



TRS Risk Management Committee



June 2012

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**TEACHER RETIREMENT SYSTEM OF TEXAS MEETING
BOARD OF TRUSTEES
AND
RISK MANAGEMENT COMMITTEE**

(Mr. McDonald, Committee Chair; Ms. Charleston; Mr. Colonna; Mr. Kelly; & Mr. Moss, Committee Members)

AGENDA

**June 7, 2012 – 12:00 p.m.
TRS East Building—Boardroom**

1. Consider approval of the proposed minutes of the April 19, 2012 committee meeting – Eric McDonald
2. Receive report on the Enterprise Risk Management Program, including a discussion of the risk management activities relating to the TEAM Program, Workforce Continuity, Confidential Information, Procurement and Contract Management – Jay LeBlanc and Michelle Pagán
3. Receive overview of Disaster Recovery and Business Continuity Initiatives – Chris Cutler, Minerva Evans, and Jay LeBlanc
4. Receive report from the State Office of Risk Management on TRS’ Risk Management Program – Jay LeBlanc
5. Receive report on Trust Liquidity Stress Testing – Jase Auby

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

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Minutes of the Risk Management Committee

April 19, 2012

The Risk Management Committee of the Board of Trustees of the Teacher Retirement System of Texas met on April 19, 2012 in Room 345E of the TRS offices. The following committee members were present:

Eric McDonald, Chair
Karen Charleston
David Kelly
Chris Moss

A quorum of the committee was present. Others present:

Todd Barth, TRS Trustee	Howard Goldman, TRS
Charlotte Clifton, TRS Trustee	Amy Barrett, TRS
Anita Palmer, TRS Trustee	Eric Lang, TRS
Nanette Sissney, TRS Trustee	Jay LeBlanc, TRS
Brian Guthrie, TRS	Minerva Evans, TRS
Ken Welch, TRS	Michelle Pagan, TRS
Britt Harris, TRS	Sylvia Bell, TRS
Dr. Keith Brown, Investment Advisor	Janis Hydak, TRS
Steve Huff, Reinhart Boerner Van Deuren	Ashley Baum, TRS
Steve Voss, Hewitt Ennis Knupp	Hugh Ohn, TRS
Jerry Albright, TRS	Katy Hoffman, TRS
Don Green, TRS	Vicki Garcia, TRS
Shayne McGuire, TRS	Angela Vogeli, TRS
Jase Auby, TRS	Mary Chang, TRS
Bernie Bozzelli, TRS	Denise Lopez, TRS
Mohan Balachandran, TRS	Lynn Lau, TRS
Kelly Newhall, TRS	John Claisse, Albourne
Patricia Cantú, TRS	Jim Baker, Unite Here
Sharon Toalson, TRS	Leroy DeHaven
Chris Pan, TRS	Randy P. Washington, Accenture
Jared Simpson, TRS	Craig TeDuits, State Street
Anthony Paolini, TRS	Nicholas Bonn, State Street
Steven Lambert, TRS	John Powell, State Street

Mr. McDonald called the meeting to order at 1:15 p.m.

1. Consider the approval of the proposed minutes of the September 15, 2011 committee meeting

On a motion by Mr. Moss, seconded by Mr. Kelly, the committee approved the minutes of the September 15, 2011 meeting as presented.

2. Review the annual report on the Securities Lending Program – Nicholas Bonn, Joyce P. Dardonis and John K. Powell, State Street, and Mohan Balachandran.

Mr. John Powell of State Street provided an overview of TRS' securities lending program and explained the role of State Street in the program. Mr. Powell stated that the checks and balances in State Street's securities lending program come from TRS' policies and requirements and State Street's own trading and bank policies. He stated that State Street and TRS staff review and discuss TRS' securities lending program monthly.

Presenting the performance of the securities lending program in the first quarter of FY 2012, Mr. Powell reported that TRS earned \$26.8 million, an approximately 6% increase from \$17.3 million in the first quarter of FY 2011. Mr. Powell stated that interest rates had been low, which caused the spreads on the program's cash investments to be low as well, with the plan currently returning 72 basis points on the investments made. Mr. Powell stated that the program was at an all-time high of liquidity, meaning that a large portion of the investments mature within the next 90 days. Mr. Powell stated that TRS' program was capped based on TRS policy that up to 30% of TRS' assets can be on loan and that the program was currently well within that limit with about \$22 billion on loan.

Mr. Balachandran stated that the program's investment portfolio used to be in investments of a longer duration, such as credit, but it had become more liquid investments with investments of shorter durations because spreads had narrowed over the last two years. He stated that over 50% of the portfolio had 90-day liquidity and TRS was not taking any risk right now because the market was not paying TRS to take risk. He stated that the goal is to make about \$100 million a year from the program.

Mr. Powell provided a brief overview of the broker-dealers who borrowed TRS securities as of December 31, 2011. He said that the top 10 borrowers overall were unchanged. He briefly reviewed the credit limitations for each broker-dealer and stated that the limits are mainly correlated with the size of the broker-dealer. Responding to the questions from Mr. McDonald as to whether anything should be inferred when a broker-dealer uses almost their entire credit line, Mr. Powell replied that nothing could be directly inferred from that. Responding to another question from Mr. McDonald concerning the monitoring of credit usage from a counterparty issue, Mr. Powell replied that State Street has reasons to review it and that it comes back to checks and balances on TRS' program.

3. Review the Investment Risk Report – Jase Auby.

Mr. Auby presented the investment risk report as of December 31, 2011. He stated that TRS was in compliance with the asset allocation ranges that are set forth in the Investment Policy Statement (IPS). He reported that the value at risk (VaR) was 8.2% (68% of the VaR limit range); the tracking error was 142 basis points (47% of the maximum 300 basis points allowed); the various leverage measures were well within historical norms, with one exception in the gross leverage number of 112.4% due to the change in Tactical Asset Allocation (TAA); counterparty exposures were within IPS limits and counterparty ratings were in compliance; and derivatives exposures were in compliance with the IPS.

Concerning the asset allocation, Mr. Auby stated that the major portfolio level and the sub-portfolio levels were in full compliance and that any variations were primarily a result of the

change in the TAA. Mr. Auby stated that as of December 31, 2011, the fund was 0.5% underweight to global equity, 0.3% overweight to stable value, and 0.1% overweight to real return. He stated that the largest overweight for the sub-portfolios was absolute return at 2.2%, and the largest underweight was the real assets at -2.2% as a result of the benchmark moving from 8% of the portfolio to 13%.

Concerning the VaR, Mr. Auby stated that the portfolio had an overweight risk position at 8.6% versus the benchmark at 8.3% as of September 30, 2011, but it switched to an underweight risk position as of December 31, 2011 primarily due to the benchmark increasing to 9% as a result of the changes to the asset allocation on September 30, 2011 and the TAA positioning. He also presented the VaR versus the dollars invested in each asset class. Responding to a question from Mr. McDonald concerning the historical time period used in calculating VaR, Mr. Auby replied that the look-back period is five years. Mr. Auby stated that 2008 was about to roll out of the five-year history, which was not desirable because 2008 was valuable from a risk perspective, so staff was considering setting the lookback window to commence at a fixed date of January 1, 2008 and allowing it to expand over time from five years to six years, seven years, etc. Responding to a question from Mr. Barth concerning what the VaR was capturing, Mr. Auby replied that it was looking at the worst month out of the 60-month period, which currently ran from mid-September 2008 to mid-October 2008. Mr. Auby also reviewed the changes in the composition of the VaR over time and stated that the Public Equity Portfolio had been and was still the largest contributor to risk, but that the Public Equity Portfolio's contribution to risk had decreased over time as the Real Assets Portfolio risk had increased. Mr. Auby noted that real return assets were under-risk by 3.1%, having shifted from being overweight risk in the third quarter of 2011 to being underweight risk in the fourth quarter of 2011 as a result of the change in the benchmark.

Mr. Auby reported that the forecasted tracking error for the total public fund had been 75 basis points, the three-year realized tracking error had been 142 basis points, the policy neutral tracking error had been 100 basis points, and the maximum tracking error had been 300 basis points. Responding to a question from Mr. McDonald, Mr. Auby agreed that monitoring tracking error helps determine whether the models are working correctly. He stated that the tracking error sets the amount of risk that a fund is willing to take, monitors the risk taken historically, and allows TRS to forecast risk. Mr. Auby also reviewed tracking error by asset class and stated that the historic realized tracking error for total public assets was 142 basis points. When private assets were layered onto that, he said, the tracking error for the entire trust became 213 basis points. He stated that the IPS requirement for tracking error is aimed solely at the fund's public assets and provides no tracking error target for the fund's private assets.

Concerning the various leverage levels, Mr. Auby stated that the trust net leverage had held steady at around 98%, but that the gross leverage level had increased from 100% to 112.4%, primarily due to a transition of TAA to a 100% derivatives overlay position. He stated that under the old TAA implementation method, the TAA team would sell securities on the underweights and would use derivatives only on the overweights, so the gross notional of the derivatives equaled the net notional. Under the new method, he said, derivatives are used for both overweights and underweights, so the net notional of the derivatives equals zero. Mr. Auby stated that the new TAA method included the following advantages: more efficient and liquid implementation of TAA, preservation of the trust's core asset allocation, and a decrease in the amount of risk contributed by the derivatives portfolio from 11.9% in the fourth quarter of 2010

to 1.7% in the fourth quarter of 2011. Presenting the leverage of each portfolio, Mr. Auby stated that hedge fund leverage had remained within a 200%–300% range and net leverage remained at 50%, and that the variation in leverage came from changes in the portfolio positions of the individual managers and from adding and subtracting managers from the portfolios. Mr. Auby stated that strategic partners' aggregate leverage had remained stable and was currently at 159.9% gross and 108.7% net. He stated that the Real Assets Portfolio was going through significant change and the Real Estate Portfolio had stayed relatively stable between 40% and 50%.

Concerning counterparty exposure, Mr. Auby stated that total counterparty exposure was \$21.8 million and the rating of all counterparties remained above the A-/A3 level required by policy. He pointed out that five of the eight counterparties—Barclays, Deutsche Bank, Goldman Sachs, Morgan Stanley, and UBS—were on downgrade watch from Moody's. He stated that Moody's indicated that none of their downgrades were expected to go below the A3 level, except that Morgan Stanley could be downgraded to the Baa2 level. Mr. Auby stated that even if Morgan Stanley were downgraded to Baa2, Morgan Stanley would still be within the policy limit because the policy allows for two of the three ratings to be below the A-/A3 level. Mr. Auby stated that monitoring efforts had increased because of the downgrade watch. He also stated that all of the risk exposures to the counterparties were fully collateralized. Responding to a question from Dr. Brown concerning the remedy if Morgan Stanley were to go below the A- level in all three ratings, Mr. Barth replied that the committee would need to present a plan for remedying the policy violation to the board within 90 days. Responding to a question from Mr. Barth concerning the range of time horizons for counterparty transactions, Mr. Auby stated that the time period was generally very short, about three to four months.

