated that management did not believe it was necessary to require all employees involved in investment decisions to file financial disclosure statements internally because of (1) protections offered by the requirements of ERS's investment policies, (2) the Chartered Financial Analyst Institute's standards of professional conduct and code of ethics, and (3) affirmations regarding conflicts of interest that employees submit. ERS also asserted that it accepts the risk associated with not implementing this recommendation.
6	ERS should require employees to annually affirm that they are in compliance with the ERS ethics policy.	Fully Implemented	Substantially Implemented	ERS uses the Chartered Financial Analyst Institute's code of ethics for its ethics policy, and it requires both members of its board of trustees and employees to affirm their compliance with that policy. One (16.67 percent) of the 6 members of the ERS board of trustees did not complete the required affirmation for fiscal year 2012. All 6 members of the board of trustees and all 7 members of the ERS investment advisory committee completed the required affirmations for fiscal year 2013. All 84 employees who were required to do so completed the affirmations for fiscal year 2013.

Status of Implementation of Prior Audit Recommendations at ERS

No.	Recommendation	Implementation Status as Reported by ERS	Implementation Status as Determined by Auditors	Auditor Comments
7	ERS should require employees to sign annual affirmations that they have no conflicts of interest.	Fully Implemented	Substantially Implemented	ERS requires all members of its board of trustees and employees covered by its investment ethics policies to disclose and cure conflicts of interest. One (16.67 percent) of the 6 members of the ERS board of trustees did not complete the required affirmation for fiscal year 2012. All members of the ERS board of trustees completed affirmations for this requirement for fiscal year 2013. All 84 employees who were required to do so completed the affirmations for fiscal year 2013.
8	ERS should consider tracking the receipt and disposal of all prohibited gifts it receives.	Fully Implemented	Considered and Fully Implemented	ERS developed procedures for the receipt and disposal of prohibited gifts. In addition, ERS developed a prohibited gift tracking log that tracks the date a gift was received, the employee who received the gift, a description of the gift, the vendor that provided the gift, and the method and date of disposition. Auditors also met with two employees and verified that both were knowledgeable about ERS's procedures and tracking log for prohibited gifts.
9	ERS should consider requiring an annual statement from employees, as part of the ethics compliance statement, stating that the employees do not have any undisclosed brokerage accounts and that they have not conducted any undisclosed personal securities trades. The ethics policies should clearly state the penalties for conducting personal securities trades without prior disclosure.	Fully Implemented	Considered and Fully Implemented	ERS modified its affirmations to include a requirement that all employees covered by its investment ethics policies annually disclose any brokerage accounts and whether they have conducted any personal securities trades. The affirmations also state the penalties for violations of the ERS investment policies. All 84 employees who were required to do so completed the affirmations for fiscal year 2013.
10	ERS should ensure that all employees with access to confidential trade information are required to comply with its investment ethics policy.	Fully Implemented	Fully Implemented	ERS limits access to confidential trade information through its Bloomberg system. Auditors verified that only employees covered by the ERS investment ethics policies have access to that system. ERS's investment ethics policies require those employees to confirm their compliance with those policies.
11	ERS should consider (1) conducting FBI criminal background checks on all job applicants for positions covered by their ethics policies and (2) conducting recurring FBI criminal background checks on all existing employees covered by their investment ethics policies.	Fully Implemented	Considered and Substantially Implemented	ERS considered this recommendation and modified its background check policies to include FBI criminal background checks on applicants for positions covered by its investment ethics policies. ERS chose not to conduct recurring FBI criminal background checks on all existing employees covered by its investment ethics policies.

Status of Implementation of Prior Audit Recommendations at ERS				
No.	Recommendation	Implementation Status as Reported by ERS	Implementation Status as Determined by Auditors	Auditor Comments
12	ERS should revise its ethics policy to require employees covered by its ethics policy, members of its board of trustees, and members of its investment advisory council to attend annual ethics training.	Fully Implemented	Fully Implemented	ERS modified its standards of conduct to require all employees to take annual ethics training. Auditors reviewed meeting minutes to verify that members of ERS's board of trustees and its investment advisory committee attended ethics workshops or online ethics training in fiscal years 2010 and 2011 as required.

Recommendations

ERS should:

- Require employees to annually affirm that they are in compliance with the ERS ethics policy.
- Require employees to sign annual affirmations that they have no conflicts of interest.

4. **Quarterly Transaction Accounts** – requires the covered employee to identify any brokerage accounts or other accounts in which securities may be traded (a) for themselves, or (b) for which they have indirect beneficial ownership and/or direct influence, control or discretionary authority over the timing of the trade of securities or a derivative on a security. ("Accounts" means all brokerage accounts and 401(k), 403(b), 457, IRA, or similar retirement accounts, but only those for which the covered employee has discretionary authority for any transactions.)
5. **Account Affirmation** – affirmation that the covered employee has disclosed, in accordance with the ERS Investment Policy, all brokerage accounts or other accounts (a) for themselves, or (b) for which they have indirect beneficial ownership and/or direct influence, control or discretionary authority over the timing of the trade of securities or a derivative on a security. ("Accounts" includes all brokerage accounts and 401(k), 403(b), 457, IRA, or similar retirement accounts, but only those for which the covered employee has discretionary authority for any transactions.)
6. **Outside Employment/Business Disclosure** - certification by the covered employee that any outside employment and/or business activities have been previously disclosed to and approved by their supervisor and/or division director. Covered employees further certify that all activities and relationships in which they are involved and have disclosed do not pose any actual or perceived conflict of interest with their service, relationship or employment with ERS. They also attest, under penalties of perjury, that all information provided on outside employment/business activities is complete, accurate, true and correct.
7. **Outside Directorships** – certification by the covered employee that all activities and relationships in which he/she is involved and has disclosed do not pose any actual or perceived conflict of interest with the covered employee's service, relationship or employment, as applicable, with ERS. The employees also attest, under penalties of perjury, that all information provided on outside directorships is complete, accurate, true and correct.

Periodically, affirmation Reports are generated by Internal Audit to identify any outstanding affirmations for completion. As noted in the audit report, for fiscal year 2013, all required individuals completed affirmations in compliance with ERS ethics policies.

Teacher Retirement System

The Teacher Retirement System (TRS) fully or substantially implemented all 13 recommendations that auditors issued to TRS in *An Audit Report on Ethics Policies at the Employees Retirement System, the Teacher Retirement System, and the University of Texas Investment Management Company* (State Auditor's Office Report No. 09-031, April 2009). Those recommendations were related to:

- Identifying and resolving board members', employees', and contractors' potential conflicts of interest.
- Strengthening monitoring of employees' personal securities trades and safeguarding confidential investment information.
- Requiring employees to obtain ethics training and implementing processes for employees to report ethics violations anonymously.

While TRS has fully implemented most prior audit recommendations, it should continue its efforts to improve controls related to conducting FBI criminal background checks on existing employees. TRS considered conducting those checks as the State Auditor's Office had recommended. TRS also modified its background check policies to conduct FBI criminal background checks on final candidates for positions covered by its ethics policies. However, TRS chose not to conduct recurring FBI background checks on all existing employees covered by its investment ethics policies.

Table 2 provides additional details on TRS's implementation of prior State Auditor's Office recommendations.

Table 2

Status of Implementation of Prior Audit Recommendations at TRS				
No.	Recommendation	Implementation Status as Reported by TRS	Implementation Status as Determined by Auditors	Auditor Comments
1	TRS should require board members to simultaneously file copies of their financial disclosure statements with both the Texas Ethics Commission and with the TRS ethics compliance officer.	Fully Implemented	Fully Implemented	TRS's policies and procedures require board members to file copies of financial disclosures with the Texas Ethics Commission and internally with TRS's executive director. All board members submitted financial disclosure statements as required in fiscal year 2012.
2	TRS should regularly review board members' financial disclosure statements for potential conflicts of interest.	Fully Implemented	Fully Implemented	The TRS compliance officer reviewed board members' financial disclosure statements after receiving those statements from the Texas Ethics Commission in August 2012.

Status of Implementation of Prior Audit Recommendations at TRS

No.	Recommendation	Implementation Status as Reported by TRS	Implementation Status as Determined by Auditors	Auditor Comments
3	TRS should require its executive director to file financial disclosure statements with the TRS ethics compliance officer at the same time that the executive director submits those statements to the Texas Ethics Commission.	Fully Implemented	Fully Implemented	TRS's policies and procedures require its executive director to file a financial disclosure statement with the Texas Ethics Commission, the TRS general counsel, and the TRS chief audit executive. The executive director submitted a financial disclosure statement as required in fiscal year 2012.
4	TRS should require all employees who are involved in investment decisions to file financial disclosure statements internally.	Fully Implemented	Fully Implemented	TRS's policies and procedures require employees with fiduciary responsibility to file financial disclosure statements with the executive director. All 53 employees with fiduciary responsibility submitted financial disclosure statements as required in fiscal year 2012.
5	TRS should develop procedures to ensure that it notifies all financial advisors and service providers of the statutory requirement to file an annual conflict of interest disclosure statement. TRS should track submission of these statements to ensure that all financial advisors and service providers comply, and it should consider suspending business activities with service providers that do not submit disclosures by the filing due date.	Fully Implemented	Fully Implemented	TRS has procedures to ensure that it notifies financial advisors and service providers of the statutory requirement to file an annual conflict of interest disclosure statement. TRS tracks submission of those statements to ensure that financial advisors and service providers comply. Auditors verified that all 15 financial advisors and service providers tested submitted disclosures by the due date.
6	TRS should ensure that all individuals working in the investment division are required to comply with the TRS investment ethics policy.	Fully Implemented	Fully Implemented	TRS has policies and procedures that require all TRS employees with fiduciary responsibility and certain contractors to comply with its ethics policies. Auditors reviewed 10 TRS employees and contractors with access to its Bloomberg system (TRS's trading system that contains confidential trade information) in October 2012, and all of them had a signed the ethics policies
7	TRS should consider requiring an annual statement from employees, as part of the ethics compliance statement, stating that the employees do not have any undisclosed brokerage accounts and that they have not conducted any undisclosed personal securities trades. The ethics policies should clearly state the penalties for conducting personal securities trades without prior disclosure.	Fully Implemented	Considered and Fully Implemented	TRS implemented an affirmation that requires employees and certain contractors to annually disclose any brokerage accounts or personal securities trades in accordance with its trading policy. In addition, TRS's trading policies detail sanctions that will be applied to employees who violate those policies. Auditors also verified that all 67 employees and contractors tested submitted disclosures for fiscal year 2012 as required.

Status of Implementation of Prior Audit Recommendations at TRS

No.	Recommendation	Implementation Status as Reported by TRS	Implementation Status as Determined by Auditors	Auditor Comments
8	TRS should consistently enforce penalties for violations of personal trading policies and track verbal warnings given to employees regarding their personal trades.	Fully Implemented	Fully Implemented	TRS implemented trading policies that outline sanctions for personal trading violations. TRS has implemented a tracking spreadsheet that its employees use to record and report possible violations of its trading policies, resolutions, and any associated penalties. TRS asserts that it has not assessed any monetary sanctions or penalties. However, it has investigated potential violations, required individuals involved in less significant violations of its trading policies to acknowledge that a violation has occurred, and required violators to re-read its trading policies.
9	TRS should strengthen access controls by limiting the number of system administrator accounts for the Bloomberg System.	Fully Implemented	Fully Implemented	TRS reduced the number of system administrator accounts on the Bloomberg system from five to three. Auditors reviewed each of those accounts and determined that they were reasonable.
10	TRS should ensure that only individuals who are required to comply with its investment ethics policy have access to confidential trade information.	Fully Implemented	Fully Implemented	TRS implemented trading policies that limit employees' and contractors' access to confidential information related to publicly traded securities. Auditors reviewed 10 user accounts for TRS's Bloomberg system and verified that all 10 users of those accounts had signed TRS's investment ethics policies, which include requirements for confidential trades.
11	TRS should consider (1) conducting FBI criminal background checks on all job applicants for positions covered by its ethics policies and (2) conducting recurring FBI criminal background checks on all existing employees covered by its investment ethics policies.	Fully Implemented	Considered and Substantially Implemented	TRS modified its background check policies to conduct FBI criminal background checks on final candidates for all positions. Auditors reviewed a sample of 13 employees whom TRS hired after January 1, 2011, and verified that TRS had conducted FBI background checks for all 13. However, TRS chose not to institute recurring FBI criminal background checks on all existing employees covered by its investment ethics policies.
12	TRS should revise its ethics policy to require employees covered by its ethics policy and members of its board of trustees to attend annual ethics training.	Fully Implemented	Fully Implemented	TRS changed its ethics policy to require its employees and board members to attend annual ethics training. TRS also has developed a system to track its employees' and board members' completion of online ethics training in accordance with training requirements.
13	TRS should establish and implement a process for employees to report violations of ethics policies anonymously.	Fully Implemented	Fully Implemented	TRS established a process for employees to report fraud, waste, and abuse. That process includes providing an anonymous hotline. Auditors contacted the hotline in September 2012 and verified that it was operational.

Management's Response from TRS



www.trs.state.tx.us

800.223.8778

512.542.6400

Brian K. Guthrie
Executive Director

1000 Red River Street
Austin, Texas 78701-2698

March 26, 2013

State Auditor's Office
ATTN: Kels Farmer
P.O. Box 12067
Austin, Texas 78711-2067

Subject: Management Response Letter for Follow-up Audit Report on Ethics Policies for Trustee Investing Practices at the Employees Retirement System, the Teacher Retirement System, and the University of Texas Investment Management Company

The State Auditor's Office (SAO) Follow-up Audit Report on Ethics Policies for Trustee Investing Practices at the Employees Retirement System, the Teacher Retirement System, and the University of Texas Investment Management Company confirmed that of the 13 recommendations chosen for this follow-up audit, TRS had fully implemented 12 and substantially implemented one. The recommendation regarding FBI background checks was substantially implemented after the following considerations:

In response to the SAO's recommendation that TRS consider conducting FBI criminal background checks on all job applicants covered by TRS' ethics policies and recurring background checks on existing employees, TRS expanded its background check practices but in a slightly different way than recommended by the SAO. With regard to job applicants, TRS addressed the concerns raised by the SAO and determined that all final job applicants, including current employees applying for another position, must be fingerprinted by DPS and submit to an FBI criminal background check prior to final offer.

With regard to the SAO's recommendation to consider conducting recurring FBI background checks on all existing employees covered by TRS' investment ethics policy, TRS carefully considered the concerns raised by the SAO and the United States Equal Opportunity Employment Commission's guidance on using criminal background checks (see Enforcement Guidance on the Consideration of Arrest and Conviction Records in Employment Decisions Under Title VII of the Civil Rights Act of 1964, as amended, 42 U.S.C. § 2000e et seq.), which guidance urged caution in employers' use of criminal convictions. TRS also considered (1) the fact that longstanding current employees had been screened for Texas convictions, (2) employee morale, (3) TRS' fiduciary obligations, (4) legal risks to TRS, and (5) a survey of other state agencies and pension funds. Balancing these concerns, TRS determined that current employees with a hire or transfer date later than January 1, 2011, would be required to be fingerprinted by DPS and submit to a an FBI criminal background check. Once the fingerprints of all

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current employees with a hire date later than January 1, 2011 and all new hires have been submitted to law enforcement, TRS is notified by DPS and the FBI if one of these employees is arrested for any offense. Additionally, TRS also requires all employees to self-report all arrests or criminal proceedings (other than minor traffic violations) or be subject to disciplinary action. Finally, the TRS executive director has the discretion to order either or both of the DPS and FBI checks on any current employee if he deems it necessary.

TRS has always been diligent about safeguarding the integrity of the work performed by its employees. TRS reached its decisions regarding criminal background checks after carefully balancing a number of concerns. The chosen policy provides the TRS system with greater security while limiting disruptions in the workplace. TRS is grateful to the SAO for highlighting this important issue.

Thank you for this opportunity to respond.

Sincerely,



Brian K. Guthrie
Executive director

BKG:mg

The University of Texas Investment Management Company

The University of Texas Investment Management Company (UTIMCO) has fully or substantially implemented 12 (92 percent) of 13 recommendations selected for follow up from *An Audit Report on Ethics Policies at the Employees Retirement System, the Teacher Retirement System, and the University of Texas Investment Management Company* (State Auditor's Office Report No. 09-031, April 2009). Six of those recommendations were:

- Four recommendations related to identifying and resolving employees' and contractors' potential conflicts of interest.
- Two recommendations related to safeguarding confidential investment information.

UTIMCO fully or substantially implemented six prior audit recommendations that the State Auditor's Office had offered for UTIMCO's consideration. Specifically:

- UTIMCO considered and substantially implemented two recommendations to require its chief compliance officer to verify board members' and employees' financial disclosures. However, it has not developed any formal procedures for that process.
- UTIMCO considered and fully implemented two recommendations for enhancing its controls over gifts and travel for which its vendors pay.
- UTIMCO considered and substantially implemented a recommendation to develop a disclosure form that includes a statement through which employees can certify that they do not have any undisclosed brokerage accounts. However, UTIMCO does not require all employees to complete that form.
- UTIMCO considered and substantially implemented a recommendation to modify its background check procedures to require background checks on all job applicants for positions covered by its ethics policies and all existing employees covered by its investment ethics policies. However, UTIMCO decided not to use FBI criminal background checks as a part of those procedures.

While UTIMCO has made significant progress in implementing a majority of the prior audit recommendations, it did not implement a recommendation to enforce penalties for violations of personal trading policies and track verbal warnings given to employees regarding their personal trades. UTIMCO also has not developed any formal policies or procedures for that recommendation,

and it asserts it has not issued any warnings or penalties since that recommendation was issued.

Table 3 provides additional details on UTIMCO's implementation of prior State Auditor's Office recommendations.

Table 3

Status of Implementation of Prior Audit Recommendations at UTIMCO				
No.	Recommendation	Implementation Status as Reported by UTIMCO	Implementation Status as Determined by Auditors	Auditor Comments
1	UTIMCO should consider regularly reviewing public information to independently verify the completeness of the financial disclosure statements that board members submit.	Fully Implemented	Considered and Substantially Implemented	UTIMCO considered this recommendation and asserted that its chief compliance office would review public information to verify the completeness of board disclosures to the extent practical.
2	UTIMCO ethics compliance officers should consider regularly reviewing public information to independently verify the completeness of the information that employees disclose.	Fully Implemented	Considered and Substantially Implemented	UTIMCO provided evidence that it considered this recommendation and asserted that it would follow this recommendation when practical.
3	UTIMCO should require all employees covered by its investment ethics policies to sign annual statements affirming that they have disclosed and received approval for any outside employment or business activities.	Fully Implemented	Fully Implemented	UTIMCO has implemented a code of ethics that requires employees to annually disclose all outside employment and business activities. Auditors determined that six employees tested had submitted the required annual affirmation statements in 2012. Auditors also determined that two employees tested had obtained approval for outside employment.
4	UTIMCO should develop procedures to ensure that it notifies all financial advisors and service providers of the statutory requirement to file an annual conflict of interest disclosure statement. It should track submission of these statements to ensure that all financial advisors and service providers comply, and it should consider suspending business activities with service providers that do not submit disclosures by the filing due date.	Fully Implemented	Fully Implemented	UTIMCO developed procedures to notify all financial advisors and service providers of the requirement to file an annual conflict of interest disclosure. UTIMCO tracks the submission of these statements and makes follow-up requests as necessary. Auditors selected 15 financial advisors and service providers from UTIMCO's tracking sheet and verified that each one was included on UTIMCO's executive summary for fiscal year 2011. UTIMCO asserted that it considered suspending business activities with service providers that do not submit disclosures by the filing due date, but it has not decided to remove any of them from consideration for future business activities.
5	UTIMCO should consider tracking the receipt and disposal of all prohibited gifts it receives.	Fully Implemented	Considered and Fully Implemented	UTIMCO maintains a tracking log of the prohibited gifts employees received and the method of disposal. Auditors also met with seven UTIMCO employees and verified that each of them was knowledgeable about the prohibited gifts policy and received annual training that covers that policy.

