TEACHER RETIREMENT SYSTEM OF TEXAS MEETING
BOARD OF TRUSTEES

AGENDA

June 5, 2014 – 12:30 p.m.
June 6, 2014 – 9:30 a.m.

TRS East Building, 5th Floor, Boardroom

NOTE: The Board may take up any item posted on the agenda during its meeting on Thursday, June 5, 2014, or the following day beginning at the time and place specified on this agenda.

The open portions of the June 5-6, 2014, Board meetings are being broadcast over the Internet. Access to the Internet broadcast of the Board meeting is provided on TRS' Website at www.trs.state.tx.us.

1. Call roll of Board members. [Estimated time 12:30-12:45]
2. Consider administrative items, including – David Kelly: [Estimated time 12:30-12:45]
   A. Approval of the March 27-28, 2014 Board meeting minutes.
   B. Setting, rescheduling, or canceling future Board meetings.
3. Provide opportunity for public comments – David Kelly. [Estimated time 12:30-12:45]
4. Review and discuss the Executive Director's report on the following matters – Brian Guthrie: [Estimated time 12:45-1:15]
   A. Administrative operational matters, including financial, audit, legal, staff services, board administration activities, special projects, long-term space planning, and strategic planning.
   B. Board operational matters, including a review of draft agendas for upcoming meetings.
5. Receive an update on TRS' long-term space planning project, including matters related to real property – Meredith Bell, CBRE Workplace Strategy; Lenny Beaudoin, CBRE Workplace Strategy; Peter Jansen, CBRE Public Institutions and Education Services; and Peter Larkin, CBRE Public Institutions and Education Services. [Estimated time 1:15 - 1:45]
6. Discuss and consider investment matters, including the following items:
   A. Review the report of the Investment Management Committee on its June 5, 2014 meeting – Todd Barth. [Estimated time 1:45-1:45]
B. Receive a presentation on the Global Investment Outlook – Bob Prince, Bridgewater. [Estimated time 1:45-2:45]

C. Fourth Phase Review of the 2014 Asset Allocation Study, including allocation recommendations – Britt Harris, Mohan Balachandran and Ashley Baum. [Estimated time 2:45-4:30]

D. Performance Review: First Quarter 2014 – Steve Voss and Brady O’Connell, Hewitt EnnisKnupp. [Estimated time 4:30-5:00]

7. Receive a presentation from the TEAM Program Independent Program Assessment (IPA) Vendor – Michael Johnson, Bridgepoint Consulting. [Estimated time 5:00-5:45]

8. Receive an update on the TEAM Program, including an update on the schedule and a review of dependencies between TEAM projects – David Cook, Jamie Pierce; Adam Fambrough; and Jay Masi, Provaliant. [Estimated time 5:45 - 6:15]

9. Review the report of the Compensation Committee on its June 5, 2014 meeting – Nanette Sissney. [Estimated time 6:15-6:30]

10. Review the report of the Budget Committee on its June 5, 2014 meeting and consider authorizing an increase in the current fiscal year budget to provide funding for professional services related to TRS-ActiveCare – Nanette Sissney. [Estimated time 6:15-6:30]

11. Review the report of the Policy Committee on its June 5, 2014 meeting and consider final proposed amendments to or adoption of the following TRS rules in Title 34, Part 3 of the Texas Administrative Code – Joe Colonnetta. [Estimated time 6:15-6:30]

A. Rule § 23.5, relating to Nomination for Appointment to the Board of Trustees;
B. Rule § 25.1, relating to Full-time Service;
C. Rule § 25.25, relating to Required Deposits;
D. Proposed new Rule § 25.36, relating to Employer Payments for Members Not Covered under the Federal Old-Age, Survivors, and Disability Insurance Program;
E. Proposed new Rule § 25.37, relating to Employer Payments from Public Junior Colleges and Public Junior College Districts;
F. Rule § 25.77, relating to USERRA Service Creditable but not Established;
G. Rule § 25.113, relating to Transfer of Credit between TRS and ERS;
H. Rule § 25.302, relating to Calculation of Actuarial Costs of Service Credit;
I. Proposed new Rule § 25.303, relating to Calculation of Actuarial Costs for Purchase of Compensation Credit;
J. Rule § 27.5, relating to Termination of Rights to Benefits;
K. Rule § 29.1, relating to Eligibility for Service Retirement;
L. Rule § 29.11, relating to Actuarial Tables;
M. Rule § 43.43, relating to Subpoenas and Commissions; and
N. Proposed new Rule § 51.13, relating to Five-Year Service Credit Requirement Effective August 31, 2014.


NOTE: The Board meeting likely will recess after the last item above and resume Friday morning to take up items listed below.

13. Provide an opportunity for public comment – David Kelly. [Estimated time 9:30-9:45]

14. Receive an update on matters related to TRS-Care and TRS-ActiveCare, including – Betsey Jones; Kevin DeStefino, RPh; Alan Lotvin, EVP Specialty for CVS/caremark; and Bill Hickman, Gabriel, Roeder, Smith & Company:

[Estimated time for items 14 through 19 —9:45-12:30]

A. The report of the Retirees Advisory Committee on its April 10, 2014 and May 22, 2014 meetings.

B. Age-in and enrollment opportunities in Medicare Advantage and Medicare Part D plans.

C. Matters relating to compound and specialty drugs.

D. The TRS-Care and TRS-ActiveCare sustainability studies.

15. Discuss and consider adoption of premiums and plan design for TRS-Care, the retiree health benefits program, including: (i) adopting premiums and plan design for the three standard plans and the fully-insured Medicare Advantage Plans; and (ii) adopting plan design for the Medicare Part D Plans – Betsey Jones and William Hickman, Gabriel, Roeder, Smith & Company.

16. Discuss and consider the following items regarding the active employees health benefits program (TRS-ActiveCare) health maintenance organization (HMO) option, including considering a finding that deliberating or conferring on the HMO vendor selection in open meeting would have a detrimental effect on the position of the retirement system in negotiations with a third person – Betsey Jones and William Hickman, Gabriel, Roeder, Smith & Company:

A. Selection of HMO vendor(s) under TRS-ActiveCare.
B. Adoption of premiums and plan design for the TRS-ActiveCare HMO plan options.

17. Discuss and consider adoption of premiums and plan design for self-funded plan options under the active employees health benefits program (TRS-ActiveCare) – Betsey Jones and William Hickman, Gabriel, Roeder, Smith & Company.

18. Discuss and consider enrollment periods for the 2014-2015 plan year for the active employees health benefits program (TRS-ActiveCare) – Betsey Jones and William Hickman, Gabriel, Roeder, Smith & Company.

19. Evaluate the performance of Gabriel, Roeder, Smith & Company as the provider of health benefit consultant services to TRS – Betsey Jones.

20. Evaluate the performance of Gabriel, Roeder, Smith & Company as the provider of Pension Trust Fund actuarial services and related services to TRS – Rebecca Merrill. [Estimated time 12:30-12:45]

21. Consider selecting a firm to provide actuarial audit services – Rebecca Merrill [Estimated time 12:45-1:00]

22. Receive a report on the 2014 TRS Member Satisfaction Survey – Howard Goldman and Veronica Kronvall, University of North Texas (UNT) Survey Research Center. [Estimated time 1:00-1:30]

23. Review the report of the Audit Committee on its June 6, 2014 meeting and consider adoption of proposed revisions to Fiscal Year 2014 Audit Plan – Christopher Moss. [Estimated time 1:30-1:30]

24. Review the report of the Chief Financial Officer under § 825.314(b), Government Code, on expenditures that exceed the amount of operating expenses appropriated from the general revenue fund and are required to perform the fiduciary duties of the Board – Don Green. [Estimated time 1:30-1:45]

25. Review and discuss the Deputy Director’s Report, including matters related to administrative, financial, and staff services operations – Ken Welch [Estimated time 1:45-2:00]

26. Review the report of the General Counsel on pending or contemplated litigation, including updates on litigation involving benefit-program contributions, retirement benefits, health-benefit programs, and open records – Carolina de Onís. [Estimated time 2:00-adjourn, if needed]

27. Consider personnel matters, including the appointment, employment, evaluation, compensation, performance, duties, discipline, or dismissal of the Executive Director, Chief Investment Officer, or Chief Audit Executive – David Kelly.
28. Consult with the Board's attorney(s) in Executive Session on any item listed above on this meeting agenda as authorized by Section 551.071 of the Texas Open Meetings Act (Chapter 551 of the Texas Government Code) – David Kelly.
Tab 2
Minutes of the Board of Trustees
March 27-28, 2014

The Board of Trustees of the Teacher Retirement System of Texas met on March 27-28, 2014, in the boardroom located on the fifth floor of the TRS East Building offices at 1000 Red River Street, Austin, Texas. The following board members were present:

David Kelly, Chair
Todd Barth
Karen Charleston
Joe Colonnetta
David Corpus
Christopher Moss
Anita Palmer
Dolores Ramirez
Nanette Sissney

Others present:

- Brian Guthrie, TRS
- Ken Welch, TRS
- Amy Barrett, TRS
- Carolina de Onis, TRS
- Howard Goldman, TRS
- T. Britton Harris IV, TRS
- Betsey Jones, TRS
- Jerry Albright, TRS
- Thomas Albright, TRS
- Dr. Mohan Balachandran, TRS
- Ashley Baum, TRS
- Vaughn Brock, TRS
- Chi Chai, TRS
- Janis Hydak, TRS
- Dan Junell, TRS
- Lynn Lau, TRS
- Denise Lopez, TRS
- Shayne McGuire, TRS
- James Nield, TRS
- Hugh Ohn, TRS
- Mike Pia, TRS

Ken Standley, TRS
Daniel Ting, TRS
Sharon Toalson, TRS
David Veal, TRS
Courtney Villalta, TRS
Patrick Zerda, TRS
Dr. Keith Brown
Steve Huff, Reinhart Boerner Van Deuren
Brady O’Connell, Hewitt EnnisKnupp
Meredyth Fouler, Speaker of the House
Juan V. Garcia, Office of the Governor
Tony Werley, J.P. Morgan
Michael Hood, J.P. Morgan
Katie Magee, J. P. Morgan
Philip Mullins, Texas State Employee Union
Ted Melina Raab, Texas American Federation of Teachers
Ann Fickel, Texas Classroom Teachers Association
Josh Sanderson, Association of Texas Professional Educators
Bill Barnes, Texas Retired Teachers Association
Tom Rogers, Texas Retired Teachers Association & Austin Retired Teachers Association

Mr. Kelly called the meeting to order at 11:35 a.m.

1. Call roll of Board members.

Ms. Lau called the roll. All trustees were present.

2. Consider administrative matters, including the following – David Kelly:

   A. Consider the approval of the February 12-14, 2014 Board meeting minutes.

On a motion by Mr. Moss, seconded by Mr. Barth, the board unanimously adopted the minutes of the February 12-14, 2014 meeting.
B. Consider excusing Board member absence from the February 12-14, 2014 Board meeting.

On a motion by Ms. Sissney, seconded by Mr. Moss, the board unanimously approved the absence of Mr. Colonnetta from the February 12-14, 2014 board meeting.

3. Provide opportunity for public comments – David Kelly.

No public comment was received.

4. Review and discuss the Executive Director's report on the following matters – Brian Guthrie:

   A. Administrative operational matters, including financial, audit, legal, staff services, board administration activities, special projects, long-term space planning, and strategic planning.

   Mr. Guthrie acknowledged the departure of his assistant, Mary Gerdes.

   Mr. Guthrie provided the updated schedule for board-approved contracts. He noted the proposed selection of an actuarial audit provider in June and the planned issuance of a request for proposal (RFP) for health maintenance organizations (HMOs) for TRS-ActiveCare in April.

   B. Board operational matters, including a review of draft agendas for upcoming meetings.

   Mr. Guthrie provided an update on the strategic planning and long-term space planning processes and their timelines. He highlighted major agenda items for the June and July meetings. He provided an update on recent and upcoming TRS events. He confirmed for Ms. Sissney that the strategic plan would be presented to the board for consideration in June. He also laid out the implementation process for the plan.

5. Discuss and consider investment matters, including the following items:


   Mr. O’Connell of Hewitt EnnisKnupp presented the trust fund performance review for the fourth quarter of 2013. Discussing the risk metrics peer comparison, Dr. Brown cautioned that the level of risk should be taken into account in judging investment performance.

   B. Quarterly Strategic Partner Update – David Veal.

   Mr. Veal provided a quarterly update on the public and private markets Strategic Partnership Networks (SPNs). Mr. Veal explained for Dr. Brown why the policy benchmarks and asset allocation ranges for the public market SPN differed from those the Investment Management Division (IMD) used for similar asset classes. He confirmed for Dr. Brown that IMD determined the benchmarks and asset positioning for the SPN.
C. Discuss and consider the engagement of Tudor Pickering Holt & Co. as investment advisors to the Board – Vaughn Brock.

Mr. Barth recused himself from the discussion and consideration of agenda item 5.C. regarding the engagement of Tudor Pickering Holt & Co. as investment advisors to the board.

Mr. Brock profiled Tudor Pickering Holt & Co. and noted that the firm was approved to manage $150 million fund for TRS principal investments. He said that staff recommended the firm to be engaged as advisors to the Energy and Natural Resources Portfolio. He explained for Mr. Kelly the proposed contract compensation arrangement.

On a motion by Mr. Colonnetta, seconded by Mr. Corpus, the board unanimously adopted the following resolution to engage Tudor Pickering Holt & Co. as investment advisors to the board:

Whereas, The Investment Management Division of the Teacher Retirement System of Texas (TRS) desires to engage the services of Tudor Pickering Holt & Co. to assist and advise the Energy and Natural Resources staff, and the Chief Investment Officer has recommended that the TRS Board of Trustees authorize such engagement; and

Whereas, Tudor Pickering Holt & Co. has demonstrated the requisite qualifications and experience to act as a portfolio consultant to the TRS, assist the Investment Management Division with due diligence, and to deliver prudence letters for prospective investment transactions as required by the board’s Investment Policy Statement; now, therefore, be it

Resolved, That the TRS Board of Trustees hereby authorizes the engagement of Tudor Pickering Holt & Co. as a consultant to assist and advise the Investment Management Division with respect to the Energy and Natural Resources Portfolio; and

Resolved, That the Board authorizes the Executive Director or his designee to implement the board's authorization to engage Tudor Pickering Holt & Co. and further to execute all documents and take all actions deemed by the Executive Director or his designee to be necessary or advisable to implement this resolution, as well as all actions deemed by him to be necessary to negotiate an agreement on substantially the same terms presented to the board and on such other terms and conditions deemed by the Executive Director in his discretion to be in the best interest of the retirement system, and from time to time to amend, modify, or extend the contract as deemed by the Executive Director, in his discretion, to be in the best interest of the retirement system, it being stipulated that the board's authorizations pursuant to this resolution shall not be construed as a binding agreement or obligation to contract, and there shall be no binding agreement among the parties until a definitive written agreement is successfully negotiated and executed by both parties.

Mr. Barth reentered the meeting at 12:20 p.m.

D. 2014 Strategic Asset Allocation Study Update

i. Overview of fiduciary duty – Steve Huff, Reinhart Boerner Van Deuren s.c.

Mr. Huff discussed the board’s fiduciary duties in considering TRS' asset allocation policy.
ii. Review two leading Strategic Asset Allocation methodologies:

   Mr. Werley and Mr. Hood provided a presentation on market return assumptions.


   Dr. Brown provided a presentation on risk parity.

   After a brief recess at 2:35 p.m., the board reconvened at 2:50 p.m.


   Mr. O’Connell provided an update on the strategic asset allocation process.

iv. Third Phase Review of the 2014 Asset Allocation Study – Mohan Balachandran and Ashley Baum.

   Dr. Balachandran and Ms. Baum presented the third phase review of the 2014 Asset Allocation Study. Ms. Baum stated that, based on research findings, staff believed that the current asset allocation was productive and would enable the fund to reach its targeted 8 percent return rate over the long term. She said that, therefore, staff did not see the need to significantly overhaul the current asset allocations. Discussing with Dr. Brown the capital market expectations survey of 17 investment partners that staff conducted, Ms. Baum explained why staff used the survey participants' median expected returns, which reflected their common assumptions. She stated that by using a median, staff tried to capture the whole universe of the expectations the partners based on their individual methodologies.

   Dr. Balachandran explained the five potential strategies that could be used to meet the challenge of lower expected long-term returns and the potential impact of those strategies on regime diversification, liquidity, counterparty risk and model risk. He presented 20 key sample portfolios developed to meet the challenge and explained their characteristics and potential issues.

   Ms. Baum presented the next steps and timeline of the study. She stated that staff would present formal recommendations for the board’s consideration at the September meeting.

E. Review the report of the Investment Management Committee on its March 27, 2014 meeting – Todd Barth.

   Mr. Barth, Committee Chair, provided the Investment Management Committee report as follows:

   The Investment Management Committee met on March 27, 2014. The first presentation was a review of the Internal Public Markets Portfolio, which was presented by Chi Chai. Next Bernie Bozzelli reviewed the annual trading management group report.
F. Review the report of the Risk Management Committee on its March 27, 2014 meeting – Karen Charleston.

Ms. Charleston, Committee Chair, provided the Risk Management Committee report as follows:

The Risk Management Committee met on March 27, 2014. Jase Auby reviewed the various risk measures, including asset allocation, tracking error and levels of leverage, and derivative exposures.

Mr. Kelly announced that the board would defer item 6 and take up agenda item 7.