4. Review trust derivatives usage – Jase Auby.

Mr. Auby provided an historical overview of TRS' derivatives usage. He stated that TRS began using derivatives in 1993 with currency forwards and had expanded its derivatives use over time. He stated that the trust began using options in 2001 with the addition of a covered call writing program, which had been discontinued except for a small position in connection with the trust's GGP investment. Mr. Auby stated that Texas law and TRS' IPS had changed in 2007 to allow the trust to use over-the-counter derivatives, such as swaps, and that the fund's internal portfolios and externally-managed portfolios increased their use of derivatives at that time. He stated that the trust began to use futures in 2008.

Mr. Auby stated that the trust uses the four instrument types, forwards, options, swaps, and futures, in five ways: (1) to manage currency and exchange currency risk; (2) covered call writing programs; (3) TAA and asset replication; (4) risk management; and (5) SPNs and external managers.

Mr. Auby stated that Hewitt EnnisKnupp's 2010 survey of the investment policies of large U.S. public pension plans indicates that TRS' use of derivatives is typical and consistent with the derivatives use of the peer funds. Responding to a question by Mr. Barth concerning the number of other pension plans surveyed, Mr. Auby stated that the eleven funds listed in the chart were the largest public plans. Mr. Auby stated that BNY Mellon's survey of institutional investors shows that 82% of the public plans surveyed used derivatives for risk reduction purposes and 73% used derivatives to meet fund allocation goals, which are two main reasons TRS used derivatives. He stated that TRS used derivatives when they were more efficient than

regular investments or when they offered an alternative that could only be implemented by using derivatives. He stated that managing derivatives is a specialized activity which requires the cooperation of many different areas of the investment division: the Portfolio Strategy and Execution (PSE) group, which oversees most of the portfolio's use of derivatives and the SPNs' use of derivatives; Investment Operations, which has dedicated personnel for documenting and settling derivatives; External Public Markets, which oversees the use of derivatives by the external investment managers; Legal Services, which negotiates documentation and helps manage upcoming regulatory and other market issues; State Street Services, which calculates risk statistics and requisitions; and Investment Compliance, which oversees the compliance of the fund's derivatives positions within the IPS.

Mr. Auby stated that the derivatives monitoring process involves a number of reports, which are submitted to executive management. He confirmed for Mr. Barth that the total counterparty exposure less \$21.8 million held as collateral, was consistent with the norm. Mr. Auby stated that the fund's operational risk and control procedures resemble those used for non-derivative investing activities. He stated that portfolio management and trading was properly separated from the exchange-traded derivatives. He also noted that over-the-counter derivatives execution uses paper documentation. Mr. Auby stated that the trust's use of derivatives was the subject of two audits in 2010, one by the trust's internal audit group led by Ms. Barrett and Mr. Ohn, and the other by an external auditor, Independent Fiduciary Services, who was engaged by the State Auditor's Office. He stated that both audits resulted in no significant findings.

Mr. Auby discussed regulatory trends in the derivatives markets. He stated that the Dodd-Frank Act, which Congress passed in 2010, would likely impact TRS in three ways once the associated regulations for the Act were adopted: the derivatives markets would either be required or encouraged to move away from over-the-counter to regulated exchanges and clearing houses, increased collateral requirements would likely be instituted, and compliance and suitability requirements for TRS and TRS counterparties would be increased. Mr. Auby stated that he viewed those changes as positive for TRS because they would enhance transparency and reduce the counterparty risk in the market. Responding to a question from Mr. McDonald as to whether the expected changes would decrease liquidity in some derivative instruments, Mr. Auby replied that he did not anticipate that it would affect liquidity for the very basic asset replication instruments that TRS used.

Mr. Auby stated that TRS used forwards, swaps and futures to replicate an underlying investment and that TRS used options in covered calls. He stated that those instruments have the primary advantage of being more liquid than the underlying holdings. Mr. Auby reviewed the swap instrument in more detail. He stated that total return swaps paid TRS the same return as the total return on the S&P 500, interest rate swaps paid the same rate of interest as if TRS owned a fixed-rate bond, enhanced swaps paid the same return as if TRS owned a portfolio of commodities, and credit swaps paid TRS the credit spread that TRS would receive if it owned a corporate bond. Mr. Auby stated that derivatives were traded either on an exchange or with a bank using standardized documentation developed by the International Swaps and Derivatives Association.

Concerning TRS' derivatives usage, Mr. Auby stated that the TAA team used 30% of the trust's gross notional exposure, the passive portfolios used 25%, the strategic partners used 16%, and hedge funds used 15%. Responding to a question from Mr. Barth concerning the level of derivatives usage by the strategic partners, Mr. Auby replied that the strategic partners comprised

5% of the portfolio and 15% of the total derivatives usage. He said that they used derivatives to incur net leverage. Mr. Auby also stated that exchange-traded futures comprised 65% of TRS' derivatives usage, currency forwards comprised 23%, and swaps comprised 12%. He said that TRS had a very small options position. He stated that TRS' derivatives usage had increased because TRS replaced futures with total return swaps; and the benchmark changes added the hedge fund replication portfolios. He stated that the PSE group and the strategic partners were large users of derivatives and that the external managers also used derivatives. Mr. Auby stated that the trust's current net notional was \$2.5 billion exposure, the mark-to-market of the trust derivatives portfolio is -\$24 million, and the average derivatives position matured in 3.5 months, except for interest rate swaps, which had a 29-month average maturity date.

Mr. Auby stated that the TAA team was researching using index options to replicate equity markets benchmarks, subject to a tracking error constraint. He said that External Public Markets was researching the use of derivatives overlays to manage their risk exposures and excess cash balances. He reported that the risk group was investigating using derivatives as part of a risk strategies effort in TRS advantage, tactical hedging, and insurance hedging. Responding to a question from Mr. McDonald concerning CDS (credit default swaps) use, Mr. Auby replied that TRS would replicate holding a portfolio of credit through credit indexes to gain better liquidity.

In concluding his presentation, Mr. Auby stated that derivatives were widely used by U.S. public pensions, TRS primarily used derivatives for asset replication, and IMD had a robust, experienced infrastructure for portfolio management, risk management, operations management, and legal risk management of TRS' derivatives portfolios.

The meeting was adjourned at 2:26 p.m.

Tab 2

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Enterprise Risk Management Program

Jay LeBlanc and Michelle Pagán

Teacher Retirement System of Texas Enterprise Risk Inventory - 2012

ENTERPRISE		OPERATIONS	FINANCE	INVESTMENTS
Pension Funding	Communications & External Relations	Pension Benefit Administration	General Accounting & Reporting	Investment Operations
Retiree Health Care	Governmental/ Association Relations	Health Care Administration	Budget	Investment Reporting
Workforce Continuity	TEAM	403(b)	Employer Reporting	Market
Governance	Legacy Information Systems	Customer Service	Procurement & Contract Management	Credit
Business Continuity	Information Security	Tax Qualification Status		Liquidity/Leverage
Fraud Prevention & Detection	Confidential Information			
Records Management				

Risk Assessments



- Goal
- Overall Risk
- Risks/Risk Drivers
- Mitigations
- Recent Activities/Action Items



Spotlight - TEAM

- Goal

Implement cost effective, efficient, and sustainable processes and systems that enable TRS to serve its members, employers, and annuitants.

- Overall Risk

Reliance on aging systems will impede administration and processing of pension benefits and will not meet the growing demands of TRS members.



Spotlight – TEAM

Risks/Risk Drivers	Mitigations
▪ Conflicting priorities	○ Prioritize/reallocate workload ○ Communicate/escalate issues
▪ Untimely decision-making	○ Communicate ○ Action/decision logs ○ Status reports, meetings, monitor program/project milestones
▪ Lack of resources	○ Prioritize/reallocate workload
▪ Inability to be forward-thinking	○ Commitment gathering ○ Vendor demonstrations
▪ Inaccurate planning estimates	○ Obtained estimates from peers ○ Periodic reassessments and communication
▪ Failure to manage change and scope	○ Change Control Process
▪ Lack of staff acceptance	○ Staff Involvement ○ Vendor demonstrations
▪ Internal/external fraud	○ Open evaluation process/assessment and valuation by committee

Spotlight – TEAM

- Recent Activities/Action Items
 - Reallocate workload
 - Implement staffing plans
 - Assign accountability
 - Develop teams for reporting entity outreach program
 - Continue TEAM Program/project risk assessments
 - Participate in the student intern program
 - Vendor demonstrations and estimate cost for the Independent Project Assessment (IPA) and organizational change
 - Communicate, monitor, and enforce the change control process
 - Planning organizational change project



Spotlight - Workforce Continuity

- **Goal**

Preserve valued institutional knowledge, and ensure a skilled, capable, and motivated workforce is maintained to execute TRS' functions.

- **Overall Risk**

Lack of effective knowledge management, talent management, and turnover transition management could lead to loss of institutional knowledge, which could negatively impact the delivery of member services and pension fund management.



Spotlight - Workforce Continuity

Risks/Risk Drivers	Mitigations
▪ Turnover of critical positions as well as turnover associated with retirements	○ TRS Leadership Development Program ○ Positive and rewarding work environment ○ Monitor and assess turnover and retirement trends ○ Workforce continuity plans ○ Executive management support and oversight
▪ Lack of effective transfer of key institutional knowledge and skill	○ Workforce continuity plans ○ Training needs assessment ○ TRS Leadership Development Program ○ Documented processes and procedures
▪ Lack of knowledge, sound judgment or willful non-compliance with laws, statutes, regulations, policies, and procedures governing human resources	○ Develop, review, and revise policies ○ Documented policies and procedures ○ Counsel and guidance from experts ○ Training ○ Monitoring and advising ○ Corrective action



Spotlight - Workforce Continuity

- Recent Activities/Action Items
 - Assessed workforce continuity issues and designed customized workforce continuity plans
 - Implemented leadership development program
 - Participants selected
 - Continue collecting workforce continuity plans
 - Provide management and compliance training
 - Monitor, assess, and advise about turnover and retirement trends
 - Individual business units monitor effectiveness of plans and update them as needed



Spotlight – Confidential Information

- **Goal**

Protect confidential information and ensure compliance with applicable laws and rules.