Status of Implementation of Prior Audit Recommendations at UTIMCO

No.	Recommendation	Implementation Status as Reported by UTIMCO	Implementation Status as Determined by Auditors	Auditor Comments
6	UTIMCO should ensure that it distributes its list of restricted securities to all external investment managers.	Fully Implemented	Fully Implemented	UTIMCO maintains a spreadsheet to distribute its list of restricted securities to all applicable external investment managers. Auditors reviewed that spreadsheet in September 2012 and determined that it was distributed to all external investment managers.
7	UTIMCO should review and approve vendor-paid entertainment and establish a specific process for employees to request approval.	Fully Implemented	Fully Implemented	UTIMCO established procedures for its employees to request approval of vendor-paid entertainment. Auditors also reviewed 2 of the 19 travel approval forms that UTIMCO employees submitted in fiscal year 2012 and determined that both of them included vendor-paid entertainment requests that UTIMCO's chief executive officer reviewed and approved.
8	UTIMCO should consider including on its travel approval form a list of all expenses, including entertainment expenses, that will be paid for by a third party.	Fully Implemented	Considered and Fully Implemented	UTIMCO added a section to its travel approval form that lists all anticipated expenses, including entertainment expenses, for which a third party will pay.
9	UTIMCO should consider requiring an annual statement from employees, as part of the ethics compliance statement, stating that the employees do not have any undisclosed brokerage accounts and that they have not conducted any undisclosed personal securities trades. The ethics policies should clearly state the penalties for conducting personal securities trades without prior disclosure.	Fully Implemented	Considered and Substantially Implemented	UTIMCO developed a disclosure form that includes a statement that enables employees to certify they have no undisclosed brokerage accounts.
10	UTIMCO should consistently enforce penalties for violations of personal trading policies and track verbal warnings given to employees regarding their personal trades.	Fully Implemented	Not Implemented	UTIMCO asserted that it has not issued any warnings or penalties for violations of personal trading policies. However, it has not developed formal policies, procedures, or logs to track penalties and violations. Therefore, a risk continues to exist that UTIMCO may not consistently enforce penalties for violations of its personal trading policies.
11	UTIMCO should strengthen access controls by limiting the number of system administrator accounts for the Bloomberg System.	Fully Implemented	Fully Implemented	Auditors reviewed access to UTIMCO's Bloomberg system and determined that all five system administrator accounts were appropriately assigned. In addition, UTIMCO has implemented a system of administrator accounts for the Bloomberg system that are not shared.
12	UTIMCO should prohibit the use of shared accounts for the Bloomberg System.	Fully Implemented	Fully Implemented	Auditors reviewed accounts with administrator access to UTIMCO's Bloomberg system and determined they were not shared accounts.

Status of Implementation of Prior Audit Recommendations at UTIMCO

No.	Recommendation	Implementation Status as Reported by UTIMCO	Implementation Status as Determined by Auditors	Auditor Comments
13	UTIMCO should consider (1) conducting FBI criminal background checks on all job applicants for positions covered by its ethics policies and (2) conducting recurring FBI criminal background checks on all existing employees covered by its investment ethics policies.	Fully Implemented	Considered and Substantially Implemented	UTIMCO has procedures that require background checks on all existing employees and prospective employees who are expected to receive offers of employment.

Recommendation

UTIMCO should consistently enforce penalties for violations of personal trading policies and track verbal warnings given to employees regarding their personal trades, or document its decision not to implement this recommendation.

Management's Response from UTIMCO



Bruce Zimmerman
CEO and Chief Investment Officer

March 27, 2013

Mr. John Keel, CPA
State Auditor
State Auditor's Office
P.O. Box 12067
Austin, Texas 78711-2067

Subject: Management's Responses to A Follow-up report on Ethics Policies for Trustee Investing Practices at the Employees Retirement System, the Teacher Retirement System, and The University of Texas Investment Management Company

Dear Mr. Keel:

Thank you for the opportunity to provide management's responses to the follow-up report on recommendations made by your office resulting from the audit of UTIMCO's Ethics Policies for Trustee Investing Practices. The following UTIMCO Management's Responses tracks the draft copy of the Audit Report provided by your office to UTIMCO:

Recommendation

UTIMCO should consistently enforce penalties for violations of personal trading policies and track verbal warnings given to employees regarding their personal trades, or document its decision not to implement this recommendation.

Management's Response

UTIMCO continues to believe that it has consistently enforced penalties for violations of personal trading policies. UTIMCO does recognize, however, the State Auditor's concerns about the lack of a formal policy, procedures, or logs to track penalties and violations. Therefore, UTIMCO has drafted and will implement a written procedure, including the development of a log to track penalties and violations (see draft attached as Exhibit A).

Regarding the other four items the State Auditor believed that UTIMCO had substantially but not fully implemented, UTIMCO has drafted and will implement a written procedure to satisfy full implementation for items 1 and 2, amend its Ethics Compliance Statements for Employees and Key Employees in order to fully implement item 9; and further explore requiring FBI background checks for all employees to determine whether it is appropriate and consistent with our business requirements. Please see the draft of the procedure and statements attached as Exhibit B.

Respectfully yours,

A handwritten signature in black ink, appearing to read "Bruce Zimmerman", is written over the typed name.

Bruce Zimmerman

Tel 512-225-1600 • Fax 512-225-1660 • 401 Congress Avenue, Suite 2800 • Austin, TX 78701

THE UNIVERSITY OF TEXAS INVESTMENT MANAGEMENT COMPANY

EXHIBIT A

**The University of Texas Investment Management Company
Employee Securities Transaction Violations Procedure**

Effective Date of Procedure: April 1, 2013

The University of Texas Investment Management Company's (UTIMCO's) Code of Ethics (Code) holds all employees to high standards of conduct consistent with their special relationship of trust, confidence, and responsibility to UTIMCO. The Code anticipates that many UTIMCO employees will be active investors, either individually or on behalf of others, in the same asset categories as the funds managed by UTIMCO and only prohibits such investments to the extent necessary or appropriate to avoid conflicts of interest or otherwise conform to applicable law.

Purpose: The purpose of this Procedure is to formulate guidelines for consistent enforcement of penalties for violations of personal trading policies and track verbal warnings and penalties given to employees regarding their personal trades.

Reporting: On a quarterly basis, the Chief Compliance Officer or her designee (CCO) will accumulate and report to the CEO and Chief Investment Officer all violations of the Code with respect to preclearance of securities transactions.

Guidelines: The following table sets forth the warnings and penalties that UTIMCO will normally apply to the violations of the preclearance of securities transactions procedures described in the Code. The CEO and Chief Investment Officer (or CCO, when applicable) may decline to impose a warning or penalty or impose a lesser penalty. The CCO will document all warnings and penalties issued.

Description	Warning or Penalty
1. Isolated, inadvertent failure to comply with the preclearance of securities transactions procedures	CCO may issue verbal warning
2. Repeated, inadvertent failure to comply with the preclearance of securities transactions procedures	CCO will issue verbal warning; CEO and Chief Investment Officer may issue warning
3. Repeated failure to comply with the preclearance of securities transactions procedures	CCO will issue verbal warning; CEO and Chief Investment Officer will issue warning
4. Intentional violations of preclearance of securities transactions procedures; front running; and/or insider trading.	CEO and Chief Investment Officer will issue written warning; CEO may terminate employee; CEO will notify Board Chair and Audit and Ethics Committee Chair

Notwithstanding the warnings and penalties set forth above, any employee who violates the Code may be subject to the full range of disciplinary options under UTIMCO personnel policies and practices, including termination.

Compliance: Compliance with this Procedure will be monitored by UTIMCO's Chief Compliance Officer.

EXHIBIT B



UTIMCO ETHICS COMPLIANCE STATEMENT

The UTIMCO Code of Ethics, (the "Code"), requires that all directors and employees, including acting or interim employees, execute an ethics compliance statement on or before April 30 of each year, and within thirty days of their appointment or employment.

I hereby certify that:

- A. I have received and read a copy of the Code;
- B. I will comply with the provisions of the Code;
- C. Adherence to the Code is a condition of employment;
- D. It is my duty to disclose any conflicts of interest or violations of the Code of which I am aware;
- E. It is my duty to report any act by other directors or employees when I have knowledge of violations of the Code;
- F. To the best of my knowledge, I have not violated any provision of the Code nor am I aware of any conflicts of interest or violations of the Code, except as otherwise disclosed previously to the UTIMCO Ethics Committee or Audit and Ethics Committee of the Board;
- G. In the event that I intend to acquire a pecuniary interest (as defined by the UTIMCO Code of Ethics, Section 1.02(12)(A)-(C)) in a publicly traded company, I will confirm with UTIMCO's Chief Compliance Officer prior to that acquisition that UTIMCO has no interest in that company that would pose a conflict of interest for me;
- H. I have disclosed to UTIMCO all brokerage transactions in all accounts held in my name, my spouse's name, my minor children's and other dependent relative's names, including IRA accounts, and any other brokerage accounts I control; and
- I. I will update my financial disclosure statement if a change in circumstances occurs that requires reporting under the Code.

Signature: _____ Date: _____

Print: _____

UTIMCO 03/27/13



UTIMCO ETHICS COMPLIANCE STATEMENT

The UTIMCO Code of Ethics, (the "Code"), requires that all directors and employees, including acting or interim employees, execute an ethics compliance statement on or before April 30 of each year, and within thirty days of their appointment or employment.

I hereby certify that:

- A. I am a Key Employee of the Corporation;
- B. I have received and read a copy of the Code;
- C. I will comply with the provisions of the Code;
- D. Adherence to the Code is a condition of employment;
- E. It is my duty to disclose any conflicts of interest or violations of the Code of which I am aware;
- F. It is my duty to report any act by other directors or employees when I have knowledge of violations of the Code;
- G. To the best of my knowledge, I have not violated any provision of the Code nor am I aware of any conflicts of interest or violations of the Code, except as otherwise disclosed previously to the UTIMCO Ethics Committee or Audit and Ethics Committee of the Board;
- H. In the event that I intend to acquire a pecuniary interest (as defined by the UTIMCO Code of Ethics, Section 1.02(12)(A)-(C)) in a publicly traded company, I will confirm with UTIMCO's Chief Compliance Officer prior to that acquisition that UTIMCO has no interest in that company that would pose a conflict of interest for me;
- I. I have disclosed to UTIMCO all brokerage transactions in all accounts held in my name, my spouse's name, my minor children's and other dependent relative's names, including IRA accounts, and any other brokerage accounts I control; and
- J. I will update my financial disclosure statement if a change in circumstances occurs that requires reporting under the Code.

Signature: _____ Date: _____

Print: _____

UTIMCO 03/27/13

**The University of Texas Investment Management Company
Financial Disclosure Statement Review Procedure**

Effective Date of Procedure: April 1, 2013

The University of Texas Investment Management Company's (UTIMCO's) Code of Ethics (Code) holds all employees to high standards of conduct consistent with their special relationship of trust, confidence, and responsibility to UTIMCO. The Code anticipates that many UTIMCO employees will be active investors, either individually or on behalf of others, in the same asset categories as the funds managed by UTIMCO and only prohibits such investments to the extent necessary or appropriate to avoid conflicts of interest or otherwise conform to applicable law.

Purpose: The purpose of this Procedure is to formulate guidelines for consistent review of public information to independently verify the completeness of the financial disclosure statements that directors and key employees (as defined in the UTIMCO Code of Ethics) submit.

Guidelines: Directors and employees are required to file financial disclosure statements with the Chief Compliance Officer within 30 days of appointment and employment, respectively, and on an annual basis by April 30th. Directors are permitted to request an additional extension of time to file their financial disclosure statements from the CEO and Chief Investment Officer. In order to ensure the completeness of the statements as filed, within 90 days after the deadline for filing the statements, the Chief Compliance Officer will review and gather information from public sources, such as EDGAR and the Secretary of State, and compare the information gathered with the financial disclosure statements on file for directors and key employees. Differences between reported and gathered information will be reported to the CEO and Chief Investment Officer. Updated financial disclosure statements will be requested as necessary.

Compliance: Compliance with this Procedure will be monitored by UTIMCO's CEO and Chief Investment Officer.

Appendices

Appendix 1

Objective, Scope, and Methodology

Objective

The objective of this audit was to determine the implementation status of prior State Auditor's Office recommendations and evaluate whether management has taken corrective actions to address selected recommendations in *An Audit Report on Ethics Policies for Trustee Investing Practices at the Employees Retirement System, the Teacher Retirement System, and the University of Texas Investment Management Company* (State Auditor's Office Report No. 09-031, April 2009).

Scope

The scope of this audit included reviewing the Employees Retirement System's (ERS), the Teacher Retirement System's (TRS), and the University of Texas Investment Management Company's (UTIMCO) implementation of selected recommendations from the prior audit. Auditors selected 38 of 47 prior recommendations based on responses to those recommendations, each entity's self-reported implementation status, and the level of risk. The 38 recommendations were tested for the time period from September 2010 through October 2012.

Methodology

The audit methodology included identifying and collecting information on the implementation of selected prior audit recommendations. To determine the implementation status of selected recommendations, auditors conducted interviews, reviewed each entity's ethics policies and procedures, and performed selected tests and procedures related to investing practices at each entity. Auditors selected the following samples:

- At ERS, auditors sampled employees' outside employment and directorship disclosures, employees' ethics policy affirmations, employees' conflict of interest affirmations, and investment employees' trading account affirmations.
- At TRS, auditors sampled board members' financial disclosures, key employees' financial disclosure statements, providers' submission of conflict of interest disclosures, contractors' and key employees' submission of ethics policy affirmations, employees' trading account disclosures, and background checks performed on hired employees.

- At UTIMCO, auditors sampled employees' outside employment disclosures, financial advisors' and service providers' conflict of interest disclosures, and entertainment expenses paid by vendors.

Auditors used non-statistical sampling methods to select the samples. The results from the samples selected are not intended to be projected to the entire population.

Auditors assessed the reliability of each entity's data by (1) reconciling populations of affirmations and disclosures with employee listings at ERS, TRS, and UTIMCO; (2) reviewing access to key investing systems at TRS and UTIMCO; (3) interviewing staff to verify that they were knowledgeable of the use of logs and related procedures for tracking the receipt and disposal of prohibited gifts at ERS and UTIMCO; (4) reconciling provider conflict of interest notifications with disclosure submissions at UTIMCO; (5) verifying the total number of brokers and advisors at TRS with internal reports; and (6) reconciling restricted security notifications with UTIMCO's list of providers.

Auditors were not able to determine whether UTIMCO's log of vendor-paid entertainment expenses was complete because information on actual vendor expenses was not available at UTIMCO. However, auditors reviewed UTIMCO's processes for maintaining that log, including review and approval as described in the prior audit recommendation, and determined that all items on the log were approved in accordance with UTIMCO's policies.

Information collected and reviewed included the following:

- *An Audit Report on Ethics Policies for Trustee Investing Practices at the Employees Retirement System, the Teacher Retirement System, and the University of Texas Investment Management Company* (State Auditor's Office Report No. 09-031, April 2009) and supporting working papers.
- Investment ethics policies at ERS and TRS.
- Employee ethics policies at ERS, TRS, and UTIMCO.
- ERS covered employee policy affirmation reports.
- ERS board of trustees and investment advisory committee policy affirmation reports.
- Tracking receipt gift logs at ERS and UTIMCO.
- Listing of Bloomberg system user accounts at ERS, TRS, and UTIMCO.
- Criminal background check policies at ERS, TRS, and UTIMCO.

- TRS board member, executive director, key employee, and contractor disclosure statements.
- TRS code of ethics for contractors.
- TRS trading policy for employees and certain contractors.
- TRS personal trading violations report.
- TRS board of trustees ethics policies.
- TRS fraud, waste, and abuse policy.
- UTIMCO employee outside employment affirmations.
- UTIMCO financial advisor and service provider notifications and disclosure report.
- UTIMCO travel approval and reconciliation detail forms.
- UTIMCO transactional disclosure form.

Procedures and tests conducted included the following:

- Interviewed personnel at ERS, TRS, and UTIMCO.
- Reconciled ERS covered employees with affirmation reports for outside employment, outside directorship, Chartered Financial Analyst Institute code of ethics, ERS investment policy, account affirmations, and quarterly transactions.
- Compared ERS board of trustees and investment advisory committee members with affirmation reports for outside directorship, Chartered Financial Analyst Institute code of ethics, and ERS investment policy.
- Conducted walkthroughs with ERS investment employees to verify processes for tracking the receipt and disposal of prohibited gifts on ERS's gift log.
- Compared all ERS users with access to the Bloomberg system with a list of ERS covered employees.
- Reviewed the ERS criminal history check policy to identify the types of criminal background checks ERS conducts on employees.
- Tested TRS board members' and executive director's submission and review of financial disclosure statements with the TRS ethics compliance officer and the Texas Ethics Commission.

- Tested TRS key employees' submissions of financial disclosure statements.
- Reviewed TRS's notification and tracking of financial advisors' and service providers' submissions of conflict of interest disclosure statements.
- Tested brokers, financial advisors, and service providers to verify that they submitted investment ethics policy affirmations.
- Tested key employees' submissions of brokerage account and personal security trade disclosures.
- Reviewed TRS's trading policy reports to verify that TRS consistently enforced penalties for violations of its personal trading policies.
- Reviewed TRS's Bloomberg system administrator access to determine whether access was based on users' job duties.
- Reviewed access to investment information in TRS's Bloomberg system to determine whether users had affirmed compliance with TRS's investment ethics policies.
- Tested TRS's performance of criminal background checks on new employees.
- Reviewed TRS's process for tracking required annual ethics training for TRS employees and board of trustee members.
- Contacted TRS's fraud, waste, and abuse hotline to verify that processes exist for employees to report violations of ethics policies anonymously.
- Tested employees covered by UTIMCO's investment ethics policies for affirmations of disclosure of outside employment and business activities.
- Conducted walkthroughs with UTIMCO investment employees to verify processes for tracking the receipt and disposal of prohibited gifts on UTIMCO's gift log.
- Reconciled notifications of restricted securities with UTIMCO's external investment managers.
- Tested UTIMCO's travel procedures to verify that UTIMCO reviewed and approved vendor-paid entertainment and travel expenses.
- Tested UTIMCO investment employees' disclosure of brokerage accounts and personal securities trades.

- Reviewed UTIMCO's Bloomberg system administrator access to determine whether access was based on the users' job duties.
- Reviewed UTIMCO's Bloomberg system users to verify that shared accounts were no longer utilized.
- Reviewed the ERS criminal history checks policy to determine the types of criminal background checks ERS conducts on employees.

Criteria used included the following:

- *An Audit Report on Ethics Policies for Trustee Investing Practices at the Employees Retirement System, the Teacher Retirement System, and the University of Texas Investment Management Company* (State Auditor's Office Report No. 09-031, April 2009)
- Investment ethics policies at ERS, TRS, and UTIMCO.
- Employee ethics policies at ERS, TRS, and UTIMCO.
- Texas Government Code, Chapter 411.
- Texas Government Code, Chapter 572.
- Chartered Financial Analyst Institute code of ethics.

Project Information

Audit fieldwork was conducted from September 2012 through March 2013. We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our 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.

The following members of the State Auditor's staff performed the audit:

- Kels Farmer, MBA, CISA (Project Manager)
- Arthur N. Cadena
- Erin Cromleigh, CGAP
- Joe Curtis, CPA
- Anna Howe
- Michael Karnes, MBA

- Joe Kozak, CPA, CISA
- Marlen Randy Kraemer, MBA, CISA, CGAP
- Thomas Andrew Mahoney, CGAP
- Cecile Norton
- Bansari Patel, CPA
- Barrett Sundberg, CPA, CIA
- Tony White, CFE
- Michael C. Apperley, CPA (Quality Control Reviewer)
- Ralph McClendon, CISSP, CCP, CISA (Audit Manager)

Related State Auditor's Office Work

Related State Auditor's Office Work		
Number	Product Name	Release Date
09-031	An Audit Report on Ethics Policies for Trustee Investing Practices at the Employee Retirement System, the Teacher Retirement System, and the University of Texas Investment Management Company	April 2009

Copies of this report have been distributed to the following:

Legislative Audit Committee

The Honorable David Dewhurst, Lieutenant Governor, Joint Chair
The Honorable Joe Straus III, Speaker of the House, Joint Chair
The Honorable Thomas “Tommy” Williams, Senate Finance Committee
The Honorable Jim Pitts, House Appropriations Committee
The Honorable Harvey Hilderbran, House Ways and Means Committee

Office of the Governor

The Honorable Rick Perry, Governor

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Mr. Bruce Zimmerman, Chief Executive Office and Chief Investment Officer



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TAB 2B

TEACHER RETIREMENT SYSTEM of TEXAS
Internal Audit Department Memorandum

TO: Mr. Brian Guthrie, Executive Director
Mr. Ken Welch, Deputy Director

FROM: Amy Barrett, Chief Audit Executive

SUBJECT: TRS Ethics Ratings in the Survey of Employee Engagement

DATE: August 31, 2012

A summary of TRS employee responses to ethics survey questions included in the bi-annual Survey of Employee Engagement (SEE) is attached.

The SEE asks participants to rate their level of agreement with a set of standard statements about their organization. The rating scale ranges from 1-5, with 5 being the best possible rating. The survey includes two standard ethics questions. In 2006, Internal Audit added four survey questions. Details of current and historical ratings for all six questions are included in the attached tables.