7. Review the report of the Audit Committee on its March 27, 2014 meeting – Christopher Moss.

Mr. Moss, Committee Chair, provided the Audit Committee report as follows:

The Audit Committee met at 9:55 a.m. on Thursday, March 27, 2014 in the fifth floor boardroom. General accounting assistant manager presented the results of the Comptroller of Public Accounts post-payment audit report and management responses. Myers & Stauffer, LLC presented the results of their follow-up audit of the telephone counseling center performance measures. Internal audit staff made presentations on the TRS-ActiveCare vendor selection process, the results of the second quarter testing of Investment Management Division controls, and quarterly investment and benefit payment testing. Internal Audit presented the staff’s prior audit and consulting recommendations and audited administrative matters.

8. Discuss possible co-investment opportunities involving a foreign pension fund, including potential investments in private investment funds or the purchase, holding, or disposal of restricted securities or a private investment fund’s investment in restricted securities – David Kelly.

Mr. Kelly announced that the board would go into executive session on agenda item 8 under the following statutes: section 825.3011 of the Government Code to confer about confidential investment matters, and section 551.071 of the Government Code to seek advice from legal counsel. He asked that all members of the public and staff not needed for the executive session to leave the meeting room and take their belongings with them.

Whereupon, the board went into executive session at 4:10 p.m.

The meeting was reconvened in open session at 5:02 p.m. and then recessed at 5:05 p.m.

The Board of Trustees of the Teacher Retirement System of Texas reconvened on March 28, 2014, in the boardroom located on the fifth floor of the TRS East Building offices at 1000 Red River Street, Austin, Texas. The following board members were present:

David Kelly, Chair
Todd Barth
Karen Charleston
Mr. Kelly called the meeting to order at 8:05 a.m.

1. **Call roll of Board members.**

Ms. Lau called the roll. All trustees were present.

9. **Provide an opportunity for public comment – David Kelly.**

Mr. Kelly called for public comment. No public comment was received.

Mr. Kelly announced that the board would take up agenda item 6.

6. **Review the report of the Policy Committee on its March 27, 2014 meeting and consider related matters, including amendments to the Trustee External Communications Policy – Joe Colonnetta.**

Mr. Colonnetta, Committee Chair, provided the Policy Committee report as follows:
The Policy Committee met yesterday, March 27. The committee conducted the required review of the TRS trustee external communications policy. TRS staff recommended minor revisions to update references to relevant Texas statutes, to provide that trustees should not post comments on social media sites regarding TRS business, and to clarify language regarding trustees’ ethical obligations and TRS contractual obligations in external communications. The committee recommended that the board adopt the revised policy.

The committee also commenced the four-year statutory review of Chapters 21 to 51 of TRS rules by approving a rule review plan, and authorizing public comment publication of notice of the proposed rule of review in the Texas Register.

Finally, the committee authorized for public comment and for publication in the Texas Register proposed amendments to certain TRS rules in Chapters 23 through 51 necessary to implement legislation from the most recent legislative session. Staff will bring the legislative implementation rules back to the board for final adoption in June.

On a motion by Mr. Colonnetta, the board unanimously adopted the proposed amendments to the Trustee External Communications Policy as recommended by the Policy Committee.

10. Discuss matters involving plan design of the active employees’ health benefit program, TRS-ActiveCare and the retirees’ health benefit program, TRS-Care – Betsey Jones; William Hickman, Gabriel, Roeder, Smith & Company; and Kevin DeStefino, RPh, Towers Watson.

Ms. Jones stated that staff would present recommendations for plan designs for TRS-Care and TRS-ActiveCare to the board in June for the upcoming plan year.

Mr. DeStefino of Towers Watson and Mr. Hickman of Gabriel, Roeder, Smith & Company provided an overview of the compound drug trend and the significant increase in plan costs attributable to the trend. Responding to a question from Mr. Corpus regarding the possibility of not offering compound drug prescription benefits, Ms. Jones stated that staff intended to require prior authorization for certain compound drugs under plans other than Medicare Part D. Ms. Sissney expressed her concern that the lack of oversight and regulation of compound drugs presented safety issues for participants in TRS’ health plans. Ms. Jones stated that staff would consider other strategies to control costs resulting from compound drug prescriptions and report to the board in June.


Mr. Johnson provided an update on the TEAM program assessment. He highlighted critical risk factors associated with execution of the Line of Business (LOB) and Financial System Replacement (FSR) projects, including the over-allocation of resources to multiple projects and the lack of fully dedicated staffing to certain projects and technologies. He discussed with the board recommended solutions to resolve the staffing and resource allocation issues.
12. **Receive a quarterly review of the TEAM Program – Amy Morgan; David Cook; and Jay Masci, Provaliant.**

Mr. Cook and Mr. Masci provided a quarterly update on the TEAM program. Mr. Masci highlighted the completion of the business rules project a year ahead of schedule. Ms. Morgan provided an update on the milestones and new projects, including the new TEAM SharePoint site. Ms. Yarborough presented information about the Organizational Change Management (OCM) project.

13. **Receive the report of the Chief Financial Officer, including – Don Green:**

   A. **Mid-year financial review.**

   Mr. Green provided a FY 2014 mid-year budget analysis with data comparisons by fund, division, and category. He also presented a summary of the non-TEAM related major capital items.

   B. **Review the report under § 825.314(b), Government Code, of expenditures that exceed the amount of operating expenses appropriated from the general revenue fund and are required to perform the fiduciary duties of the Board.**

   Pursuant to section 825.314(b) of the Government Code, Mr. Green reported on expenditures paid during the months of January and February of 2014.

   Ms. Sissney noted that staff would present a detailed budget report with historical comparisons at the June board meeting.

14. **Review the report of the Chief Benefit Officer, and consider related matters – Marianne Woods Wiley:**

   A. **Approve members qualified for retirement.**

   Ms. Woods Wiley presented the list of members and beneficiaries receiving initial benefit payments during the reporting period from September 1, 2013 through February 28, 2014. She referred the board to the detailed list of payments made available for their review.

   On a motion by Ms. Sissney, seconded by Ms. Charleston, the board unanimously approved the list of members and beneficiaries who qualified for retirement, disability, DROP, PLSO, survivor, or death benefits initiated during the reporting period.

   B. **Approve minutes of Medical Board meetings.**

   Ms. Woods Wiley presented the minutes of November 12, 2013 and January 14, 2014 Medical Board meetings.

   On a motion by Ms. Sissney, seconded by Ms. Charleston, the board approved the minutes of the Medical Board meetings as presented, thereby ratifying the actions of the Medical Board reflected in those minutes.
15. Receive the report and update of the General Counsel on pending or contemplated litigation, including updates on litigation involving benefit-program contributions, retirement benefits, health-benefit programs, securities, and open records – Carolina de Onís.

Mr. Kelly announced that the board would go into executive session on agenda item 15 under section 551.071 of the Government Code to seek advice from legal counsel about litigation. He asked that all members of the public and staff not needed for the executive session to leave the meeting room and take their belongings with them.

Whereupon, the board went into executive session at 9:45 a.m.

The meeting was reconvened in open session at 10:23 a.m. The board took up no further business under items 15, 16 or 17.

16. Consider personnel matters, including the appointment, employment, evaluation, compensation, performance, duties, discipline, or dismissal of the Executive Director, Chief Investment Officer, or Chief Audit Executive – David Kelly.

17. Consult with the Board’s attorney(s) in Executive Session on any item listed above on this meeting agenda as authorized by Section 551.071 of the Texas Open Meetings Act (Chapter 551 of the Texas Government Code) – David Kelly.

The meeting was adjourned at 10:23 a.m.
Executive Director’s Report

Brian Guthrie
June 5, 2014
<table>
<thead>
<tr>
<th>Event</th>
<th>Dates</th>
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<tbody>
<tr>
<td>Private Markets SPN Summit</td>
<td>April 2</td>
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<tr>
<td>Retirees Advisory Committee Workshop</td>
<td>April 10 &amp; May 22</td>
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<tr>
<td>TRTA Annual Convention</td>
<td>April 15</td>
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<tr>
<td>NCTR Deputy Director, Communication Specialist, and Administrative Assistant Workshop</td>
<td>April 28 to May 1</td>
</tr>
<tr>
<td>Government Finance Officers Association</td>
<td>May 19</td>
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<tr>
<td>NCTR Executive Director Workshop</td>
<td>June 2 &amp; June 3</td>
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Other Happenings

- Shining Example Awards:
  - Benefits Processing Billing Team.
  - Strategic Planning Team – Inaugural Winner of the Executive Director’s Award of Excellence.
- Reduction in Print Communication.
- Marina Salazar joins the Executive Office.
- Strategic Plan.
- Legislator Changes.
July 11, 2014 Major items include (1 Day Off-Quarter Meeting):
  o Space Planning Options Presentation.
  o Legislative Appropriations Request.
  o Adopt TRS FY 2015 Operating Budget.
  o TEAM.
  o Executive Evaluations. (Closed Session)
  o D&O Insurance.

Committees
  o **Budget Committee Meeting**
    ▪ Recommend adoption of FY 2015 Operating Budget.
  o **Audit Committee Meeting**
    ▪ Evaluate the Chief Audit Executive. (Closed Session)
  o **Potential Compensation Committee Meeting**
    ▪ Address any amendments to the Performance Incentive Pay Plan.
September 18-19, 2014 Major items include (2 Day Quarterly Meeting):

- Report on Q2 Earnings.
- Board Committees and Committee Chairs.
- Board Meeting Dates for CY 2015.
- Adopt Strategic Asset Allocation as part of Investment Policy Statement Amendments.
- Receive Actuarial Audit Results.
- SPN Update.

Committees

- **Investment Management Committee Meeting**
  - External Public Markets Portfolio.

- **Risk Management Committee Meeting**
  - Bi-Annual Risk Report.

- **Policy Committee Meeting**
  - Adopt Strategic Asset Allocation as part of Investment Policy Statement Amendments.
  - Performance Incentive Pay Plan (If not finalized by July).
  - Begin Review of the Board of Trustee Bylaws.
  - Finalize the 4-year Statutory Rule Review.

- **Audit Committee Meeting**
  - Adopt the Annual Audit Plan.
| Tab 5 |
workplace strategy & real estate study

FINDINGS and PRELIMINARY SCENARIOS
AGENDA

• Study Scope and Vision Recap
• Workplace Strategy Key Findings
• Workplace Recommendations
• Occupancy Scenarios
OBJECTIVES

- **Demand**: What occupancy strategy best suits TRS long-term?
- **Supply**: How do market forces impact these options?

SCOPE

- Leadership Visioning Session
- Current Space Analysis
- 37 Leadership Interviews
- Utilization and Observation Study
- 2 Employee Focus Groups
- Employee Survey
- Red River BOV
- Preliminary Real Estate Market Survey
THE VISION

HOW WOULD YOU DESCRIBE THE FUTURE WORKPLACE FOR TRS?

EFFICIENT
• Means more than improving space efficiency/cost savings
• Make it easier to connect with employees
• Enhanced technology

EXCELLENT
• Promote professionalism and a high-performance culture

COMFORTABLE & RESPECTFUL
• Easy and confidential member experience; professional experience for stakeholders
• Be a clean, safe, healthy facility

CONNECTED
• Leverage IT platform improvements
• Improve strategic adjacencies
• Global awareness for Investment Management

MOBILE
• Paperless, technologically enabled workforce

WHAT CRITERIA CAN WE ESTABLISH TO EVALUATE FUTURE POSSIBILITIES?

IMPROVE MEMBER + STAKEHOLDER EXPERIENCE

ADDRESS STAFF NEEDS TO BE MOST EFFECTIVE

OPTIMIZE OPERATIONAL PERFORMANCE
FINDINGS

Current strategic initiatives will increase the need for **flexibility**

Employees work differently than they think they do and are concerned about new ways of working (perception ≠ reality)

**Opportunity for efficiency** through workspace changes

Departments have **similar aspirations** about space, but functionally **different needs**

There are **mixed** feelings, and **strong** feelings, about collocating
INCREASING NEED FOR FLEXIBILITY

Three major changes in TRS are driving the need for an adaptable workplace:

Percent of TRS Staff Eligible to Retire

<table>
<thead>
<tr>
<th>Department</th>
<th>January 2017</th>
<th>January 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive Division</td>
<td>37.7%</td>
<td>46.8%</td>
</tr>
<tr>
<td>Investment Management</td>
<td>7.0%</td>
<td>8.5%</td>
</tr>
<tr>
<td>Benefit Services</td>
<td>19.4%</td>
<td>25.7%</td>
</tr>
<tr>
<td>Finance</td>
<td>37.5%</td>
<td>47.5%</td>
</tr>
<tr>
<td>Information Technology</td>
<td>32.3%</td>
<td>41.9%</td>
</tr>
<tr>
<td>Healthcare Policy and Administration</td>
<td>25.9%</td>
<td>29.6%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>24.9%</strong></td>
<td><strong>31.3%</strong></td>
</tr>
<tr>
<td>Executive Council Members</td>
<td>64.3%</td>
<td>64.3%</td>
</tr>
</tbody>
</table>

The TEAM initiative has changed the way we work today and will impact how we work in the future.

- Leadership Interviews, Red River

To meet our target 8% returns, we are spending more time collaborating.

- Leadership Interviews, IMD
Employees spend a significant portion of their time working outside their primary seat.
Based on survey responses, employees think they work differently than we observed.

**EMPLOYEE SURVEY**
- Red River: 83%
- Congress: 71%

**UTILIZATION STUDY**
- Red River: 47%
- Congress: 44%
OPPORTUNITY FOR EFFICIENCY

Due to varying size offices, workstations, and storage spaces, there is a wide range of space efficiency per department.

SQUARE FEET PER PERSON

- Benefit Services: 202
- Executive: 179
- Facility Services: 313
- Financial: 391
- Information Technology: 271
- Investment Mgmt: 216
- Other: 288
OPPORTUNITY FOR EFFICIENCY

Paper and equipment storage utilize valuable space today and could be an opportunity to gain efficiencies in future space.
Despite different space today, employees at Red River and Congress share similar aspirations for the functionality and image of a future workplace.

- Professional Image
- Private Quiet Rooms
- Amenity Spaces
- Access to Natural Light & Glass
Across TRS, an opportunity for improvement is to provide the tools and capabilities to work flexibly.

Overall, I would describe my ability to do individual work outside my primary office as highly effective.
The priorities for a future workplace illustrate the different functional needs across TRS.

<table>
<thead>
<tr>
<th>DEPARTMENT</th>
<th>LEADERSHIP PRIORITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive</td>
<td>• Connect employees to the <strong>mission and values</strong> of TRS</td>
</tr>
<tr>
<td></td>
<td>• Attract the <strong>next generation</strong> of TRS employees</td>
</tr>
<tr>
<td></td>
<td>• <strong>Flexibility</strong> to adapt to changes in TRS</td>
</tr>
<tr>
<td>Investment Management</td>
<td>• Maintain adjacencies and <strong>equal or better quality space</strong> compared to today</td>
</tr>
<tr>
<td></td>
<td>• <strong>Downtown location</strong> to support connections to investment community and attract/retain talent</td>
</tr>
<tr>
<td></td>
<td>• Professional image reflecting the success of the fund</td>
</tr>
<tr>
<td>Benefit Services</td>
<td>• All of Benefits <strong>collocated together</strong></td>
</tr>
<tr>
<td></td>
<td>• Space and facility designed with the <strong>member experience</strong> at the forefront</td>
</tr>
<tr>
<td></td>
<td>• <strong>Flexibility</strong> to adapt to changes in the function of the department</td>
</tr>
<tr>
<td>Finance</td>
<td>• Provides <strong>choice</strong> for employees</td>
</tr>
<tr>
<td></td>
<td>• <strong>Clean and safe</strong> environment for employees</td>
</tr>
<tr>
<td>IT</td>
<td>• A workplace that supports <strong>effective collaboration</strong></td>
</tr>
<tr>
<td></td>
<td>• A future workplace built for <strong>change</strong></td>
</tr>
<tr>
<td>Legal, Internal Audit, HR</td>
<td>• Provide <strong>connection and support</strong> to internal customers</td>
</tr>
<tr>
<td></td>
<td>• <strong>Functionality</strong> to support the way we work</td>
</tr>
</tbody>
</table>

**SIMILAR ASPIRATIONS | DIFFERENT NEEDS**
THERE ARE MIXED FEELINGS, AND STRONG FEELINGS, ABOUT COLLOCATING

It is important to have a shared space to remind us we all work for the same organization.

We have different clients across TRS, if we are together our space needs cater to each separately.

We are open to collocating with Red River if it means we do not have to change the quality of space we have today.

For those that support internal customers across TRS, being in separate locations is a significant burden.

Our professional image is critical; collocation cannot hinder our connection to the investment community.
RECOMMENDATIONS

1. CENTRALIZE MEMBER, PUBLIC SPACE

2. SUPPORT DIFFERENT TYPES OF COLLABORATION

3. DEVELOP “KIT OF PARTS” SPACE STANDARDS

4. IMPLEMENT FUNCTIONAL ALLOCATION OF SPACE
KIT OF PARTS AND SPACE STANDARDS

WORKPLACE ELEMENTS
There are many different sized offices and workstations currently, particularly at Red River. Inconsistencies prevent flexibility and an under allocation of small and medium conference rooms limits effectiveness of meetings and collaboration.

TODAY

Workstations are high paneled, confined, and receive limited natural light. Various sizes and layout challenges way-finding at Red River.

Private offices vary in size and location. They are used to hold small meetings, as well as provide private and quiet space.

Conference rooms typical capacities range from 6-20 seats. Conference spaces are typically overbooked and host groups of 2-5 people.
KIT OF PARTS AND SPACE STANDARDS

FUTURE WORKPLACE ELEMENTS

The future workplace should offer a variety of workspaces to support the varied work styles and functional needs, while also promoting effective collaboration.