- **Overall Risk**

Unauthorized or unintentional release of confidential information could result in state and/or federal law violations and sanctions against TRS or its employees.



Spotlight – Confidential Information

Risks/Risk Drivers	Mitigations
▪ Non-compliance with laws and regulations result in civil or criminal penalties imposed on TRS or its employees	○ Training and awareness; Fraud hotline ○ Policies and procedures; Records retention ○ System security; Physical security ○ Corrective action; Legal review
▪ Employees or contract workers expose or disclose information to unauthorized parties	○ System security; Physical security ○ Training and awareness ○ Policies and procedures ○ Monitoring compliance ○ Management oversight/review ○ Corrective action; Contractor penalties ○ Employer reference checks ○ Criminal history background checks (state/federal)
▪ Vendors, business partners, or external parties <u>expose or disclose</u> information to unauthorized parties, <u>or gain</u> unauthorized access to electronic or hardcopy information	○ System security; Physical security ○ Vendor selection ○ Contractual agreements and forms ○ Communication
▪ Natural disaster or accident exposes hardcopy confidential information (onsite or in vendor's possession)	○ Vendor selection; vendor's mitigation/remediation plan ○ Training and awareness ○ Vulnerability assessments



Spotlight – Confidential Information

- Recent Activities/Action Items
 - Revised *Confidentiality Policy* and developed procedures
 - Developed action plan to review and revise established training; roll-out enhanced training
 - Enhance system security and disaster recovery plans
 - Continue annual vulnerability and security risk assessments
 - Review vendor contracts for mitigation/remediation plans
 - Continue annual inventory of confidential information (recertification of information)



Spotlight - Procurement & Contract Management

- Goal

Maintain effective procurement and contract management systems.

- Overall Risk

Inappropriate procurement practices could result in purchases of sub-standard products and services, unfavorable pricing or contract terms, and violation of laws. Ineffective contract monitoring could result in contractors not fulfilling their contractual obligations.



Spotlight - Procurement & Contract Management

Risks/Risk Drivers	Mitigations
▪ Inadequate resources and loss of institutional knowledge	<ul style="list-style-type: none">○ Succession planning; Cross-training and rotation of duties; Staff development○ Positive and pleasant work environment○ Adequate funding for FTEs
▪ Failure to receive information timely	<ul style="list-style-type: none">○ Effective communication; Planning○ Documented processes and procedures
▪ Unauthorized access to or release of confidential information	<ul style="list-style-type: none">○ Documented processes and procedures○ Management oversight; Contract review○ Screen prospective employees
▪ Internal fraud	<ul style="list-style-type: none">○ Documented processes and procedures○ Management oversight○ Segregation of duties○ Screen prospective employees
▪ Collusion with vendor/contractor on major contracts (Healthcare contracts)	<ul style="list-style-type: none">○ Cross-functional participation on major contracts○ Documented processes and procedures○ Management oversight; Contract review○ Segregation of duties○ Screen prospective employees
▪ Competing priorities/heavy workload	<ul style="list-style-type: none">○ Plan and prioritize work○ Management oversight○ Cross-training and rotation of duties



Spotlight - Procurement & Contract Management

- Recent Activities/Action Items
 - Prioritize filling vacant positions
 - Continue training and development initiatives
 - Monitor statutes/rules and update policies and procedures as needed
 - Monitor staffing levels; Ensure sufficient resources are available for TEAM Program
 - Ensure appropriate forms are included in contractual agreements
 - Preparation for new financial system upgrade

Appendix

- A. TRS Spotlight Report
- B. Risk Reports
- C. Departmental Activities At-a-Glance

Appendix A – TRS Spotlight Report

Teacher Retirement System of Texas 2012 Spotlight Report

Risk Category	Goal	Summary of Activities
1 Pension Funding	Maintain an actuarially sound pension plan.	TRS is conducting a legislatively mandated study on the actuarial and fiscal impacts from potential changes to the pension plan in the areas of retirement eligibility, final average salary, benefit multiplier, and the creation of a hybrid plan that includes defined benefit and defined contribution elements. The report will be submitted to the Legislative Budget Board and the Governor no later than Sept. 1, 2012.
2 Retiree Health Care	Facilitate long term soundness of TRS-Care in order to pay retiree health care costs.	TRS is conducting a legislatively mandated study to review options that would improve the long-term sustainability of the program. In June the TRS board will select a vendor for a Medicare Advantage (MA) plan. The board will also approve rates and benefits for FY 13, including the MA and Medicare D Employer Group Waiver Plan (EGWP) options.
3 TEAM	Implement cost effective, efficient, and sustainable processes and systems that enable TRS to serve its members, employers, and annuitants.	<ul style="list-style-type: none"> • Members of the Core Management Team (CMT) along with over 100 other TRS staff members are participating in Commitment Gathering Sessions for the development of the Pension Administration Line-of-Business (LOB) procurement process. These sessions will be completed by June 30, 2012. The commitments will be incorporated into the procurement documents for the LOB solution. The CMT also identified staffing needs for the TEAM Program to be included into the budget process. • The Statement of Work (SOW) for the Data Management project has been revised to include requirements for combining all elements of the project into one. With this change, the project team has been expanded to include both IT and business users. The SOW is in the final stages of completion and TRS expects to have the vendor on site by the end of June 2012. • Project teams have been identified and work has begun on several projects within the TEAM Program. The Business Rules team has been established and is currently developing rules related to active members. Business rules will be used in the pension administration LOB development to ensure that new systems incorporate functionality that is consistent with TRS laws, rules, and policies. The IT Department has initiated the TRS Enterprise Security project to ensure system security throughout the agency. The Reporting Entity Outreach project is in the early stage; the project sponsor has been identified and the CMT is working with the project manager to select a project team. A project team for the Financial System project has been established and business requirements have been prepared. This team began their project risk assessment in May 2012. • The CMT has also identified risks associated with the entire TEAM Program and will be identifying risks within each project as the projects begin, which will continue throughout the TEAM Program.
4 Workforce Continuity	Preserve valued institutional knowledge, and ensure a skilled, capable, and motivated workforce is maintained to execute TRS' functions.	HR completed a process with larger business units to assess workforce continuity issues and design customized workforce continuity plans. Workforce planning initiatives are underway throughout the organization; as of the end of FY 2011. Three business units have submitted their formal plans to HR. Their plans include cross-training and staff development as well as reorganizations and process documentation. A leadership development program has been initiated that is designed to develop competitive talent pools to mitigate loss of institutional knowledge with future vacancies.
5 Confidential Information	Protect confidential information and ensure compliance with applicable laws and rules.	The revised Confidentiality Policy and new Confidential Information Procedures and Standards have been approved by executive management and distributed to employees and contractors via e-mail and posted on the intranet. An action plan was developed to review and revise established confidentiality/HIPAA training and roll-out revised training to employees and contractors.
6 Procurement & Contract Management	Maintain effective procurement and contract management systems.	We recently experienced two vacancies and are in the process of becoming fully staffed. Hired a new team leader and are in the process of hiring a new senior purchaser. In preparation for a new financial system upgrade, we have documented core requirements. We are currently working in conjunction with TRS Legal Services to review the TEAM Data Management solicitation document and develop draft elements of the TEAM LOB solicitation document.

Appendix B - Risk Reports

TEAM RISK REPORT

SPOTLIGHT CATEGORY	GLOBAL OWNER	REPORTING DATE
TEAM	Deputy Director	June 7, 2012

GOAL: Implement cost effective, efficient, and sustainable processes and systems that enable TRS to serve its members, employers, and annuitants.

OVERALL RISK: Reliance on aging systems will impede administration and processing of pension benefits and will not meet the growing demands of TRS members.

Objective	Summary of Activities
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Implement modern pension and benefit information systems that allow TRS staff to serve our members and deliver accurate benefits effectively and timely by August 2016.

- Staffing plans for the agency, due to the impact of the TEAM Program, were developed and submitted as part of the budget process.
- The Core Management Team (CMT) has completed their initial risk identification and assessment for the TEAM Program.
- The Executive Steering Committee (ESC) has started their initial risk identification and assessment for the TEAM Program.
- A vendor demonstration has occurred allowing staff to envision system and process opportunities/capabilities.

Risks/Risk Drivers	Mitigations	Description
1. Conflicting priorities between existing work and TEAM Program related assignments	<ul style="list-style-type: none"> ▪ Prioritize workload ▪ Communication ▪ Reallocate workload 	<ul style="list-style-type: none"> ○ Prioritize work and communicate it to all staff. ○ Communicate to all staff that TEAM is a TRS priority. ○ Assessment, evaluation and reallocation of duties for key staff.
2. Decisions not made timely	<ul style="list-style-type: none"> ▪ Program/Project Management ▪ Action/decision logs ▪ Weekly status updates ▪ Escalate issues if needed 	<ul style="list-style-type: none"> ○ TEAM Program manager monitors projects. ○ Actions and decision are documented, maintained and communicated. ○ Status reports are provided weekly and distributed to ESC and CMT for review. ○ Seek additional support if backlog in decision making occurs.
3. Lack of resources	<ul style="list-style-type: none"> ▪ TRS/TEAM staffing plans ▪ Prioritize work load ▪ Program/project milestones 	<ul style="list-style-type: none"> ○ Staffing plans and FTE needs developed and submitted through the budget process. ○ Prioritize work and communicate it to all staff. ○ Closely monitor program/project milestones.

TRS Spotlight Category

TEAM RISK REPORT

Risks/Risk Drivers	Mitigations	Description
4. Inability to be forward thinking	<ul style="list-style-type: none"> ▪ Vendor demonstration ▪ Weekly status meetings ▪ Commitment gathering ▪ Key staff involvement 	<ul style="list-style-type: none"> ○ Line-of-Business (LOB) vendor demonstration to show possibilities with functionality. ○ ESC and CMT meets weekly discussing TEAM issues. ○ Diverse groups meeting to identify business requirements. ○ Identifying the appropriate staff for participating in the TEAM Program/projects.
5. Inaccurate planning estimates	<ul style="list-style-type: none"> ▪ Obtain estimates ▪ Periodic reassessments and communication ▪ Weekly status meetings 	<ul style="list-style-type: none"> ○ Obtained estimates from public peer systems and vendors. ○ Closely monitor the program/projects. ○ Diverse groups review estimates and expectations.
6. Failure to manage change & scope	<ul style="list-style-type: none"> ▪ Change control process 	<ul style="list-style-type: none"> ○ Communicate to all staff that a formal change control process is in place and must be followed.
7. Lack of staff acceptance	<ul style="list-style-type: none"> ▪ Vendor demonstrations ▪ Staff involvement 	<ul style="list-style-type: none"> ○ The vendor demonstrations allow staff to see the benefits of TEAM. ○ Staff participation in the commitment gathering sessions, Request for Offer (RFO) development and risk identification process empowers staff and provides a mechanism for their input to be included.