In 2012, TRS ethics ratings are consistent with those of prior years with an overall average rating of 4.10. This year, the Institute for Organizational Excellence also began reporting ethical climate ratings of organizations by averaging the rating of the two standard ethics questions in the survey. TRS scored a 4.12 in ethical climate, outscoring organizations of similar size or similar mission. TRS also scored above the overall average of all participating organizations as seen below.

Ethical Climate Ratings (two standard ethics questions in SEE)	
Teacher Retirement System	4.12
Organizations of similar size (301-1000 employees)	3.95
Organizations with similar mission (education)	4.00
All participating organizations	3.89

In 2012, all but one question averaged a rating above 4.0. Employees' familiarity with the ethics policy remains the highest overall rated question at 4.29, despite ethics policy training for all TRS employees not occurring as often as required by policy. The question regarding employees' comfort in reporting ethics violations remained the lowest rated question at 3.96; however, this rating is significantly above the TRS overall SEE average of 3.91. The Executive and Investment Divisions scored highest on ethics questions at 4.26 and 4.24 respectively.

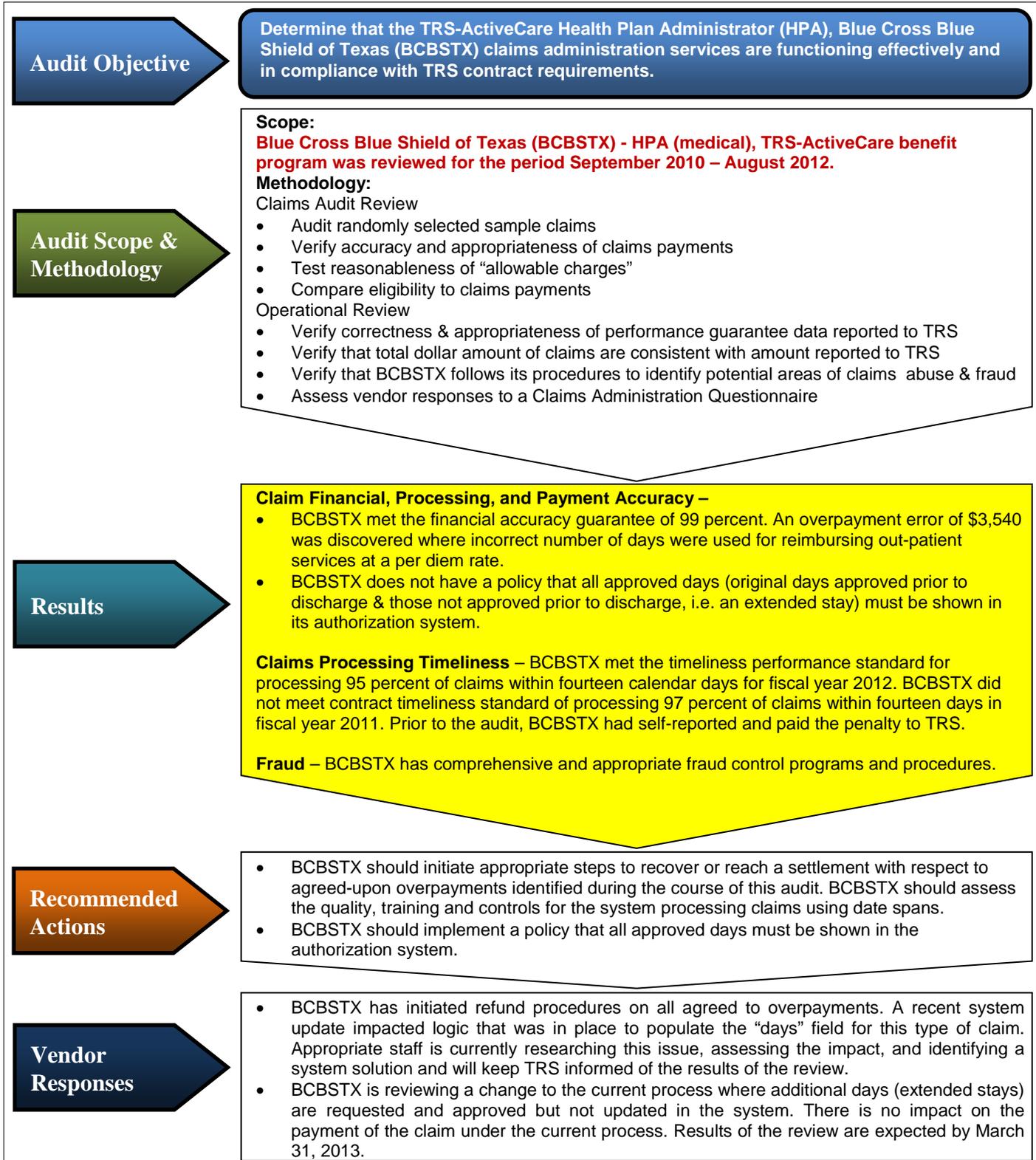
If I can be of any further assistance or if you have questions, please do not hesitate call me.

TAB 3

Independent Audit Report on TRS-ActiveCare Service Providers

For the period September 1, 2010 through August 31, 2012

Audit Conducted by Sagebrush Solutions for TRS Health Insurance and Benefits Department



Legend of Results:

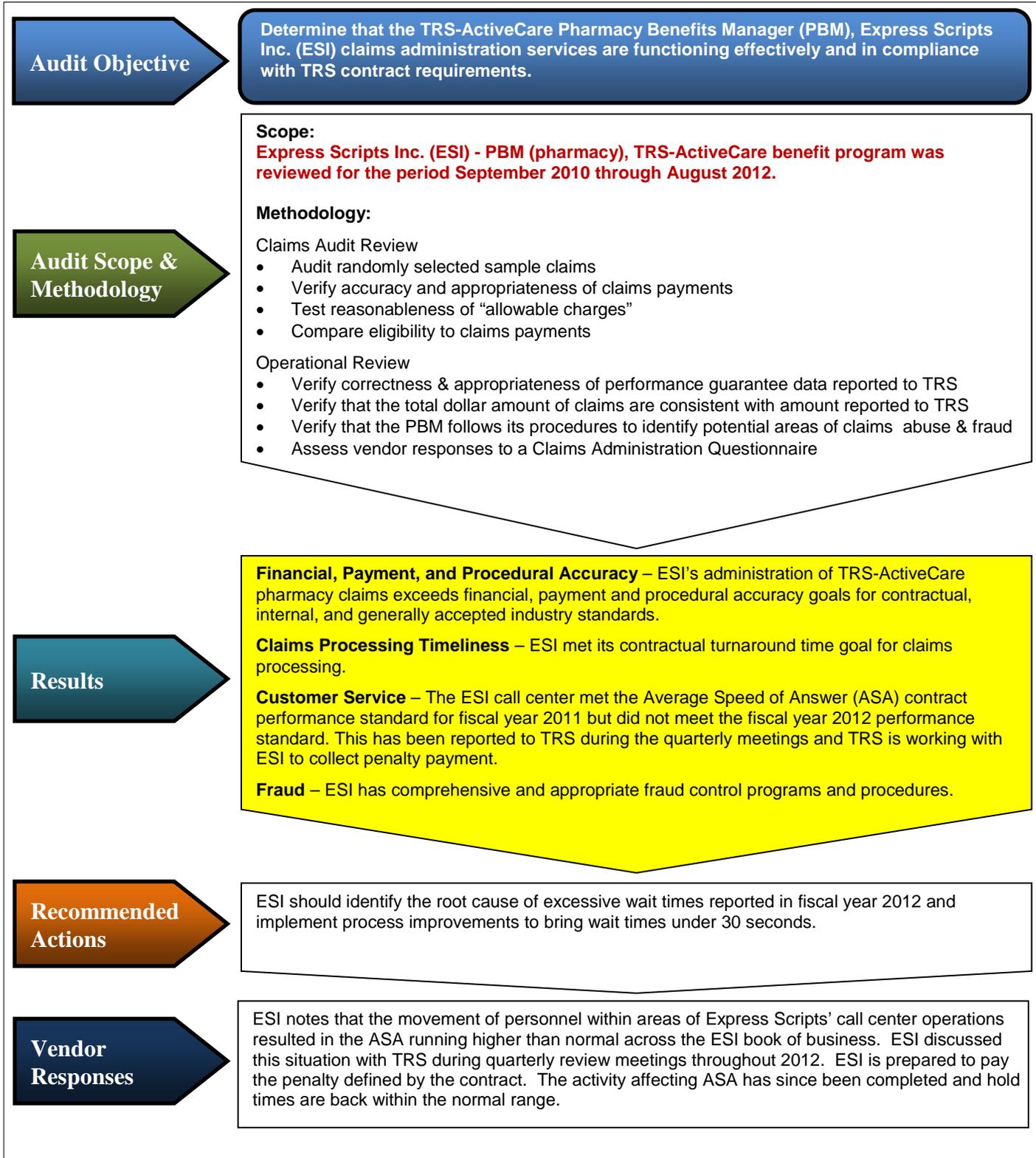
Red - Significant to TRS
Yellow - Other Reportable Issue

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

Independent Audit Report on TRS-ActiveCare Service Providers

For the period September 1, 2010 through August 31, 2012

**Audit Conducted by Sagebrush Solutions for
TRS Health Insurance and Benefits Department**



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

Independent Audit Report on TRS-ActiveCare Service Providers

For the period September 1, 2010 through August 31, 2012

**Audit Conducted by Sagebrush Solutions for
TRS Health Insurance and Benefits Department**

Audit Objective	Determine that TRS-ActiveCare Health Maintenance Organizations (HMO), First Care, Valley Baptist, and Scott & White Health Plan claims administration services are functioning effectively and in compliance with TRS contract requirements.
Audit Scope & Methodology	<p>Scope: First Care, Valley Baptist (administered by First Care), and Scott & White Health Plan, TRS-ActiveCare HMO benefit programs were reviewed for the period September 2010 through August 2012.</p> <p>Methodology: The auditor requested that each of the administrators complete detailed Claim Administration Questionnaire addressing issues such as system capabilities, claim adjudication procedures, claim pricing, fraud procedures, timeliness and training.</p> <p>The Questionnaire was used as a framework for the claims audit by establishing the administrator's procedures and protocols for processing. The auditor did not request electronic data files from the HMOs, First Care, Valley Baptist and Scott & White. HMO statistics were drawn from their internal quality reports.</p> <p>In addition, the auditor performed an operational walk through, processed fictitious claims, and conducted interviews with key personnel for each HMO.</p>
Results	<p>Claims Processing Timeliness – All HMOs exceeded their internal goals and met or exceeded their generally observed industry standards for processing claims.</p> <p>Claim Financial, Processing and Payment Accuracy – All HMOs exceeded internal and industry standards for the reported financial and payment accuracy rate with the exception of Scott & White, which fell slightly below their internal payment accuracy goal.</p> <p>Fraud – All HMO benefit programs have comprehensive and appropriate fraud control programs and procedures.</p>
Recommended Actions	<p>First Care – None</p> <p>Valley Baptist – None</p> <p>Scott & White - None</p>
Vendor Responses	<p>N/A</p>

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



Prepared for the
Teacher Retirement System
of Texas

Teacher Retirement System of Texas

Report on the Audit of
Insurance Carrier Operations
Regarding the
Teacher Retirement System of Texas
TRS-ActiveCare Benefit Program

BlueCross BlueShield of Texas

Express Scripts Inc.

First Care

Valley Baptist

Scott and White

**For the period of
September 1, 2010 through August 31, 2012**

EXECUTIVE SUMMARY

The Teacher Retirement System of Texas (TRS) engaged Sagebrush Solutions to conduct an audit of the claim administration services at certain benefit plan administrators by the Health Plan Administrator (HPA). Principal components of the audit program include:

- Audit randomly selected sample claims
- Review and verify the accuracy and appropriateness of claims payments
- Test the reasonableness of the system of internal claims audit and processing controls
- Test the reasonableness of the “allowable charge”
- Compare eligibility to claim payments
- Verify the correctness and appropriateness of the data reported by the HPA as it pertains to performance guarantees specified in their contract with TRS.
- Verify that the total number of claims from which the samples were selected by the Contractor are consistent with the number of claims reported by the HPA to TRS in the annual report for each plan year
- Verify that the HPA follows its procedures to identify potential areas of claims abuse and fraud
- Assess vendor responses to a Claims Administration Questionnaire

The following benefit programs were reviewed under the audit program:

- TRS-ActiveCare medical program administered by Blue Cross Blue Shield of Texas
- TRS-ActiveCare prescription drug program administered by Express Scripts Inc. (ESI)
- First Care
- Valley Baptist
- Scott & White Health Plan

Claim samples were selected from electronic data files provided by each of the administrators for the population of GBP claims processed between September 1, 2010 and August 31, 2012. Each claim in the sample was tested for:

- Payment and processing accuracy
- Adherence to plan benefits
- Timeliness of payment

Data were provided by:

- Blue Cross Blue Shield of Texas (BCBSTX), a division of Health Care Services Corporation, a mutual legal reserve company, the administrator for TRS-ActiveCare
- Express Scripts Inc. (ESI) the TRS-ActiveCare pharmacy benefits manager

EXECUTIVE SUMMARY

The Health Maintenance Organizations (HMO), First Care, Valley Baptist and Scott & White, did not provide electronic data files. Their statistics were drawn from their internal quality reports.

We requested that each of the administrators complete detailed Claim Administration Questionnaire addressing issues such as system capabilities, claim adjudication procedures, claim pricing, fraud procedures, timeliness and training. The Questionnaire was used as a framework for the claims audit by establishing the administrator's procedures and protocols for processing.

The audit also included a review of official records to ensure that generally accepted accounting procedures and records support the data used to develop the annual accounting statements. The scope did not encompass a review of the financial statements of the administrator nor an audit of its accounting records.

The body of this report contains the detailed results and recommendations for improvement for each benefit plan administrator reviewed under this audit program. Other than any noted deviations, the claims administration functions reviewed appear to be in accordance with contractual agreements.

The following provides a summary of the key findings of our audit:

Fraud

- BCBSTX, ESI, First Care, Valley Baptist, and Scott & White each have in place comprehensive and appropriate fraud control programs and procedures.
- Sagebrush submitted fictitious claims to test system controls at Scott & White, First Care and Valley Baptist.

Claim Processing Timeliness

- BCBSTX did not meet the timeliness standards specified in its agreement with TRS for processing of TRS-ActiveCare claims in fiscal year 2011. BCBSTX met internal and performance guarantee standards for the timely processing of claims in fiscal year 2012.
- Express Scripts Inc. met internal and performance guarantee standards for the timely processing of prescription drug claims.
- First Care exceeded the internal goal and met generally accepted industry standards for the timely processing of claims.
- Valley Baptist, also administered by First Care, exceeded the internal goal and met generally accepted industry standards for the timely processing of claims.
- Scott & White exceeded its internal goal and the generally observed industry standards for processing claims.

EXECUTIVE SUMMARY

Claim Financial, Processing and Payment Accuracy

- The performance agreement between TRS-ActiveCare and BCBSTX for financial accuracy is 99.0%. The financial accuracy must be 99.0 percent or greater. The audited accuracy results in the samples were: fiscal year 2011, 100.00% and fiscal year 2012, 99.93%. BCBSTX exceeded the contract performance guarantee financial accuracy standard for both fiscal year 2011 and fiscal year 2012.

There were no payment errors identified in the 2011 sample, the weighted payment accuracy rate is 100.00%. Based on the one (1) payment error identified in the 2012 sample, the weighted payment accuracy rate is 99.99%. This accuracy rate exceeds the BCBSTX internal goal of 97.00%, as well as the generally observed industry standard of 95.00% to 97.00%, based on our experience. This accuracy rate also meets the minimum performance guarantee of 98.00% as shown in the contract between TRS-ActiveCare and BCBSTX.

The two (2) identified procedural errors, both of which BCBSTX agrees to in the fiscal year 2011 sample, produced a weighted accuracy rate of 99.79%. The three (3) identified procedural errors, of which BCBSTX agrees in the fiscal year 2012 sample, produced a weighted accuracy rate of 98.67%.

The audited procedural or non-payment accuracy rate exceeds the industry standard of 95% by several percent. This accuracy rate also meets the minimum performance guarantee of 98% as shown in the contract between TRS-ActiveCare and BCBSTX.

- Express Script Inc. (ESI) tested financial accuracy rate of the sample is 100 percent. This accuracy exceeds the ESI internal goal of 98.5 percent and the generally observed industry standard of 99.0 percent.

The payment accuracy rate for the audit sample is 100.00 percent. This accuracy exceeds the TRS contract performance agreement requirement and the ESI internal goal of 98.5 percent and the generally observed industry standard of 95.0 to 97.0 percent.

The procedural accuracy rate for the audit sample is 100.00 percent. This procedural accuracy rate exceeds the generally accepted industry standard of 95.0 percent. ESI does not currently measure procedural or non-payment accuracy internally.

- First Care - For January through September 2012, the reported financial accuracy rate for all internal audits was 99.86%. According to these results, FirstCare exceeds internal and industry standards.

For January through September 2012, the reported payment accuracy rate for all internal audits was 99.87%. According to these results, FirstCare exceeds internal and industry payment accuracy standards.

EXECUTIVE SUMMARY

For January through September 2012, the reported non-payment accuracy rate for all internal audits was 99.08%. FirstCare exceeds internal and industry non-payment accuracy standards.

- Valley Baptist - For January through September 2012, the reported financial accuracy rate for all internal audits was 99.86%. According to these results, FirstCare exceeds internal and industry standards.

For January through September 2012, the reported payment accuracy rate for all internal audits was 99.87%. According to these results, FirstCare exceeds internal and industry payment accuracy standards.

For January through September 2010, the reported non-payment accuracy rate for all internal audits was 99.08%. FirstCare exceeds internal and industry non-payment accuracy standards.

- Scott & White - For fiscal year 2012, the reported financial accuracy rate for internal audits was 99.12%. In 2011, the financial accuracy rate was 99.31%. According to these results, Scott & White financial accuracy meets internal and industry standards for 2011 and 2012. The internal accuracy goal was 97.0% in fiscal year 2011 and 98.0% in fiscal year 2012.

For fiscal year 2012, the reported payment accuracy rate for internal audits was 97.44%. In 2011, the payment accuracy rate was 97.08%. According to these results, Scott & White met industry payment accuracy standards in 2011 and 2012 but fell slightly below internal standards for fiscal year 2012. The internal accuracy goal was 97.0% in fiscal year 2011 and 98.0% in fiscal year 2012.

For fiscal year 2012, the reported overall accuracy rate for internal audits was 97.82%. In 2011, the overall accuracy rate was 97.39%. According to these results, Scott & White met industry overall accuracy standards in 2011 and 2012 but fell slightly below internal standards for fiscal year 2012. The internal accuracy goal was 97.0% in fiscal year 2011 and 98.0% in fiscal year 2012.

Recommendations

The information presented below highlights our major recommendations for each plan. Detailed descriptions of our observations and recommendations can be found in the body of this audit report.

BCBSTX

Overpayments: Appropriate steps should be initiated to recover or reach a settlement with respect to agreed upon overpayments identified during the course of this audit.

EXECUTIVE SUMMARY

Allowable Amounts: Incorrect allowable amounts were calculated on one (1) claim. The claim was processed using a fifteen (15) day date span as opposed to the actual dates of service on the line items of the claim. There were only twelve (12) individual dates of service billed. The individual line items did not include the number of units per line, which was 1 in this case, causing the system to calculate the allowed amount based on the date span.

BCBSTX should assess the quality, training and controls for this process. BCBSTX should standardize this process to the extent possible in order to improve overall performance. The Blue Chip system should have standard edits to prevent payment errors where applicable, including the ability to review claims history for potential duplicate and related claims. BCBSTX supervisors should closely monitor this in quality assessments.

Express Scripts Inc. (ESI)

CUSTOMER SERVICE

We recommend that ESI identify the root cause of the excessive wait times experienced in fiscal year 2012 and implement process improvements to bring wait times under 30 seconds.

First Care & Valley Baptist (administered by First Care)

FirstCare has industry standard systems and processes. The staffing of the customer service and claims adjudication functions appears to be adequate in both size and experience for the membership. A review of the Health Plan's controls through a Questionnaire instrument, operational walk through, interviews with key personnel and processing of fictitious claims indicate that FirstCare has adequate system and process controls in place.

Scott & White

A best practice that we have observed is segregating duties of people with access to create provider records and people with access to release payments.

The other fraud detection practices appear to be appropriate, including manual and systematic edits and checks.