TOMORROW

Workstations will be a consistent size and feature lower panels to promote connectivity and knowledge sharing.

Private offices will offer transparency and flexibility through glass doors and adaptable furniture.

Touchdown seating will be available for visitors and employees needing to do quick work in transition or at their non-primary site.
The future workplace should offer a variety of workspaces to support the varied work styles and functional needs, while also promoting effective collaboration.

**TOMORROW**

- **Quiet rooms** will offer private space for phone calls or focused work
- **Huddle rooms/ Open Team spaces** will provide open and private spaces for quick and effective collaboration
- **Conference Rooms** will feature a professional environment for client or private meetings, including seamless technology
KIT OF PARTS ILLUSTRATION

- **INDIVIDUAL WORKSTATIONS**
  - 1 PERSON | 6X8

- **INDIVIDUAL BENCHES**
  - 1 PERSON | 5X5

- **PRIVATE OFFICES**
  - 1 PERSON | 10X15

- **COUNSELING OFFICES**
  - 1 PERSON | 15X20

- **QUIET ROOMS**
  - 1-2 PERSON | 7.5X10

- **SMALL CONF/HUDDLE ROOMS**
  - 2-4 PPL | 10X15

- **TOUCHDOWN SPACES**
  - 1 PERSON/SEAT | 5X5

- **MED/LG CONF ROOMS**
  - 6-10/12-16/20+ PPL
# OCCUPANCY PROFILES

As defined by workplace needs and job function, TRS has three occupancy profiles:

<table>
<thead>
<tr>
<th>Who is it?</th>
<th>DIRECTLY SERVICING MEMBERS</th>
<th>AT THE CENTER OF IT ALL</th>
<th>CONNECTED TO INVESTMENT COMMUNITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Who is it?</td>
<td>Benefits 187 employees today</td>
<td>Exec, Shared Services 385 employees today</td>
<td>IMD 143 employees today</td>
</tr>
<tr>
<td></td>
<td>Benefit Processing, Member Data Services, Counseling</td>
<td>Executive team (legal, HR, etc.), Finance, HP&amp;A, IT</td>
<td>13 business units currently at 816 Congress</td>
</tr>
<tr>
<td>Adjacencies</td>
<td>Benefits team together</td>
<td>Access to service internal customers, Executive to Legislature</td>
<td>IMD team together (with some embedded support services)</td>
</tr>
<tr>
<td>Who is the customer and what are their needs?</td>
<td>Members • Accessibility &amp; parking • Service center • Shared amenities</td>
<td>Members &amp; Internal Customers • Connection to TRS organization</td>
<td>Investment Partners • Professional image to support the capabilities of the fund</td>
</tr>
<tr>
<td>Functional Requirements</td>
<td>• Private counseling offices • Call center function • Member Data Services and Benefit Processing storage &amp; equipment</td>
<td>• “Hotelling” space if parts of the organization are at different locations • Technology to support mobility and collaboration</td>
<td>• Financial services finishes and fit-out • Technology to support operation • Downtown location</td>
</tr>
</tbody>
</table>
## Scenario Overview

<table>
<thead>
<tr>
<th>Scenario</th>
<th>I: Status Quo</th>
<th>II: Collocation Hybrid A</th>
<th>III: Collocation Hybrid B</th>
<th>IV: All Collocate</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Department</strong></td>
<td>IMD BENEFITS EXEC SHARED</td>
<td>IMD BENEFITS EXEC SHARED</td>
<td>BENEFITS EXEC SHARED</td>
<td>IMD BENEFITS EXEC SHARED</td>
</tr>
<tr>
<td><strong>Location Strategy</strong></td>
<td>STAY IN PLACE</td>
<td>STAY IN PLACE</td>
<td>RELOCATE SUBURBAN</td>
<td>RELOCATE SUBURBAN</td>
</tr>
<tr>
<td><strong>RSF</strong></td>
<td>47,000</td>
<td>198,500</td>
<td>152,000</td>
<td>136,000</td>
</tr>
<tr>
<td><strong>USF</strong></td>
<td>43,100</td>
<td>176,000</td>
<td>132,000</td>
<td>118,000</td>
</tr>
<tr>
<td><strong>USF/Person</strong></td>
<td>237</td>
<td>323</td>
<td>272</td>
<td>225</td>
</tr>
<tr>
<td><strong>Headcount</strong></td>
<td>182</td>
<td>575</td>
<td>195</td>
<td>727</td>
</tr>
</tbody>
</table>

### Space Allocation:

- **I: Status Quo**
  - Space Allocation: 245,500
- **II: Collocation Hybrid A**
  - Space Allocation: 199,000
- **III: Collocation Hybrid B**
  - Space Allocation: 197,000
- **IV: All Collocate**
  - Space Allocation: 190,000
## Scenario Evaluation

<table>
<thead>
<tr>
<th>Scenario</th>
<th>I: Status Quo</th>
<th>II: Collocation Hybrid A</th>
<th>III: Collocation Hybrid B</th>
<th>IV: All Collocate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department</td>
<td>IMD</td>
<td>BENEFITS EXEC SHARED</td>
<td>IMD</td>
<td>BENEFITS EXEC SHARED</td>
</tr>
<tr>
<td>RSF</td>
<td>47,000</td>
<td>198,500</td>
<td>47,000</td>
<td>152,000</td>
</tr>
<tr>
<td>Address staff needs to be most effective</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
</tr>
<tr>
<td>Flexibility to adopt new ways of working</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
</tr>
<tr>
<td>Cost (20 yr NPV)</td>
<td>$52.6 M</td>
<td>$47.8 M</td>
<td>$62.5 M</td>
<td>$40.8 M</td>
</tr>
</tbody>
</table>
Global Conditions, Asset Returns and Investment Strategy

Bob Prince, Co-Chief Investment Officer
June 2014
OUR TEMPLATE: THREE BIG FORCES

1. PRODUCTIVITY

2. THE LONG-TERM DEBT CYCLE
   (50 – 75 years)

3. THE SHORT-TERM DEBT CYCLE
   (5 – 8 years)
U.S. DELEVERAGING

US Total Debt (% GDP)

Household Debt Level & Service as % of Disposable Income

US Interest Rate Cycles

US Monetary Base (% GDP)

Source: Global Financial Data Inc. and Bridgewater Analysis.
CENTRAL BANKS ARE PRINTING ACROSS THE DEVELOPED WORLD

Global Monetary Stimulation

Level of Global Monetary Stimulation

US | UK | Japan | Euroland
LIQUIDITY IMPACT

1. Liquidity pushes down cash

2. Money moves to riskier assets
LOW EXPECTED RETURNS

Discounted Forward Real Yield of Cash

USA Expected Real Bond Return

USA Expected Real Equity Return

USA Risk-Weighted Average Expected Real Return of Stocks and Bonds
LONG-TERM EXPECTED AND ACTUAL RETURNS OF ASSETS
LONG-TERM EXPECTED AND ACTUAL RETURNS OF ASSETS

Jpn Subsequent 10yr Equity Return  Jpn Expected Equity Return

1.3%

Jpn Subsequent 10yr Total Nom Bond Return  Jpn Bond yield

0.6%

Eur Subsequent 10yr Equity Return  Eur Expected Equity Return

6.0%

Eur Subsequent 10yr Total Nom Bond Return  Eur Bond yield

1.7%
LONG-TERM EXPECTED AND ACTUAL RETURNS OF ASSETS

US Public Pension Funds – Required Return to Achieve Full Funding

Central Banks are Losing the Ability to Stimulate Economies

Lowest amount of fuel since the depression

Please review the "Important Disclosures and Other Information" located at the end of this presentation. Global 60/40 portfolio consists of 60% world equities and 40% world bonds.
DIVERGING GLOBAL CONDITIONS

**US**
- Economic conditions are gradually normalizing.
- Shifts in relative conditions favor secular dollar strength.

**Europe**
- European conditions warrant an easier monetary policy.
- Long term sustainability has not been achieved.

**Japan**
- The impact of QE is fading.
- Fiscal tightening is a near-term risk.

**China**
- The world is increasingly dependent on China.
- China is increasingly dependent on debt, which has reached its limits.

**Emerging Markets**
- The virtuous cycle of cheap labor, capital inflows and strong growth has run its course.
- Those most dependent on foreign capital are going through longer term adjustments in consumption.
Engineering Returns to Meet Investment Objectives
THERE IS ONLY BETA AND ALPHA

Hold Assets

“Beta”
↓
Risk Premium

Make Bets

“Alpha”
↓
Timing
### Achieving Your Target Return

**Texas TRS Portfolio Total Return**

<table>
<thead>
<tr>
<th>Since 1970</th>
<th>Risk Free Rate</th>
<th>Beta</th>
<th>Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.7%</td>
<td>5.5%</td>
<td>5.2%</td>
<td>?</td>
</tr>
</tbody>
</table>

**Target**

| 8%         | 1%             | ? |

The beta return since 1970 is calculated by subtracting the return of the risk free rate since 1970 from the Texas TRS beta portfolio total return since 1970. HYPOTHETICAL OR SIMULATED PERFORMANCE RESULTS HAVE CERTAIN INHERENT LIMITATIONS. UNLIKE AN ACTUAL PERFORMANCE RECORD, SIMULATED RESULTS DO NOT REPRESENT ACTUAL TRADING OR THE COSTS OF MANAGING THE PORTFOLIO. ALSO, SINCE THE TRADES HAVE NOT ACTUALLY BEEN EXECUTED, THE RESULTS MAY HAVE UNDER OR OVER COMPENSATED FOR THE IMPACT, IF ANY, OF CERTAIN MARKET FACTORS, SUCH AS LACK OF LIQUIDITY. SIMULATED TRADING PROGRAMS IN GENERAL ARE ALSO SUBJECT TO THE FACT THAT THEY ARE DESIGNED WITH THE BENEFIT OF HINDSIGHT. NO REPRESENTATION IS BEING MADE THAT ANY ACCOUNT WILL OR IS LIKELY TO ACHIEVE PROFITS OR LOSSES SIMILAR TO THOSE SHOWN. Past performance is not indicative of future results. Please review the “Important Disclosures and Other Information” located at the end of this presentation. Data is through April 2014.
Creating a Balanced Beta
ADJUSTING ASSET CLASSES TO A COMMON RISK

Expected Rates of Return For Various Asset Classes

Based on return and risk expectations from an independent study by Rocaton, a third party consultant. Please review the “Important Disclosures and Other Information” located at the end of this presentation.
RISK-ADJUSTING ASSET CLASSES MEANS MORE CHOICES WITHOUT LOSS OF RETURN

Risk-Adjusted Expected Excess Returns (Standardized to the Risk Level of the S&P 500)

Based on return and risk expectations from an independent study by Rocaton, a third party consultant. Please review the “Important Disclosures and Other Information” located at the end of this presentation.
# BALANCE ASSET EXPOSURE TO ECONOMIC ENVIRONMENTS

<table>
<thead>
<tr>
<th>Growth</th>
<th>Inflation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rising</strong></td>
<td><strong>Falling</strong></td>
</tr>
<tr>
<td>25% of Risk</td>
<td>25% of Risk</td>
</tr>
<tr>
<td>- Equities</td>
<td>- IL Bonds</td>
</tr>
<tr>
<td>- Commodities</td>
<td>- Commodities</td>
</tr>
<tr>
<td>- Corporate Credit</td>
<td>- EM Credit</td>
</tr>
<tr>
<td>- EM Credit</td>
<td></td>
</tr>
<tr>
<td>25% of Risk</td>
<td>25% of Risk</td>
</tr>
<tr>
<td>- Nominal Bonds</td>
<td>- Nominal Bonds</td>
</tr>
<tr>
<td>- IL Bonds</td>
<td>- Equities</td>
</tr>
<tr>
<td>Risk Premiums &amp; Discount Rates</td>
<td></td>
</tr>
</tbody>
</table>
Data through Apr 2014. Rising growth assets represented by risk-matched commodities and stocks, falling growth assets represented by risk-matched nominal bonds and IL bonds, rising inflation assets represented by risk-matched commodities and IL bonds, falling inflation assets represented by risk-matched nominal bonds and stocks. For illustrative purposes only. The example does not necessarily indicate the actual historical or current implementation of Bridgewater’s strategies. Please review the “Important Disclosures and Other Information” located at the end of this presentation.
ENVIRONMENTAL BALANCE IS A NATURAL HEDGE

Rolling 3 Year Returns (Without Risk Premium)

Returns as of April 2014. Rising growth represented by volatility-matched commodities minus IL bonds, falling growth represented by volatility-matched nominal bonds minus stocks, rising inflation represented by volatility-matched commodities minus stocks, falling inflation represented by volatility-matched nominal bonds minus IL bonds. For illustrative purposes only. The example does not necessarily indicate the actual historical or current implementation of Bridgewater’s strategies. Please review the “Important Disclosures and Other Information” located at the end of this presentation.
A BALANCED PORTFOLIO HAS MORE RETURN PER UNIT OF RISK

Texas TRS Portfolio

<table>
<thead>
<tr>
<th>Growth</th>
<th>Inflation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Growth</td>
<td></td>
</tr>
<tr>
<td>Rising</td>
<td></td>
</tr>
<tr>
<td>Rising</td>
<td></td>
</tr>
<tr>
<td>Falling</td>
<td></td>
</tr>
<tr>
<td>Falling</td>
<td></td>
</tr>
</tbody>
</table>

Return-to-Risk Ratio

0.4

All Weather Approach

<table>
<thead>
<tr>
<th>Growth</th>
<th>Inflation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Growth</td>
<td></td>
</tr>
<tr>
<td>Rising</td>
<td></td>
</tr>
<tr>
<td>Falling</td>
<td></td>
</tr>
</tbody>
</table>

0.65

Please review the “Important Disclosures and Other Information” located at the end of this presentation.
Creating a Balanced Alpha
BALANCED ALPHA HAS MORE RETURN PER UNIT OF RISK

20 Managers (4% Return, 10% Volatility)
At Typical Correlations (0.5)

10 Managers (4% Return, 10% Volatility)
Uncorrelated (0.0)

Illustrative Analysis. Please review the “Important Disclosures and Other Information” located at the end of this presentation.
ENGINEERING A LONG-TERM TARGET RETURN WITH A TIGHT RANGE OF OUTCOMES

Desired Total Return = Risk Free Rate + Beta + Alpha

8% = 3% + 5% + ?

Risk Ratio
8% x 0.65

Bonds are the “risk free return” when you have long-term liabilities

The remaining return is best achieved through a diversified portfolio

Positive alpha to exceed target

Risk-free rate represents the yield Merrill Lynch’s 10+ year bond index. Please review the “Important Disclosures and Other Information” located at the end of this presentation.
Appendix
All Weather is a balanced portfolio, not a bond portfolio.

Returns are driven by how conditions transpire in relation to what is discounted. A big rise in interest rates is already discounted.

When interest rates rise due to strong growth or rising inflation, other assets will perform well and produce balance.

A period of tight money will hurt all assets, but will not last long and will raise going-forward returns.
A BIG RISE IN INTEREST RATES IS ALREADY DISCOUNTED

USA Real Rates

USA Nominal Rates

USA Real Rates
Long Rate Short Rate

USA Nominal Rates
Long Rate Short Rate

Fed Funds Rate Tightening 5 Years Forward Easing

Bond Yield Bottom in Yields 5 Years Forward Top in Yields

Spot 1y 2y 3y 4y 5y 7y 10y

Time Forward

Spot 1y 2y 3y 4y 5y 7y 10y

Time Forward

USA Real Rates

USA Nominal Rates

USA Real Rates

USA Nominal Rates

Data as of May 20 2014. Please review the “Important Disclosures and Other Information” located at the end of this presentation.
## PERFORMANCE WHEN BOND YIELDS RISE, ANNUAL PERIODS

### Periods of Rising Yields
**(1920-Present)**

**Assets at 10% Volatility**

<table>
<thead>
<tr>
<th></th>
<th>World Nominal Bonds</th>
<th>World Equities</th>
<th>World Inflation Linked Bonds</th>
<th>Commodities</th>
<th>All Weather</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Annual Total Return</td>
<td>1%</td>
<td>10%</td>
<td>10%</td>
<td>8%</td>
<td>8%</td>
</tr>
</tbody>
</table>

- Number of Rolling 12m Periods: 542
- Average Starting Yield: 5.0%
- Average Ending Yield: 5.6%
- Average Rise in Yield: 0.6%

### Periods of Rising Yields from below 2.5%
**(1920-Present)**

**Assets at 10% Volatility**

<table>
<thead>
<tr>
<th></th>
<th>World Nominal Bonds</th>
<th>World Equities</th>
<th>World Inflation Linked Bonds</th>
<th>Commodities</th>
<th>All Weather</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Annual Total Return</td>
<td>1%</td>
<td>14%</td>
<td>22%</td>
<td>5%</td>
<td>10%</td>
</tr>
</tbody>
</table>

- Number of Rolling 12m Periods: 112
- Average Starting Yield: 2.0%
- Average Ending Yield: 2.3%
- Average Rise in Yield: 0.3%