Action Items
1. Reallocation of duties (Risk 1)
2. Assign accountability for action items related to timely decisions (Risk 2)
3. Implement staffing plan (Risk 3)
4. Development of RFO for LOB vendor (Risk 3)
5. Participate in the Intern Program (Risk 1 & 3)
6. Develop teams for reporting entity outreach program (Risk 4)
7. Vendor demonstrations and estimate cost for the IPA and organizational change (Risk 5)
8. Communicate, monitor and enforce the change control process (Risk 6)
9. Planning organizational change project (Risk 7)

TEAM RISK REPORT

Action Items
10. Risk assessments at the program and project level will continue (All risks)

Monitoring Plan		
Key Mitigations	Monitored By	Monitoring Process
Project management	Program & Project Manager	Minimum weekly program/project meeting to review all risk and mitigation plan updates with the Program/Project Manager and Sponsor. The Project Management Office (PMO) will meet with Project Managers regularly to ensure project consistency. As new projects begin, they will utilize the Service Request Process to help ensure that resources are better tracked.
Action and decision logs	ESC, CMT, Program & Project Manager	Documented action and decisions are received and reviewed weekly by ESC, CMT, and Program & Project Manager.
Meeting minutes	ESC, CMT, Program & Project Manager	Meeting agenda, minutes and decisions are documented and sent out for review. These are available for all staff.
Weekly reviews	Project Sponsor	Project Manager works with Project Sponsor regarding the reviewing, monitoring, and updating of the risks on the status reports. Project Sponsor reports risks and issues to the CMT and ESC.
Risk assessments	ERM Team, Project Sponsor, Program & Project Manager	Risk assessments are conducted and tracked on the risk log. Results are shared with ESC, CMT, Project Sponsor, and Program & Project Manager.

Fraud Risk Assessment		
Fraud Risks	Mitigations	
1. Internal Fraud (Ex: requirements favor a specific vendor that staff or a Board member may have a relationship with)	-Open Evaluation Process -Assessment and Valuation by committee -Fraud Hotline -Ethics Policy and training	-Open records process -Open meetings act
2. External Fraud (Ex: undue influence by vendor(s) to alter requirements in an attempt for a peer vendor to gain a contract)	-Open Evaluation Process -Assessment and Valuation by committee -Fraud Hotline -Ethics Policy and training -Research vendor relationships	-Competing vendors will speak out -Open records process -Open meetings act

WORKFORCE CONTINUITY RISK REPORT

SPOTLIGHT CATEGORY	GLOBAL OWNER	REPORTING DATE
Workforce Continuity	Human Resources Director	June 7, 2012

GOAL: Preserve valued institutional knowledge, and ensure a skilled, capable, and motivated workforce is maintained to execute TRS' functions.

OVERALL RISK: Lack of effective knowledge management, talent management, and turnover transition management could lead to loss of institutional knowledge, which could negatively impact the delivery of member services and pension fund management.

Objectives	Summary of Activities
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- | | |
|--|--|
| <ul style="list-style-type: none"> • Successful implementation of TRS Leadership Development Program (LDP). | <ul style="list-style-type: none"> ▪ HR has selected a vendor for the assessment, development plans, and coaching. The team has also briefed Board members as well as staff members. ▪ Participants have been selected. Next step is to assess participants' core leadership competencies. |
| <ul style="list-style-type: none"> • Determine if all appropriate business units have current workforce continuity plans. | <ul style="list-style-type: none"> ▪ Three business units have submitted their workforce continuity plan. |

Risk/Risk Driver #1	Mitigations	Description	
Turnover of critical positions as well as turnover associated with retirements.	<ul style="list-style-type: none"> ▪ TRS Leadership Development Program ▪ Positive and rewarding work environment ▪ Monitor and assess turnover and retirement trends ▪ Executive management support and oversight 	<ul style="list-style-type: none"> ○ Development of bench strength through training such as the TRS Leadership Development Program. ○ Sustain a positive and rewarding work environment to minimize turnover. ○ Monitor and assess turnover and retirement trends and report data to management. ○ Executive management provides needed support and oversight through various methods such as meetings with team leaders and management as well as presentations to the board. 	
Action Item			Target Dates
Determine if all appropriate business units have current workforce continuity plans.			May 2012

WORKFORCE CONTINUITY RISK REPORT

Monitoring Plan		
Key Mitigations	Monitored By	Monitoring Process
Monitor organization turnover and assess trends	Human Resources	Monitoring using USPS data and provide individual business unit data to management.
Workforce continuity plans	Management	Follow biennial workforce continuity plan, review annual turnover data and trends, and update plan as necessary.
Survey of Organizational Engagement data	Human Resources	Analyze biennial Survey of Organizational Engagement data for trends within TRS control. Evaluate results and recommend actions for management's consideration.
Evaluate career ladders	Human Resources	Ongoing review of classification and career ladders.

Risk/Risk Driver #2	Mitigations	Description
Lack of effective transfer of key institutional knowledge and skill.	<ul style="list-style-type: none"> ▪ Workforce continuity plans ▪ TRS Leadership Development Program 	<ul style="list-style-type: none"> ○ Develop, follow, and update workforce continuity plans. ○ Transfer of institutional knowledge through coaching/mentoring and TRS specific projects within the leadership development program.
Action Items		Target Dates
Determine if all appropriate business units have current workforce continuity plans.		May 2012
Individual business units monitor the effectiveness of their workforce continuity plans and update them as necessary.		Ongoing
Monitoring Plan		
Key Mitigations	Monitored By	Monitoring Process
Documented processes and procedures	Management	Identify and capture undocumented processes in written procedures or job aids. Maintain system to capture undocumented processes.
Biennial needs assessment and inventory of training	Human Resources	Conduct Biennial Training Needs Assessment and compare with training offered.
Ongoing training needs assessments by departments	Management	Conduct ongoing assessment of training/skill needs and knowledge gaps. Acquire, develop, and deliver training to address identified gaps.

TRS Spotlight Category

WORKFORCE CONTINUITY RISK REPORT

Risk/Risk Driver #3	Mitigations	Description
Lack of knowledge, sound judgment or willful non-compliance regarding federal and state laws, statutes, regulations, and TRS policies and procedures governing Human Resources.	<ul style="list-style-type: none"> ▪ Develop, review and revise policies ▪ Counsel and guidance from experts ▪ Training ▪ Monitoring and advising ▪ Corrective action 	<ul style="list-style-type: none"> ○ Develop, review, and revise policies per review schedule and in accordance with changes in federal and state laws and statutes. ○ Timely counsel and guidance by subject matter experts. ○ Management and compliance training to ensure laws and rules are communicated. ○ Monitoring and advising executive management regarding instances of non-compliance. ○ Corrective action and performance management policies and procedures.
Action Item	Target Dates	
Provide management and compliance training in close alignment with executive council requirements.	September 2012	
Monitoring Plan		
Key Mitigations	Monitored By	Monitoring Process
Documented policies and procedures	Human Resources	Develop, review, and revise policies per review schedule and in accordance with changes in federal and state laws and statutes.
Training	Management and Human Resources	Management training is conducted as needed.
Corrective Action	Management and Human Resources	Corrective action and performance management policies and procedures.

CONFIDENTIAL INFORMATION RISK REPORT

SPOTLIGHT CATEGORY	GLOBAL OWNER	REPORTING DATE
Confidential Information	Deputy Director	June 7, 2012

GOAL: Protect confidential information and ensure compliance with applicable laws and rules.

OVERALL RISK: Unauthorized or unintentional release of confidential information could result in state and/or federal law violations and sanctions against TRS or its employees.

Objective	Summary of Activities
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Ensure policies, procedures, and training is in place to safeguard confidential information.

- Two inventories of confidential and sensitive information completed in 2011; one in collaboration with Grant Thornton consultants and the other as part of the annual business impact analysis process.
- Revised Confidentiality Policy to include classifying information, monitoring responsibility, reporting non-compliance and security incidents, and training frequency requirements.
- Drafted new Confidential Information Procedures and Standards.
- Confidential shred bins are locked and secured badge/keypad access was added.
- Records retention policy revised to include e-records in addition to hardcopy records.

Risks/Risk Drivers	Mitigations	Description
<p>1. Non-compliance with federal or state laws and regulations result in civil or criminal penalties imposed on TRS or TRS employees.</p>	<ul style="list-style-type: none"> ▪ Training and awareness ▪ Policies and procedures ▪ Audit and system security review ▪ Records Retention Schedule ▪ Physical security ▪ System security ▪ Corrective Action 	<ul style="list-style-type: none"> ○ Training provided on confidentiality, HIPAA, information security, public information act, fraud, waste, and abuse prevention, and ethics. ○ Revised <i>Confidentiality Policy</i> and created new Confidential Information Procedures and Standards. ○ Audit tests information security on a quarterly basis. Information Security Officer conducts a security risk assessment annually and makes recommendations. ○ Destruction of information in accordance with standard procedures. ○ Locked confidential shred bins, security cameras, and restricted badge access. ○ Access is restricted and limited to business need only; user authentication; use secure encryption methods for transmissions; and ability to remote disable (wipe) laptops and blackberries. ○ Termination for employees or sanctions and penalties for contract workers.

CONFIDENTIAL INFORMATION RISK REPORT

Risks/Risk Drivers	Mitigations	Description
	<ul style="list-style-type: none"> ▪ Legal review 	<ul style="list-style-type: none"> ○ Legal reviews TRS policies applicable to protected health information (PHI) and confidential information, monitors changes to applicable state and federal laws and rules, suggests TRS policy amendments as necessary, and renders legal services on information requests that involve confidential information.
2. Employees or contract workers accidentally expose or disclose confidential information to unauthorized parties.	<ul style="list-style-type: none"> ▪ Training and awareness ▪ Policies and procedures ▪ Monitoring compliance ▪ Corrective Action ▪ Employer reference checks; criminal history background checks ▪ Management/supervisor oversight/review ▪ Physical security ▪ System security 	<ul style="list-style-type: none"> ○ Training provided on confidentiality, HIPAA, information security, public information act, fraud, waste, and abuse prevention, and ethics. ○ Revised <i>Confidentiality Policy</i> and created new Confidential Information Procedures and Standards. ○ HIPAA Privacy Officer receives reports of potential PHI breaches. Information Security Officer conducts a security risk assessment annually and makes recommendations. ○ Termination for employees or sanctions and penalties for contract workers. ○ Human Resources conducts criminal history background checks on all new employees, applicants, consultants, contractors and workers. Employees are also responsible for self-reporting incidents. Conduct state and federal criminal history background checks. ○ Management, supervisors, and information owners provide oversight and review. ○ Locked confidential shred bins, security cameras, and restricted badge access. ○ Access is restricted and limited to business need only; user authentication; use secure encryption methods for transmissions; and ability to remote disable (wipe) laptops and blackberries.
3. Vendors, business partners, or external parties <u>expose or disclose</u> confidential information to unauthorized parties.	<ul style="list-style-type: none"> ▪ System security ▪ Physical security ▪ Vendor contract agreements; Non-disclosure agreements; Business associate agreements ▪ Communication 	<ul style="list-style-type: none"> ○ Access is restricted and limited to business need only; user authentication; and use secure encryption methods for transmissions. ○ Locked confidential shred bins, security cameras, and restricted badge access. ○ Request non-disclosure and business associate agreements as part of the vendor contract process. ○ Communicate policies and procedures, access and disclosure restrictions, and breach of contract sanctions or penalties.