TAB 4

TAB 4A

AUDIT OF DERIVATIVES

March 27, 2013

TRS Internal Audit Department

Business Objectives	Generate alpha and manage risk by applying asset overlay strategies, using derivatives	Ensure that derivatives are executed as authorized, and settled and valued accurately	Adhere to changing derivatives laws and regulations under the Dodd Frank Act
Business Risks	<ul style="list-style-type: none"> Investing in unauthorized types of derivatives Counterparty risk Liquidity risk Key person risk Model risk 	<ul style="list-style-type: none"> Trading derivatives without approval Trading derivatives with unauthorized counterparty Settlement risk Incorrect valuation 	<ul style="list-style-type: none"> Non-compliance with derivatives regulations Sanctions, penalties or fines Counterparties not willing to trade with TRS
Management Controls	<ul style="list-style-type: none"> Investment Policy Statement (IPS) Counterparty exposure limit Compliance checks on asset and risk limits Review of model outputs 	<ul style="list-style-type: none"> Segregation of duties Authorized list of brokers and counterparties Trade reconciliations Valuation policy Independent pricing 	<ul style="list-style-type: none"> Use of internal and external legal services Internal and external compliance checks Suitability assurance provided to counterparties
Controls Tested	<ul style="list-style-type: none"> Approval needed for derivatives trades Model governance on Tactical Asset Allocation (TAA) models and Hedge Fund Replication model Access to model inputs and outputs files 	<ul style="list-style-type: none"> Portfolio manager's approval of derivative trade Trade reconciliations Valuation of sample derivatives Investment Accounting's monitoring of controls at valuation service provider 	<ul style="list-style-type: none"> Legal staff's involvement Written compliance policies and procedures Designation of Qualified Independent Representatives (QIR)
Results	Management controls are operating effectively. However, opportunities exist to enhance controls.	Management controls are operating effectively.	Management controls are operating effectively.
Recommended Actions	<ul style="list-style-type: none"> Develop a checklist to ensure consistent use of TAA models Password protect derivative model files Restrict access to network folders 	None	None
Management Responses	Management agrees with the recommendations, and therefore will take corrective action.	N/A	N/A

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

March 27, 2013

Audit Committee, Board of Trustees
Mr. Brian Guthrie, Executive Director

EXECUTIVE SUMMARY

We have completed the audit of *Derivatives*, as included in the *Fiscal Year 2013 Audit Plan*. As part of this project, Internal Audit engaged an external service provider (Protiviti Inc.) to obtain additional expertise in the areas of model governance, technology control best practices, and Dodd Frank Act requirements. Business objectives related to TRS derivatives investments that are covered as part of this project are as follows:

- To generate target excess returns (“alpha”) and manage investment risk in an efficient manner, through the use of authorized types of derivatives, by applying portfolio overlay strategies to various policy asset classes
- To ensure that derivatives investments are executed as authorized by portfolio managers, settled as executed, and valued in accordance with industry valuation standards
- To adhere to changing derivative laws and regulations, including the regulations issued by the Commodity Futures Trading Commission (CFTC) and the Securities and Exchange Commission (SEC) under the requirements of the Dodd Frank Act

Based on our audit results, we determined that management controls are operating effectively to achieve business objectives. We did not identify any significant issues. However, we identified opportunities to enhance controls related to: (a) developing a checklist to ensure consistent usage of the Tactical Asset Allocation Model, (b) password-protecting derivative model files, and (c) further restricting access to the network folders containing derivative model files.

Results of this audit provide positive assurance on the derivatives activities performed by the Investment Management Division (IMD). We noted similar results in our audit report on derivatives issued in March 2010.

Results of our procedures are presented in more detail in the **Results and Recommendations** section (page 12). The audit objective, scope, methodology and conclusion are described in **Appendix A** (page 16).

BACKGROUND

Since the 80th Texas Legislature authorized TRS to invest in derivatives in 2007, the TRS Investment Management Division (IMD) has been using them to efficiently manage and reduce the risk of the overall TRS investment portfolio. TRS' uses of derivatives are guided by Article 8 of the Investment Policy Statement (IPS) adopted by the Board of Trustees. This Article includes sections on the applications permitted or not permitted, documentation and controls, and derivatives restrictions with regard to the uses of derivatives.

TRS derivatives investments were previously audited by Internal Audit in March 2010 when TRS' uses of derivatives were concentrated mostly on total return swaps. Since then, the IMD has started using other types of derivatives (such as futures) and also initiated various derivatives-related strategies and programs, such as Tactical Asset Allocation (TAA), Hedge Fund Replication (HFR), Enhanced Commodity Alpha Strategies (ECAS), and Quantitative Vector Fund (QVF). 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.

Definition and Types of Derivatives

Derivatives are defined as 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, interest rates, etc. Common types of derivatives used by TRS, strategic partner networks (SPNs), and external managers are futures, forwards, options and swaps.

Benefits of Using Derivatives

Derivatives help organizations more effectively and predictably manage their exposure to a specific risk. For example, an entity with variable-rate debt may enter into a derivative instrument designed to synthetically fix the debt's interest rate, thereby hedging the risk that rising interest rates will negatively affect cash flows. In addition, by entering into derivatives arrangements, organizations can take advantage of the economics of an underlying transaction without actually entering into the transaction itself. For example, TRS enters into a total rate of return swap contract for small cap equities to gain exposure to the performance of the small cap index without actually buying small cap stocks using cash. Since derivatives do not involve underlying securities, investing in derivatives would help reduce transaction costs (i.e., broker commissions and market impact costs) including the costs involved in portfolio rebalancing. Derivatives also allow exposure to certain asset classes that an entity may not be authorized to own. For example, TRS is prohibited from owning physical assets (such as buildings and commodities). Therefore, investing in index futures or swap contracts whose performance is tied to these types of assets would allow TRS to gain exposure to the performance of these assets without being subject to the risks involved in owning these physical assets.

Risks Involved in Derivatives Investments

Derivatives, which are used to address certain types of risks, also introduce different types of risks to the entities involved. For example, if an entity with variable-rate debt enters into a fixed-rate contract with counterparty, this entity mitigates the risk related to changing interest rates. However, this entity is now subject to the credit risk related to the counterparty. In addition, because entering into a derivative transaction only requires a payment of a small fraction of the total contract amount (i.e., notional amount) at the time of the transaction, they are subject to the risks related to this leverage. Leverage usually magnifies both potential returns and potential risks for any investments. Risks related to derivatives also vary depending on different types of derivatives involved. Some of the common types of risks related to the derivatives TRS uses are identified in the Business Objectives, Risks, and Controls section (page 7).

Different Groups Involved in Derivatives Activities

The following TRS divisions are involved in derivatives transactions:

- Tactical Asset Allocation (TAA) and Strategic Asset Allocation (SAA) groups of the IMD manage derivatives portfolios by identifying derivatives trades to control asset allocations and portfolio risk. To identify derivative trades, these groups use various factor-based models, such as TAA, HFR, ECAS, and QVF.
- Trading group of the IMD executes derivative trades as requested by TAA or SAA groups.
- Investment Operations group within the IMD reconciles derivative trades executed.
- Investment Accounting Team is responsible for overseeing valuation of investments (including derivatives) as well as approving cash payments during periodic reset dates for swaps. This team, which is located outside the IMD, reports to the Chief Financial Officer.

In addition to these internal TRS groups, the custodian (State Street Bank) acts as the book of record and is responsible for settling derivative trades, independently valuing derivative positions, and independently tracking and moving collateral or margin on a daily basis.

Models Used by the IMD

To adjust asset allocations (usually on a monthly basis) based on capital market conditions and predictions, TAA and SAA groups use the following models:

(1) Tactical Asset Allocation (TAA) Model

The TAA model is used for developing trading strategies to capture alpha as part of the Fund's alpha strategy. The TAA model analyzes and recommends potential trades of asset classes based on over- and under-weighting pairs of asset classes that have been identified as potential sources of alpha. The regression models capture both long-term and short-term drivers of the market by utilizing factors that represent various aspects of the economy and that provide signals on the asset classes being modeled. Currently, there are 11 different factor models that the TAA group uses. See **Appendix B** (page 18) for the process map for

the TAA, **Appendix C** (page 19) for the diagram of TAA's 11 factor model framework, and **Appendix D** (page 20) for the diagram of the Derivatives Trading Process.

(2) Hedge Fund Replication (HFR) Model

The HFR model is used by the Strategic Asset Allocation (SAA) group to replicate the hedge fund returns. The need for hedge fund replication grew out of an initiative by the Fund to increase the allocation to external hedge funds (from 4 percent to 9 percent). The External Public Markets group, which is responsible for managing the hedge fund managers, needed time to perform due diligence prior to distributing increased allocation to new hedge fund managers. In the meantime, the SAA group is managing the funds via a hedge fund replication process so as to reduce the risk of underweighting hedge funds. The hedge fund simply replicates the Hedge Fund Research Institute's Fund of Funds Composite Index (HFRI Index). A regression model is used to determine what the weights in the tradable derivatives should be. These weights are tied back to the overall exposures to hedge funds.

(3) Enhanced Commodity Alpha Strategy (ECAS)

The SAA group has used Enhanced Goldman Sachs Commodity Index (GSCI) Total Return Swaps since June 2009 to replicate the Trust's exposure to commodities. The expertise developed internally with these Total Return Swaps has demonstrated excess return generation capabilities. The Enhanced Commodity Alpha Strategies (ECAS) portfolio uses derivatives in the form of Total Return Swaps. The ECAS portfolio enters into the same Enhanced Total Return Swaps as the prior Enhanced GSCI program and adds the additional step of hedging the exposure to commodities by shorting an equivalent amount of regular GSCI. In this sense, the directional market risk is neutralized (though the risk of residual overweights and underweights of the components of the GSCI remains) and the resulting portfolio is an overlay on the Trust similar to the existing TAA program.

(4) 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 swaps 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.

TRS Investments in Derivatives as of December 31, 2012

As of December 31, 2012, TRS derivatives investments consist of futures, forwards, swaps and options. Gross notional values of these derivatives were \$15.1 billion, which represents approximately 13.2 percent of the market value of the TRS total fund of \$114.6 billion. In addition, for the \$15.1 billion derivatives, approximately 68.6 percent was managed by internal staff while the remaining 31.4 percent was managed by external entities including strategic partners and external managers. The following table shows the breakdown of these derivatives investments:

Table 1 - TRS Derivatives Exposure by Asset Types (in millions)

Derivative Type	TRS Internal	Strategic Partner Networks (SPNs)	External Managers	Gross Notional Amount
Futures	\$5,561.9	\$2,180.6	\$71.7	\$7,814.2
Forwards	3,297.9	873.5	487.8	4,659.2
Swaps	1,522.0	1,012.8	81.5	2,616.3
Options	0.0	0.0	\$35.6	35.6
TOTAL	\$10,381.8	\$4,066.9	\$676.6	\$15,125.3

Regarding counterparty exposure, the following table shows total notional exposure and the net exposure by each counterparty as of December 31, 2012:

Table 2 - Counterparty Exposure Related to Derivatives Transactions (dollars in millions)

Counterparty	Number of OTC Derivatives (Forwards, Swaps and Options)	Total Notional Exposure	Unrealized Gains (Losses) based on Mark-To-Market	Collateral Posted	Net Counterparty Exposure
Barclays Bank	23	\$851.4	\$0.4	\$0	\$0.4
Citibank N.A.	14	929.2	(0.3)	0	0.0
Credit Suisse International	2	45.2	0.4	0	0.4
Deutsche Bank AG	76	772.1	6.6	0	6.6
Goldman Sachs International *	37	1,205.6	14.9	0	14.9
JP Morgan Chase Bank N.A.	67	1,786.3	9.7	0	9.7
Morgan Stanley	23	92.6	(1.8)	0	0.0
Societe Generale	2	30.0	0.0	0	0.0
UBS AG	126	1,598.7	(3.3)	0	0.0
TOTAL	370	\$7,311.1	\$26.6	\$0	\$32.0

*: This exposure with Goldman Sachs International does not include an initial margin of \$276.1 million for investments in 173 exchange-traded futures (ETFs).

The table above shows that the net counterparty exposure (defined as positive market value of all over-the-counter derivative position less collateral posted) was \$32.0 million. This means that the maximum amount of potential loss TRS could suffer from its derivative positions due to financial problems of all nine counterparties at the same time was approximately \$32 million as of December 31, 2012. Furthermore, neither TRS nor any counterparty had to post collateral to back up derivatives-related losses because none of the collateral thresholds (that usually start from \$25 million) was exceeded.

BUSINESS OBJECTIVES, RISKS, AND CONTROLS

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

Business Objective	Inherent Risks (without considering controls)	Management Controls	Management Controls Tested
To generate target excess returns (“alpha”) and manage investment risk in an efficient manner, through the use of authorized types of derivatives, by applying portfolio overlay strategies to various policy asset classes	(1) Use derivatives in an unauthorized manner (e.g., for speculation purposes or to circumvent legislative or policy restrictions)	A) Investment Policy Statement (IPS) prohibiting speculation through derivatives B) A written memo required before initiating new derivative types C) Internal Investment Committee (IIC) review and approval	<ul style="list-style-type: none"> A written memo required before initiating new derivative types Internal Investment Committee (IIC) review and approval
	(2) Invest in unauthorized types of derivatives	A) IPS authorizes use of certain derivative types B) Approval needed for derivative trades C) Derivative Trade Automated Program (DTAP) which generates proposed trades for asset replication purposes	<ul style="list-style-type: none"> IPS authorizes use of certain derivative types Approval needed for derivative trades DTAP which generates proposed trades for asset replication purposes
	(3) Derivative exposure causes certain assets going outside the permitted asset allocation limits, and thus exceeding risk limits	A) Asset allocation limits established in the IPS (i.e., Value at Risk) B) Tracking error limits established C) Daily, weekly, monthly, quarterly derivative exposure report D) Compliance monitoring by State Street and Internal Audit	<ul style="list-style-type: none"> Daily, weekly, monthly, quarterly derivative exposure report Compliance monitoring by State Street and Internal Audit
	(4) Compliance risk – Derivative transactions (executed by internal staff or external managers) are made in violation of governing laws, regulations, policies, or investment guidelines	A) Review by Investment Management Committee (IMC) before use of a new derivative type B) Compliance monitoring by State Street and Internal Audit C) Portfolio manager’s checks	<ul style="list-style-type: none"> Compliance monitoring by State Street and Internal Audit Portfolio manager’s checks
	(5) Model risk - the risk of financial loss or poor decision-making due to the use of incomplete or incorrect models or input data	A) Model Governance – Model is reviewed by Managing Director and approved by the IIC or IMC prior to entering production B) Model Governance – Material changes are reviewed and approved prior to implementation C) Model Governance – Documentation is maintained to mitigate key person risk D) Model Governance – Spreadsheet controls are implemented to reduce the possibility of error E) Model Governance – Data is backed up on a periodic basis F) Model Data – Model user performs checks to ensure the data is loaded into the model correctly and completely G) Model Assumptions are communicated to and understood by the IMC or IIC	<ul style="list-style-type: none"> Model Governance – Model is reviewed by Managing Director and approved by the IIC or IMC prior to entering production Model Governance – Material changes are reviewed and approved prior to implementation Model Governance – Documentation is maintained to mitigate key person risk Model Governance – Spreadsheet controls are implemented to reduce the possibility of error Model Governance – Data is backed up on a periodic basis Model Data – Model user performs checks to ensure the data is loaded into the model correctly and completely

Business Objective	Inherent Risks (without considering controls)	Management Controls	Management Controls Tested
		<p>H) Model Analytics – Involvement of strategic partners or external managers and review of academic literature during development</p> <p>I) Model Assumptions/ Analytics – Backtesting and performance monitoring are performed on a periodic basis to assess model effectiveness</p> <p>J) Model Output – Model user performs reasonableness checks on the model outputs before initiating trades</p> <p>K) Model Output – Supporting documentation maintained on model outputs and decisions</p>	<ul style="list-style-type: none"> • Model Assumptions are communicated to and understood by the IMC or IIC • Model Analytics – Involvement of strategic partners or external managers and review of academic literature during development • Model Assumptions/ Analytics – Backtesting and performance monitoring are performed on a periodic basis to assess model effectiveness • Model Output – Model user performs reasonableness checks on the model outputs before initiating trades • Model Output – Supporting documentation maintained on model outputs and decisions
	<p>(6) Market risk – the risk associated with a change in a derivative contract value due to an adverse movement in price, index, or interest rate</p>	<p>A) Diversification of assets</p> <p>B) Allocation limits on individual asset classes</p> <p>C) Use of tactical asset allocation (TAA) or strategic asset allocation (SAA) models</p> <p>D) Derivative exposure monitoring</p> <p>E) Monitoring of Value at Risk (VaR) and Tracking Error</p>	<ul style="list-style-type: none"> • Use of tactical asset allocation (TAA) or strategic asset allocation (SAA) models • Derivative exposure monitoring
	<p>(7) Liquidity risk (“cash flow needs”) caused by levered positions and/or swap resets</p>	<p>A) Policy to avoid leverage by setting aside cash for notional amount of swap trades</p> <p>B) Cash forecasts (i.e., needs vs. availability)</p> <p>C) Daily collateral required (in liquid assets) from counterparties</p> <p>D) Policy asset allocation limits on illiquid assets (such as private equity and real assets)</p>	<ul style="list-style-type: none"> • Policy to avoid leverage by setting aside cash for notional amount of swap trades • Daily collateral required (in liquid assets) from counterparties
	<p>(8) Counterparty risk – the risk that a counterparty will fail to perform its obligations, or potential loss will occur from over-the-counter (OTC) derivative counterparty’s default</p>	<p>A) Counterparty selection criteria established</p> <p>B) Minimum credit rating required to be TRS counterparty</p> <p>C) Monitoring of counterparty credit rating</p> <p>D) Exposure limit established for each counterparty</p> <p>E) Collateral threshold limits established for each counterparty</p> <p>F) Designation of International Swaps and Derivatives Association (ISDA) counterparties</p> <p>G) Approved broker list</p> <p>H) Netting policies for obligations</p>	<ul style="list-style-type: none"> • Collateral threshold limits established for each counterparty • Designation of International Swaps and Derivatives Association (ISDA) counterparties

Business Objective	Inherent Risks (without considering controls)	Management Controls	Management Controls Tested
	(9) Key person risk – Staff managing derivatives lacks expertise, knowledge, or training and/or departure of key staff	A) Hiring policy requiring qualifications and experience (e.g., minimum qualifications) B) Retention efforts, including career path, compensation, and benefits C) Annual training requirements D) Cross-training of staff E) Written operating procedures	<ul style="list-style-type: none"> Cross-training of staff
	(10) Management risk – management’s inability or unwillingness to supervise or oversee derivative activities	A) IMD organizational structure, including reporting relationship B) Qualifications and experience of IMD directors C) IMC	Not tested
	(11) Operational risk – the risk of human error or deficiencies in the firm’s operating system, including IT systems and applications	A) Reconciliation of derivatives traded B) Use of independent third-party custodian C) Segregation of duties (execution from trade approval) D) Risk measurement and reporting E) Limit to access to designated folders F) Password required to access to files	<ul style="list-style-type: none"> Reconciliation of derivatives traded Use of independent third-party custodian Segregation of duties (execution from trade approval) Limit to access to designated folders Password required to access to files
	(12) Legal risk – a counterparty’s performance obligations will be unenforceable due to legal reasons	A) Use of standard ISDA contracts for swap trades B) Derivatives trades allowed only with ISDA counterparties C) Use of internal and external counsel	<ul style="list-style-type: none"> Use of standard ISDA contracts for swap trades
	(13) Headline risk - TRS' reputation negatively affected by derivative losses caused by internal staff or counterparties	A) No use of exotic or complicated types of derivatives B) Asset allocation and risk limits established C) Monitoring of derivatives exposure and risks D) IMC oversight E) Board reporting on derivative exposure	Not tested
To ensure that derivatives investments are executed as authorized by portfolio managers, settled as executed, and valued in accordance with industry valuation standards	(14) Derivatives are executed (i.e., traded) without authorization from portfolio managers, or not executed as authorized	A) Portfolio manager approval needed for trading B) Trading system controls (different modules established in Bloomberg) C) Bloomberg system access restricts ability to execute derivative trades	<ul style="list-style-type: none"> Portfolio manager approval needed for trading Bloomberg system access restricts ability to execute derivative trades
	(15) Derivatives are traded with unauthorized brokers or counterparties	A) Approved broker list B) Quarterly evaluation of brokers C) Daily compliance tests D) Novation requests before settlement (if executed with unauthorized broker)	<ul style="list-style-type: none"> Approved broker list Quarterly evaluation of brokers
	(16) Settlement risk - Derivative transactions may not be completely or accurately settled in a timely manner	A) Swap trade confirmation B) Pre-settlement monitoring C) Investment Ops and custodian’s reconciliation (by comparing transaction data among Bloomberg, Broker, and Custodian)	<ul style="list-style-type: none"> Swap trade confirmation Investment Ops and custodian’s reconciliation (by comparing transaction data among Bloomberg, Broker, and Custodian)