Data through Apr 2014. All Weather returns shown gross of fees. All Weather refers to the All Weather 10% Strategy. Please note the returns shown for All Weather are simulated prior to June 1996 using the All Weather Asset Mix (see All Weather Asset Mix Disclosure). It is expected that the simulated performance will periodically change as a function of both refinements to our simulation methodology and the underlying market data. HYPOTHETICAL OR SIMULATED PERFORMANCE RESULTS HAVE CERTAIN INHERENT LIMITATIONS. UNLIKE AN ACTUAL PERFORMANCE RECORD, SIMULATED RESULTS DO NOT REPRESENT ACTUAL TRADING OR THE COSTS OF MANAGING THE PORTFOLIO. ALSO, SINCE THE TRADES HAVE NOT ACTUALLY BEEN EXECUTED, THE RESULTS MAY HAVE UNDER OR OVER COMPENSATED FOR THE IMPACT, IF ANY, OF CERTAIN MARKET FACTORS, SUCH AS LACK OF LIQUIDITY. SIMULATED TRADING PROGRAMS IN GENERAL ARE ALSO SUBJECT TO THE FACT THAT THEY ARE DESIGNED WITH THE BENEFIT OF HINDSIGHT. NO REPRESENTATION IS BEING MADE THAT ANY ACCOUNT WILL OR IS LIKELY TO ACHIEVE PROFITS OR LOSSES SIMILAR TO THOSE SHOWN. Past performance is not indicative of future results. Please review the “Important Disclosures and Other Information” located at the end of this presentation.
Annualized Gross of Fees 1946 - Sep. 1981
Total Return 8.7%
Excess Return 4.4%
Standard Deviation 7.5%
Sharpe Ratio 0.59

Annualized Gross of Fees Oct. 1981 - Present
Total Return 12.1%
Excess Return 7.4%
Standard Deviation 9.7%
Sharpe Ratio 0.77

All Weather Strategy Historical Performance

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Return</td>
<td>8.7%</td>
<td>10.3%</td>
<td>12.1%</td>
</tr>
<tr>
<td>Excess Return</td>
<td>4.4%</td>
<td>5.8%</td>
<td>7.4%</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>7.5%</td>
<td>8.6%</td>
<td>9.7%</td>
</tr>
<tr>
<td>Sharpe Ratio</td>
<td>0.59</td>
<td>0.68</td>
<td>0.77</td>
</tr>
</tbody>
</table>

Data through Apr 2014. Please note the returns shown for All Weather are simulated prior to June 1996 using the All Weather Asset Mix (see All Weather Asset Mix Disclosure). It is expected that the simulated performance will periodically change as a function of both refinements to our simulation methodology and the underlying market data. HYPOTHETICAL OR SIMULATED PERFORMANCE RESULTS HAVE CERTAIN INHERENT LIMITATIONS. UNLIKE AN ACTUAL PERFORMANCE RECORD, SIMULATED RESULTS DO NOT REPRESENT ACTUAL TRADING OR THE COSTS OF MANAGING THE PORTFOLIO. ALSO, SINCE THE TRADES HAVE NOT ACTUALLY BEEN EXECUTED, THE RESULTS MAY HAVE UNDER OR OVER COMPENSATED FOR THE IMPACT, IF ANY, OF CERTAIN MARKET FACTORS, SUCH AS LACK OF LIQUIDITY. SIMULATED TRADING PROGRAMS IN GENERAL ARE ALSO SUBJECT TO THE FACT THAT THEY ARE DESIGNED WITH THE BENEFIT OF HINDSIGHT. NO REPRESENTATION IS BEING MADE THAT ANY ACCOUNT WILL OR IS LIKELY TO ACHIEVE PROFITS OR LOSSES SIMILAR TO THOSE SHOWN. Past performance is not indicative of future results. Please review the “Important Disclosures and Other Information” located at the end of this presentation.
Important Disclosures and Other Information

Please read carefully the following important disclosures and other information as they provide additional information relevant to understanding the assumptions, research and performance information presented herein. Additional information is available upon request except where the proprietary nature of the information precludes its dissemination.
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ALL WEATHER ASSET MIX DISCLOSURE

<table>
<thead>
<tr>
<th>All Weather Asset Mix Performance (Net of Fees)</th>
<th>All Weather Total Return in USD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Last 1 Year</td>
<td>0.9%</td>
</tr>
<tr>
<td>Last 3 Years</td>
<td>6.7%</td>
</tr>
<tr>
<td>Last 5 Years</td>
<td>13.1%</td>
</tr>
<tr>
<td>Last 10 Years</td>
<td>9.3%</td>
</tr>
</tbody>
</table>

Annualized Returns (Jun-96 through Apr-14)

<table>
<thead>
<tr>
<th>Net Since Inception Jun-96 through Apr-14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annualized Return</td>
</tr>
<tr>
<td>Standard Deviation</td>
</tr>
<tr>
<td>Sharpe Ratio</td>
</tr>
</tbody>
</table>

All Weather Asset Mix Disclosure:
Where shown, simulated returns for All Weather are created using the All Weather asset mix. The All Weather asset mix performance is simulated by applying All Weather asset mix weights, which are determined by Bridgewater's proprietary process for building an environmentally balanced portfolio, to historical market returns. We use actual market returns when available and otherwise use Bridgewater Associates' proprietary estimates, based on other available data and our fundamental understanding of asset classes. In certain cases, market data for an exposure which otherwise would exist in the simulation may be omitted if the relevant data is unavailable, deemed unreliable, immaterial or accounted for using proxies. In the case of omitted markets, other markets in the same asset class, which represent the vast majority of our positions in each asset class, are scaled to represent the full asset class position. Examples of omitted markets include, but are not limited to, non-U.S. markets prior to 1970, emerging market equities, some inflation-linked bond markets and certain commodities.

Simulated asset returns are subject to considerable uncertainty and potential error, as there is a great deal that cannot be known about how assets would have performed in the absence of actual market returns. The All Weather asset mix simulation is an approximation of our actual process but not an exact replication, and may have differences including but not limited to the precise mix of markets used and the weights applied to those markets. It is expected that the simulated performance will periodically change as a function of both refinements to our simulation methodology (including the addition/removal of asset classes) and the underlying market data. There is no guarantee that previous results would not be materially different. Future strategy changes could materially change previous simulated return in order to reflect the changes accurately across time.

Transaction costs are accounted for and are estimates themselves based on historical measured costs and/or modeled costs. Actual transaction costs experienced could have been higher or lower than those reflected in the simulation. Where noted, the All Weather Asset Mix Net of Fees returns have been calculated using our standard fee schedule for a minimum size account, which are the highest fees we have or would currently charge an account. Investment advisory fees are described in Bridgewater's ADV Part 2A. No claim is being made of the All Weather Asset Mix's ability to perform in absolute terms or relative to any market return in the future, during market events not represented or during market events occurring in the future. Market conditions and events vary considerably, are unpredictable and can have unforeseen impacts resulting in materially adverse performance results.

Past results are not necessarily indicative of future results. WHERE SHOWN, HYPOTHETICAL OR SIMULATED PERFORMANCE RESULTS HAVE CERTAIN INHERENT LIMITATIONS. UNLIKE AN ACTUAL PERFORMANCE RECORD, SIMULATED RESULTS DO NOT REPRESENT ACTUAL TRADING OR THE COSTS OF MANAGING THE PORTFOLIO. ALSO, SINCE THE TRADES HAVE NOT ACTUALLY BEEN EXECUTED, THE RESULTS MAY HAVE UNDER OR OVER COMPENSATED FOR THE IMPACT, IF ANY, OF CERTAIN MARKET FACTORS, SUCH AS LACK OF LIQUIDITY. SIMULATED TRADING PROGRAMS IN GENERAL ARE ALSO SUBJECT TO THE FACT THAT THEY ARE DESIGNED WITH THE BENEFIT OF HINDSIGHT. NO REPRESENTATION IS BEING MADE THAT ANY ACCOUNT WILL OR IS LIKELY TO ACHIEVE PROFITS OR LOSSES SIMILAR TO THOSE SHOWN.
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Bridgewater All Weather Strategy Performance Disclosure:
For the period June 1996 (the inception of the strategy) through August 2001 the performance is based on the total return of the Bridgewater All Weather strategy as implemented for Bridgewater's principals and their affiliates and was not fully hedged to the US Dollar. The All Weather strategy is structured to be fully hedged, and the performance reflected after August 2001 includes these hedging transactions. For the period of August 2001 through present the performance shown is the actual total returns of the longest running fully funded All Weather account. For the entire history excess returns are calculated by subtracting the cash return of the US repo rate from the total returns described above. Of note, the All Weather strategy’s target leverage, volatility and return, as well as the asset mix varied from June 1996 to July 2005. From August 2005 through the present the strategy has targeted 10% volatility. Bridgewater manages additional All Weather portfolios not included in this performance history.

Gross of fees performance is gross of management fees and includes the reinvestment of interest, gains, and losses. Returns will be reduced by the investment advisory fees and any other expenses that may be incurred in the management of the account.

Net of fees performance has been calculated using our standard fee schedule for a minimum size account, which are the highest fees we have or would currently charge an account. Investment advisory fees are described in Bridgewater’s ADV Part 2A.

No representation is being made that any account will or is likely to achieve returns similar to those shown. Trading in futures is risky and can result in losses as well as profits. PAST RESULTS ARE NOT NECESSARILY INDICATIVE OF FUTURE RESULTS. Performance as of the current month is estimated and subject to change.

All Weather Strategy Performance (Net of Fees)

<table>
<thead>
<tr>
<th></th>
<th>All Weather Total Return in USD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Last 1 Year</td>
<td>-1.8%</td>
</tr>
<tr>
<td>Last 3 Years</td>
<td>9.1%</td>
</tr>
<tr>
<td>Last 5 Years</td>
<td>11.9%</td>
</tr>
<tr>
<td>Last 10 Years</td>
<td>7.8%</td>
</tr>
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</table>

Annualized Returns (Jun-96 through Apr-14)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Annualized Return</td>
<td>8.8%</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>10.6%</td>
</tr>
<tr>
<td>Sharpe Ratio</td>
<td>0.57</td>
</tr>
</tbody>
</table>

Net Since Inception Jun-96 through Apr-14

Past results are not necessarily indicative of future results.
**TEXAS TRS PORTFOLIO**

This page contains the allocation information for the historical simulation of the Texas TRS beta portfolio, from 1970 onwards, as well as forward looking assumptions for expected returns, volatility, tracking error, and correlations used in this analysis.

The portfolio capital allocation weights (illustrated below) are estimates based either upon Bridgewater Associates’ understanding of standard asset allocation (which may change without notice) or information provided by or publicly available from the recipient of this presentation. Asset class returns are actual market returns where available and otherwise a proxy index constructed based on Bridgewater Associates understanding of global financial markets. Information regarding specific indices and simulation methods used for proxies is available upon request (except where the proprietary nature of information precludes its dissemination). Results are hypothetical or simulated and gross of fees unless otherwise indicated. HYPOTHETICAL OR SIMULATED PERFORMANCE RESULTS HAVE CERTAIN INHERENT LIMITATIONS. UNLIKE AN ACTUAL PERFORMANCE RECORD, SIMULATED RESULTS DO NOT REPRESENT ACTUAL TRADING OR THE COSTS OF MANAGING THE PORTFOLIO. ALSO, SINCE THE TRADES HAVE NOT ACTUALLY BEEN EXECUTED, THE RESULTS MAY HAVE UNDER OR OVER COMPENSATED FOR THE IMPACT, IF ANY, OF CERTAIN MARKET FACTORS, SUCH AS LACK OF LIQUIDITY. SIMULATED TRADING PROGRAMS IN GENERAL ARE ALSO SUBJECT TO THE FACT THAT THEY ARE DESIGNED WITH THE BENEFIT OF HINDSIGHT. NO REPRESENTATION IS BEING MADE THAT ANY ACCOUNT WILL OR IS LIKELY TO ACHIEVE PROFITS OR LOSSES SIMILAR TO THOSE SHOWN.

<table>
<thead>
<tr>
<th>Asset Type</th>
<th>Exposure Type</th>
<th>Asset</th>
<th>Notional</th>
<th>Beta Volatility</th>
<th>Volatility</th>
<th>Exposures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asset Real Estate U.S. Real Estate (Extended)</td>
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<tr>
<td>Asset Nominal Govt Bonds U.S. Gov’t Bonds (Extended)</td>
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<tr>
<td>Asset Inflation-Linked Bonds U.S. IL Bonds (Extended)</td>
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<tr>
<td>Asset Equities World Equities Ex-US (Extended)</td>
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<td>Asset Equities Emerging Market Equities</td>
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<tr>
<td>Asset Currency PLNvsUSD</td>
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<tr>
<td>Asset Currency HUFvsUSD</td>
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<td>Asset Currency DKKvsUSD</td>
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<tr>
<td>Asset Currency CADvsUSD</td>
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<tr>
<td>Asset Currency BRLvsUSD</td>
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<tr>
<td>Asset Commodities Commodities (GSCI - Extended)</td>
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<td></td>
</tr>
</tbody>
</table>

**Exposure Type**

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| Tab 6 C |
Strategic Asset Allocation Review

Britt Harris, Chief Investment Officer
Mohan Balachandran, Senior Managing Director
Ashley Baum, Investment Manager
June 2014
2014 SAA Study: Where Are We?

- Survey firms/advisors for intermediate and long term return, volatility, and correlation forecasts
- Combine forecasts into single set of asset assumptions
- Develop team (IMD, HEK, GRS)
- Collaborative review by TRS and GRS
- Assess funding risk using current views of portfolio
- Consider new ways to manage liabilities
- Review liquidity implications
- Compare/contrast current portfolio and suggested portfolio
- Compare/contrast assumptions driving change
- Review limits (Tactical ranges, etc.)
- Review feasibility
- Consider tail risk minimization
- Review confidence in achieving target return
- Consider order and timing of implementation based on feasibility, regime, and valuation views
Process Review: Completed To Date

• Review of best practices (HEK)
• Review of fiduciary responsibilities (Reinhart)
• Education on investment strategies and metrics (Dr. Brown)
• Determination of goals
• Development of analytic team (IMD, HEK, GRS, SPN, others)
• Analytical review of market conditions and Capital Market Expectations
• Consideration of asset allocation modifications and new/expanded strategies
# Teacher Retirement System of Texas

## Current Situation

### TRS Trust Valuation

<table>
<thead>
<tr>
<th></th>
<th>FY 2013 (Aug 13)</th>
<th>FY 2012 (Aug 12)</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Funded Ratio</td>
<td>80.8%</td>
<td>81.9%</td>
<td>-1.1%</td>
</tr>
<tr>
<td>Unfunded Accrued Liability</td>
<td>$28.9 B</td>
<td>$26.1 B</td>
<td>+2.8 B</td>
</tr>
<tr>
<td>Texas Credit Rating</td>
<td>AAA</td>
<td>AA +</td>
<td>+</td>
</tr>
<tr>
<td>TRS Pension / TX State GDP</td>
<td>10.0%</td>
<td>10.2%</td>
<td>-0.2%</td>
</tr>
</tbody>
</table>

### Key Facts

- **Duration of Liabilities**: 24 years
- **Benefit Payments**: $8.9 B
- **Member/State Contributions**: 6.8%
- **Net Payout Ratio**: 3.2%

### Trust Actuarial Asset Value:

- **Value**: $117.4 Billion

### GRS 30-year Asset Growth Rate:

- **Rate**: 4.1%

### GRS 30-year Liability Growth Rate:

- **Rate**: 3.6%

### Expected Passive Returns – By Portfolio

<table>
<thead>
<tr>
<th>Portfolio</th>
<th>Long-Term Return</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Equity</td>
<td>7.9%</td>
</tr>
<tr>
<td>Stable Value</td>
<td>3.6%</td>
</tr>
<tr>
<td>Real Return</td>
<td>7.3%</td>
</tr>
<tr>
<td>Passive Return</td>
<td>7.4%</td>
</tr>
</tbody>
</table>

### Long-Term Risk-Adjusted Portfolio Returns

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Trust Expected Return</td>
<td>8.4%</td>
</tr>
<tr>
<td>Projected Risk</td>
<td>11.4%</td>
</tr>
<tr>
<td>Projected Sharpe Ratio</td>
<td>0.50</td>
</tr>
</tbody>
</table>

### GOALS:

- **Long-Term Sustainability of TRS Pension System, Optimal Long-Term Investment Return**

---

1. Trust Valuation figures from GRS. TX State GDP from the US Bureau of Economic Analysis. Both numbers as of August 31, 2013.
2. 8.6% Annual Required Contribution Rate
3. As a % of Current Trust Assets - March 31, 2014
4. Risk, return and correlation estimates sourced from TRS Capital Market Survey. Assumes current Policy allocation
5. Long-Term Passive Return (+) 100 bps of Alpha
Preliminary Findings

• Projected long-term returns are generally below historical average returns

• Global fixed income is no longer projected to contribute significantly to the Trust’s total return objective (8%)

• Current investment policy with alpha is projected to achieve 8% over the duration of the TRS pension liability (24 Years)

• Intermediate-term investment returns may be lower than 8%

• No major changes seem necessary or appropriate at this time based on the information received and analysis conducted over the course of the SAA Study
Preliminary Recommendations (Review)

• Consider policy refinements outlined in this report
  o 5% increase to illiquid investments
  o 5% addition of Risk Parity
  o Reduction of Fixed Income
  o Combination of the above

• Continue to collaborate with key parties to ensure the Trust has proper funding, benefits, and investment resources
# Review of Long-Term Investment Return Projections