CONFIDENTIAL INFORMATION RISK REPORT

Risks/Risk Drivers	Mitigations	Description
4. Vendors, business partners, <u>or</u> external parties <u>gain</u> unauthorized access to confidential information electronically or physically.	<ul style="list-style-type: none"> ▪ Vendor contract agreements; Non-disclosure agreements; Business associate agreements ▪ System security ▪ Physical security ▪ Communication 	<ul style="list-style-type: none"> ○ Request non-disclosure and business associate agreements as part of the vendor contract process. ○ Access is restricted and limited to business need only; user authentication; use secure encryption methods for transmissions; and firewalls. ○ Locked confidential shred bins, security cameras, and restricted badge access. ○ Communicate policies and procedures, access and disclosure restrictions, and breach of contract sanctions or penalties.
5. Natural disaster or accident exposes hardcopy confidential information (onsite or in the vendor's possession)	<ul style="list-style-type: none"> ▪ Vendor selection for disaster recovery services ▪ Training and awareness ▪ Vendor's mitigation/remediation plan ▪ Vulnerability assessments 	<ul style="list-style-type: none"> ○ Contract with reputable, recognized vendors in the disaster recovery industry. ○ Training provided on confidentiality, HIPAA, information security, public information act, fraud, waste, and abuse prevention, and ethics. ○ Vendors' have mitigation/remediation plans to assist with document recovery after an incident. ○ Information Security Officer conducts annual vulnerability assessments.

Action Items	Target Dates
Confirm vendors have mitigation/remediation plans to assist with document recovery after an incident (Contract Management)	Ongoing
Provide information inventory report to information owners for recertification (Enterprise Risk Management)	September 2012
Implement state encryption rule when published (Information Technology)	December 2013
Enhance disaster recovery plans to respond to natural disasters or vendor accidents (Enterprise Risk Management)	December 2013
Enhance established new employee orientation training and provide to current employees (Information Technology, Legal, Benefits, Human Resources)	January 2013
System security enhancements (scanning, encryption, and monitoring) (Information Technology)	January 2013

CONFIDENTIAL INFORMATION RISK REPORT

Monitoring Plan		
Key Mitigations	Monitored By	Monitoring Process
System security and Physical security	Information Technology, Staff Services, and Information Owners	<ul style="list-style-type: none"> ▪ Information Technology staff remotely disables laptops and blackberries that have been reported lost or stolen. ▪ Information Security Officer conducts annual: <ul style="list-style-type: none"> ○ Security risk assessments and makes recommendations. ○ Vulnerability assessments and penetration testing. ▪ Information Technology provides secure encryption methods for transmission of confidential information. ▪ Security staff monitors both West and East buildings 24 hours a day. Routine security patrols ensure critical areas are secured. ▪ Staff Services provides limited key access to confidential shred bins.
Criminal History Background Checks	Human Resources	Human Resources conducts state and federal criminal history background checks on all new employees, applicants, consultants, contractors and workers. Employees are also responsible for self-reporting incidents.
Records Retention Program	Data Management and Records Liaisons	Records Analyst coordinates agency-wide records purge on an annual basis to ensure departmental information, which may contain confidential records, is destroyed in accordance with standard procedures.
Training and Awareness	Human Resources, Information Security, and Management	<ul style="list-style-type: none"> ▪ Human Resources staff provides and documents training for confidentiality, HIPAA, information security, fraud, waste, and abuse prevention, and ethics. ▪ Managers provide specialized departmental training on HIPAA, document completion of training, and provide information to Human Resources. ▪ Information Security provides annual training.
Vendor contract agreements; non-disclosure agreements; and business associate agreements	Contract Management	Contract management staff requests non-disclosure and business associate agreements as part of the vendor contract process.

PROCUREMENT & CONTRACT MANAGEMENT RISK REPORT

SPOTLIGHT CATEGORY	GLOBAL OWNER	REPORTING DATE
Procurement & Contract Management	Chief Financial Officer	June 7, 2012

GOAL: Maintain effective procurement and contract management systems.

- OVERALL RISK:**
- Inappropriate procurement practices could result in purchases of sub-standard products and services, unfavorable pricing or contract terms, and violation of laws.
 - Ineffective contract monitoring could result in contractors not fulfilling their contractual obligations.

Objectives	Summary of Activities
<ul style="list-style-type: none"> • Mitigate Procurement risk associated with processing purchases and contracts. 	Allocated significant resources to document requirements for a proposed financial system upgrade in an effort to strengthen existing processes and controls as well as gaining efficiency through technological advancements.
<ul style="list-style-type: none"> • Mitigate Contract Management risk through effective monitoring processes. 	Allocated significant resources to document requirements for a proposed financial system upgrade in an effort to strengthen monitoring, tracking, and notification processes for existing contracts.

Risk/Risk Driver #1	Mitigations	Description
Inadequate resources and loss of institutional knowledge.	<ul style="list-style-type: none"> ▪ Succession planning ▪ Cross-training and rotation of duties ▪ Provide positive and pleasant work environment ▪ Adequate funding for FTEs ▪ Staff development 	<ul style="list-style-type: none"> ○ Identify and prepare staff to assume higher level duties and functions in accordance with the department's succession plan. ○ Ensure procurement staff is knowledgeable on various procurement types and processes to allow them to provide assistance to other team members as needed. ○ Foster a collaborative work environment, allow flextime when possible, and recognize employees for extraordinary contributions on an ongoing basis. ○ Ensure adequate funding exists to provide staffing at appropriate levels during each budgetary cycle. ○ Provide training opportunities to assist staff in career development in accordance with the departmental training plan. TRS has certified purchasers who must receive 24 hours of continuing education credits annually.

PROCUREMENT & CONTRACT MANAGEMENT RISK REPORT

Action Items		Target Dates
Prioritize filling vacant positions.		Ongoing
Generate opportunities for cross-training, team building, and professional development to minimize turnover.		Ongoing
Monitoring Plan		
Key Mitigations	Monitored By	Monitoring Process
Cross-Training	Purchasing & Contracts Team Leader	Systematically ensure that multiple team members have the knowledge to perform each team task.
One-on-One and Team Meetings	Purchasing & Contracts Team Leader	Actively solicit feedback from team members regarding workload levels and any possible issues affecting the Purchasing Team.
Monitor Staffing Levels	Department Manager	Review overtime reports and workload metrics to determine appropriate staffing levels.

Risk/Risk Driver #2	Mitigations	Description
Failure to receive information in a timely manner.	<ul style="list-style-type: none"> ▪ Effective communication ▪ Documented processes and procedures ▪ Planning 	<ul style="list-style-type: none"> ○ Make management aware of possible problems as needed. Communicate with department staff on purchasing lead times and requirements for various procurement processes. ○ Documented processes and procedures prescribe communication content, frequency, recipient, and originator. ○ Information is disseminated or gathered at specific points in time.
Action Items		Target Dates
Monitor statute/rule changes and reporting requirements; update TRS procurement policy and procedures.		Ongoing
Inform staff of new requirements and convey existing procedures as opportunities arise.		Ongoing
Monitoring Plan		
Key Mitigations	Monitored By	Monitoring Process
Documented processes and procedures	Purchasing Staff, Contract Administration Coordinator, and Purchasing & Contracts Team Leader	Maintain documented processes and procedures. Note any changes to current Purchasing Team processes and/or procedures and ensure that these are captured in the team procedures and/or Contract Administration Manual.

TRS Spotlight Category

PROCUREMENT & CONTRACT MANAGEMENT RISK REPORT

Effective Communication	Purchasing & Contracts Team Leader and Contract Administration Coordinator	Ensure that e-mail, Intranet, and/or phone are used to share necessary information in a timely manner to meet the need(s) at hand.
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Risk/Risk Driver #3	Mitigations	Description
Unauthorized access to or release of confidential information.	<ul style="list-style-type: none"> ▪ Documented processes and procedures 	<ul style="list-style-type: none"> ○ Ensure appropriate forms (Non-Disclosure Agreements, Code of Ethics, Business Associate Agreement, Information Security Policy Acknowledgement, etc.) are included in contracts where applicable.
	<ul style="list-style-type: none"> ▪ Management oversight 	<ul style="list-style-type: none"> ○ TRS' Contract Administration Coordinator provides a quality assurance function by reviewing procurement files for completeness.
	<ul style="list-style-type: none"> ▪ Screen prospective employees 	<ul style="list-style-type: none"> ○ Background checks performed on new staff during the hiring process.
Action Items		Target Dates
Obtain legal review on matters involving confidentiality.		Ongoing
Ensure appropriate forms are included in contractual agreements.		Ongoing
Monitoring Plan		
Key Mitigations	Monitored By	Monitoring Process
Review of procurements	Purchasing & Contracts Team Leader and Contract Administration Coordinator	Ensure all procurements are in accordance with established processes and procedures.
Contract Review	Purchasing & Contracts Team Leader and Contract Administration Coordinator	Perform periodic review of contracts to ensure that contract requirements, deliverables, and payments are in accordance with the terms of the contract.

Risk/Risk Driver #4	Mitigations	Description
Internal fraud	<ul style="list-style-type: none"> ▪ Documented processes and procedures 	<ul style="list-style-type: none"> ○ Maintain existing contract administration manual and documented processes and procedures, and communicate changes to these documents to all team members.
	<ul style="list-style-type: none"> ▪ Management oversight 	<ul style="list-style-type: none"> ○ TRS' Contract Administration Coordinator provides a quality assurance function by reviewing procurement processes and providing guidance. Audits of the procurement and accounting functions are conducted by several internal and external audit entities each year.