Business Objective	Inherent Risks (without considering controls)	Management Controls	Management Controls Tested
	(17) Not all derivative positions are captured or accounted for in the system	<ul style="list-style-type: none"> A) Reconciliation of derivatives traded in Bloomberg (i.e., futures and FX forwards) B) Confirmation through swap term sheets C) Custodian's daily and monthly reconciliations D) Daily TRS monitoring of notional value and market value of derivative holdings 	<ul style="list-style-type: none"> • Reconciliation of derivatives traded in Bloomberg (i.e., futures and FX forwards) • Confirmation through swap term sheets • Custodian's daily and monthly reconciliations • Daily TRS monitoring of notional value and market value of derivative holdings
	(18) Derivatives are valued/priced or reported incorrectly	<ul style="list-style-type: none"> A) Mark-to-market policy B) Approved derivatives pricing matrix C) Independently priced by a third party D) Daily TRS monitoring of notional value and market value E) Third party custodian is subject to control reviews (i.e., SSAE 16) F) On-site visits to the custodian 	<ul style="list-style-type: none"> • Approved derivatives pricing matrix • Third party custodian is subject to control reviews (i.e., SSAE 16) • On-site visits to the custodian
	(19) Incorrect asset exposure or risk management decisions caused by wrong derivative valuation	<ul style="list-style-type: none"> A) Independent valuation by a third party B) IMC oversight C) Portfolio manager's review of positions 	<ul style="list-style-type: none"> • Portfolio manager's review of positions
	(20) Fraud risk, including misappropriation of funds (especially during swap resets) or misrepresentation of financial reports	<ul style="list-style-type: none"> A) Designation of ISDA counterparties B) Custody of financial assets by a third party custodian C) Investment Accounting's approval needed for fund movement D) Custodian's FTOP (Fund Transfer Operating Policies), including authorized list for fund transfers E) Internal and external audits 	<ul style="list-style-type: none"> • Designation of ISDA counterparties • Investment Accounting's approval needed for fund movement • Custodian's FTOP (Fund Transfer Operating Policies), including authorized list for fund transfers
	(21) No collateral or incorrect amount of collateral demanded on counterparties	<ul style="list-style-type: none"> A) Collateral threshold established B) Daily collateral report prepared by third party administrator C) Investment Operation's review of daily collateral report 	<ul style="list-style-type: none"> • Collateral threshold established
	(22) TRS valuation policies and procedures are not consistent with industry standards (e.g., incorrect, incomplete, or outdated)	<ul style="list-style-type: none"> A) Investment Accounting's monitoring of industry valuation standards B) Use of external consultant to develop valuation policies C) Valuation Committee oversight 	Not tested
	(23) TRS valuation policies and procedures are not followed	<ul style="list-style-type: none"> A) Oversight by the TRS Valuation Committee B) Investment Accounting's monitoring of valuation service provider 	<ul style="list-style-type: none"> • Investment Accounting's monitoring of valuation service provider
To adhere to changing derivative laws and regulations, including the regulations issued by the Commodity Futures Trading Commission (CFTC) under the requirements of the Dodd Frank Act	(24) Compliance risk – Derivative transactions made were in violation of governing laws, regulations, or policies	<ul style="list-style-type: none"> A) Derivatives policies included in the IPS B) Legal staff's involvement and review of derivatives policies and practices C) Pre-strategy review by IMC D) Compliance checks by State Street and Internal Audit E) Portfolio manager's monitoring F) Quarterly Derivatives Operations Group meetings 	<ul style="list-style-type: none"> • Legal staff's involvement and review of derivatives policies and practices

Business Objective	Inherent Risks (without considering controls)	Management Controls	Management Controls Tested
	(25) TRS receives sanctions, penalties, or fines for violating derivative trade regulations	A) Written compliance policies and procedures B) Internal Legal staff's involvement C) Use of external legal firms	<ul style="list-style-type: none"> • Written compliance policies and procedures
	(26) Counterparties not willing to trade with TRS (since they do not consider TRS a qualified institutional investor)	A) Designation of Qualified Independent Representative (QIR) in response to CFTC regulations B) Suitability assurance provided to TRS counterparties	<ul style="list-style-type: none"> • Designation of Qualified Independent Representative (QIR) in response to CFTC regulations
	(27) TRS loses legislative authority to trade derivatives	A) Proactive communication with legislative leaders B) Internal and external audits – to provide assurance to state leaders that TRS has been using derivatives in accordance with statutory requirements as well as adding value to the fund	Not tested
	(28) TRS derivatives policies are outdated or inconsistent with the requirements of laws and regulations	A) Use of external firm to monitor and stay up to date with derivatives regulations B) Periodic revisions to policies C) Compliance tests	Not tested

RESULTS AND RECOMMENDATIONS

OVERALL RESULTS

Based on the audit test results, we determined that management controls are operating effectively to achieve the business objectives. No significant issues were identified. The positive test results as well as opportunities for management to enhance derivatives-related controls are described below.

POSITIVE RESULTS

A. Controls for IMD's Use of Derivatives

- All derivative types used are authorized as per within the Investment Policy Statement (IPS).
- Derivative models used to aid TAA and SAA personnel in determining potential derivative trades are reviewed by the Managing Director and approved by the IIC or IMC prior to entering production.
- Users of the derivatives models perform checks to ensure that input data is loaded into the model correctly and completely.
- TAA/SAA Model users and Portfolio Managers perform reasonableness checks on the model outputs before initiating and approving trades.
- Bloomberg system access restricts ability to execute derivative trades to authorized individuals on the Trading Team.
- Derivative exposure monitoring is performed to mitigate counterparty, liquidity, and other risks.
- Proper segregations of duties exist to prevent individuals from outside of the TAA/SAA Portfolio Management Teams from initiating and approving derivative trades.
- Proper segregations of duties exist to prevent individuals from outside of the Trading Group from executing derivative trades.

B. Controls for IMD's Reconciliation, Valuation, and Accounting of Derivatives

- Only pre-approved brokers who undergo periodic performance evaluations are used to perform derivative transactions on behalf of TRS.
- Three-way derivative transaction reconciliations are performed on a daily basis by TRS Investment Operation Team and State Street (Custodian) by comparing transaction data among the Bloomberg Trading System, the Broker, and the Custodian.
- Daily TRS monitoring of notional value and market value of derivative holdings.
- Continuous monitoring of Custodian of its reconciliation, valuation, and accounting services via 1) third party Statement on Standards for Attestation Engagement (SSAE) No. 16 reviews, 2) daily interaction with Investment Operations and Investment Accounting, and 3) periodic site visits with Investment Operations and Investment Accounting.
- Collateral thresholds established and monitored by Compliance Team.

- Proper segregation of duties exists to prevent individuals from outside of the Investment Operations Teams from reconciling, valuing, and accounting for derivatives trades.

C. Controls for IMD's Regulatory Compliance of Derivatives

- Legal staff's involvement and review of derivatives policies and practices.
- Written policies and procedures comply with recent Dodd Frank Act regulations.
- Designation of Qualified Independent Representative (QIR) is in place to respond to Commodity Futures Trading Commission (CFTC) regulations.

SIGNIFICANT RESULTS¹

No significant issues and recommendations were identified.

OTHER REPORTABLE RESULTS

1. Establish a formal checklist procedure to help ensure consistent usage of the TAA Model

Results of our testing indicated the TAA Model for Derivatives lacks a written checklist of procedures to be performed as routine modeling activities progress. As a result, process steps may be missed if the regular TAA team member is unavailable to run the TAA model and another TAA team member is required to do so.

Recommendation

We recommend that TAA management establish a TAA Model written checklist to ensure consistency of model execution on a daily basis and across backup team members.

Management Responses

Management agrees with the recommendation. We will implement a written checklist that outlines all the steps to running the TAA model for derivatives. We expect to complete this checklist by June 2013.

2. Derivative model files should be password-protected

Results of our testing indicated the TAA Model, Hedge Fund Replication (HFR) Model, Quantitative Vector Fund (QVF) Model, Enhanced Commodity Alpha Strategies (ECAS) Model, and Derivative Trade Automated Program (DTAP) Tool are not password protected. As a result, access to view and update these models may be compromised if 1) access to the network folder is also compromised, and 2) the models are distributed to unauthorized individuals.

¹ 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.

Recommendation

To add an extra layer of security, we recommend that the TAA Model, HFR Model, QVF Model, ECAS Model, and DTAP Trading Tool are updated to include password protection at the file level. The password should: (1) only be known to users on a need to know basis, (2) should be changed periodically, and (3) should be changed as users change roles/positions in the organization and no longer need to access these files. In addition, we recommend that the IMD establish procedures to ensure appropriate controls over high risk spreadsheet files included in the TAA and SAA folders are in place and applied consistently. Procedures should include processes for identifying, inventorying, classifying, and protecting high risk spreadsheets on an ongoing basis.

Management Responses

Management agrees with the recommendations. We will implement password protection on the TAA Model, HFR Model, QVF Model, ECAS Model and DTAP Trading Tool. We will also establish procedures to protect high risk spreadsheets included in the TAA and SAA folders. We expect to complete these by August 2013.

3. Further restrict network folder level access to Derivative model files

Results of our testing indicated the folders that maintain TAA Model files could be further restricted to only TAA management and staff personnel. Currently, there are no individuals outside of the IMD that have access to these folders; however, there are individuals within the IMD that do not require access to these folders. As a result, there is potential for someone from the IMD that does not need access to the folders to maliciously or accidentally view, modify, or delete the TAA model files.

Recommendation

We recommend that TAA management coordinate with Enterprise IT to further restrict access to the network folders that maintain important TAA files, including TAA model files. In addition, we recommend that the IMD implement a process to re-evaluate and remove unnecessary network folder access when user access requirements change because of a reorganization or personnel role change.

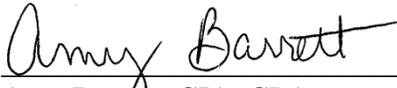
Management Responses

Management agrees with the recommendation. We will restrict access to the TAA network folder to only authorized individuals. We expect to complete this recommendation by April 2013.

Results of our testing indicated the Hedge Fund Replication Model inputs are not saved. As a result, it would be difficult to try to replicate the results of the model for further testing and/or model validation purposes. Management has indicated to us that they have already identified the need to save model inputs and are taking steps to do so. Therefore, we have no recommendations at this time.

* * * * *

We appreciate IMD and Legal Services management and staff for their cooperation, courtesy, and professionalism extended to us during this audit. We also appreciate support provided by staff from the custodian (State Street Bank).



Amy Barrett, CIA, CPA
Chief Audit Executive



Hugh Ohn, CFA, CIA, CPA, FRM
Director of Investment Audit and Compliance



Brian Gomolski, CIA, CPA
Senior Investment Auditor

APPENDIX A

AUDIT OBJECTIVE, SCOPE, METHODOLOGY, AND CONCLUSION

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.

AUDIT OBJECTIVE

The audit objective was to determine whether internal controls are in place and are working effectively to achieve the business objectives stated below and mitigate significant risks to meeting those objectives.

- To generate target excess returns (“alpha”) and manage investment risk in an efficient manner, through the use of authorized types of derivatives, by applying portfolio overlay strategies to various policy asset classes
- To ensure that derivatives investments are executed as authorized by portfolio managers, settled as executed, and valued in accordance with industry valuation standards
- To adhere to changing derivative laws and regulations, including the regulations issued by the Commodity Futures Trading Commission (CFTC) and the Securities and Exchange Commission (SEC) under the requirements of the Dodd Frank Act

SCOPE

The scope of the audit included derivatives transactions executed during calendar year 2012.

METHODOLOGY

Our methodology included obtaining information on management’s business objectives and risks, and focused on key processes and monitoring controls that management has established to address significant risks. To meet the audit objectives, we specifically performed the following procedures:

- Verified existence of written memo describing planned use for a new derivative type
- Verified Internal Investment Committee (IIC) review and approval of new derivative types
- Verified that the Investment Policy Statement (IPS) states approved types of derivatives and parameters for permitted uses
- Verified portfolio manager approval for derivative trades

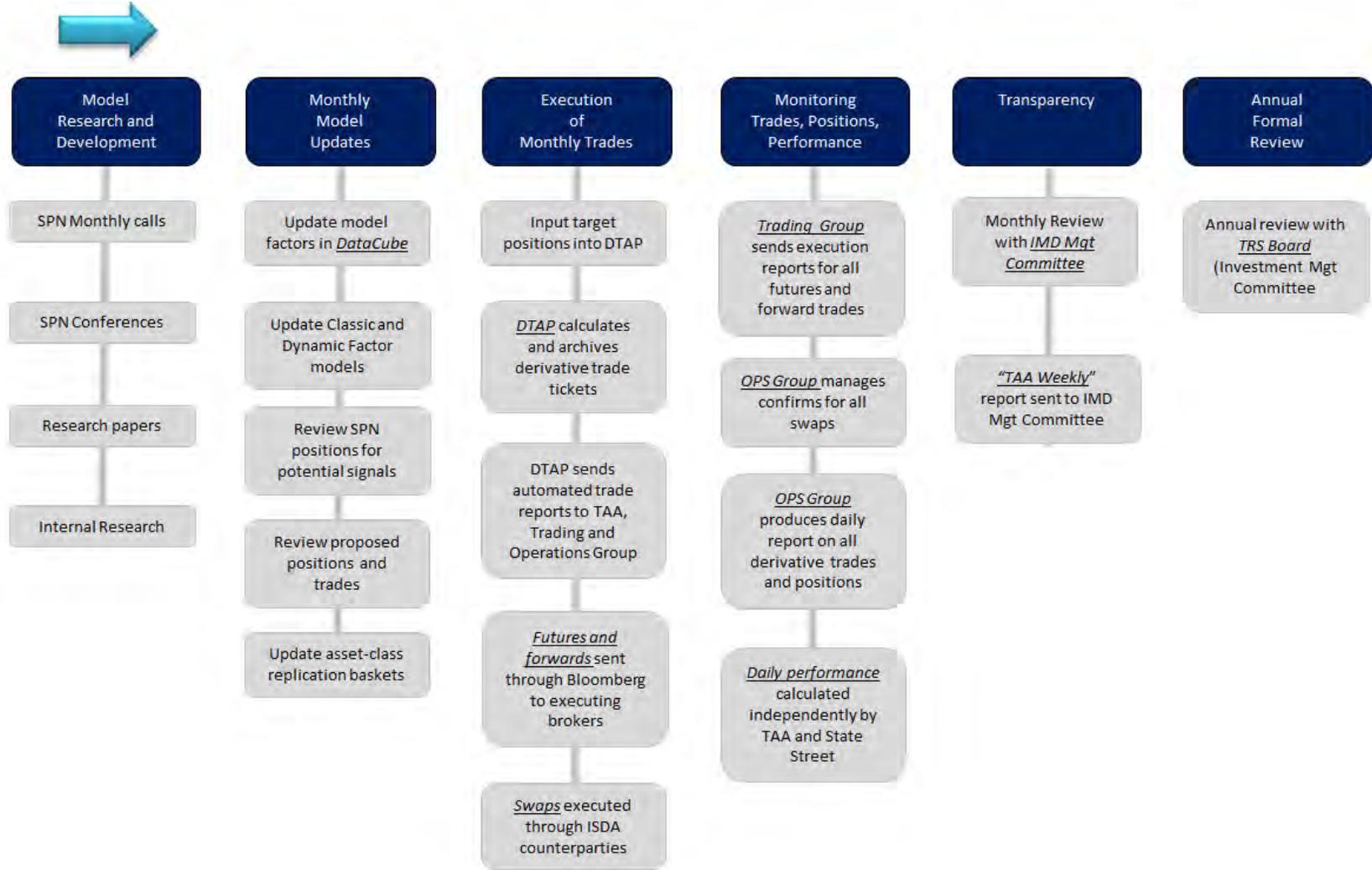
- Verified routine monitoring of derivative compliance by State Street
- Observed and test use of investment management models to create derivative strategies
- Verified that derivative exposure is properly monitored
- Verified Investment Operations' monitoring of daily collateral posting process
- Reviewed State Street SSAE 16 report for properly audited custodial controls
- Verified that individuals with authority to execute trades can't approve trades and vice versa
- Verified that only authorized users are able to access designated network folders
- Verified that key documents are password protected
- Verified use of standard International Swaps and Derivatives Association (ISDA) contracts with authorized ISDA counterparties
- Inspected Bloomberg system access controls
- Verified that brokers receive periodic evaluations
- Verified that TRS monitors notional and market values of derivatives
- Inspected approved derivatives pricing matrix and compare to confirmed trade prices
- Observed Investment Operations' and custodian's daily trade reconciliations
- Selected sample swap reset amounts and verified Investment Accounting's approval
- Verified existence of written compliance policies and procedures related to derivative trade regulations and violations
- Verified designation of Dodd-Frank Qualified Independent Representative (QIR)

CONCLUSION

Based on the audit work, we determined that management controls are operating effectively to achieve business objectives. No significant issues were identified. However, we identified opportunities to enhance controls related to: (a) developing a checklist to ensure consistent usage of the Tactical Asset Allocation Model, (b) password-protecting derivative model files, and (c) further restricting access to the network folders containing derivative model files.

APPENDIX B

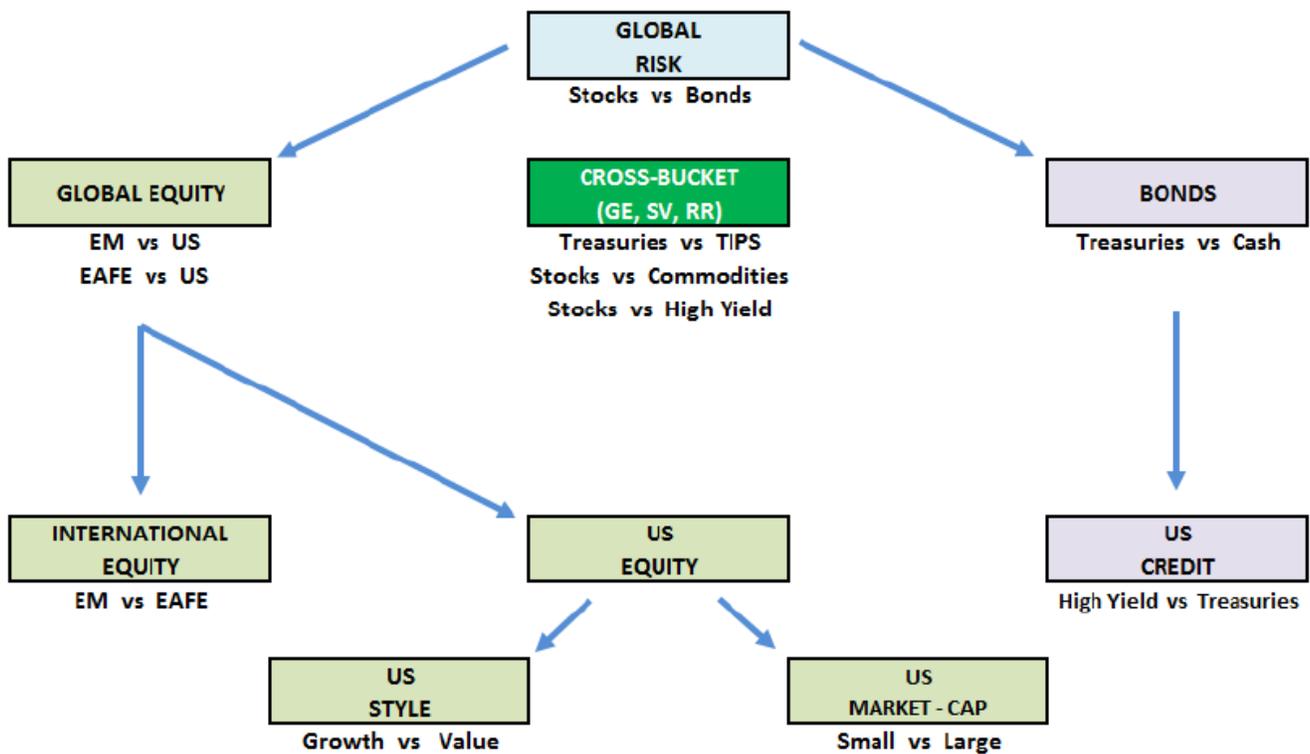
Investment Process Tactical Asset Allocation