<table>
<thead>
<tr>
<th>Historical Norm</th>
<th>JP Morgan Estimate</th>
<th>Survey Results</th>
<th>Volatility</th>
<th>Beta to MSCI World</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inflation</strong></td>
<td></td>
<td>Median</td>
<td>Max</td>
<td>Min</td>
</tr>
<tr>
<td></td>
<td>3.6%</td>
<td>2.3%</td>
<td>2.2%</td>
<td>2.7%</td>
</tr>
<tr>
<td><strong>GLOBAL EQUITY</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>US Large Cap</td>
<td>12.0%</td>
<td>7.5%</td>
<td>6.7%</td>
<td>7.5%</td>
</tr>
<tr>
<td>US Small Cap</td>
<td>12.1%</td>
<td>7.5%</td>
<td>7.5%</td>
<td>10.7%</td>
</tr>
<tr>
<td>Non-US Developed</td>
<td>9.5%</td>
<td>7.5%</td>
<td>7.3%</td>
<td>11.0%</td>
</tr>
<tr>
<td>Emerging Markets</td>
<td>11.5%</td>
<td>9.0%</td>
<td>8.1%</td>
<td>12.0%</td>
</tr>
<tr>
<td>Directional Hedge Funds</td>
<td>7.3%</td>
<td>5.8%</td>
<td>5.4%</td>
<td>7.8%</td>
</tr>
<tr>
<td>Private Equity</td>
<td>12.5%</td>
<td>8.0%</td>
<td>9.2%</td>
<td>12.1%</td>
</tr>
<tr>
<td><strong>STABLE VALUE (Deflation)</strong></td>
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</tr>
<tr>
<td>Cash</td>
<td>5.5%</td>
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<tr>
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<td>4.6%</td>
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<td>6.1%</td>
</tr>
<tr>
<td><strong>REAL RETURN (Inflation)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TIPS</td>
<td>7.5%</td>
<td>4.8%</td>
<td>3.1%</td>
<td>4.8%</td>
</tr>
<tr>
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<td>6.7%</td>
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<td>Infrastructure</td>
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<td>7.3%</td>
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<tr>
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<td>7.3%</td>
<td>7.6%</td>
<td>8.8%</td>
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<td>Commodities</td>
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<td>Gold</td>
<td>4.9%</td>
<td>4.1%</td>
<td>4.1%</td>
<td>5.7%</td>
</tr>
</tbody>
</table>

**Source:** TRS, JP Morgan, Bloomberg


2 Estimates are unlevered.

3 Volatility for ENR is estimated as a 50/50 combination of Private Equity and Real Assets volatility estimates.

4 Volatility for Private Equity estimated as 1.15 times that of US Large Cap and Real Assets estimated as 0.84 times that of US REITs using TRS Risk Group proxy methodology.
# TRS Investment Allocation Comparison (Review)

## Comparison of Strategic Asset Allocations

<table>
<thead>
<tr>
<th></th>
<th>TRS</th>
<th>Public Plans</th>
<th>Private Plans</th>
<th>Endowment Plans</th>
<th>Canadian Plans</th>
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<td><strong>Global Equity</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>US Large Cap</td>
<td>18.0%</td>
<td>27.5%</td>
<td>24.2%</td>
<td>9.0%</td>
<td>9.5%</td>
</tr>
<tr>
<td>US Small Cap</td>
<td>2.0%</td>
<td>3.6%</td>
<td>3.0%</td>
<td>1.1%</td>
<td>1.2%</td>
</tr>
<tr>
<td>Non-US Developed</td>
<td>15.0%</td>
<td>19.8%</td>
<td>12.0%</td>
<td>10.8%</td>
<td>15.4%</td>
</tr>
<tr>
<td>Emerging Markets</td>
<td>10.0%</td>
<td>5.5%</td>
<td>3.1%</td>
<td>7.6%</td>
<td>3.9%</td>
</tr>
<tr>
<td>Directional Hedge Fund</td>
<td>5.0%</td>
<td>N/A¹</td>
<td>4.5%</td>
<td>2¹</td>
<td>N/A¹</td>
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<tr>
<td>Private Equity</td>
<td>11.0%</td>
<td>10.7%</td>
<td>5.7%</td>
<td>18.3%</td>
<td>14.7%</td>
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<tr>
<td><strong>Global Equity Total</strong></td>
<td>61.0%</td>
<td>67.1%</td>
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<td></td>
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<tr>
<td>Fixed Income/Credit</td>
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<td>23.5%</td>
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<td>US Long Treasuries</td>
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<tr>
<td>Stable Value Hedge Fund</td>
<td>4.0%</td>
<td>N/A¹</td>
<td>3.7%</td>
<td>2¹</td>
<td>N/A¹</td>
</tr>
<tr>
<td><strong>Stable Value Total</strong></td>
<td>18.0%</td>
<td>23.5%</td>
<td>42.5%</td>
<td>16.2%</td>
<td>24.5%</td>
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<tr>
<td><strong>Real Return (Inflation)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TIPS</td>
<td>5.0%</td>
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<td></td>
<td>7.4%</td>
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<tr>
<td>Real Assets</td>
<td>13.0%</td>
<td>9.5%</td>
<td>5.0%</td>
<td>14.2%</td>
<td>23.5%</td>
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<tr>
<td>ENR</td>
<td>3.0%</td>
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<td>11.5%</td>
</tr>
<tr>
<td><strong>Real Return Total</strong></td>
<td>21.0%</td>
<td>9.5%</td>
<td>5.0%</td>
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<td>30.8%</td>
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<tr>
<td><strong>Total</strong></td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

### Source:
Public plans compiled from 2013 CEM Peer Survey data. Private plans compiled according to Top 100 private plans as reported by P&I Investments data as of 9/30/13 (Accessed 5/12/14). Endowments and Canadian plans come from investment policy materials from their respective investment company websites. Endowments consist of Harvard, Yale, Stanford, and UTIMCO. Canadian plans consist of Canadian Pension Plan, Ontario Teachers, and Ontario Municipal.

1 Hedge Fund allocation is not explicitly given for Canadian plans. For Public plans, although the median HF allocation of the CEM Peer Survey is zero, there were some plans with an explicit allocation to HF, and across those plans the median allocation was 6%.

2 Hedge Fund allocations are not distinguished by the data provider, Pensions and Investments. They are split between Directional HF and Stable Value HF at an assumed ratio of 55%/45%.
Key Options: Potential SAA Portfolios

As we introduced in the March SAA Study review, there are four key options to efficiently improve projected long-term results (assuming current resources and organizational structure)

1. Increase illiquidity via purchase of additional holdings in Private Markets
   - Private Equity
   - Real Estate
   - Energy

2. Increase Risk Parity
   - Alternative return stream
   - More balanced risk framework
   - Uses leverage to improve returns, within pre-specified risk framework

3. Sell Treasuries
   - Re-allocate to higher return, but less diversifying, investments

4. Combination of above
### Preliminary Recommendations—Balanced Funding Options

#### Portfolio Alternatives

<table>
<thead>
<tr>
<th></th>
<th>Current Policy</th>
<th>+5% Private</th>
<th>+5% Risk Parity</th>
<th>Combined</th>
<th>+5% Equity/-5% LTreasury</th>
</tr>
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<tbody>
<tr>
<td><strong>Liquid Strategies:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Global Equity</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Large Cap</td>
<td>18%</td>
<td>17%</td>
<td>17%</td>
<td>16%</td>
<td>20%</td>
</tr>
<tr>
<td>Small Cap</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
</tr>
<tr>
<td><strong>Total US Equity</strong></td>
<td>20%</td>
<td>19%</td>
<td>19%</td>
<td>18%</td>
<td>22%</td>
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<tr>
<td>Non-US Developed</td>
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<td>14%</td>
<td>14%</td>
<td>13%</td>
<td>17%</td>
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<tr>
<td>Emerging Markets</td>
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<td>10%</td>
<td>9%</td>
<td>11%</td>
</tr>
<tr>
<td><strong>Total Non-US Equity</strong></td>
<td>25%</td>
<td>23%</td>
<td>24%</td>
<td>22%</td>
<td>28%</td>
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<tr>
<td><strong>Total Liquid Equity</strong></td>
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<td>42%</td>
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<td><strong>Stable Value</strong></td>
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<td>Cash</td>
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<td>1%</td>
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</tr>
<tr>
<td>Long-Term Treasury</td>
<td>13%</td>
<td>12%</td>
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<td>11%</td>
<td>8%</td>
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<tr>
<td><strong>Total Liquid Fixed Income</strong></td>
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<td>13%</td>
<td>12%</td>
<td>9%</td>
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<tr>
<td><strong>Real Return</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TIPS</td>
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<td>60%</td>
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<td>64%</td>
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<td>11%</td>
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<td>13%</td>
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<td>32%</td>
<td>27%</td>
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<tr>
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<tr>
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<td>100%</td>
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<tr>
<td><strong>Net Leverage</strong></td>
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<td>1.00x</td>
<td>1.04x</td>
<td>1.04x</td>
<td>1.00x</td>
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</table>
## Preliminary Recommendations—Balanced Funding Options

<table>
<thead>
<tr>
<th>Portfolio Alternatives</th>
<th>Current Policy</th>
<th>1 +5% Private</th>
<th>2 +5% Risk Parity</th>
<th>3 Combined</th>
<th>4 +5% Equity/-5% LTreasury</th>
</tr>
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<tbody>
<tr>
<td>Global Equity</td>
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<td>60%</td>
<td>58%</td>
<td>57%</td>
<td>66%</td>
</tr>
<tr>
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<td>17%</td>
<td>16%</td>
<td>13%</td>
</tr>
<tr>
<td>Real Return</td>
<td>21%</td>
<td>23%</td>
<td>20%</td>
<td>22%</td>
<td>21%</td>
</tr>
<tr>
<td>Risk Parity</td>
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<td>5%</td>
<td>5%</td>
<td>0%</td>
</tr>
<tr>
<td>Non-US Exposure</td>
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<td>23%</td>
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<tr>
<td>Public Equity</td>
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<td>68%</td>
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<td>32%</td>
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<tr>
<td>Expected Return (with alpha)</td>
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### Preliminary Recommendations—Funded from Fixed Income Only

#### Liquid Strategies:

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<th>+5% Private</th>
<th>+5% Risk Parity</th>
<th>Combined</th>
<th>+5% Equity/ -5% LTreasury</th>
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</thead>
<tbody>
<tr>
<td><strong>Global Equity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Large Cap</td>
<td>18%</td>
<td>18%</td>
<td>18%</td>
<td>18%</td>
<td>20%</td>
</tr>
<tr>
<td>Small Cap</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
</tr>
<tr>
<td><strong>Total US Equity</strong></td>
<td>20%</td>
<td>20%</td>
<td>20%</td>
<td>20%</td>
<td>22%</td>
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<tr>
<td>Non-US Developed</td>
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<td>17%</td>
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<tr>
<td>Emerging Markets</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>11%</td>
</tr>
<tr>
<td><strong>Total Non-US Equity</strong></td>
<td>25%</td>
<td>25%</td>
<td>25%</td>
<td>25%</td>
<td>28%</td>
</tr>
<tr>
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<td>45%</td>
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#### Stable Value

<table>
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<tr>
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<th>+5% Private</th>
<th>+5% Risk Parity</th>
<th>Combined</th>
<th>+5% Equity/ -5% LTreasury</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
</tr>
<tr>
<td>Long-Term Treasury</td>
<td>13%</td>
<td>10%</td>
<td>10%</td>
<td>5%</td>
<td>8%</td>
</tr>
<tr>
<td><strong>Total Liquid Fixed Income</strong></td>
<td>14%</td>
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<td>6%</td>
<td>9%</td>
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#### Real Return

<table>
<thead>
<tr>
<th></th>
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<th>+5% Private</th>
<th>+5% Risk Parity</th>
<th>Combined</th>
<th>+5% Equity/ -5% LTreasury</th>
</tr>
</thead>
<tbody>
<tr>
<td>TIPS</td>
<td>5%</td>
<td>3%</td>
<td>3%</td>
<td>3%</td>
<td>5%</td>
</tr>
<tr>
<td><strong>TOTAL LIQUID ASSETS</strong></td>
<td>64%</td>
<td>59%</td>
<td>59%</td>
<td>54%</td>
<td>64%</td>
</tr>
</tbody>
</table>

#### Hedge Fund Strategies:

<table>
<thead>
<tr>
<th></th>
<th>Current Policy</th>
<th>+5% Private</th>
<th>+5% Risk Parity</th>
<th>Combined</th>
<th>+5% Equity/ -5% LTreasury</th>
</tr>
</thead>
<tbody>
<tr>
<td>Directional Hedge Funds</td>
<td>5%</td>
<td>5%</td>
<td>5%</td>
<td>5%</td>
<td>5%</td>
</tr>
<tr>
<td>Stable Value Hedge Funds</td>
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<td>4%</td>
<td>4%</td>
<td>4%</td>
<td>4%</td>
</tr>
<tr>
<td><strong>TOTAL HEDGE FUNDS</strong></td>
<td>9%</td>
<td>9%</td>
<td>9%</td>
<td>9%</td>
<td>9%</td>
</tr>
</tbody>
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#### Illiquid Strategies:

<table>
<thead>
<tr>
<th></th>
<th>Current Policy</th>
<th>+5% Private</th>
<th>+5% Risk Parity</th>
<th>Combined</th>
<th>+5% Equity/ -5% LTreasury</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private Equity</td>
<td>11%</td>
<td>13%</td>
<td>11%</td>
<td>13%</td>
<td>11%</td>
</tr>
<tr>
<td>Real Assets</td>
<td>13%</td>
<td>16%</td>
<td>13%</td>
<td>16%</td>
<td>13%</td>
</tr>
<tr>
<td>ENR</td>
<td>3%</td>
<td>3%</td>
<td>3%</td>
<td>3%</td>
<td>3%</td>
</tr>
<tr>
<td><strong>TOTAL ILLIQUID ASSETS</strong></td>
<td>27%</td>
<td>32%</td>
<td>27%</td>
<td>32%</td>
<td>27%</td>
</tr>
</tbody>
</table>

#### Risk Parity

<table>
<thead>
<tr>
<th></th>
<th>Current Policy</th>
<th>+5% Private</th>
<th>+5% Risk Parity</th>
<th>Combined</th>
<th>+5% Equity/ -5% LTreasury</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0%</td>
<td>0%</td>
<td>5%</td>
<td>5%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>TOTAL TRUST</strong></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Net Leverage</strong></td>
<td>1.00x</td>
<td>1.00x</td>
<td>1.04x</td>
<td>1.04x</td>
<td>1.00x</td>
</tr>
</tbody>
</table>

### Legend

- Decrease from Current Policy
- Increase from Current Policy
## Preliminary Recommendations—Funded from Fixed Income Only

<table>
<thead>
<tr>
<th>Alternatives Funded by UST and TIPS</th>
<th>Current Policy</th>
<th>5 +5% Private</th>
<th>6 +5% Risk Parity</th>
<th>7 Combined</th>
<th>8 +5% Equity/-5% LTreasury</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Global Equity</strong></td>
<td>61%</td>
<td>63%</td>
<td>61%</td>
<td>63%</td>
<td>66%</td>
</tr>
<tr>
<td><strong>Stable Value</strong></td>
<td>18%</td>
<td>15%</td>
<td>15%</td>
<td>10%</td>
<td>13%</td>
</tr>
<tr>
<td><strong>Real Return</strong></td>
<td>21%</td>
<td>22%</td>
<td>19%</td>
<td>22%</td>
<td>21%</td>
</tr>
<tr>
<td><strong>Risk Parity</strong></td>
<td>0%</td>
<td>0%</td>
<td>5%</td>
<td>5%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Non-US Exposure</strong></td>
<td>25%</td>
<td>25%</td>
<td>25%</td>
<td>25%</td>
<td>28%</td>
</tr>
<tr>
<td><strong>Hedge Fund Total</strong></td>
<td>9%</td>
<td>9%</td>
<td>9%</td>
<td>9%</td>
<td>9%</td>
</tr>
<tr>
<td><strong>Public Equity</strong></td>
<td>45%</td>
<td>45%</td>
<td>45%</td>
<td>45%</td>
<td>50%</td>
</tr>
<tr>
<td><strong>Total Liquid + HF</strong></td>
<td>73%</td>
<td>68%</td>
<td>68%</td>
<td>63%</td>
<td>73%</td>
</tr>
<tr>
<td><strong>Total Private</strong></td>
<td>27%</td>
<td>32%</td>
<td>27%</td>
<td>32%</td>
<td>27%</td>
</tr>
<tr>
<td><strong>Expected Return (with alpha)</strong></td>
<td>8.4%</td>
<td>8.6%</td>
<td>8.6%</td>
<td>8.9%</td>
<td>8.5%</td>
</tr>
<tr>
<td><strong>Volatility</strong></td>
<td>11.4%</td>
<td>12.0%</td>
<td>11.9%</td>
<td>12.6%</td>
<td>12.3%</td>
</tr>
<tr>
<td><strong>Sharpe Ratio</strong></td>
<td>0.50</td>
<td>0.49</td>
<td>0.50</td>
<td>0.49</td>
<td>0.47</td>
</tr>
<tr>
<td><strong>Liquidity Score</strong></td>
<td>2.82</td>
<td>2.98</td>
<td>2.73</td>
<td>2.92</td>
<td>2.84</td>
</tr>
</tbody>
</table>
Comparison of Risk

Traditional Strategy versus Risk Parity

<table>
<thead>
<tr>
<th>Target Risk (Vol)</th>
<th>Target Return</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.5%</td>
<td>5%</td>
</tr>
<tr>
<td>6.5%</td>
<td>6%</td>
</tr>
<tr>
<td>9.5%</td>
<td>8%</td>
</tr>
</tbody>
</table>

- **Traditional Strategy**
- **Risk Parity at Different Leverage Levels**

Note: Analysis assumes a Risk Parity strategy with a constant Sharpe ratio of 0.65 and unlevered volatility of 4.5%. Assumes an annualized risk-free rate of 2%.
## Comparison of Alternative Asset Allocation Strategies

<table>
<thead>
<tr>
<th>Asset Class</th>
<th>Capital Allocation</th>
<th>Risk Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>US Large Cap</td>
<td>18.0%</td>
<td>10.0%</td>
</tr>
<tr>
<td>US Small Cap</td>
<td>2.0%</td>
<td>4.0%</td>
</tr>
<tr>
<td>Non-US Developed</td>
<td>15.0%</td>
<td>10.0%</td>
</tr>
<tr>
<td>Emerging Markets</td>
<td>10.0%</td>
<td>8.0%</td>
</tr>
<tr>
<td>Directional Hedge Funds</td>
<td>5.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Private Equity</td>
<td>11.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Global Equity</td>
<td>61.0%</td>
<td>32.0%</td>
</tr>
<tr>
<td>Cash</td>
<td>1.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>US Treasuries -- Long</td>
<td>13.0%</td>
<td>40.0%</td>
</tr>
<tr>
<td>Non-US Sovereign Bonds</td>
<td>0.0%</td>
<td>60.0%</td>
</tr>
<tr>
<td>High Yield</td>
<td>0.0%</td>
<td>4.0%</td>
</tr>
<tr>
<td>Stable Value Hedge Funds</td>
<td>4.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Stable Value</td>
<td>18.0%</td>
<td>104.0%</td>
</tr>
<tr>
<td>Real Assets</td>
<td>13.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>US TIPS</td>
<td>5.0%</td>
<td>50.0%</td>
</tr>
<tr>
<td>Commodities</td>
<td>0.0%</td>
<td>14.0%</td>
</tr>
<tr>
<td>ENR</td>
<td>3.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Real Return</td>
<td>21.0%</td>
<td>64.0%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100%</td>
<td>200%</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>11.4%</td>
<td>10.0%</td>
</tr>
</tbody>
</table>

Note: Risk Parity fund is shown for illustrative purposes at 2x leverage and uses only liquid, Trust benchmark assets. While indicative of the Risk Parity approach, these weights will vary over time. Probabilities estimated through 1 million simulations of returns on the S&P 500, a Risk Parity strategy, and Current Policy using the Capital Markets Expectation Survey. Probability simulations include alpha of +100 bps for Current Policy and tracking error of +285 bps.
Comparison of Asset Allocation Strategy to Risk Parity

Source: TRS, Bloomberg, Bridgewater, AQR

Risk Parity is modeled as a 50/50 allocation between Bridgewater All-Weather strategy and the AQR GRP Strategy, both of which are investable Risk Parity strategies. Actual track records are used back to the inception date of the strategies (June 1996 for Bridgewater and January 2006 for AQR). Firm-provided back tests are used to simulate performance prior to inception.