TRS Spotlight Category

PROCUREMENT & CONTRACT MANAGEMENT RISK REPORT

Risk/Risk Driver #4	Mitigations	Description
	<ul style="list-style-type: none"> ▪ Segregation of duties ▪ Screen prospective employees 	<ul style="list-style-type: none"> ○ Procurement, receiving, property management, and payment functions are segregated under different functional business units and supervisory staff. ○ Background checks performed on new staff during the hiring process.
Action Items		Target Dates
Maintain Fraud, Waste, and Abuse Hotline to allow anonymous reporting.		Ongoing
Continue Fraud, Waste, and Abuse Prevention training as part of New Employee Orientation.		Ongoing
Monitoring Plan		
Key Mitigations	Monitored By	Monitoring Process
Review of procurements	Purchasing & Contracts Team Leader and Contract Administration Coordinator	Ensure all procurements are in accordance with established processes and procedures.
Contract Review	Purchasing & Contracts Team Leader and Contract Administration Coordinator	Perform periodic review of contracts to ensure that contract requirements, deliverables, and payments are in accordance with the terms of the contract.

Risk/Risk Driver #5	Mitigations	Description
Collusion with vendor/ contractor on major contracts (Healthcare Contracts)	<ul style="list-style-type: none"> ▪ Cross-functional participation on major contracts ▪ Documented processes and procedures ▪ Management oversight 	<ul style="list-style-type: none"> ○ TRS' healthcare contracts include Procurement (vendor interaction), Legal (review and counsel), and Internal Audit (observation) business units. ○ The Board's Ethics policy includes a blackout period stating Board members may not communicate with prospective vendors through the solicitation process for contracts in which the Board will make the selection of the contractor. All evaluation/advisory staff execute Non-Disclosure Agreements. ○ TRS' Contract Administration Coordinator provides a quality assurance function by reviewing procurement processes and providing guidance. Audits of the procurement and accounting functions are conducted by several internal and external audit entities each year.

PROCUREMENT & CONTRACT MANAGEMENT RISK REPORT

Risk/Risk Driver #5	Mitigations	Description
	<ul style="list-style-type: none"> ▪ Segregation of duties ▪ Screen prospective employees 	<ul style="list-style-type: none"> ○ Procurement, receiving, and payment functions are segregated under different functional business units and supervisory staff. ○ Background checks performed on new staff during the hiring process.
Action Item		Target Dates
Maintain existing controls and monitoring.		Ongoing
Monitoring Plan		
Key Mitigations	Monitored By	Monitoring Process
Cross-functional participation	Divisional Management, Legal Services, Internal Audit, Purchasing & Contracts Team Leader	Active involvement throughout the contracting process by Divisional Management, Legal Services, Internal Audit, and Procurement.
Contract Review	Purchasing & Contracts Team Leader and Contract Administration Coordinator	Review of major contracts to ensure that contract requirements and appropriate documentation are contained in the contract file.

Risk/Risk Driver #6	Mitigations	Description
Competing priorities/ heavy workload.	<ul style="list-style-type: none"> ▪ Plan and prioritize work ▪ Management oversight ▪ Cross-training and rotation of duties 	<ul style="list-style-type: none"> ○ Work is planned and prioritized so that most important tasks are addressed in the proper order. Planning allows management to understand how and when staff is committed. TRS' contract management and tracking system allows procurement staff to track contracts and provide advance notification to department staff of upcoming contract renewals on a monthly basis. ○ Management monitors staff activities and service demands and reassigns staff as needed. Procurement staff verifies required management review and approvals are obtained in accordance with TRS policy. Management communicates with procurement and department staff as needed to identify issues and priorities. ○ Staff is cross-trained so that they can fill in during periods of peak demand or extended absences.

PROCUREMENT & CONTRACT MANAGEMENT RISK REPORT

Action Item		Target Dates
Ensure sufficient resources exist throughout the TEAM Program development.		Ongoing
Monitoring Plan		
Key Mitigations	Monitored By	Monitoring Process
Contract Administration Tracking System (CATS)	Purchasing & Contracts Team Leader, Contract Administration Coordinator, Purchasing Staff	Use contract expiration reports to plan for the renewal or re-solicitation of expiring contracts.
Planning	Purchasing & Contracts Team Leader and Purchasing Staff	Maintain regular contact with contract sponsors to obtain knowledge and status of upcoming contracts.
Communication	Purchasing & Contracts Team Leader	Meet one-on-one with purchasing staff and the team to verify priorities and gauge workloads.

Appendix C

Departmental Activities At-a-Glance



- Established the Risk Management & Strategic Planning department
- Issued the Enterprise Risk Management (ERM) Policy
- Revised and updated the Incident Management Team Plan
- Implemented the TRS Emergency Notification System 
- Developed and conducted an incident management team tabletop exercise, with facilitation assistance from the Travis County Office of Emergency Management
- Coordinated the disaster recovery testing at IBM facility in Dallas and proof-of-concept co-location site at 816 Congress
- Coordinated, conducted, and led a shelter-in -place drill at the Red River campus
- Developed TRS policy review tracking and monitoring system

Departmental Activities At-a-Glance

- Designed and significantly enhanced content material for the *Risk Management Handbook* which includes important information related to emergency situations, reporting work-related accidents, injuries, or illnesses, health and safety, ergonomics, security badges, wellness, business continuity, and ERM.

- Performed detailed risk assessments in the areas of:
 - TEAM
 - Work Force Continuity
 - Confidential Information
 - Procurement & Contract Management

- Project leader for the compilation and review of the fiscal year *2013–2017 Strategic Plan*

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Tab 3

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June 2012

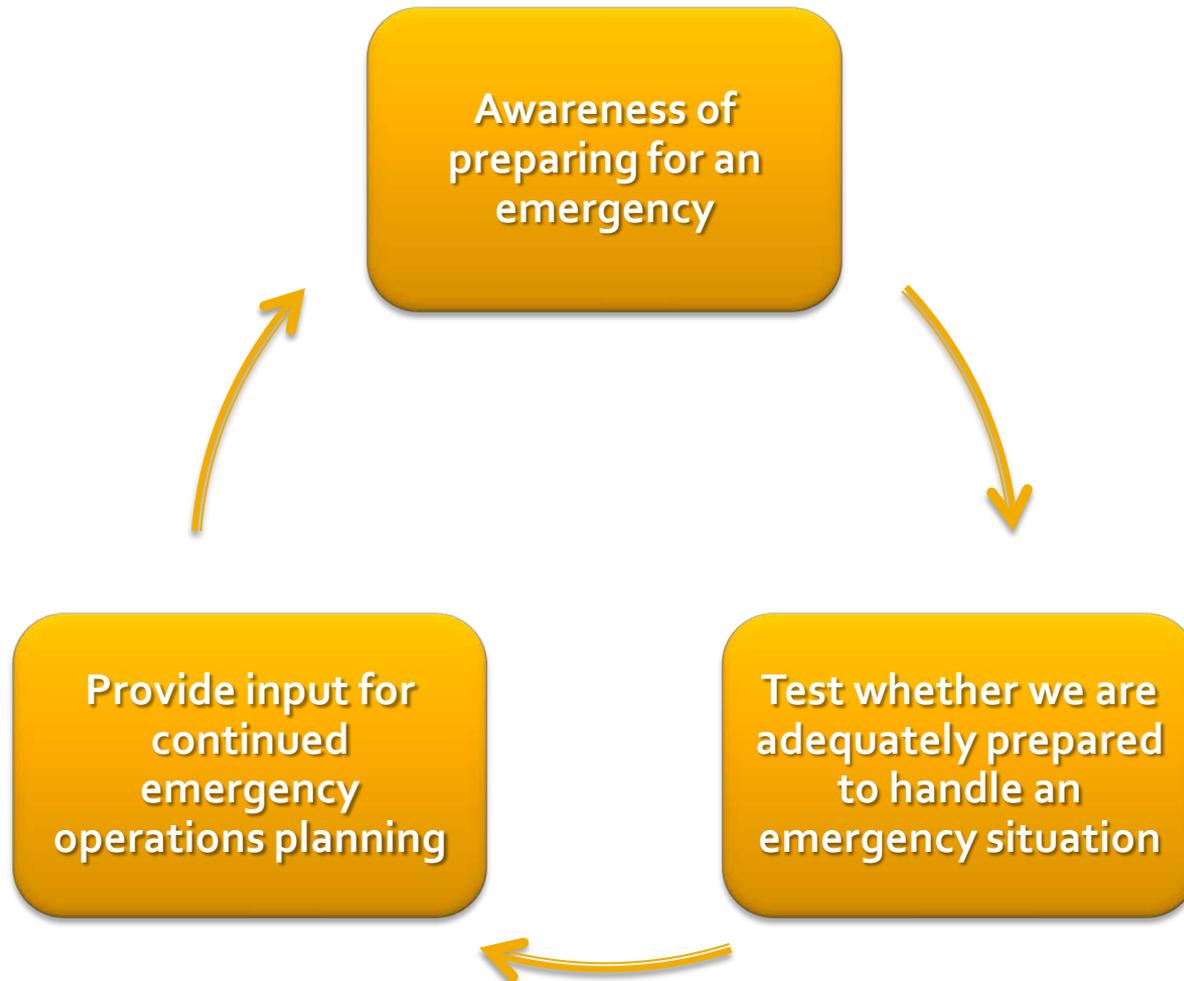
Disaster Recovery and Business Continuity Initiatives



Disaster Recovery and Business Continuity Initiatives

- **Topics**
 - Tabletop Exercise
 - Business Continuity Planning
 - Disaster Recovery Exercise

Tabletop Exercise Purpose





February 2012 - For testing purposes only

Incident Management Team (IMT)

The purpose of the IMT is to:

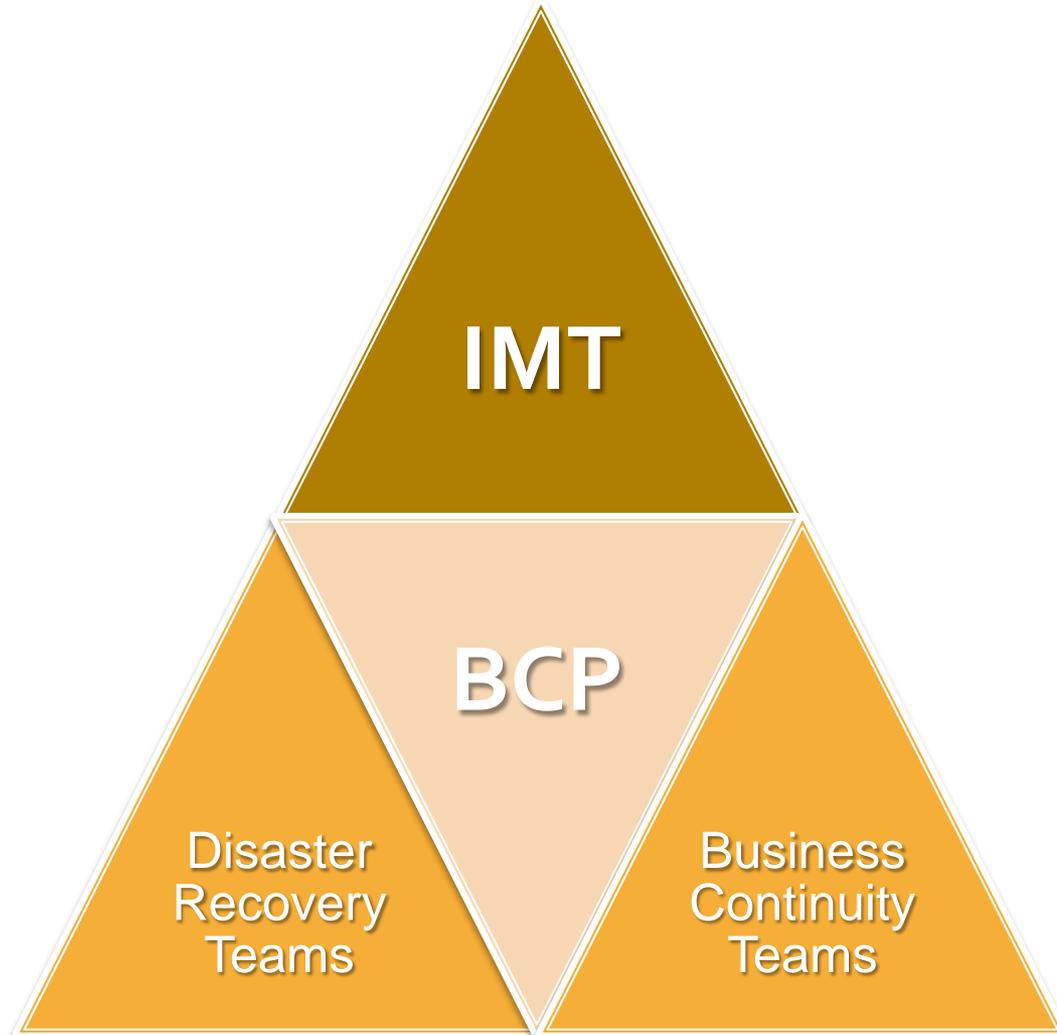
- Provide a central organization to respond to incidents
- Manage the Incident Command Center and oversee the recovery efforts
- Comply with regulations
- Minimize the potential for negative exposures



TRS IMT in Action

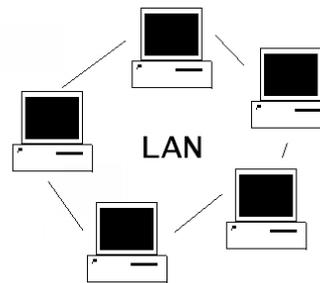


Business Continuity Planning



Business Continuity Teams

- **Incident Management Team** has the ultimate responsibility for making decisions related to business resumption.
- **Disaster Recovery Teams** are needed to recover the technological aspects of mission-critical business functions in the event of a major business interruption.



- **Business Continuity Teams** consist of business units necessary to resume TRS' critical functions in the event of a major business interruption.

April 28th – 29th

2012 Disaster Recovery Exercise



Disaster Recovery Exercise

Event Scenario Summary

A terrorist event occurred at the Texas State Capitol, damaging government buildings and bringing down power grids. TRS main facility is damaged but the 816 Congress building was spared. Law enforcement officials have evacuated and cordoned most of downtown. Homeland Security and the FBI will begin their investigation immediately. The investigation is anticipated to last several weeks. Affected businesses have been notified and a decision made to begin using alternative plans to conduct business.



Disaster Recovery Exercise

	Dallas Team	816 Congress Team
Participants:	4	18
Technology Focus:	Mainframe & Imaging	Distributed Systems & Network
Objectives:	<ul style="list-style-type: none">• Mainframe restore including ADABAS and DB2 databases• Imaging System restore with the last 3 months of images• Restore remaining images to the imaging system (5TB)• Test Mainframe, Imaging, ADABAS and DB2 systems• Restore printed batch reports• Securely erase data from all systems restored	<ul style="list-style-type: none">• Demonstrate advantages of replication strategy• Restore core business functions (<i>i.e., email, data shares, SharePoint, Internet, etc...</i>)• Restore core database and reporting services• Restore connectivity and secure connectivity to State Street• Restore access to critical Investment systems.• Provide secure remote access for business users to recovered systems (VPN)

Disaster Recovery Exercise

Current Distributed Systems Process



Red River Location



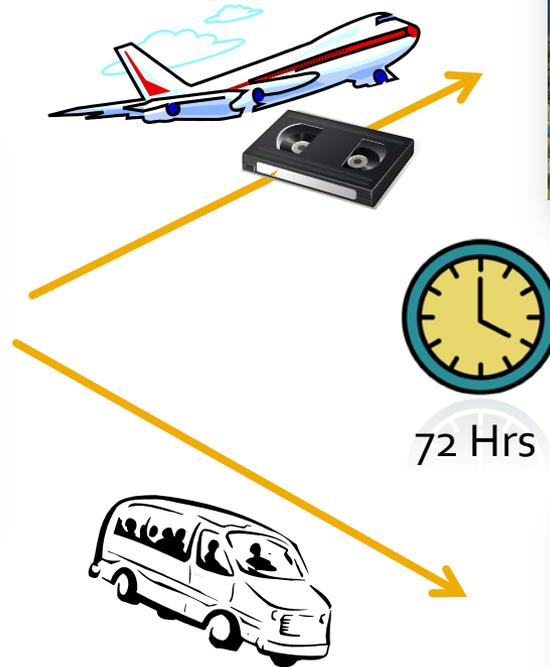
Offsite Storage

* Tape estimates include tapes created for mainframe, imaging, distributed & network systems.

Disaster Recovery Exercise



Red River Location



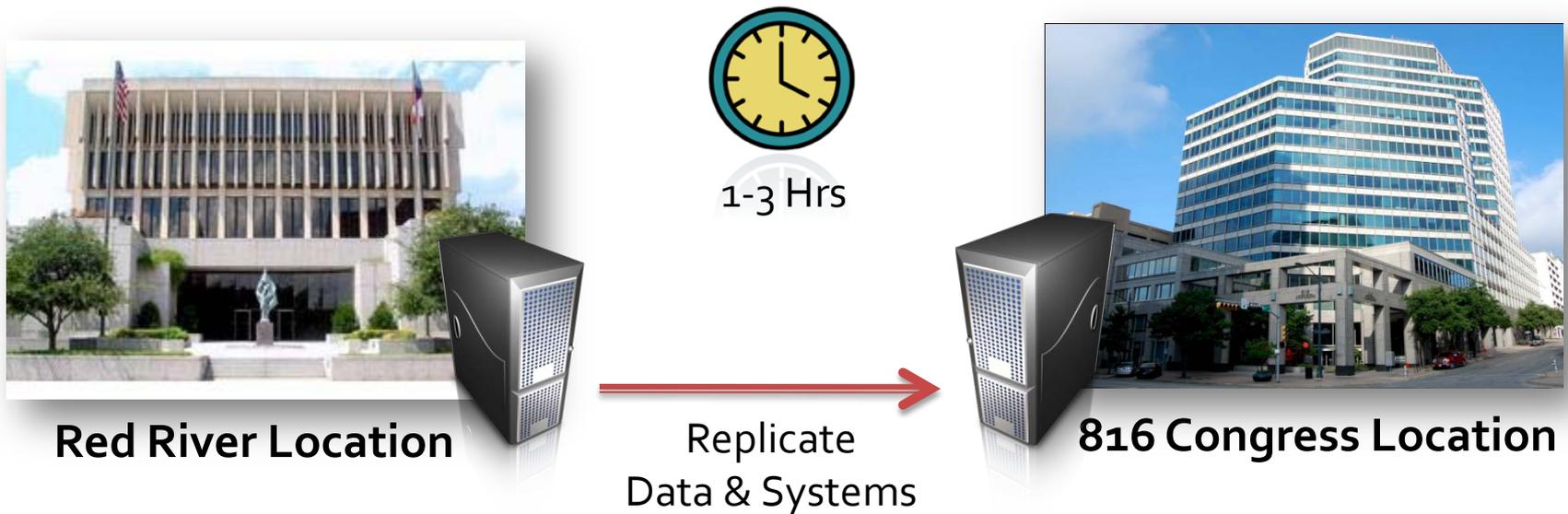
IBM, New York



IBM, Dallas

Disaster Recovery Exercise

Co-location & Replication Proof-of-Concept



Disaster Recovery Exercise

- **New Strategy Advantages**
 - Dramatic reductions in recovery times
 - Reduces complexity and risks compared with traditional methods
 - Offers more recovery granularity and flexibility
 - Reduces potential for errors during recovery
 - Removes vendor dependence and over subscription
 - Dramatically simplifies fallback (return home)
 - Foundation for TEAM Program



Disaster Recovery Exercise

Metric	Previous Test	This Year
Core Server Recovery Time	48 hours	2 hours, 38 minutes
Number of Servers Recovered	12	110
# of Servers / Systems Tested	12	45
Amount of data restored	4.5 TB	14.5TB
Business User Access	61 Physical Workstations at IBM	Unlimited VPN Virtual Desktops
Recovery Points	5	33
System / Data Age	72 hours	1-12 hours

Disaster Recovery Exercise

■ Key Outcomes

- Successfully tested and validated co-location and replication strategy.
- Achieved 83% objective success rate. Objectives not met were due to time constraints.
- 110 Servers / Services restored including the mainframe, imaging system, core data and network servers and Investment systems.
- New staff member was able to successfully restore the mainframe environment from documentation.



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**State Office of Risk Management
Report on TRS' Risk Management Program**

Jay LeBlanc



STATE OFFICE OF RISK MANAGEMENT

WILLIAM P. CLEMENTS, JR. BUILDING, 6TH FLOOR
P.O. BOX 13777, AUSTIN, TEXAS 78711
(512) 475-1440

May 18, 2012

Brian Guthrie
Executive Director
Teacher Retirement System of Texas
1000 Red River Street
Austin, Texas 78701

Agency #323

Dear Mr. Guthrie

RE: Risk Management Program Review (RMPR) - REVISED

A Risk Management Program Review of the Teacher Retirement System of Texas was conducted on May 9th and 10th, 2012. The consultation was conducted under the authority of Texas Labor Code, Title V, Subtitle A, Chapter 412, and is designed to assist state agencies to develop and implement comprehensive risk management programs that meet Risk Management for Texas State Agencies (RMTSA) guidelines. This is a revision of the report dated May 18, 2012.