APPENDIX C

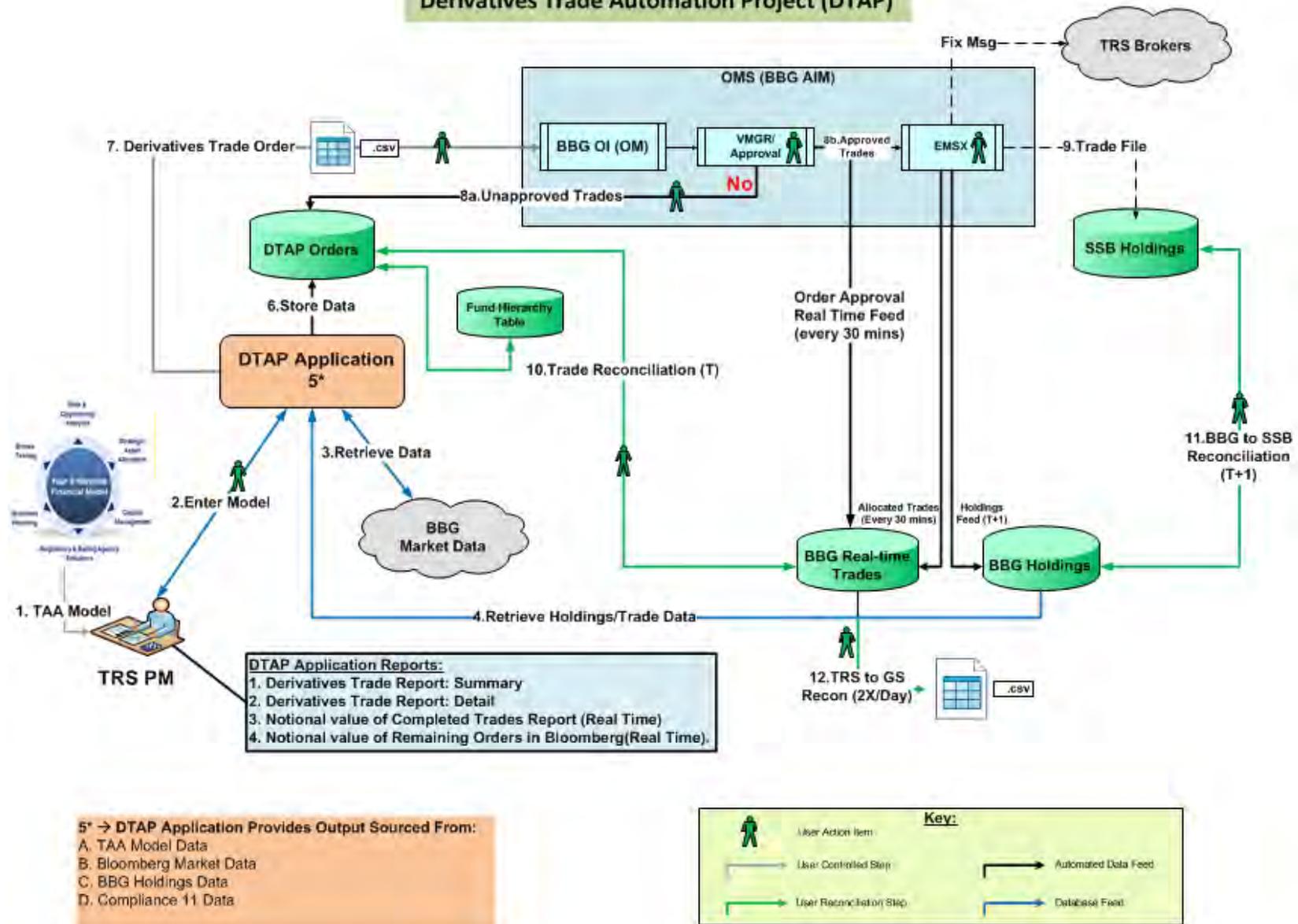
TACTICAL ASSET ALLOCATION (TAA) MODEL FRAMEWORK

- 11 asset class pair models
- Factor-based, updated monthly



APPENDIX D – Derivatives Trading Process

Derivatives Trade Automation Project (DTAP)



TAB 4B

QUARTERLY INVESTMENT TESTING
INVESTMENT POLICY STATEMENT (IPS), SECURITIES LENDING POLICY (SLP), WIRE TRANSFER PROCEDURES
CALENDAR QUARTER ENDED DECEMBER 31, 2012, EXCEPT AS NOTED

Business Objectives	1. <u>Board Reports</u> All required information is reported to the TRS Board of Trustees	2. <u>Investment Selection and Approval</u> Investments made are within delegated limits and established selection criteria	3. <u>Other (IPS, SLP, wire transfers, other reporting)</u> Risk limits are followed for other investment programs and activities	4. <u>Monitoring by Investment Compliance Specialist</u> Investment activities comply with IPS (for the four months ended February 28, 2013)
Business Risks	Board is not informed of key investment decisions and critical information	Approvals and fundings exceed delegated limits	Risks exceed Board established tolerances	Noncompliance is undetected or not timely resolved
Management Assertions	All required reports are made to the Board	Approvals and fundings are within limits and made for qualified managers	Programs are within risk limits	Investment activities comply with investment policies (proxy, securities lending, IPS)
Agreed-Upon Procedures	<ul style="list-style-type: none"> Compare Board reports to IPS requirements Obtain underlying supporting documentation for the following reports: <ul style="list-style-type: none"> - Derivatives - Risk Limits - Leverage 	<ul style="list-style-type: none"> Vouch Internal Investment Committee (IIC) approved investments to supporting documentation Verify approval limits of new investments 	<ul style="list-style-type: none"> Validate monitoring of securities lending program Validate IMD obtained reporting requirements of new managers/funds and summarized results Obtain senior management disclosures about known compliance violations Test supporting documentation for wire transfers 	Perform various compliance checks and monitor State Street's daily compliance reports
Test Results	<ul style="list-style-type: none"> All reporting requirements met Documentation provides support for reports tested 	<ul style="list-style-type: none"> All supporting documentation exists All new approved investments were within authorized limits 	<ul style="list-style-type: none"> All other IPS and SLP requirements are met Investment Accounting – Callback for one wire transfer for \$90,000 did not occur 	No exceptions
Management Responses	None	None	Investment Accounting agrees with the finding and has started working with State Street to remedy the issue.	None

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

March 19, 2013

Britt Harris, Chief Investment Officer
Don Green, Chief Financial Officer

We have completed the **Quarterly Investment Testing** of compliance with the requirements of the Investment Policy Statement (IPS), Securities Lending Policy (SLP), and procedures for wire transfers as included in the *Fiscal Year 2013 Audit Plan*.

We performed the procedures listed below that were agreed to by management of the Investment Management Division (IMD). These procedures include tests that supplement the current compliance monitoring procedures performed by State Street and the Senior Investment Compliance Specialist.

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.

The results of our testing indicated that all compliance and procedural requirements have been met, except for the following:

- A callback from State Street to TRS did not take place per TRS' instructions for one selected Russian wire for \$90,000.

Our testing procedures and results are included in **Appendix A**. The monitoring results of the Investment Compliance Specialist are included in this report in **Appendix B**.

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 and Investment Accounting for their cooperation and professionalism shown to us during this quarterly testing.



Amy Barrett, CIA, CPA
Chief Audit Executive



Brian T. Gomolski, CIA, CPA
Senior Investment Auditor



Hugh Ohn, CFA, CPA, CIA, FRM
Director of Investment Audit and Compliance

APPENDIX A

AGREED-UPON PROCEDURES AND RESULTS

STEP #	OBJ. #	TEST PURPOSE	TEST DESCRIPTION	TEST RESULT	MANAGEMENT RESPONSE
1	2	IPS Article 1.5 and Government Code Section 825.301 (Sudan) – Obtain evidence that required Sudan reports filed	Determine whether TRS filed an annual report of Sudan investment activity by December 31, 2012 with presiding officer of each house of the legislature, the attorney general, and US presidential special envoy to Sudan	Confirmed that the report was filed with the required parties by December 31, 2012	No response required
2	1	IPS Article 1.7 – Verify that all requirements were reported to Board of Trustees	<ul style="list-style-type: none"> • Obtain copies of all reports required to be reported to Board of Trustees and compare to reporting requirements per Investment Policy Statement (IPS) • Semi-annually, select the following reports and obtain supporting documentation: <ul style="list-style-type: none"> 1.7f – Derivatives 1.7g – Risk limit 1.7i – Gross and net leverage derived from hedge fund and strategic partners 	<ul style="list-style-type: none"> • Reports contained the required reporting information • Supporting documentation existed for the reports selected for testing 	No response required
3	2	IPS Article 3.3f – Obtain evidence of existence of IMD's prudent underwriting objectives for advisor's due diligence	Select sample of Private Markets 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 IIC materials	No response required
4	2	IPS Article 6 – Verify sample of approved investments in emerging managers meet requirements	Test sample of approved investments and verify each is independent private investment management firm with less than \$2 billion, has a performance track record as a firm of less than 5 years, or both	Investments tested are independent private investment management firms with less than \$2 billion or have a performance track record as a firm that is no more than 5 years or both	No response required
5	2	IPS Article 9.3d – Obtain evidence of IMD's examination of	Confirm securities lending agent is an organization rated A- or better by a Nationally Recognized Statistical	Reviewed the Daily Derivatives Report as of December 31, 2012 and noted that the rating for State Street was A- or	No response required

STEP #	OBJ. #	TEST PURPOSE	TEST DESCRIPTION	TEST RESULT	MANAGEMENT RESPONSE
		requirements of its securities lending agent	Rating Organization (NRSRO)	better per Moody's, Fitch, and Standard and Poor's	
6	2	IPS Article 9.9 – Obtain evidence that leverage used meets requirements	<ul style="list-style-type: none"> • Obtain evidence that leverage was used only as authorized • Inquire if any risk parameters were exceeded, and if so was the limit caused by leverage 	Reviewed the Risk Committee presentation from September 2012 and noted no exceptions	No response required
7	2	IPS Article 11 - Verify existence of placement agent questionnaire for each new investment selected for testing and test for inclusion in summary report to Board	<ul style="list-style-type: none"> • For each investment selected for testing, verify that IMD obtained responses to the questionnaire • Determine that IMD compiled responses to the questionnaires and reported all results to Board at least semi-annually 	Each investment tested had a completed questionnaire and was included in the summary report to the Board	No response required
8	2	IPS Appendix B – Verify sample of investments approved are within policy limits	<ul style="list-style-type: none"> • Select sample of approved investments and obtain tear sheet for each, observe whether the approved amounts are within authorized limits: <ul style="list-style-type: none"> a) Initial allocation – .50% b) Additional or follow-on – 1% c) Total Manager Limits – 3% d) Total limit each manager organization – 6% • Obtain documentation from IMD staff that supports the calculations of the authorized limits • Inquire if any “Special Investment Opportunities” were made for the quarter, and if so: <ul style="list-style-type: none"> a) Obtain documentation that the Special Investment Opportunity was either a distressed situation or market dislocation b) Obtain documentation that the CIO notified the Executive Director (ED) of each Special Investment Opportunity c) Obtain documentation that CIO and ED requested comments 	For the sample selected for testing, no manager or partner organization exceeded the authorized limits and documentation existed for IMD staff calculations of authorized limits. There were no investments in Special Investment Opportunities.	No response required

STEP #	OBJ. #	TEST PURPOSE	TEST DESCRIPTION	TEST RESULT	MANAGEMENT RESPONSE
			<p>from chairman of appropriate Board committee and TRS consultants and advisers</p> <p>d) Verify Special Investment Opportunity did not exceed \$1 billion</p> <p>e) Verify that no further investment in a Special Investment Opportunity was made until Board reauthorized CIO's authority to designate a Special Investment Opportunity.</p>		
9	4	Compliance Report of Senior Investment Compliance Specialist (SICS) – Verify with SICS that all other policy requirements were met	Obtain the investment compliance report from the Senior Investment Compliance Specialist (SICS) of other non-compliance issues as a result of the custodian's monitoring procedures	Obtained the investment compliance report. Refer to Appendix B.	Refer to Appendix B
10	3	Quarterly Disclosures – Verify all known compliance violations have been reported	Send request for disclosure to IMD management, Legal Investment staff, and CIO requesting disclosure of any known compliance violations during testing period	Obtained all disclosures from IMD management, Legal Investment staff, and CIO of any known compliance violations during testing period and there were no additional disclosures.	No response required
11	3	Test authorizations of wire transfers – Verify wire transfers are authorized and properly supported	Obtain wire transfer reports for testing period, select sample of wire transfers, and verify that supporting documentation exists for each	All wire transfers tested were properly authorized and correct amounts were wired. However, a callback from State Street to TRS did not take place for one selected Russian trade wire for \$90,000 per TRS' instructions. Investment Accounting Group (located outside the IMD) is responsible for approving and monitoring wire transfers.	TRS Investment Accounting agrees with the recommendation. State Street incorrectly followed their internal policy threshold for when a callback on pre-settlement fundings is required rather than TRS's policy that all such fundings require a callback. TRS has reviewed the new Funds Transfer Origination Policy (FTOP) with State Street. Additionally, the TRS callback group has clarified internal procedures to ensure that Investment Accounting verifies that all required callbacks take place.

Note: Testing procedures for the Investment Policy Statement (IPS), Securities Lending Policy (SLP), and wire transfers are for the activity for the quarter ending December 31, 2012, except as noted.

APPENDIX B

COMPLIANCE WITH INVESTMENT AND RELATED POLICIES As of and for the four months ended February 28, 2013

Policy	Compliance Exceptions	Reportable Exceptions	Management Responses
Investment Policy Statement (IPS)	No	None	N/A
Securities Lending Policy (SLP)	No	None	N/A
Proxy Voting Policy	No	None	N/A

-  Unsatisfactory progress is being made or there have been significant delays in resolving issue.
-  Timely or satisfactory progress is being made toward resolving issue.
-  No exception or satisfactorily resolved issue.

TAB 4C

CONFIDENTIAL PRIVATE DOCUMENT - NOT SUBJECT TO PUBLIC
DISCLOSURE - GOVERNMENT CODE 552.139 relating to exception to disclosure for
government information relating to security issues for computers.

TAB 4D

Telephone Counseling Center Performance Measures Audit

March 2013

Outsourced Audit for TRS Internal Audit Department by Myers and Stauffer, LC

Audit Objectives	<p>Determine whether the calculation of the Average Speed of Answer (ASA) performance measure is in accordance with the methodology presented in the TRS Strategic Plan or a reasonable approximation of that methodology.</p>	<p>Determine whether Telephone Counseling Center (TCC) governance is effective in managing speed of answer by benchmarking current call center processes, data collected, and call center software functionality with industry practice and the available functionality of the existing software.</p>
Audit Scope	<ul style="list-style-type: none"> • TRS's TCC and related applications supporting the ASA performance measurement • Siemens Communications, Inc. (Siemens) who provides the application that supports performance measurement of the ASA • Activities and calculations from September 1, 2011 - September 30, 2012 	
Audit Methodology	<ul style="list-style-type: none"> • Interviews with TRS management and staff and Siemens employees • Review of policies and procedures for the ASA measure • Analysis of Siemens application data • Recalculation of selected ASA measure data • Examination of industry best practices for managing call centers • Observation of TCC management processes 	
Results	<p>Issues with information accuracy produced by Siemens application made reported ASA figures unreliable during fiscal year 2012 and September 2012.</p>	<p>Telephone Counseling Center governance is effective in managing ASA. Service level is a more commonly used measure for call center wait times.</p>
Recommended Actions	<ul style="list-style-type: none"> • Investigate using a data source without known problems, or disclose issues with accuracy in reported data • Continue working with Siemens to correct causes of errors affecting ASA data • Assess running additional analytical procedures prior to and after upgrades to help identify any introduced errors 	<ul style="list-style-type: none"> • Evaluate service level as a more suitable performance measure. If so: <ul style="list-style-type: none"> ○ Coordinate with entities to change from ASA measure to service level measure ○ Identify realistic service level measure performance goal considering resources & client needs
Management Responses	<p>Management agrees and has incorporated disclosure statements on TCC reports and other reports as applicable. We continue to work with Siemens to correct errors affecting ASA data and we will run pre- and post-upgrade reports to identify errors.</p>	<p>Management agrees and will analyze the suitability of service level as a performance measurement tool. If service level is an appropriate measure, we will coordinate with the necessary entities to move from the ASA to the service level measure.</p>

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

**Independent Accountant's Report on
An Audit of Call Center Performance Measures
For the Teacher Retirement System of Texas**

For the Period September 1, 2011 through September 30, 2012



*To the Executive Director of the Teacher Retirement System of Texas
Austin, Texas*

Myers and Stauffer LC has completed the Audit of Call Center Performance Measures under the master contract K201300145 with the Teacher Retirement System of Texas (TRS). This audit was performed under Engagement Release Order #3, effective January 2, 2013. Our audit covered the period of September 1, 2011 through September 30, 2012.

We conducted this audit in accordance with the performance audit provisions of *Generally Accepted Government Auditing Standards (December 2011 revision)* 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. *Government Auditing Standards* require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our 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. Management responses from TRS are included in this report. We did not audit their responses and, accordingly, we do not provide any assurances on them.

This report is intended solely for the information and use of TRS management and its Board and is not intended to be, and should not be, used by anyone other than the specified party.

If we can be of any assistance to you, or if you have any questions concerning this report, please contact us.

Sincerely,

Myers and Stauffer LC

January 14, 2013

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EXECUTIVE SUMMARY

Introduction

The Teacher Retirement System of Texas (TRS) operates a Telephone Counseling Center (Counseling Center) that answers inquiries from active members, retirees, payment beneficiaries, employers, and financial representatives. Related to the operations of the Counseling Center, TRS reports Average Customer Hold Time, also known as Average Speed of Answer (ASA), to the Legislative Budget Board as one of its key performance measures.

TRS uses Siemens OpenScope Contact Center to capture call data and to calculate the ASA performance measure. From September 2011 through September 2012, TRS experienced issues with the OpenScope Contact Center application and internal issues that made reported results for the ASA measure unreliable.

The purpose of this report is to provide a summary of the results of our audit of TRS's reported results for the ASA measure and of TRS's processes for managing the Counseling Center.

Summary of Objectives, Scope, and Methodology

The objectives of this audit were to:

- Determine whether the calculation of the key performance measure for Average Speed of Answer is in accordance with the methodology presented in the TRS Strategic Plan or a reasonable approximation of that methodology. Provide recommendations for enhancements to improve controls and increase accuracy of the Average Speed of Answer performance measure.
- Determine whether Telephone Counseling Center governance is effective in managing speed of answer by benchmarking current call center processes, data collected, and call center software functionality with industry practice and the available functionality of the existing software. Provide recommendations for enhancements to decrease ASA or otherwise improve management of TCC operations related to ASA.

We performed this audit in accordance with the performance audit provisions of the Government Auditing Standards (2011 revision) 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..

The scope of this audit covered:

- A. TRS's Telephone Counseling Center and related applications supporting performance measurement of Average Customer Hold Time for Calls Received on Toll Free Line (In Minutes) also referred to as Average Speed of Answer.
- B. Siemens Communications, Inc. (Siemens) who provides the application that supports performance measurement of Average Customer Hold Time for Calls Received on Toll Free Line (In Minutes) also referred to as Average Speed of Answer.

- C. The time frame of the assessment covered activities and calculations for the period September 1, 2011 through September 30, 2012.

Our methodology included interviews of TRS management and staff and Siemens employees, review of policies and procedures for preparing the ASA measure, analysis of data from the Siemens OpenScape Contact Center application, recalculation of the ASA measure for selected months, examination of industry best practices for managing call centers, and observation of TRS Counseling Center management processes.

Summary of Findings and Recommendations

As a result of our audit procedures we found that:

- Issues with the accuracy of information produced by the OpenScape Contact Center application made ASA figures reported based on information from OpenScape Contact Center unreliable during fiscal year 2012 and September 2012.
- Telephone Counseling Center governance is effective in managing Average Speed of Answer.
- Service level is a more commonly used measure for call center wait times. An example of service level would be “eighty percent of calls are answered within four minutes.”

We recommend that Management of the Counseling Center:

- Investigate the feasibility of calculating and reporting the ASA measure based on a data source without known problems. If such a data source cannot be identified, disclose in all performance measure reports the known issues with the accuracy of the reported results.
- Continue to work with Siemens to identify and correct the causes of errors in OpenScape Contact Center affecting the ASA measure.
- Given the history of problems with OpenScape Contact Center, assess whether there are additional analytical procedures that could be performed such as running management reports more frequently prior to and following an OpenScape Contact Center upgrade as an additional “early warning mechanism” to identify possible errors introduced into the software.
- Evaluate the suitability of measuring service level as a tool for managing Telephone Counseling Center performance. If management determines that service level is a more suitable measure, management should:
 - Coordinate with the Legislative Budget Board and other entities as necessary to change from using the Average Speed of Answer Measure to using a service level measure.
 - Identify realistic service level measure performance goals, taking into consideration available resources and client needs.