<table>
<thead>
<tr>
<th>Current Policy</th>
<th>Risk Parity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Return</td>
<td>8.1%</td>
</tr>
<tr>
<td>Volatility</td>
<td>11.2%</td>
</tr>
<tr>
<td>Sharpe Ratio</td>
<td>0.49</td>
</tr>
</tbody>
</table>

### Correlation

<table>
<thead>
<tr>
<th>S&amp;P 500</th>
<th>UST</th>
<th>CPI</th>
<th>S&amp;P 500</th>
<th>UST</th>
<th>CPI</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 years</td>
<td>0.95</td>
<td>-0.23</td>
<td>-0.13</td>
<td>0.50</td>
<td>0.19</td>
</tr>
<tr>
<td>10 years</td>
<td>0.95</td>
<td>-0.12</td>
<td>0.09</td>
<td>0.57</td>
<td>0.29</td>
</tr>
<tr>
<td>20 years</td>
<td>0.93</td>
<td>-0.07</td>
<td>0.04</td>
<td>0.57</td>
<td>0.37</td>
</tr>
<tr>
<td>Drawdowns</td>
<td>0.94</td>
<td>-0.11</td>
<td>0.02</td>
<td>0.10</td>
<td>-0.01</td>
</tr>
</tbody>
</table>

### Drawdown Period

- Maximum: -43.4% / -25.0%
- Length to Recover (Months): 26 / 21
- Trough Date: Feb 2009 / Oct 2008

### Market Cycle Performance

- Corrections (22% of the time): -20.1% / -7.4%
- Recoveries (42% of the time): 16.8% / 15.3%
- Expansions (36% of the time): 16.2% / 16.8%

### Market Cycle Betas to S&P 500

- Corrections (22% of the time): 0.75 / 0.42
- Recoveries (42% of the time): 0.70 / 0.24
- Expansions (36% of the time): 0.57 / 0.51

### VaR Analysis

- 95% Historical VaR: 8.0% / 7.4%

### Relative Performance Analysis

- Max Underperformance: -53.0% / -21.9%
- Period: Feb 2009 / Dec 2009
## PERFORMANCE

<table>
<thead>
<tr>
<th>Asset Class</th>
<th>1-Year TWR</th>
<th>3-Year TWR</th>
<th>10-Year TWR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private Equity</td>
<td>23.8%</td>
<td>15.2%</td>
<td>17.8%</td>
</tr>
<tr>
<td>Policy Benchmark³</td>
<td>17.9%</td>
<td>12.0%</td>
<td>9.8%</td>
</tr>
<tr>
<td>Excess Return</td>
<td>5.9%</td>
<td>3.2%</td>
<td>8.0%</td>
</tr>
</tbody>
</table>

**TUCS Peer Comparison**: 4th, 8th, 1st

## PORTFOLIO GROWTH

<table>
<thead>
<tr>
<th>PE (millions)</th>
<th>1-Year</th>
<th>3-Year</th>
<th>10-Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ending Value</td>
<td>$14,833</td>
<td>$14,833</td>
<td>$14,833</td>
</tr>
<tr>
<td>less Starting Value</td>
<td>13,324</td>
<td>9,622</td>
<td>905</td>
</tr>
<tr>
<td>less Contributions</td>
<td>2,206</td>
<td>8,140</td>
<td>17,828</td>
</tr>
<tr>
<td>plus Distributions</td>
<td>3,589</td>
<td>8,645</td>
<td>12,804</td>
</tr>
<tr>
<td>Investment Return</td>
<td>$2,892</td>
<td>$5,716</td>
<td>$8,905</td>
</tr>
</tbody>
</table>

## LONG-TERM MARKET RETURN AND RISK EXPECTATIONS

<table>
<thead>
<tr>
<th>Style</th>
<th>Portfolio Target Weight</th>
<th>Strategic Goal</th>
<th>Expected Market Return⁴</th>
<th>Public Risk Proxy⁵</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buyout</td>
<td>70%</td>
<td>Equity Alpha</td>
<td>13.3%</td>
<td>25.3%</td>
</tr>
<tr>
<td>Growth Equity / Venture</td>
<td>15%</td>
<td>Equity Alpha</td>
<td>11.3%</td>
<td>30.9%</td>
</tr>
<tr>
<td>Credit / Special Situations</td>
<td>15%</td>
<td>Diversification</td>
<td>11.3%</td>
<td>18.7%</td>
</tr>
<tr>
<td><strong>PRIVATE EQUITY TOTAL</strong></td>
<td><strong>100%</strong></td>
<td><strong>Equity Alpha / Diversification</strong></td>
<td><strong>12.7%</strong></td>
<td><strong>25.2%</strong></td>
</tr>
</tbody>
</table>

## ALLOCATION SUMMARY

<table>
<thead>
<tr>
<th>Style</th>
<th>% of Portfolio 12/31/2013</th>
<th>% of Portfolio 12/31/2012</th>
<th>Change</th>
<th>% of Total Trust 12/31/2013</th>
<th>% of Total Trust 12/31/2012</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buyout</td>
<td>77.5%</td>
<td>78.8%</td>
<td>-1.3%</td>
<td>8.6%</td>
<td>9.2%</td>
<td>-0.6%</td>
</tr>
<tr>
<td>Growth Equity / Venture</td>
<td>9.3%</td>
<td>7.4%</td>
<td>1.9%</td>
<td>1.0%</td>
<td>0.9%</td>
<td>0.1%</td>
</tr>
<tr>
<td>Credit / Special Situations</td>
<td>13.2%</td>
<td>13.8%</td>
<td>-0.6%</td>
<td>1.8%</td>
<td>1.6%</td>
<td>0.2%</td>
</tr>
<tr>
<td><strong>PRIVATE EQUITY TOTAL</strong></td>
<td><strong>100.0%</strong></td>
<td><strong>100.0%</strong></td>
<td>-</td>
<td><strong>11.4%</strong></td>
<td><strong>11.7%</strong></td>
<td><strong>-0.3%</strong></td>
</tr>
</tbody>
</table>

---

² State Street as of 3/31/13.
³ State Street as of 12/31/13, 12/31/10, 12/31/03, excludes ENR.
³³ Policy benchmark provided by State Street.
⁴ Hamilton Lane, 20 years of data ending 12/31/13.
⁵ TRS Risk Group/Morgan Stanley. Represents the public markets proxy of de-smoothed private assets as used in the TRS Risk Model. For comparison, S&P 500 is 20.0%.
### Real Assets Summary

#### PERFORMANCE

<table>
<thead>
<tr>
<th>Asset Class</th>
<th>1-Year Return</th>
<th>3-Year Return</th>
<th>5-Year Return</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real Assets TWR</td>
<td>12.6%</td>
<td>12.2%</td>
<td>5.4%</td>
</tr>
<tr>
<td>Real Assets Benchmark TWR</td>
<td>12.9%</td>
<td>12.5%</td>
<td>5.0%</td>
</tr>
<tr>
<td>TUCS Peer Comparison TWR¹</td>
<td>25th</td>
<td>25th</td>
<td>45th</td>
</tr>
<tr>
<td>Real Assets IRR</td>
<td>12.4%</td>
<td>12.2%</td>
<td>9.7%</td>
</tr>
</tbody>
</table>

#### PORTFOLIO GROWTH²

<table>
<thead>
<tr>
<th>Real Assets ($ millions)</th>
<th>1-Year</th>
<th>3-Year</th>
<th>5-Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ending Value</td>
<td>$15,138</td>
<td>$15,138</td>
<td>$15,138</td>
</tr>
<tr>
<td>less Starting Value</td>
<td>13,266</td>
<td>7,654</td>
<td>2,967</td>
</tr>
<tr>
<td>less Contributions</td>
<td>2,548</td>
<td>7,635</td>
<td>13,132</td>
</tr>
<tr>
<td>plus Distributions</td>
<td>2,439</td>
<td>4,422</td>
<td>5,443</td>
</tr>
<tr>
<td>Investment Return</td>
<td>$1,763</td>
<td>$4,271</td>
<td>$4,482</td>
</tr>
</tbody>
</table>

#### LONG TERM MARKET RETURN AND RISK EXPECTATIONS

<table>
<thead>
<tr>
<th>Style</th>
<th>Portfolio Weight</th>
<th>Strategic Goal</th>
<th>Expected Market Return³</th>
<th>Public Risk Proxy⁴</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core</td>
<td>30.0%</td>
<td>Diversification/Beta/Inflation Protection</td>
<td>6.3%</td>
<td>20.3%</td>
</tr>
<tr>
<td>Value-Add</td>
<td>10.0%</td>
<td>Return Enhancement/Inflation Protection</td>
<td>7.3%</td>
<td>24.4%</td>
</tr>
<tr>
<td>Opportunistic</td>
<td>30.0%</td>
<td>Return Enhancement</td>
<td>9.3%</td>
<td>35.6%</td>
</tr>
<tr>
<td>Real Assets Special Situations (RASS)</td>
<td>12.0%</td>
<td>Relative Value</td>
<td>7.3%</td>
<td>21.6%</td>
</tr>
<tr>
<td>Other Real Assets</td>
<td>18.0%</td>
<td>Inflation Protection</td>
<td>7.5%</td>
<td>20.0%</td>
</tr>
<tr>
<td><strong>REAL ASSETS TOTAL</strong></td>
<td><strong>100.0%</strong></td>
<td><strong>Diversification/Inflation Protection</strong></td>
<td><strong>7.6%</strong></td>
<td><strong>25.6%</strong></td>
</tr>
</tbody>
</table>

#### ALLOCATION SUMMARY

<table>
<thead>
<tr>
<th>Style</th>
<th>% of Portfolio</th>
<th>% of Total Trust</th>
<th>Change</th>
<th>% of Portfolio</th>
<th>% of Total Trust</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core</td>
<td>29.5%</td>
<td>31.4%</td>
<td>-1.9%</td>
<td>3.5%</td>
<td>3.5%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Value Added</td>
<td>14.5%</td>
<td>13.7%</td>
<td>0.8%</td>
<td>1.7%</td>
<td>1.6%</td>
<td>0.1%</td>
</tr>
<tr>
<td>Opportunistic</td>
<td>37.6%</td>
<td>37.1%</td>
<td>0.5%</td>
<td>4.1%</td>
<td>4.0%</td>
<td>0.1%</td>
</tr>
<tr>
<td>Real Assets Special Situations (RASS)</td>
<td>9.8%</td>
<td>9.8%</td>
<td>0.0%</td>
<td>1.1%</td>
<td>1.2%</td>
<td>-0.1%</td>
</tr>
<tr>
<td>Other Real Assets</td>
<td>7.4%</td>
<td>7.2%</td>
<td>0.2%</td>
<td>1.2%</td>
<td>2.1%</td>
<td>-0.9%</td>
</tr>
<tr>
<td>Emerging Managers</td>
<td>1.1%</td>
<td>0.8%</td>
<td>0.3%</td>
<td>0.2%</td>
<td>0.1%</td>
<td>0.1%</td>
</tr>
<tr>
<td><strong>REAL ASSETS TOTAL</strong></td>
<td><strong>100.0%</strong></td>
<td><strong>100.0%</strong></td>
<td>-</td>
<td><strong>11.9%</strong></td>
<td><strong>12.7%</strong></td>
<td><strong>-0.8%</strong></td>
</tr>
</tbody>
</table>

¹TUCS Report as of 3/31/14.
²State Street reports as of 12/31/13, 12/31/10, and 12/31/08, excluding ENR.
³Townsend
⁴TRS Risk Group
Increase Illiquidity by 5%

- Increase of 5% to Illiquid Asset Classes (2% PE and 3% RA)
  - Funded from 3% liquid equities, 1% UST and 1% TIPS
  - 10 bps in additional expected return
  - Increase in Sharpe ratio
  - Potential for additional alpha in manager selection
  - No significant impact on stress liquidity ratios
  - Still allows ability to redeploy assets opportunistically
  - Phase in over time
Supply and demand fundamentals are excellent as continued shortage of new supply has helped keep the market strong.
Risk Analysis

• Probability of achieving 8%
• Probability of achieving a positive return
• Drawdown scenarios
• Economic regimes and cycles
• Tail risk
• Other risk metrics
# Probability of Achieving an 8% Return

<table>
<thead>
<tr>
<th>Current Policy</th>
<th>Expected Return (%)</th>
<th>Probability of Achieving an 8% Return (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Long Term</td>
<td>1 Year</td>
</tr>
<tr>
<td>Current Policy</td>
<td>8.4</td>
<td>53.2</td>
</tr>
<tr>
<td>Risk Parity</td>
<td>8.9</td>
<td>55.2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Balanced Funding</th>
<th>Expected Return (%)</th>
<th>Probability of Achieving an 8% Return (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>+5% Private</td>
<td>8.5</td>
<td>53.7</td>
</tr>
<tr>
<td>+5% Risk Parity</td>
<td>8.5</td>
<td>53.8</td>
</tr>
<tr>
<td>Combined</td>
<td>8.7</td>
<td>54.3</td>
</tr>
<tr>
<td>+5% Equity/ -5% LTreasury</td>
<td>8.5</td>
<td>53.8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Funding from Fixed Income</th>
<th>Expected Return (%)</th>
<th>Probability of Achieving an 8% Return (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>+5% Private</td>
<td>8.6</td>
<td>54.2</td>
</tr>
<tr>
<td>+5% Risk Parity</td>
<td>8.6</td>
<td>54.0</td>
</tr>
<tr>
<td>Combined</td>
<td>8.9</td>
<td>54.8</td>
</tr>
<tr>
<td>+5% Equity/ -5% LTreasury</td>
<td>8.5</td>
<td>53.8</td>
</tr>
</tbody>
</table>

*Note: Table provides probability of portfolio achieving returns of at least 8% over different time horizons. All probabilities are estimated using 1 million simulations and inputs from the 2014 TRS Capital Markets Expectations Survey. Assumes alpha of 100 bps and tracking error of 285 bps for all portfolios except for the 100% allocation to Risk Parity.*
## Probability of Achieving a Positive Return

<table>
<thead>
<tr>
<th>Expected Return (%)</th>
<th>Probability of Achieving a Positive Return (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Long Term</td>
</tr>
<tr>
<td><strong>Current Policy</strong></td>
<td></td>
</tr>
<tr>
<td>8.4</td>
<td>63.2</td>
</tr>
<tr>
<td><strong>Risk Parity</strong></td>
<td>8.9</td>
</tr>
<tr>
<td><strong>Balanced Funding</strong></td>
<td></td>
</tr>
<tr>
<td>+5% Private</td>
<td>8.5</td>
</tr>
<tr>
<td>+5% Risk Parity</td>
<td>8.5</td>
</tr>
<tr>
<td>Combined</td>
<td>8.7</td>
</tr>
<tr>
<td>+5% Equity/ -5% LTreasury</td>
<td>8.5</td>
</tr>
<tr>
<td><strong>Funding from Fixed Income</strong></td>
<td></td>
</tr>
<tr>
<td>+5% Private</td>
<td>8.6</td>
</tr>
<tr>
<td>+5% Risk Parity</td>
<td>8.6</td>
</tr>
<tr>
<td>Combined</td>
<td>8.9</td>
</tr>
<tr>
<td>+5% Equity/ -5% LTreasury</td>
<td>8.5</td>
</tr>
</tbody>
</table>