The following observations were reviewed and discussed during the visit:

- The total medical and indemnity benefits paid to claimants at the Teacher Retirement System of Texas in the following years are listed below:

FY12 - \$926 (through 1st Quarter)
FY11 - \$1,216
FY10 - \$1,657
FY09 - \$5,324
- The leading causes of workers' compensation claims at the Teachers Retirement System of Texas during FY09-FY12 was slips, trips, or falls and strains.
- The injury frequency rate (i.e. accepted claims per 100 full time equivalent employees - FTEs) was 0.2% in FY12, 0.58% in FY11, 0.4% in FY10 and 0.84% in FY09.
- The workers' compensation claim cost per FTE was \$2.17 at the Teachers Retirement System of Texas in FY11.

Noteworthy observations made during this consultation include the following:

- Teacher Retirement System of Texas is very proactive with regard to safety. A safety culture exists throughout the agency, which reflects positively on management's commitment to providing a safe working environment for all employees.
- Fire evacuation drills are conducted, documented, and critiqued.
- The agency has 45 Department Health & Safety Officers (DHSOs) whose specific duties and safety responsibilities have been well defined. They all meet on a regular basis and have received appropriate training.
- TRS has a good hazard reporting system in place and all near misses/incidents are reported to the Safety Coordinator.
- Housekeeping was exemplary throughout the entire agency; the Printing Shop's housekeeping was noteworthy.
- The agency's fire control system is current with its required annual inspection. The FM-200 clean agent fire suppression system located in the computer room is current with its required semi-annual inspection.
- AED units and first aid kits are located prominently and readily available for use.
- Employee safety training is a priority at the agency. TRS does a good job training all employees in safety (back injury protection, slips/trips/falls, proper lifting procedures, hazardous communications, etc.) and has recently conducted a drill within a shelter of a building for employees i.e. tornado or hurricane emergency (May 2, 2012).
- TRS has an Incident Management Team Plan in place that is both well written and comprehensive. This plan provides for a central organization to handle incidents and to manage the Incident Command Center.
- The agency's Risk Management Handbook and Health, Safety and Security Handbook are both comprehensive and promote a safe, healthy, hazard-free work environment.

The Risk Management Program Review of April 8th and 9th, 2009, was discussed with Jay LeBlanc, Risk Management & Strategic Planning Director, and Minerva Evans, Risk Management Specialist, during the course of this RMPR. There were three open recommendations from that consultation and they have been closed as a result of this RMPR. The closed recommendations are:

- **#09-04-01 Safety and Health Manual**
- **#09-04-02 Business Continuity Plan (BCP)**
- **#09-04-03 Open Stairs in the East Dock**

Recommendations to improve or maintain the effectiveness of your Risk Management program include the following:

- #12-05-01 Automatic Fire-Extinguishing System in the Kitchen.** The Gaylord Quencher fire control system located in the Kitchen, which is water based, was red-tagged in April 2012 by the servicing vendor. Currently the fire control system in the kitchen is operational and fully functioning, but was red-tagged because it does not meet current NFPA standards. TRS should install a replacement fire control system in the kitchen that meets current NFPA standards for the protection of cooking equipment that

Brian Guthrie
May 18, 2012
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produces grease-laden vapors that might be a source of ignition of grease in the hood, grease removal device, or duct. Fire-extinguishing equipment must be present in the kitchen and include both an automatic fire-extinguishing system as primary protection and a portable fire extinguisher as secondary protection. All portable fire extinguishers installed in kitchen cooking areas must be specifically listed (Class K) for such use.

An automatic fire-extinguishing system which meets current NFPA standards should be installed in TRS's kitchen as soon as practical to reduce the potential fire hazard of cooking operations. Additionally, a Class K portable fire extinguisher should also be installed in the kitchen.

Reference: NFPA 96, Chapter 10.2.1 and NFPA 10, Chapter 5.1.

We request that the appropriate staff review this document, specify the actions that the Teacher Retirement System of Texas plans to take, and project the estimated date of completion for these recommendations. Please provide your response by **June 22, 2012**, to me via US mail, fax, or E-mail: Joseph.deering@sorm.state.tx.us.

Please convey my appreciation to the Teacher Retirement System of Texas staff for the cooperation and assistance given during this RMPR. If you have any questions, please call me at (512) 936-1568.

Sincerely,

A handwritten signature in black ink that reads "Joe Deering". The signature is written in a cursive style with a large initial "J" and "D".

Joe Deering
Risk Management Specialist
Risk Assessment and Loss Prevention
State Office of Risk Management

cc: Jay LeBlanc, Risk Management & Strategic Planning
Minerva Evans, Risk Management Specialist

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Trust Liquidity Stress Testing

Jase Auby



Introduction

- ❑ Liquidity is a measure of how readily the assets of the Trust can be sold and converted into cash
 - ❑ Cash is required for
 - Disbursements of benefits to plan participants
 - Investment activities
 - Trade settlement
 - Rebalancing
 - Derivatives transactions
 - Meeting commitments to fund new investments
 - Return of securities lending collateral
 - ❑ The Investment Division monitors Trust liquidity on two time horizons
 - Daily
 - Monthly
 - ❑ Today's presentation reviews a monthly Liquidity Stress Testing process
-

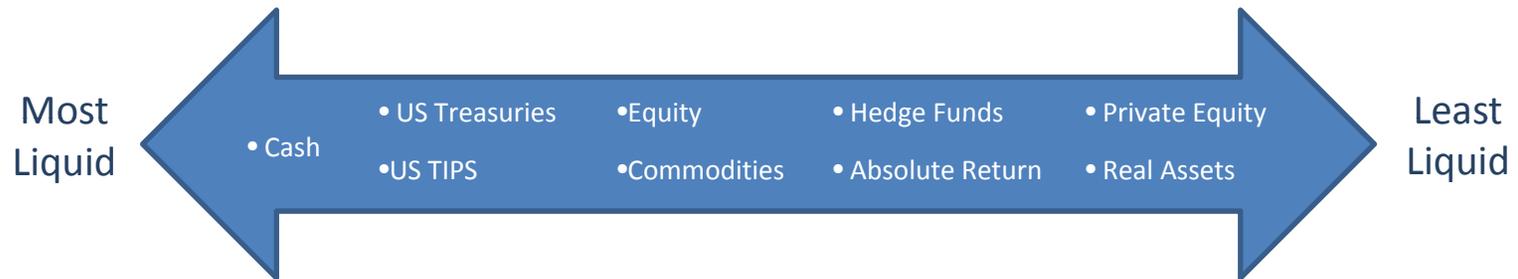


Sources and Uses of Liquidity

- ❑ The Liquidity Stress Testing process considers “Sources” and “Uses” of liquidity

- ❑ **Sources of Liquidity**¹

1. Trust Assets (\$110.3 billion)



2. Securities Lending Collateral (\$22.2 billion)

- ❑ **Uses of Liquidity**

1. Normal activities (benefits disbursements, trade settlement, rebalancing, etc.)
2. Stressed activities
 - Market-driven derivatives movements
 - Lower than expected securities lending usage
 - Accelerated capital calls

¹ As of March 31, 2012



Stress Testing

Stress Test: Over a one month horizon and under stressed conditions, can sufficient liquidity be raised to meet the Trust's potential increased obligations?

Stress to Sources of Liquidity

- ❑ Two Stresses are applied to the Assets of the Trust
 1. **Market Value Stress** = 1.5 times worst month in past 10 years
 2. **Liquidity Stress** = If the Trust attempted to sell, how far away from the actual market price would the Trust be able to execute?

- ❑ US Large Cap Equity Example ¹:
 - Market Value of USLC \$21.5 billion
 - Worst month in past 10 years -28%
 - Market Value Stress -42% (equal to 1.5 times -28%)
 - Liquidity Stress -20%
 - Stressed Market Value of USLC \$9.9 billion ²

¹ As of March 31, 2012

² Equal to \$21.5 times (1-42%) * (1-20%)



Stress Testing

Stress to Uses of Liquidity

- ❑ Normal cash flows are projected out one month and assumed to occur

- ❑ In addition, three Stresses are applied to the investment portfolio:
 1. **Additional derivatives collateral posting**
 - Derivatives positions are stressed with the same market value stresses as the Sources of Liquidity

 2. **Reduced usage of the Securities Lending Program**
 - Equity usage is reduced by 50%
 - UST and TIPS are not stressed

 3. **Private Markets**
 - Capital calls are increased by 100%
 - Return of capital is reduced to 0%

Putting it All Together

Sources and Uses of Liquidity



Sources of Liquidity \$, billions as of March 31, 2012	Market Value	Stressed Value
Liquid Assets (Cash, UST, TIPS, Equities, Commodities)	\$74.0	\$40.6
Securities Lending (Cash, Fixed Income)	22.2	18.4
Total Sources of Liquidity	\$96.2	\$59.0
<i>Note: Excluded Illiquid Assets (Private Equity, Real Assets, Hedge Funds, Other)</i>	\$36.3	

Uses of Liquidity \$, billions as of March 31, 2012	Market Value	Stressed Value
Normal Uses of Liquidity	-\$0.1	-\$0.1
Stressed Derivatives		-0.9
Stressed Securities Lending		-3.4
Stressed Private Markets		-0.8
Total Uses of Liquidity	-\$0.1	-\$5.1

Putting it All Together

Liquidity Ratio and Conclusion



- ☐ Sources and Uses can be combined into a Liquidity Ratio

Liquidity Ratio	Value ¹
Sources of Liquidity	\$59.0
Uses of Liquidity	-\$5.1
Ratio (Sources/Uses)	11.5
Alert Threshold	4.0
Fail Threshold	3.0
Test Result	Pass
Note: Net Liquidity (Sources less Uses)	\$53.8
Note: 12 Months Benefit Payments (at 4% Annual Rate)	\$4.4

¹ \$, billions as of March 31, 2012



Conclusion

- ❑ The Trust is highly liquid

- ❑ Under a stressed scenario, the Trust has 11.5 times more liquidity than required

- ❑ The Trust has \$53.8 billion of net liquidity which equates to 12.2 times the annual benefit payments of \$4.4 billion (assuming a 4% annual payout rate)