We obtained Management Responses from management of the TRS Telephone Counseling Center, included within the report. Management generally agreed with our findings and recommendations. We did not audit their responses and, accordingly, we do not provide any assurances on them.

BACKGROUND INFORMATION

The Teacher Retirement System (TRS) Telephone Counseling Center (Counseling Center) provides information about TRS services and benefits to active members, retirees, payment beneficiaries, employers, and financial representatives. The Counseling Center operates from 7 am to 6 pm Monday through Friday. The Counseling Center is staffed with 35 full time equivalent positions. Counselors provide customer service and information to active members, retirees, payment beneficiaries, employers, and financial representatives regarding service credit and purchases of service credit, refunds, retirement, account balances, changes in policy, health benefits, and other areas related to the mission of TRS.

TRS uses the measure *Average Customer Hold Time for Calls Received on Toll Free line (in Minutes)* as part of its process for managing Counseling Center performance. The measure definition according to the TRS Strategic Plan states that:

“The measure provides the average time (in minutes) it takes for a telephone call received through the toll-free telephone line to be answered by a TRS Benefits Counselor after the call is released from the automated telephone system.”

Average Customer Hold Time is also referred to as Average Speed of Answer (ASA). TRS reports its results under this performance measure to the Legislative Budget Board.

TRS uses Siemens OpenScape Contact Center Enterprise Version 8 (OpenScape) to manage call center processes. OpenScape is also the primary data source for information used to calculate the ASA measure. In addition to OpenScape, TRS uses Witness Call Recording and Monitoring software and internally developed applications, including Benefit Counseling Dashboard and Benefit Counseling Reporting, for managing Counseling Center operations.

DETAILED FINDINGS

Chapter 1:

Issues with the accuracy of information produced by the OpenScape Contact Center application made ASA figures reported based on information from OpenScape Contact Center unreliable during fiscal year 2012 and September 2012.

The Teacher Retirement System of Texas uses Siemens OpenScape Contact Center (OpenScape) for managing Counseling Center call flow. In addition, OpenScape captures data on call times and speed of answer. Counseling Center management uses this information from OpenScape to calculate and report results to the Legislative Budget Board for the measure Average Customer Hold Time for Calls Received on Toll Free Line (In Minutes), more commonly referred to as Average Speed of Answer (ASA). According to the TRS Strategic Plans for Fiscal Years (FY) 2011 through 2015 and 2013 through 2017, this measure is defined as follows:

“This measure provides the average time (in minutes) it takes for a telephone call received through the toll-free telephone line to be answered by a TRS Benefits Counselor after the call is released from the automated telephone system.”

The Texas State Auditor’s Office *Guide to Performance Measure Management 2012 Edition* emphasizes that to be effective a performance measure management system must produce accurate and reliable information over time.

In order to determine whether the calculation of the ASA performance measure is in accordance with the methodology presented in the TRS Strategic Plan or a reasonable approximation of that methodology, we:

- Interviewed Siemens personnel to gain an understanding of how OpenScape captures call data and performs calculations.
- Interviewed TRS personnel to gain an understanding of how they use OpenScape to produce the final values reported for the ASA measure.
- Reviewed TRS policies and procedures and system documentation for OpenScape.
- Performed recalculations of the ASA figures produced by OpenScape for the months of November 2011, August 2012, and September 2012.

Our audit procedures found the following.

In June 2011, TRS upgraded their OpenScape software from version 7 to version 8. Following the upgrade, during fiscal year 2012 and continuing into September 2012 and beyond, TRS experienced a number of issues with OpenScape indicating that the call information produced by OpenScape was not accurate. TRS identified that there were issues with the accuracy of information from the OpenScape application, communicated its concerns to Siemens, and worked with Siemens throughout this period to attempt resolution of the issues. Siemens attributed the issues to programming errors. The issues TRS identified included that the calculated figures OpenScape produced for ASA were incorrect. TRS identified this issue in February 2012, and escalated it to Siemens at that time.

During our recalculations of the ASA measure, we performed the following procedures:

- Attempted to trace the detailed call data captured by OpenScape to the aggregate data that OpenScape calculates and records from the detailed data.
- Traced the aggregate data to the Monthly Queue Summary Reports, which serve as the basis for TRS's reported results.

Our recalculations and subsequent inquiries of TRS and Siemens personnel confirmed the issues with the inaccuracy of the ASA measure identified by TRS during fiscal year 2012, and determined that the ASA measure was not being calculated correctly by OpenScape as of September 2012.

Furthermore, our procedures indicated that:

- OpenScape calculated the ASA results on the Monthly Queue Summary Reports from the aggregate data using procedures consistent with OpenScape's intended formulas
- When we attempted to recreate the aggregate data from the detailed call data, we could not reproduce OpenScape's aggregate data from the detailed call data.
- The errors encountered in OpenScape, including those that still exist as of September 2012, cause the ASA measure to be calculated as a higher average time than the actual ASA.

We concluded that the errors in the ASA measure occur when OpenScape produces aggregate data from the detailed call data. The inaccuracies in the reported ASA figures appear to be the result of programming errors in the OpenScape Contact Center application code. As of the completion of our audit fieldwork, TRS was continuing to work with Siemens to ensure correction of the errors in OpenScape.

During FY 2012, rather than reporting the ASA measure using the calculations from OpenScape, TRS implemented alternate procedures to calculate and report the ASA performance measure based on internally generated data in an attempt to improve the accuracy of the reported ASA numbers. We interviewed TRS personnel regarding their alternate procedures, examined documented guidance for performing the alternate procedures, and re-performed TRS's calculations based on their alternate procedures. While TRS's alternate procedures were consistent with the performance measure definition, because the alternative procedures relied in part on data from the OpenScape application that may be inaccurate, the ASA figures reported from the alternative procedures may also be inaccurate.

Internal errors with TRS applications and systems also contributed to inaccuracies in reported figures for the ASA measure during FY 2012. For example, a programming error in the Benefits Center Dashboard, an internally developed application, resulted in source data used to calculate the ASA measure during part of FY 2012 being inaccurate. A loss of synchronization of system time between certain workstations and servers also contributed to inaccurate ASA measure reporting during part of FY 2012. TRS management identified and corrected these issues prior to the start of our audit fieldwork.

Recommendations

We recommend that TRS:

- Investigate the feasibility of calculating and reporting the ASA measure based on a data source without known problems. If such a data source cannot be identified, disclose in all performance measure reports the known issues with the accuracy of the reported results.

- Continue to work with Siemens to identify and correct the causes of errors in OpenScape affecting the ASA measure.
- Given the history of problems with OpenScape, assess whether there are additional analytical procedures that could be performed such as running management reports more frequently prior to and following an OpenScape upgrade as an additional “early warning mechanism” to identify possible errors introduced into the software.

Management Responses:

Management is in agreement with these recommendations. We have already incorporated disclosure statements on monthly Telephone Counseling Center reports with the known issues regarding the accuracy of the reported results. Any additional reports that may be produced will also contain such disclosure as long as it is needed. Information Technology (IT) Department management continues to work with Siemens to identify and correct the causes of errors in OpenScape affecting the ASA measure. This dialog is ongoing. We further agree with the recommendation to run management reports more frequently prior to and following upcoming OpenScape updates to identify possible errors introduced into the software. This will be a combined effort between the Benefit Counseling and IT Departments. The first opportunity for implementation is with the next update tentatively expected by May 2013. We would follow the same procedures for any subsequent updates.

Chapter 2:

Telephone Counseling Center governance is effective in managing Average Speed of Answer. Service level is a more commonly used measure for measuring call center wait times.

The Teacher Retirement System (TRS) Telephone Counseling Center (Counseling Center) provides information about TRS services and benefits to active members, retirees, payment beneficiaries, employers, and financial representatives. The Counseling Center operates from 7 am to 6 pm Monday through Friday. The Counseling Center is staffed with 35 full time equivalent positions. Counselors provide customer service and information to active members, retirees, payment beneficiaries, employers, and financial representatives regarding service credit and purchases of service credit, refunds, retirement, account balances, changes in policy, health benefits, and other areas related to the mission of TRS.

TRS uses Siemens OpenScape Contact Center Enterprise Version 8 (OpenScape) to manage Counseling Center processes. OpenScape is also the primary data source for information used to calculate the Average Speed of Answer (ASA) measure. In addition to OpenScape, TRS uses Witness Call Recording and Monitoring software and internally developed applications, including Benefit Counseling Dashboard and Benefit Counseling Reporting, for managing Counseling Center operations.

We performed the following procedures during our assessment of Counseling Center governance processes:

- Examined policies and procedures for management and operation of the Telephone Counseling Center.
- Interviewed management and staff of the Telephone Counseling Center.
- Toured the Telephone Counseling Center.
- Observed counselors using the Benefits Counseling Dashboard application.
- Observed the functions available and in use in OpenScape Contact Center and Benefits Counseling Dashboard for scheduling telephone counselors and monitoring productivity.
- Listened to a sample of counselors taking calls using the Witness Call Recording and Monitoring software.
- Reviewed and validated the methodology used by Counseling Center management for estimating the need for additional staffing.
- Analyzed Counseling Center data from OpenScape and TRS's internal data to identify trends in call volumes and wait times.
- Reviewed the available functionalities of the OpenScape software versus what is in use to determine if there were opportunities for further improving ASA.
- Researched industry standard benchmarks for measuring and managing call center performance to identify industry standard and best practices. Sources used include:
 - TRS Strategic Plan Performance Measure definition
 - "Benchmarking and Definitions within Contact Centres" study from Scottish Government
 - Defined Benefit Administration Benchmarking Analysis
 - CEM Benchmarking Inc Pension Call Centers Business Process Review and Best Practices
 - Lieber and Associates Study "Inbound Metrics"
 - NAQC Issue Paper: *Call Center Metrics: Best Practices in Performance Measurement and Management to Maximize Queue Efficiency and Quality*

- Examined documentation by Counseling Center management to resolve problems they encountered with the accuracy of the Average Speed of Answer (ASA) measure

We found that TRS's governance processes for the Counseling Center are effective overall in managing ASA. Strengths we noted in TRS's governance processes for the Counseling Center include:

- Use of the capabilities of the OpenScope and Benefit Counseling Dashboard applications for scheduling counselors and monitoring productivity and performance.
- Distribution and periodic updating of a Schedule Adherence document, detailing each counselor's responsibilities for adhering to their prescribed schedule.
- Availability of a customer satisfaction survey for callers using the Counseling Center.
- Periodic (generally monthly) meetings between counselors and Counseling Center team leads to discuss performance, including schedule adherence.
- Use of call monitoring software and call evaluation scorecards to ensure counselors maintain quality of service in answering calls.
- Use of a Top Gun program to reward high performing counselors.
- Distribution of "Max Facts" bulletins to keep counselors informed of information that needs to be provided to customers of the Counseling Center.
- Use of industry standards methods and formulas for estimating additional staffing needs for the Counseling Center.
- Taking action to correct issues encountered with the accuracy of the ASA measure, including working with Siemens to escalate and correct errors in OpenScope, and correcting internal application and system errors that affected the accuracy of ASA results.

Many of these tools focus on productivity and performance, which indirectly affect ASA. When Counseling Center productivity and performance are higher, ASA should decrease, as callers are more likely to get complete, concise, prompt answers to their questions. Absenteeism and non-productive time reduces the number of counselors available to answer calls, which will increase the ASA.

Our examination of documented call center industry best practices found that service level, which measures success in answering a percentage of calls within a specified timeframe (for example, eighty percent of calls are answered within 4 minutes), is a more commonly used measure than ASA. Industry sources also indicate that ASA results tend to be skewed by staffing variations or wide variations in call volume over time. A service level measure also provides a clearer picture of service by showing the proportion of calls that were not answered within the acceptable timeframe, whereas an ASA measure only provides an aggregated average of all calls. In addition, our discussion with Counseling Center management indicated that management places a higher premium on ensuring that members receive a complete and accurate answer to their inquiries than minimizing ASA. Increasing the effort in satisfying a member's needs will tend to increase call duration and wait times, which will increase ASA. This emphasis on providing a full response at the expense of ASA further suggests that ASA may not be the most appropriate measure for the Counseling Center.

Recommendations

We recommend that TRS evaluate the suitability of service level as a tool for managing Telephone Counseling Center performance.

If management determines that service level is a more suitable measure, management should:

- Coordinate with the Legislative Budget Board and other entities as necessary to change from using the ASA measure to using a service level measure.
- Identify realistic service level measure performance goals, taking into consideration available resources and client needs.

Management Responses:

Management is in agreement with the recommendation to analyze service level versus ASA as the tool for managing the Telephone Counseling Center's performance. Benefit Counseling management will begin to research best practices and comparative data from other public pension funds and peer organizations with respect to service level measurement. That research should be completed by May 31, 2013. If service level is the appropriate measure, we will test that methodology and calculation in the OpenScope system this summer with the plan to begin using it parallel to the current ASA method in September 2013. We will continue to measure performance under the two methods for the next two years. During the 2015 budget submission process for the 2016 and 2017 biennium, we will work with TRS executive management to coordinate with the Legislative Budget Board and other entities as necessary to change from using the ASA measure to using a service level measure. This change would begin with the 2016 fiscal year.

APPENDIX A: OBJECTIVES, SCOPE, AND METHODOLOGY

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.

Government Auditing 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 Objectives

The objectives of this audit were to:

- Determine whether the calculation of the key performance measure for Average Speed of Answer is in accordance with the methodology presented in the Teacher Retirement System of Texas (TRS) Strategic Plan or a reasonable approximation of that methodology. Provide recommendations for enhancements to improve controls and increase accuracy of the Average Speed of Answer performance measure.
- Determine whether Telephone Counseling Center governance is effective in managing speed of answer by benchmarking current call center processes, data collected, and call center software functionality with industry practice and the available functionality of the existing software. Provide recommendations for enhancements to decrease ASA or otherwise improve management of TCC operations related to ASA.

Audit Scope

The scope of this audit covered:

- A. TRS' Telephone Counseling Center and related applications supporting performance measurement of Average Customer Hold Time for Calls Received on Toll Free Line (In Minutes) also referred to as Average Speed of Answer.
- B. Siemens Communications, Inc. (Siemens) who provides the application that supports performance measurement of Average Customer Hold Time for Calls Received on Toll Free Line (In Minutes) also referred to as Average Speed of Answer.
- C. The time frame of the assessment covered activities and calculations for the period September 1, 2012 through September 30, 2012.

Audit Methodology

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

- Interviewed TRS Benefit Counseling management and staff
- Interviewed TRS Information Technology staff
- Interviewed Siemens personnel
- Reviewed policies and procedures for management of the Telephone Counseling Center and for calculation of Average Speed of Answer

- Examined and analyzed data and reports used in the calculation and validation of the ASA measure.
- Examined documentation of issues encountered by TRS in calculating and reporting ASA and corrective actions taken
- Examined and validated estimates and procedures used in making capacity planning decisions for staffing of the Counseling Center
- Toured the Telephone Counseling Center and observed processes for call answering, call monitoring, and scheduling and monitoring productivity and quality of Counseling Center staff
- Analyzed Counseling Center data from OpenScape and TRS’s internal data to identify trends in call volumes and wait times
- Reviewed the available functionalities of the OpenScape software versus what is in use to determine if there were opportunities for further improving Average Speed of Answer
- Researched industry standard benchmarks for measuring and managing call center performance to identify industry standard practices. Sources used include:
 - TRS Strategic Plan Performance Measure definition
 - “Benchmarking and Definitions within Contact Centres” study from Scottish Government
 - Defined Benefit Administration Benchmarking Analysis
 - CEM Benchmarking Inc Pension Call Centers Business Process Review and Best Practices
 - Lieber and Associates Study “Inbound Metrics”
 - NAQC Issue Paper: *Call Center Metrics: Best Practices in Performance Measurement and Management to Maximize Queue Efficiency and Quality*

TAB 4E

SEMI-ANNUAL TESTING OF BENEFIT PAYMENTS

JULY 2012 – DECEMBER 2012

TRS Internal Audit Department

Business Objectives	To deliver retirement and related benefits authorized by law for members and their beneficiaries.		
Business Risks	Fraud / Errors Benefit payments could be incorrect or fraudulent in these areas: <ul style="list-style-type: none"> • Payments to recent retirees • Benefit payments with an expiration date 	Eligibility TRS members could retire with full benefits without meeting Rule of 80 or minimum requirements	Manual Voucher Payments Manual voucher payments could be processed incorrectly or without proper authorization
Management Assertions	All benefit payments are valid	All retirees who received annuity benefit payments are eligible	All manually processed voucher payments are valid
Agreed-upon Procedures	Matched benefit payments to supporting documents in two areas: <ol style="list-style-type: none"> 1. Recent retiree benefit recalculations 2. Benefit payment expiration dates 	<ol style="list-style-type: none"> 3. Recalculated Rule of 80 or minimum requirements for all new normal-age service retirements during the testing period 	<ol style="list-style-type: none"> 4. Matched 60 randomly selected manually processed voucher payments to supporting documentation
Test Results	<ul style="list-style-type: none"> • Future payment expiry date not set in Annuity Payroll System for one disability retiree. No current financial impact. • During expiry date testing, we also identified one TRS-Care premium refund underpayment of \$195. 	No Exceptions	One TRS-Care premium refund underpayment of \$230.
Management Responses	Management agrees with the test results and is taking corrective actions including adding the expiry date, developing an expiry issue detection report, issuing the refund, and providing staff training.	N/A	Management agrees with the test results and is taking corrective actions including issuing the refund and providing staff training.

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

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

March 20, 2013

Mr. Don Green, Chief Financial Officer
Ms. Marianne Woods Wiley, Chief Benefit Officer
Ms. Betsey Jones, Director, Health Care Policy and Administration

We have completed the first testing period for the **Semi-Annual Testing of Benefit Payments** as included in the *Fiscal Year 2013 Audit Plan*.

We performed the procedures listed below that were agreed to by management of Benefit Services, the Health Benefits Division, and the Financial Division. These procedures included four data-mining tests designed to identify anomalies in benefit payments during the current testing period and possible deviations from management's benefit processing controls.

For this testing period, the tests performed included testing gross payment amounts made to recent retirees, manual benefit payments, normal age retirement criteria, and expiry date testing for five or ten year guaranteed period payments, disability retirement payment calculations for retirees with less than 10 years of service, and expiry dates greater than 50 years. There was one expiry date exception and two TRS-Care premium refund exceptions noted 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

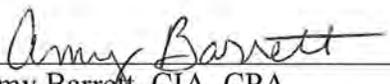
We were not engaged to and did not perform an examination of the internal controls nor the operating effectiveness pertaining to the subject areas tested. Accordingly, we do not express an opinion on the suitability of the design of internal controls nor the operating effectiveness of the subject areas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

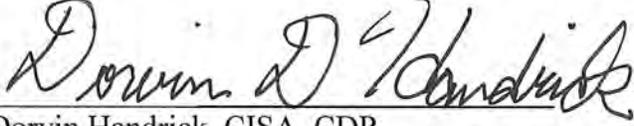
This report is intended solely for information and use by TRS management, the Board of Trustees, and oversight agencies, and is not intended to be and should not be used by anyone other than those specified parties. However, this report is a matter of public record and its distribution is not limited.

* * * * *

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



Amy Barrett, CIA, CPA
Chief Audit Executive



Dorvin Handrick, CISA, CDP
Senior IT Auditor



Tomna Miller
Auditor



Jan Engler, CIA, CISA, CFE,
Internal Audit Manager

APPENDIX A

AGREED-UPON PROCEDURES AND RESULTS

1. Test Purpose: Test that gross annuity payments from July to December 2012 to recent retirees (June 2012 or later retirements) are calculated accurately.

Test Description: Query the *July to December 2012 Benefit Payments Data File* for all gross annuity payments that were related to recent member retirements and randomly select five sample items from each month for a total of 30 sample items. Recalculate the gross payment amount as follows: The annuitant's standard annuity payment is first recalculated based on the member's number of years of service and the average salary amount at the time of retirement and agreed to the supporting documentation in the TRS *Imaging System*. If applicable, recalculate the gross annuity payment amount using the annuity payment option adjustment factor(s) selected by the member per the supporting documentation in the TRS *Imaging System*.

Test Result: All 30 gross annuity payments to recent retirees from July to December 2012 were recalculated and traced to supporting documentation. No exceptions were noted.