*Note: Table provides probability of portfolio achieving returns of more than 0% over different time horizons. All probabilities are estimated using 1 million simulations and inputs from the 2014 TRS Capital Markets Expectations Survey. Assumes alpha of 100 bps and tracking error of 285 bps for all portfolios except for the 100% allocation to Risk Parity.*
Historical Stress Period Analysis

<table>
<thead>
<tr>
<th></th>
<th>Expected Return (%)</th>
<th>Portfolio Drawdown Analysis (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Long Term</td>
<td>Bond Crash</td>
</tr>
<tr>
<td><strong>Current Policy</strong></td>
<td></td>
<td>(1.2)</td>
</tr>
<tr>
<td><strong>Risk Parity</strong></td>
<td>8.4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8.9</td>
<td>(7.2)</td>
</tr>
<tr>
<td><strong>Balanced Funding</strong></td>
<td>8.5</td>
<td>(0.9)</td>
</tr>
<tr>
<td>+5% Private</td>
<td>8.5</td>
<td>(1.4)</td>
</tr>
<tr>
<td>+5% Risk Parity</td>
<td>8.7</td>
<td>(1.1)</td>
</tr>
<tr>
<td>Combined</td>
<td>8.5</td>
<td>(1.0)</td>
</tr>
<tr>
<td>+5% Equity/ -5% LTreasury</td>
<td>8.5</td>
<td></td>
</tr>
<tr>
<td><strong>Funding from Fixed Income</strong></td>
<td></td>
<td>(0.8)</td>
</tr>
<tr>
<td>+5% Private</td>
<td>8.6</td>
<td>(1.4)</td>
</tr>
<tr>
<td>+5% Risk Parity</td>
<td>8.6</td>
<td>(0.9)</td>
</tr>
<tr>
<td>Combined</td>
<td>8.9</td>
<td>(1.0)</td>
</tr>
<tr>
<td>+5% Equity/ -5% LTreasury</td>
<td>8.5</td>
<td></td>
</tr>
</tbody>
</table>

## Environmental Regime Analysis

<table>
<thead>
<tr>
<th>Expected Return (%)</th>
<th>Environmental Regime Analysis (Annualized, %)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Global Equity</td>
</tr>
<tr>
<td></td>
<td>Return</td>
</tr>
<tr>
<td><strong>Current Policy</strong></td>
<td></td>
</tr>
<tr>
<td>Long Term</td>
<td>8.4</td>
</tr>
<tr>
<td></td>
<td>8.9</td>
</tr>
<tr>
<td><strong>Risk Parity</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>8.5</td>
</tr>
<tr>
<td></td>
<td>8.5</td>
</tr>
<tr>
<td></td>
<td>8.7</td>
</tr>
<tr>
<td></td>
<td>8.5</td>
</tr>
<tr>
<td><strong>Balanced Funding</strong></td>
<td></td>
</tr>
<tr>
<td>+5% Private</td>
<td>8.5</td>
</tr>
<tr>
<td>+5% Risk Parity</td>
<td>8.5</td>
</tr>
<tr>
<td>Combined</td>
<td>8.7</td>
</tr>
<tr>
<td>+5% Equity/ -5% LTreasury</td>
<td>8.5</td>
</tr>
<tr>
<td><strong>Funding from Fixed Income</strong></td>
<td></td>
</tr>
<tr>
<td>+5% Private</td>
<td>8.6</td>
</tr>
<tr>
<td>+5% Risk Parity</td>
<td>8.6</td>
</tr>
<tr>
<td>Combined</td>
<td>8.9</td>
</tr>
<tr>
<td>+5% Equity/ -5% LTreasury</td>
<td>8.5</td>
</tr>
</tbody>
</table>

*Note: Returns calculated from Jan 1990 – Dec 2013 using quarterly data. Volatility estimated from Jan 1960 – Dec 2013 using quarterly data. Both returns and volatility are annualized.*
# Market Cycle Analysis

**Note:** Returns are calculated from quarterly data and expressed as an annualized return. Market cycle periods are determined by the level and direction of changes in the price of the S&P 500. Corrections occur when the S&P is in drawdown and price declines from a prior high. Recoveries occur when the level of the S&P is advancing, but has yet to surpass its prior high. Expansions occur when the S&P is gaining in value and setting new highs.

<table>
<thead>
<tr>
<th>Current Policy</th>
<th>Risk Parity</th>
<th>Expected Return (%)</th>
<th>Market Cycle Performance (Annualized, %)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Long Term</td>
<td>Correction</td>
</tr>
<tr>
<td><strong>Current Policy</strong></td>
<td><strong>Risk Parity</strong></td>
<td>8.4</td>
<td>(9.9)</td>
</tr>
<tr>
<td><strong>Balanced Funding</strong></td>
<td></td>
<td>8.9</td>
<td>(5.7)</td>
</tr>
<tr>
<td>+5% Private</td>
<td></td>
<td>8.5</td>
<td>(9.3)</td>
</tr>
<tr>
<td>+5% Risk Parity</td>
<td></td>
<td>8.5</td>
<td>(9.9)</td>
</tr>
<tr>
<td>Combined</td>
<td></td>
<td>8.7</td>
<td>(9.3)</td>
</tr>
<tr>
<td>+5% Equity/ -5% LTreasury</td>
<td></td>
<td>8.5</td>
<td>(11.8)</td>
</tr>
<tr>
<td><strong>Funding from Fixed Income</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>+5% Private</td>
<td></td>
<td>8.6</td>
<td>(10.4)</td>
</tr>
<tr>
<td>+5% Risk Parity</td>
<td></td>
<td>8.6</td>
<td>(10.7)</td>
</tr>
<tr>
<td>Combined</td>
<td></td>
<td>8.9</td>
<td>(11.3)</td>
</tr>
<tr>
<td>+5% Equity/ -5% LTreasury</td>
<td></td>
<td>8.5</td>
<td>(11.8)</td>
</tr>
</tbody>
</table>
# Volatility, Liquidity, and Leverage

### Note:
Standard deviation is measured using quarterly data and is annualized. VaR is estimated as quarterly, 95% historical VaR.

<table>
<thead>
<tr>
<th>Current Policy</th>
<th>Risk Parity</th>
<th>Expected Return (%)</th>
<th>Risk Metrics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Long Term</td>
<td>10 Year Std Dev (%)</td>
</tr>
<tr>
<td>Current Policy</td>
<td></td>
<td>8.4, 9.7, 9.3, 2.82</td>
<td>9.7, 10.2, 9.3, 3.75</td>
</tr>
<tr>
<td>Risk Parity</td>
<td></td>
<td>8.9, 10.2, 10.6, 3.75</td>
<td>10.2, 10.6, 3.75, 3.75</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Balanced Funding</th>
<th>Risk Parity</th>
<th>Expected Return (%)</th>
<th>Risk Metrics</th>
</tr>
</thead>
<tbody>
<tr>
<td>+5% Private</td>
<td></td>
<td>8.5, 9.6, 10.0, 2.97</td>
<td>1.00x</td>
</tr>
<tr>
<td>+5% Risk Parity</td>
<td></td>
<td>8.5, 9.7, 9.1, 2.90</td>
<td>1.04x</td>
</tr>
<tr>
<td>Combined</td>
<td></td>
<td>8.7, 9.6, 9.8, 3.05</td>
<td>1.04x</td>
</tr>
<tr>
<td>+5% Equity/-5% LTreasury</td>
<td></td>
<td>8.5, 10.9, 9.8, 2.84</td>
<td>1.00x</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Funding from Fixed Income</th>
<th>Risk Parity</th>
<th>Expected Return (%)</th>
<th>Risk Metrics</th>
</tr>
</thead>
<tbody>
<tr>
<td>+5% Private</td>
<td></td>
<td>8.6, 10.3, 10.2, 2.98</td>
<td>1.00x</td>
</tr>
<tr>
<td>+5% Risk Parity</td>
<td></td>
<td>8.6, 10.2, 9.3, 2.92</td>
<td>1.04x</td>
</tr>
<tr>
<td>Combined</td>
<td></td>
<td>8.9, 10.9, 10.0, 3.11</td>
<td>1.04x</td>
</tr>
<tr>
<td>+5% Equity/-5% LTreasury</td>
<td></td>
<td>8.5, 10.9, 9.8, 2.84</td>
<td>1.00x</td>
</tr>
</tbody>
</table>
2014 SAA Study: What is Next?

Data Gathering & Processing
- December 2013
- Survey firms/advisors for intermediate and long term return, volatility, and correlation forecasts
- Combine forecasts into single set of asset assumptions
- Develop team (IMD, HEK, GRS)

Research & Exploration
- February 2014
- Review addition and/or reduction of existing asset classes
- Consider addition of new asset classes and diversification approaches
- Review current benchmarks
- Review foreign currency risk

Modeling & Analysis
- March 2014
- Collaborative review by TRS and GRS
- Assess funding risk using current views of portfolio
- Consider new ways to manage liabilities
- Review liquidity implications

Review & Finalize
- June 2014
- Determine risk/constraints for use in analysis
- Valuation based return expectations and optimizations

Implement
- September 2014
- Consider order and timing of implementation based on feasibility, regime, and valuation views

Scenario Analysis
- Interim Board Report
- Evaluate asset allocation under alternate scenarios
- Condition returns on economic regimes and cycles
- Consider tail risk minimization
- Review confidence in achieving target return

Review Changes
- Interim Board Report
- Compare/contrast current portfolio and suggested portfolio
- Compare/contrast assumptions driving change
- Review limits (Tactical ranges, etc.)
- Review feasibility

Allocation Recommendation
- Final Recommendation
- Discuss with Board of Trustees, Executive Management (April – June)
- Present formal recommendations (September)

Post Approval
- Consider order and timing of implementation based on feasibility, regime, and valuation views
# Preliminary SAA Study Recommendation

## Asset Allocation

<table>
<thead>
<tr>
<th>Asset Allocation</th>
<th>Current Policy</th>
<th>Proposed Policy</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Liquid Strategies:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Global Equity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Large Cap</td>
<td>18%</td>
<td>16%</td>
<td>-2%</td>
</tr>
<tr>
<td>Small Cap</td>
<td>2%</td>
<td>2%</td>
<td>0%</td>
</tr>
<tr>
<td>Total US Equity</td>
<td>20%</td>
<td>18%</td>
<td>-2%</td>
</tr>
<tr>
<td>Non-US Developed</td>
<td>15%</td>
<td>13%</td>
<td>-2%</td>
</tr>
<tr>
<td>Emerging Markets</td>
<td>10%</td>
<td>9%</td>
<td>-1%</td>
</tr>
<tr>
<td>Total Non-US Equity</td>
<td>25%</td>
<td>22%</td>
<td>-3%</td>
</tr>
<tr>
<td><strong>TOTAL LIQUID EQUITY</strong></td>
<td>45%</td>
<td>40%</td>
<td>-5%</td>
</tr>
<tr>
<td>Stable Value</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash</td>
<td>1%</td>
<td>1%</td>
<td>0%</td>
</tr>
<tr>
<td>Long-Term Treasury</td>
<td>13%</td>
<td>11%</td>
<td>-2%</td>
</tr>
<tr>
<td><strong>Total Liquid Fixed Income</strong></td>
<td>14%</td>
<td>12%</td>
<td>-2%</td>
</tr>
<tr>
<td>Real Return</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TIPS</td>
<td>5%</td>
<td>3%</td>
<td>-2%</td>
</tr>
<tr>
<td><strong>TOTAL LIQUID ASSETS</strong></td>
<td>64%</td>
<td>55%</td>
<td>-9%</td>
</tr>
<tr>
<td>Hedge Fund Strategies:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Directional Hedge Funds</td>
<td>5%</td>
<td>4%</td>
<td>-1%</td>
</tr>
<tr>
<td>Stable Value Hedge Funds</td>
<td>4%</td>
<td>4%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>TOTAL HEDGE FUNDS</strong></td>
<td>9%</td>
<td>8%</td>
<td>-1%</td>
</tr>
<tr>
<td>Illiquid Strategies:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private Equity</td>
<td>11%</td>
<td>13%</td>
<td>2%</td>
</tr>
<tr>
<td>Real Assets</td>
<td>13%</td>
<td>16%</td>
<td>3%</td>
</tr>
<tr>
<td>ENR</td>
<td>3%</td>
<td>3%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>TOTAL ILLIQUID ASSETS</strong></td>
<td>27%</td>
<td>32%</td>
<td>5%</td>
</tr>
<tr>
<td>Risk Parity</td>
<td>0%</td>
<td>5%</td>
<td>5%</td>
</tr>
<tr>
<td><strong>TOTAL TRUST</strong></td>
<td>100%</td>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td>Net Leverage</td>
<td>1.00x</td>
<td>1.04x</td>
<td>0.04x</td>
</tr>
</tbody>
</table>

## Proposed Policy Allocation

- **Global Equity**: 57%
- **Stable Value**: 16%
- **Real Return**: 22%
- **Risk Parity**: 5%

### Additional Metrics

- **Expected Return (with alpha)**: 8.7%
- **Volatility**: 11.6%
- **Sharpe Ratio**: 0.52
- **Liquidity Score**: 3.05

### Legend

- **Decrease from Current Policy**
- **Increase from Current Policy**

---

[Graph showing proposed policy allocation]
APPENDIX
# Review of Investment Risk Premia

## Expected Annual Risk Premia
Projected and Historical

<table>
<thead>
<tr>
<th>Definition</th>
<th>Historical Premia (%)</th>
<th>Projected Premia from Median Survey Response (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash vs Inflation</td>
<td>1.9</td>
<td>(0.2)</td>
</tr>
<tr>
<td><strong>Duration</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intermediate</td>
<td>2.0</td>
<td>1.6</td>
</tr>
<tr>
<td>Long-Term</td>
<td>1.5</td>
<td>(0.7)</td>
</tr>
<tr>
<td><strong>Credit</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Investment Grade</td>
<td>1.0</td>
<td>(0.3)</td>
</tr>
<tr>
<td>High Yield*</td>
<td>1.1</td>
<td>1.3</td>
</tr>
<tr>
<td><strong>Public Equity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Large Cap</td>
<td>3.5</td>
<td>3.4</td>
</tr>
<tr>
<td>Small Cap</td>
<td>0.1</td>
<td>0.8</td>
</tr>
<tr>
<td><strong>Private Equity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private Equity*</td>
<td>4.6</td>
<td>2.5</td>
</tr>
</tbody>
</table>

*All comparisons made from 1979-2013 except for asset classes where data was not fully available: High Yield Premium (Dec 1983-Dec 2013), Small Cap Premium (Dec 1983-Dec 2013) and Private Equity Premium (Mar 1997-Dec 2013).
### Historical Value Added (Alpha) for the Median Plan in the Trust Universe Comparison Service (TUCS)

#### Ten Years Ending 3/31/14

(Annualized Returns, %)

<table>
<thead>
<tr>
<th>Category</th>
<th>TUCS Median Return</th>
<th>Market Return</th>
<th>Median Plan Alpha</th>
<th>Top Quartile Return</th>
</tr>
</thead>
<tbody>
<tr>
<td>US Large Cap</td>
<td>7.8</td>
<td>7.3</td>
<td>0.5</td>
<td>8.3</td>
</tr>
<tr>
<td>US Small Cap</td>
<td>9.9</td>
<td>9.3</td>
<td>0.6</td>
<td>10.8</td>
</tr>
<tr>
<td>EAFE</td>
<td>8.1</td>
<td>6.7</td>
<td>1.4</td>
<td>9.5</td>
</tr>
<tr>
<td>Emerging Markets</td>
<td>11.3</td>
<td>10.1</td>
<td>1.2</td>
<td>13.1</td>
</tr>
<tr>
<td>Hedge Funds</td>
<td>7.6</td>
<td>3.1</td>
<td>4.5</td>
<td>9.5</td>
</tr>
<tr>
<td>Private Equity</td>
<td>11.0</td>
<td>9.8</td>
<td>1.2</td>
<td>12.9</td>
</tr>
<tr>
<td>Real Estate</td>
<td>6.9</td>
<td>8.7</td>
<td>(1.8)</td>
<td>9.1</td>
</tr>
</tbody>
</table>

Source: TUCS, TRS

Market Returns are MSCI USA Large Cap, MSCI USA Small Cap, MSCI EAFE + Canada, MSCI Emerging Markets, HFRI FOF Composite, TRS Private Equity Policy Benchmark, and the NCREIF Property Index respectively.
Risk Parity: What if Rates Rise?

- Given Risk Parity’s large allocation to Treasury Bonds, a common concern is that the strategy will suffer in rising interest rate environments.

- History shows that Interest Rate increases may hurt performance, but the performance of other asset classes matters as well – ex. 1998.

- Concern is when rates rise and correlations across assets break down.
  - May/June 2013 – 10-Yr Interest Rates increase 0.81% and Risk Parity loses 12%.

Source: TRS, Bloomberg, Bridgewater, AQR

Risk Parity is modeled as a 50/50 allocation between Bridgewater All-Weather strategy and the AQR GRP Strategy, both of which are investable Risk Parity strategies. Actual track records are used back to the inception date of the strategies (June 1996 for Bridgewater and January 2006 for AQR). Firm-provided back tests are used to simulate performance prior to inception.
Risk Parity and Leverage

Why does Risk Parity use leverage?