2. Test Purpose: Test that the expiration date to stop the annuity payment timely is properly recorded in the system.

Test Description: Test the expiration date accuracy for a sample of annuity payments from July to December 2012 for the three groups described below. Agree the recorded expiration date to the auditor's calculation based on the imaged documents maintained in the TRS *Imaging System*. Each test is described as follows:

- a. Expiration date of guaranteed-period annuity options retirement

- i.) For guaranteed-period (5-year and 10-year) annuity options that TRS is paying the beneficiary because the retiree was deceased before the guaranteed period ended, obtain all records with an expiration date that is greater than the retirement date plus the guaranteed period. Agree these records to supporting documentation indicating the expiration date.
- ii.) Obtain all records where the payment status is active but there is no expiration date. Trace these records to the supporting documentation.

- b. Expiration date of disability retirement with less than 10 years service

The disabled retiree with less than 10 years service should receive a standard benefit

amount of \$150 per month for the shortest period of the retiree's disability period, retiree's life, or total number of creditable service months.

- i.) Obtain all records with a retiree death date but payment status is still active. Trace to the supporting documentation.
- ii.) Obtain all records that the gross payment amount is not the standard amount of \$150 and report differences.
- iii.) Obtain all records where the expiration date has expired but the payment status is still active. Trace to the supporting documentation.
- iv.) Obtain all records where the member was not the payee. Trace to the supporting documentation.
- v.) Obtain all records where the expiration date is greater than the retirement date plus years of member service. Select five random samples from each monthly data file to test by adding the number of creditable service months, based on the imaged documents in the TRS *Imaging System*, to the retirement date and comparing that number with the expiration date in the retirement system. Agree sample items to supporting documentation.

c. Expiration date is longer than 50 years from the date of current payment record.

Obtain items from all payment records with an expiration date that is more than 50 years from each data file from July to December 2012 that have not been previously tested. Recalculate and agree the recorded expiration date to the supporting documentation.

Test Results:

a. Expiration date of guaranteed-period annuity options retirement

- i.) No exceptions were noted where the expiration date was greater than the retirement date plus the guaranteed period.
- ii.) All 46 unique sample items of records, with an active payment status but no expiration date, were traced to the supporting documentation. While no exceptions were noted with the expiration dates, one exception was identified in the supporting documentation where a TRS-Care premium refund amount was calculated in error during the processing of a change of a retiree's Medicare coverage. The exception resulted in an underpayment of \$195.

Management Response:

Health & Insurance Benefits (HIB) agrees with the exception and a refund of \$195 is being processed. Additionally, refresher training will be provided to HIB staff who initiate or verify refunds. This exception occurred last fall

when an unusually high volume of refunds were processed during a short period of time due to HIB's efforts to collect Medicare cards.

b. Expiration date of disability retirement with less than 10 years service

An exception where the expiry date was not set in the *Annuity Payroll System* for one disability retiree with less than 10 years of service was noted. Since the expiry date that should have been set was eight years in the future, there was no financial impact at this time.

Management Response:

Benefit Accounting/Disbursements and Benefit Processing agree that this is an exception. The correct expiration date was added to the payroll file. Benefit Processing will continue to work with IT to correct the program transferring these files to the payroll system. IT has created a report (AP2005) that is targeted to be in production March 15, 2013. The new report will run immediately following retirements batch added to payroll (AP2000) and should pick up any expiry issues for new retirements. IT has also implemented changes to AP2000 that will ensure expiry dates to transfer to the payroll system, which will continue to be monitored.

c. Expiration date is beyond 50 years from current payment records

The recalculated expiration date for the six records identified agreed to the recorded expiration date in the supporting documentation. No exceptions were noted.

3. Test Purpose: Test for normal-age service retirement benefits from July to December 2012 that do not meet the Rule of 80 with at least five years of service or the minimum retirement age of 65 with at least five years of service.

Test Description: Query the *July to December 2012 Benefit Payments Data File* for all payments that were related to normal-age service retirement benefits since June 2012. All proportionate retirements, early age retirements, and disability retirements are excluded. The annuitant's retirement age is calculated based on the year and month of the member's retirement date and birth date in the annuity system records. All records were recalculated by the auditor according to the stated criteria using the automated audit software.

Test Result: All normal-age service retirement benefits met the requirements of Rule of 80 with at least five years of service or with the minimum retirement age of 65 and at least five years of service. No exceptions were noted.

4. Test Purpose: Test that manual voucher payments are properly authorized and supported.

Test Description: Select a random sample of 10 manual voucher payments per month from the *July to December 2012 Benefit Payments Data File*. Trace and agree these manual voucher payments to the supporting documents maintained in the *TRS Imaging System*.

Test Results: We randomly selected 60 manual voucher payments to test. These test samples included 25 premium refunds, two annuity pop-ups, eight qualified domestic relations order (QDRO) related payments, four payments re-issued due to returned payments, 11 retiree requests to re-issue payment, five payment/deduction amount adjustments, and five payments re-issued due to retiree death. All payments were traced and agreed to the supporting documents. One exception was identified in our sample testing. The exception occurred when a TRS-Care premium refund amount was calculated in error during the processing of a change in a retiree's Medicare coverage. The exception resulted in an underpayment of \$230.

Management Response:

HIB agrees with the exception and a refund of \$230 was issued on March 7, 2013. Additionally, refresher training will be provided to HIB staff who initiate or verify refunds. This exception occurred last fall when an unusually high volume of refunds were processed during a short period of time due to HIB's efforts to collect Medicare cards.

TAB 5

**TRS Internal Audit
Summary of Audit Recommendations Status
April 2013**

Project	Recommendation	Status	Issue Type	Estimated Date	Revised / Actual Date
11-306 Investments Performance Calculations and Reporting					
	Include the performance calculation methodology used by State Street in TRS written operating policies and State Street Service Agreement	In Progress	Other Reportable	8/2011	8/2013
12-303 Audit of External Private Market Investments					
	Identify Information for Trustees to Preclude Non-Compliance with Private Markets Prohibited Investments under the Board of Trustees Ethics	Implemented	Other Reportable	12/2012	1/2013
	Reconcile the partner capital statement with audited financial statements	In Progress	Other Reportable	10/2012	8/2013
	Consider discontinuing operation of the valuation committee	Implemented	Other Reportable	3/2013	3/2013
12-401 Building Security					
	Procedure manual should include all tasks and a process to periodically review and update the procedure manual	In Progress	Other Reportable	10/2012	6/2013
12-403 Audit of Compensation, Payroll and Position Control					
	Develop and issue guidance to managers regarding when payment of compensatory time for exempt employees may be requested	Implemented	Other Reportable	8/2012	4/2013
	Develop and implement a written procedures manual for payroll	In Progress	Other Reportable	4/2013	

Significant to Business Objectives

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

Other Reportable

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

**TRS Internal Audit
Summary of Audit Recommendations Status
April 2013**

State Auditor’s Office (SAO) Outstanding Recommendations:

Project	Recommendation	Status	Issue Type	Estimated Date	Revised / Actual Date
SAO Audit Report, November 2012, The Audit of the Teacher Retirement System’s Fiscal Year 2012 Financial Statements (reported at the December 2012 Audit Committee)					
	Ensure that the automated systems are protected against improper modification before and after system implementation <ul style="list-style-type: none"> ➤ If TRS chooses to continue its current monitoring process, it should ensure that knowledgeable individuals receive the emails from the change management tool, review the program changes documented in the emails, and document their reviews. ➤ TRS should consider implementing controls that protect its automated system from improper modification, such as having a knowledgeable person other than the programmer review and migrate program changes to production. 	Implemented	Significant	3/2013	3/2013

TAB 6

Teacher Retirement System of Texas

April 2013 Audit Committee Agenda Items Mapped to TRS Enterprise Risk Inventory

Enterprise		Operations	Finance	Investments
Pension Funding	Communications & External Relations	<i>Pension Benefit Administration Agenda Item 4E</i>	General Accounting & Reporting	Investment Operations
Retiree Health Care	Governmental/ Association Relations	<i>Health Care Administration Agenda Item 3</i>	Budget	<i>Investment Reporting Agenda Item 4B</i>
Workforce Continuity	TEAM	403(b)	Employer Reporting	<i>Market Agenda Item 4A</i>
<i>Governance Agenda Items 2, 5 and 6</i>	Legacy Information Systems	<i>Customer Service Agenda Item 4D</i>	Procurement & Contract Management	Credit
<i>Business Continuity Agenda Item 4C</i>	Information Security	Tax Qualification Status		Liquidity/Leverage
Fraud Prevention & Detection	Confidential Information			
Records Management				

Status of Fiscal Year 2013 Planned Assurance, Consulting, and Advisory Services as of March 2013

Title	Type	Status
Executive		
Ethics and Communications Policies Compliance Audit	Audit	
Fraud Risk Identification and Prevention Audit	Audit	
Internal Ethics and Fraud Hotline Administration	Advisory	Ongoing
Fraud, Waste, and Abuse Prevention (FWAP) Committee	Advisory	Ongoing
Meetings Attendance	Advisory	Ongoing
Special Requests	All	Ongoing
Team-Related Initiatives		
Independent Program Assessment Support	Advisory	Ongoing
Team Committee Participation	Advisory	Ongoing
Benefit Services Division		
Telephone Counseling Center Performance Measures	Audit	Complete
Benefit Payment Testing (financial audit)	Audit	Complete
Benefit Payment Testing (semi-annual)	Agreed-Upon Procedures	1 of 2 Complete
Benefit Processing Surprise Inspection	Advisory	Complete
Health Care Division		
Health Care Administration Audit	Audit	In Progress
Health Care Vendor Update Meetings	Advisory	Ongoing
Vendor and Auditor Selection Observation	Advisory	
Information Technology Division		
Backup and Recovery Audit	Audit	Complete
Health Insurance Portability and Accountability Act (HIPAA) IT Security Rule Recommendations Implementation and Validation	Audit	
Internal Network Vulnerabilities Scan	Agreed-Upon Procedures	Complete
Network Penetration Test; Security Risk Assessment Review	Advisory	
Technology Committee Meetings Attendance	Advisory	Ongoing

Status of Fiscal Year 2013 Planned Assurance, Consulting, and Advisory Services as of March 2013

Title	Type	Status
Finance Division		
Employer Reporting Audit	Audit	In Progress
Procurement and Contracting Audit	Audit	
1099 Reporting and Payment Processing	Advisory	Complete
Budget Transfer Inspection	Advisory	
Accounting Standards Changes Monitoring	Advisory	Ongoing
Financial Audit Coordination	Advisory	Complete
Investment Management Division		
Investments Selection and Monitoring (Emerging Managers)	Audit	In Progress
Derivatives Audit	Audit	Complete
Investment Policy Compliance Testing (quarterly)	Agreed-Upon Procedures	Current QTR Complete
Contractual Allowance Identification	Consulting	Complete
Incentive Compensation Review	Advisory	Complete
Employee Trading Policy Compliance Monitoring	Advisory	Ongoing
Emerging Risks Monitoring	Advisory	Ongoing
Investment Committees Attendance	Advisory	Ongoing
Travel Inspection	Advisory	
Coordination of SAO Audit of Incentive Compensation	Advisory (Added to Plan)	In Progress
Coordination of SAO Ethics Policies Follow-Up Audit	Advisory (Added to Plan)	In Progress
Internal Audit Department		
External Quality Assurance Review*	Audit	In Progress
Annual Internal Audit Report	Audit	Complete
Audit Recommendation Follow-up	Audit	Ongoing
Audit Plan	Advisory	
Audit Committee Meetings Preparation	Advisory	Ongoing
Internal Audit Strategic Plan	Advisory	In Progress

*The report of the External Quality Assurance Review will be presented at the June 2013 Audit Committee.

Fiscal Year 2013 Internal Audit Advisory Services¹
December 2012 – February 2013

BENEFIT SERVICES
<p>TEAM PROJECT</p> <ul style="list-style-type: none"> • Executive Steering Committee Participation • Business Rules Committee Participation • Organizational Change Management Advisory Group Participation • Monthly meetings with TEAM Project Manager • Core Management Team: Standing Prioritization Review Meeting • Independent Program Assessment Vendor Coordination and Support <p>OTHER</p> <ul style="list-style-type: none"> • Surprise Inspections of Benefit Processing
HEALTH BENEFITS
<ul style="list-style-type: none"> • Health Plan Administrator (HPA) and Pharmacy Benefit Manager (PBM) Vendor Quarterly Update Meeting Participation
INVESTMENTS
<ul style="list-style-type: none"> • Personal Trading Monitoring, Weekly Meetings with Legal Services, Quarterly Reporting to Executive Director • Monthly Securities Lending Update Meetings Participation • Internal Investment Committee (IIC) Attendance • Investment Management Division (IMD) Staff Meeting Attendance • Monthly Council of Compliance Officers Conference Calls – provide relevant information to IMD • Participation in Discussions to Establish Automated Derivatives Monitoring in Bloomberg • Collaboration to Develop a Process Map for Principal Investing of Private Markets Deals
FINANCIAL SERVICES
<ul style="list-style-type: none"> • Coordination of State Auditor’s Office TRS Comprehensive Annual Financial Report (CAFR) • Flowcharting Benefit Accounting’s Special Service Buyback Process
EXECUTIVE
<ul style="list-style-type: none"> • Coordination of State Auditor’s Office Follow-up Audit of TRS Ethics Policies • Hot Line Call Facilitation • Executive Requests • Social Media Advisory Committee Participation • Fraud, Waste and Abuse Prevention Committee Participation • Website Advisory Committee Participation • Flowcharting the Open Records Process
INFORMATION TECHNOLOGY
<ul style="list-style-type: none"> • Enterprise Security Project Team Participation • McAfee Full Disk Encryption Impact Analysis Discussions • Information Security Manual Review

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 Performance Measures - Fiscal Year 2013
2nd Quarter Ending February 28, 2013**

Target Performance	Status
1. Plan and execute employer audit activities with significant direction and input from TRS subject matter experts	On Task
2. Facilitate and monitor timely hiring and coordination of TEAM Independent Program Assessment vendor	On Task
3. Execute 80% of audit and agreed-upon procedures projects (80% allows for flexibility due to changes in TRS business practices and special requests)	On Task
4. Complete external quality assurance review with no significant compliance exceptions	On Task
5. Enhance trust through transparency and ongoing two-way communication with trustees and executive management through regular meetings, requests for audit plan input and feedback on performance	On Task
6. Enhance value through allocating time for special requests throughout the year	On Task
7. Identify and utilize at least two internal or external resources to train and mentor audit staff in employer reporting and information technology	On Task
8. Systematically monitor emerging investment issues and impact to TRS via the investment compliance program	On Task
9. Spend a minimum of 75% of total available department hours (excludes uncontrollable leave) for professional staff on direct assurance, consulting, and advisory services	On Task
10. Facilitate success of external financial audit by effectively providing audit support, coordinating meetings, reserving facilities, and gathering schedule requests to enable timely outcomes with no surprises	Achieved

Legend: Target Status

- Target not achieved
- Behind in achieving target
- On task to achieve target
- Achieved target

Teachers Retirement System of Texas
Internal Ethics and Fraud Hotline
Incident Report Activity Summary
1/1/2010 (inception) through 3/31/2013

Time Period	Number of Calls	Status
1/1/2010 – 8/31/2010	1	Resolved
9/1/2010 – 8/31/2011	2	Resolved
9/1/2011 – 11/30/2011	0	N/A
12/1/2011 – 3/31/2012	1	Resolved
4/1/2012 – 05/31/2012	0	N/A
06/01/2012 – 08/31/2012	0	N/A
09/01/2012-11/30/2012	1	Resolved
12/01/2012 – 03/31/2013	0	N/A

Resolved – fully investigated by the Triage Team and all actions agreed to by the Triage Team have occurred.

Per the TRS Fraud and Ethics Hotline Procedures:

- The Audit Committee Chair will be kept apprised of the status of investigations and will be notified of any suspected fraud in accordance with TRS’s Fraud, Waste, and Abuse Prevention Policy.
- The Audit Committee will be provided with statistics quarterly regarding calls received, their disposition, and those resulting in identification of fraud and notification to the State Auditor’s Office hotline.
- The Audit Committee may instruct Internal Audit to perform an audit of matters relating to issues identified with the allegation in accordance with the Audit Committee Charter.
- Internal Audit will consider results of hotline calls and actions by the Triage Team in developing the annual audit plan or amendments to that plan.

ACCOUNTING AND AUDITING UPDATES
2nd Quarter
Fiscal Year 2013

1. Federal Reserve Issues Policy Statement on Internal Auditing and its Outsourcing

As a result of the supervisory experience obtained during and following the recent financial crisis, Federal Reserve staff identified areas for improving regulated institutions' internal audit functions. The Federal Reserve issued the *Supplemental Policy Statement on the Internal Audit Function and Its Outsourcing*, which addresses the characteristics, governance, and operational effectiveness of an institution's internal audit function. The Federal Reserve is providing this supplemental guidance to enhance regulated institutions' internal audit practices and to encourage them to adopt professional audit standards and other authoritative guidance, including those issued by the Institute of Internal Auditors (IIA). Below is a summary of the key points of the policy as they relate to the IIA standards.

- If the Chief Audit Executive (CAE) reports administratively to someone other than the Chief Executive Officer (CEO), the audit committee should document its rationale for this reporting structure, including mitigating controls available for situations that could adversely impact the objectivity of the CAE.
- Internal audit management should perform knowledge gap assessments at least annually to evaluate whether current staff members have the knowledge and skills commensurate with the institution's strategy and operations.
- Internal auditors generally receive a minimum of forty hours of training in a given year.
- An institution's internal audit function should have a code of ethics that emphasizes the principles of objectivity, competence, confidentiality, and integrity, consistent with professional internal audit guidance such as the code of ethics established by the IIA.
- The charter should define the criteria for when and how the internal audit function may outsource some of its work to external experts.
- The audit committee and its chairperson should have ongoing interaction with the CAE separate from formally scheduled meetings to remain current on any internal audit department, organizational, or industry concerns.
- The audit committee should receive an opinion on the adequacy of risk management processes, including effectiveness of management's self-assessment and remediation of identified issues (at least annually).
- Internal audit's risk-assessment methodology is an integral part of the evaluation of overall policies, procedures, and controls at the institution and the development of a plan to test those processes.
- The risk assessment methodology should also address the role of continuous monitoring in determining and evaluating risk.
- Generally, common practice for institutions with defined audit cycles is to follow either a three- or four-year audit cycle; high-risk areas should be audited at least every twelve to eighteen months.

- Internal audit is encouraged to utilize formal continuous monitoring practices as part of the function's risk-assessment processes to support adjustments to the audit plan or universe as they occur.
- A well-designed, comprehensive quality assurance program should ensure that internal audit activities conform to the IIA's professional standards and the institution's internal audit policies and procedures. The program should include both internal and external quality assessments.
- Each institution should conduct an internal quality assessment annually and the CAE should report the results and status of internal assessments to senior management and the audit committee at least annually.
- The audit committee and the CAE are responsible for the selection and retention of internal audit vendors and should be aware of factors that may impact vendors' competence and ability to deliver high-quality audit services.
- When an institution relies significantly on the resources of an internal audit service provider, the institution should have contingency procedures for managing temporary or permanent disruptions in the service in order to ensure that the internal audit function can meet its intended objectives.

2. SEC Proposes Rules to Improve Systems Compliance and Integrity

The Securities and Exchange Commission unanimously proposed new rules to require certain key market participants to have comprehensive policies and procedures in place surrounding their technological systems. The SEC's proposal called *Regulation SCI* would replace the current voluntary compliance program with enforceable rules designed to better insulate the markets from vulnerabilities posed by systems technology issues.

Self-regulatory organizations, certain alternative trading systems, plan processors, and certain exempt clearing agencies would be required to carefully design, develop, test, maintain, and monitor systems that are integral to their operations. The proposed rules would require them to ensure their core technology meets certain standards, conduct business continuity testing, and provide certain notifications in the event of systems disruptions and other events.

Internal Audit Staff Quarterly Accomplishments

- Amy Barrett participated in a workshop to provide input into the strategic plan to establish the American Center for Government Auditing (ACGA). The ACGA is a strategic initiative of the Institute of Internal Auditors (IIA) that will provide more resources to government auditors.
- Jan Engler was elected to a three-year term on the IIA Austin Chapter Board of Governors.
- Toma Miller was promoted to the position of Internal Auditor.
- Dinah Arce and Lih-Jen Lan celebrated their ten-year anniversary with the TRS Internal Audit department.
- Karen Morris, Jan Engler, and Lih-Jen Lan attend the Austin Chapter of the IIA training seminar, *Fraud and Data Analytics*.
- Toma Miller attended *Introduction to Information Technology Auditing* provided by the Solutions Training Group.
- Terry Harris attended the 2013 Annual Texas Association of Public Employee Retirement Systems (TEXPERS) conference.
- Brian Gomolski attended the Bloomberg Compliance Seminar in New York.