• The average Risk Parity strategy employs leverage that varies between 1.5x – 3x

• Leverage is required to increase the risk of a low volatility portfolio to the desired risk target

• Risk Parity employs leverage as a portfolio construction tool at the asset-class level – it does not use leverage to speculate on individual investment opportunities

• Synthetic exposure to assets via exchange-traded derivatives is an efficient way to utilize leverage – however, it requires operational expertise and extensive systems/controls
Risk Parity Provides Greater Safety In Drawdowns/Recessions

Trailing 3-Year Annualized Returns – Risk Parity vs. Current SAA Policy

Source: TRS, Bloomberg, Bridgewater, AQR

Risk Parity is proxied with a 50/50 allocation to the simulated performance of the Bridgewater All Weather strategy and the AQR Global Risk Parity strategy, scaled to match a targeted annualized standard deviation of 10%. All returns are simulated and do not represent an actual investment track record. If Risk Parity was implemented using external managers, additional management fees would be incurred.
Additional Illiquidity Impacts

IMD looked at increasing private allocations by an additional 20% to examine an extreme impact on the Trust’s Illiquidity Tests

### Sources of Liquidity

<table>
<thead>
<tr>
<th>($, billions)</th>
<th>Current SAA Market Value</th>
<th>Current SAA Stressed Value</th>
<th>+20% added to Illiquids Market Value</th>
<th>+20% added to Illiquids Stressed Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liquid Assets Not on Loan (Cash, UST, TIPS, Equity, Commodities)</td>
<td>56.1</td>
<td>34.3</td>
<td>56.1</td>
<td>34.3</td>
</tr>
<tr>
<td>Securities Lending Collateral (Cash, Fixed Income)</td>
<td>23.0</td>
<td>18.0</td>
<td>23.0</td>
<td>18.0</td>
</tr>
<tr>
<td><strong>Total Sources of Liquidity</strong></td>
<td><strong>79.1</strong></td>
<td><strong>52.3</strong></td>
<td><strong>59.1</strong></td>
<td><strong>52.3</strong></td>
</tr>
<tr>
<td>Note: Excluded illiquid Assets (Private Equity, Real Assets, Hedge Funds, Other)</td>
<td>23.1</td>
<td>NA</td>
<td>47.8</td>
<td>NA</td>
</tr>
<tr>
<td>Note: Excluded Liquid Assets remaining on loan</td>
<td>21.5</td>
<td>NA</td>
<td>21.5</td>
<td>NA</td>
</tr>
</tbody>
</table>

### Uses of Liquidity

<table>
<thead>
<tr>
<th>($, billions)</th>
<th>Market Value</th>
<th>Stressed Value</th>
<th>Market Value</th>
<th>Stressed Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal Uses of Liquidity</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>Stressed Securities Lending</td>
<td>-2.3</td>
<td>-1.3</td>
<td>-2.3</td>
<td>-1.3</td>
</tr>
<tr>
<td>Stressed Derivatives</td>
<td>-0.5</td>
<td>-0.4</td>
<td>-0.5</td>
<td>-0.4</td>
</tr>
<tr>
<td>Stressed Private Markets</td>
<td>-2.0</td>
<td>-3.4</td>
<td>-2.0</td>
<td>-3.4</td>
</tr>
<tr>
<td><strong>Total Uses of Liquidity</strong></td>
<td><strong>0.1</strong></td>
<td><strong>-4.7</strong></td>
<td><strong>0.1</strong></td>
<td><strong>-5.1</strong></td>
</tr>
</tbody>
</table>

### Liquidity Ratio

<table>
<thead>
<tr>
<th></th>
<th>Current SAA</th>
<th>+20% added to Illiquids</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sources of Liquidity</td>
<td>52.3</td>
<td>42.2</td>
</tr>
<tr>
<td>Uses of Liquidity</td>
<td>-4.7</td>
<td>-5.1</td>
</tr>
<tr>
<td><strong>Ratio (Sources/Uses)</strong></td>
<td><strong>11.1</strong></td>
<td><strong>8.3</strong></td>
</tr>
<tr>
<td>Alert Threshold</td>
<td>4.0</td>
<td>4.0</td>
</tr>
<tr>
<td>Fail Threshold</td>
<td>3.0</td>
<td>3.0</td>
</tr>
<tr>
<td><strong>Test Result</strong></td>
<td><strong>Pass</strong></td>
<td><strong>Pass</strong></td>
</tr>
<tr>
<td>Note: Net Liquidity (Sources less Uses)</td>
<td>47.6</td>
<td>37.1</td>
</tr>
<tr>
<td>Note: 12 Months Benefit Payments (at 3% Annual)</td>
<td>3.7</td>
<td>3.7</td>
</tr>
</tbody>
</table>

Assumptions: In the stress case, Liquid Assets are valued at 56% and Securities Lending collateral is valued at 78% which is meant to approximate 1.5x the worst monthly performance of these assets in the past ten years plus an additional liquidity stress. Within Securities Lending, 50% of equity on loan and 0% of US Treasuries on loan are assumed to be returned to TRS. Derivatives are assumed to experience the same market stress applied to the Liquid Assets. Private Market investment are assumed to not return any capital and experience capital calls at 6x the normal amount expected for a month.

Source: TRS Risk Group
Simulated Passive Returns

Using forecasted asset returns and volatility estimates from TRS Capital Markets Survey

Note: 10,000 annual returns were simulated for each portfolio.
Tab 6 D
Summary

- Overall equity markets had a positive start to 2014 despite the increased volatility driven by economic uncertainty in the U.S., the impact of the unusually harsh winter, the escalation of the Ukraine/Russia confrontation, and continuing concerns over the Chinese economy.
  - The Treasury yield curve flattened during the first quarter, driven by long bond yields falling through much of the quarter as a function of a generally “risk off” environment.
- TRS gained 2.6% during the first quarter but underperformed its benchmark by 10 basis points
  - During the trailing 12 month period, TRS performance remains strong on an absolute and relative basis.
  - TRS exceeded its performance benchmark during the trailing 3, 5, and 10 year periods.
- Major sources of underperformance during the first quarter included:
  - Below benchmark performance from Domestic equities and an overweight to US Large Cap equities.
  - An underweight to Long Treasuries, which had a strong quarter.
  - Underperformance within Energy and Natural Resources.
- Investments that added to relative results included:
  - Outperformance within Private Equity, Real Assets, and Directional Hedge Funds.
  - An allocation to Commodities, which posted positive results during the quarter.
# 1. Market Summary – First Quarter 2014

<table>
<thead>
<tr>
<th></th>
<th>First Quarter</th>
<th>One Year</th>
<th>Three Years</th>
<th>Five Years</th>
<th>Ten Years</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Global Equity:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MSCI USA Standard</td>
<td>1.8%</td>
<td>22.0%</td>
<td>14.7%</td>
<td>21.3%</td>
<td>7.6%</td>
</tr>
<tr>
<td>MSCI USA Small Cap</td>
<td>2.5</td>
<td>25.5</td>
<td>14.3</td>
<td>26.8</td>
<td>9.3</td>
</tr>
<tr>
<td>MSCI EAFE + Canada Index</td>
<td>0.7</td>
<td>16.5</td>
<td>6.3</td>
<td>15.9</td>
<td>6.7</td>
</tr>
<tr>
<td>MSCI Emerging Markets Index</td>
<td>-0.4</td>
<td>-1.4</td>
<td>-2.9</td>
<td>14.5</td>
<td>10.1</td>
</tr>
<tr>
<td>HFRI Fund of Funds Composite Index</td>
<td>0.5</td>
<td>6.0</td>
<td>2.4</td>
<td>4.9</td>
<td>3.1</td>
</tr>
<tr>
<td>State Street Private Equity Index (qtr lagged)</td>
<td>6.2</td>
<td>18.7</td>
<td>12.3</td>
<td>13.1</td>
<td>12.2</td>
</tr>
<tr>
<td>Global Equity Policy Benchmark</td>
<td>1.9</td>
<td>14.8</td>
<td>7.8</td>
<td>18.0</td>
<td>--</td>
</tr>
<tr>
<td><strong>Stable Value:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barclays Capital Long Treasury Index</td>
<td>7.1%</td>
<td>-4.2%</td>
<td>8.3%</td>
<td>4.8%</td>
<td>6.1%</td>
</tr>
<tr>
<td>HFRI Fund of Funds Conservative Index</td>
<td>1.3</td>
<td>6.1</td>
<td>2.7</td>
<td>4.6</td>
<td>2.6</td>
</tr>
<tr>
<td>3 Month LIBOR + 2%</td>
<td>0.6</td>
<td>2.3</td>
<td>2.3</td>
<td>2.4</td>
<td>4.1</td>
</tr>
<tr>
<td>90 Day US Treasury Bill</td>
<td>0.0</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>1.7</td>
</tr>
<tr>
<td>Stable Value Policy Benchmark</td>
<td>5.4</td>
<td>-1.6</td>
<td>7.5</td>
<td>4.8</td>
<td>--</td>
</tr>
<tr>
<td><strong>Real Return:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barclays Capital US Treasury TIPS Index</td>
<td>1.9%</td>
<td>-6.5%</td>
<td>3.5%</td>
<td>4.9%</td>
<td>4.5%</td>
</tr>
<tr>
<td>NCREIF ODCE (qtr lagged)</td>
<td>2.9</td>
<td>12.9</td>
<td>12.5</td>
<td>4.7</td>
<td>-</td>
</tr>
<tr>
<td>Cambridge Nat. Resources (75) / CPI (qtr lagged) (25)</td>
<td>2.6</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Goldman Sachs Commodities Index</td>
<td>2.9</td>
<td>1.1</td>
<td>-3.4</td>
<td>6.8</td>
<td>0.0</td>
</tr>
<tr>
<td>Real Return Policy Benchmark</td>
<td>2.7</td>
<td>7.6</td>
<td>9.2</td>
<td>9.7</td>
<td>--</td>
</tr>
<tr>
<td>TRS Policy Benchmark</td>
<td>2.7%</td>
<td>10.3%</td>
<td>8.6%</td>
<td>14.2%</td>
<td>6.7%</td>
</tr>
</tbody>
</table>
2. Market Value Change

Change in Market Value ( $Millions )  
From January 1, 2014 To March 31, 2014

<table>
<thead>
<tr>
<th>Millions ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$123,852.1</td>
</tr>
<tr>
<td>$3,292.2</td>
</tr>
<tr>
<td>$126,121.5</td>
</tr>
</tbody>
</table>

- Beginning Market Value: $123,852.1
- Net Additions / Withdrawals: -$1,022.8
- Investment Earnings: $3,292.2
- Ending Market Value: $126,121.5
### 3. Asset Allocation Detail

<table>
<thead>
<tr>
<th>Market Value ($ in millions) as of 3/31/2014</th>
<th>Policy Target</th>
<th>Relative Allocation to Policy Target</th>
<th>Ranges</th>
</tr>
</thead>
<tbody>
<tr>
<td>($)</td>
<td>(%)</td>
<td>(%)</td>
<td></td>
</tr>
<tr>
<td><strong>Total Fund</strong></td>
<td>$126,122</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>U.S. Large</td>
<td>$24,050</td>
<td>19.1%</td>
<td>18%</td>
</tr>
<tr>
<td>U.S. Small</td>
<td>$3,228</td>
<td>2.6%</td>
<td>2%</td>
</tr>
<tr>
<td>Non-U.S. Developed</td>
<td>$18,221</td>
<td>14.4%</td>
<td>15%</td>
</tr>
<tr>
<td>Emerging Markets</td>
<td>$12,718</td>
<td>10.1%</td>
<td>10%</td>
</tr>
<tr>
<td>Directional Hedge Funds</td>
<td>$6,387</td>
<td>5.1%</td>
<td>5%</td>
</tr>
<tr>
<td>Private Equity</td>
<td>$14,444</td>
<td>11.5%</td>
<td>11%</td>
</tr>
<tr>
<td><strong>Global Equity</strong></td>
<td>$79,048</td>
<td>62.7%</td>
<td>61%</td>
</tr>
<tr>
<td>Long Treasuries</td>
<td>$15,610</td>
<td>12.4%</td>
<td>13%</td>
</tr>
<tr>
<td>Stable Value Hedge Funds</td>
<td>$5,053</td>
<td>4.0%</td>
<td>4%</td>
</tr>
<tr>
<td>Absolute Return (including OAR)</td>
<td>$670</td>
<td>0.5%</td>
<td>0%</td>
</tr>
<tr>
<td>Cash</td>
<td>$2,154</td>
<td>1.7%</td>
<td>1%</td>
</tr>
<tr>
<td><strong>Stable Value</strong></td>
<td>$23,487</td>
<td>18.6%</td>
<td>18%</td>
</tr>
<tr>
<td>TIPS</td>
<td>$6,147</td>
<td>4.9%</td>
<td>5%</td>
</tr>
<tr>
<td>Real Assets</td>
<td>$14,987</td>
<td>11.9%</td>
<td>13%</td>
</tr>
<tr>
<td>Energy and Natural Resources</td>
<td>$2,194</td>
<td>1.7%</td>
<td>3%</td>
</tr>
<tr>
<td>Commodities</td>
<td>$259</td>
<td>0.2%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Real Return</strong></td>
<td>$23,586</td>
<td>18.7%</td>
<td>21%</td>
</tr>
</tbody>
</table>

*Note: Actual allocations above are based upon Account Level information*
4. Total TRS Performance Ending 3/31/2014

Investment Results
As of 3/31/2014

Note: The excess returns shown above may not be a perfect difference between the actual and benchmark returns due entirely to rounding.
5. Total Fund Attribution - Quarter Ending 3/31/2014

![Graphs showing asset allocation value added and manager value added for different asset classes.]
6. Risk Profile: Total Fund Risk-Return vs. Peers

Plan Sponsor Peer Group composed of 71 public funds with total assets in excess of $1B as of 3/31/14.
6. Risk Profile: Trailing 3-Year and 5-Year Risk Metrics Peer Comparison

Plan Sponsor Peer Group composed of 71 public funds with total assets in excess of $1B.

<table>
<thead>
<tr>
<th>Category</th>
<th>First Quarter</th>
<th>One Year</th>
<th>Three Years</th>
<th>Five Years</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Global Equity</strong></td>
<td>1.9%</td>
<td>16.7%</td>
<td>8.5%</td>
<td>17.7%</td>
</tr>
<tr>
<td>Global Equity Benchmark</td>
<td>1.9</td>
<td>14.8</td>
<td>7.8</td>
<td>18.0</td>
</tr>
<tr>
<td>Difference</td>
<td>+0.0</td>
<td>+1.9</td>
<td>+0.7</td>
<td>-0.3</td>
</tr>
<tr>
<td><strong>Total U.S.</strong></td>
<td>1.4</td>
<td>22.1</td>
<td>13.6</td>
<td>21.6</td>
</tr>
<tr>
<td>U.S. Benchmark</td>
<td>1.9</td>
<td>22.4</td>
<td>14.3</td>
<td>21.9</td>
</tr>
<tr>
<td>Difference</td>
<td>-0.5</td>
<td>-0.3</td>
<td>-0.7</td>
<td>-0.3</td>
</tr>
<tr>
<td>U.S. Large Cap</td>
<td>1.4</td>
<td>21.9</td>
<td>14.0</td>
<td>21.2</td>
</tr>
<tr>
<td>Large Cap Benchmark</td>
<td>1.8</td>
<td>22.0</td>
<td>14.7</td>
<td>21.2</td>
</tr>
<tr>
<td>Difference</td>
<td>-0.4</td>
<td>-0.1</td>
<td>-0.7</td>
<td>+0.0</td>
</tr>
<tr>
<td>U.S. Small Cap</td>
<td>-0.5</td>
<td>21.9</td>
<td>14.7</td>
<td>25.5</td>
</tr>
<tr>
<td>Small Cap Benchmark</td>
<td>2.5</td>
<td>25.5</td>
<td>14.3</td>
<td>25.7</td>
</tr>
<tr>
<td>Difference</td>
<td>-3.0</td>
<td>-3.6</td>
<td>+0.4</td>
<td>-0.2</td>
</tr>
<tr>
<td><strong>Non-U.S. Equity</strong></td>
<td>0.1</td>
<td>10.5</td>
<td>3.3</td>
<td>15.6</td>
</tr>
<tr>
<td>Non-U.S. Benchmark</td>
<td>0.3</td>
<td>9.0</td>
<td>2.6</td>
<td>15.4</td>
</tr>
<tr>
<td>Difference</td>
<td>-0.2</td>
<td>+1.5</td>
<td>+0.7</td>
<td>+0.2</td>
</tr>
<tr>
<td>Non-U.S. Developed</td>
<td>0.6</td>
<td>19.1</td>
<td>7.5</td>
<td>16.3</td>
</tr>
<tr>
<td>MSCI EAFE + Canada</td>
<td>0.7</td>
<td>16.5</td>
<td>6.3</td>
<td>15.9</td>
</tr>
<tr>
<td>Difference</td>
<td>-0.1</td>
<td>+2.6</td>
<td>+1.2</td>
<td>+0.4</td>
</tr>
<tr>
<td>Emerging Markets</td>
<td>-0.6</td>
<td>-0.1</td>
<td>-1.8</td>
<td>15.1</td>
</tr>
<tr>
<td>MSCI Emerging Markets</td>
<td>-0.4</td>
<td>-1.4</td>
<td>-2.9</td>
<td>14.5</td>
</tr>
<tr>
<td>Difference</td>
<td>-0.2</td>
<td>+1.3</td>
<td>+1.1</td>
<td>+0.6</td>
</tr>
</tbody>
</table>

**Note:** The excess returns shown in this presentation may differ from State Street statements due entirely to rounding. These differences are generally within a few basis points and are not material.
### 7. Global Equity: Performance Summary Ending 3/31/2014 (cont’d)

<table>
<thead>
<tr>
<th></th>
<th>First Quarter</th>
<th>One Year</th>
<th>Three Years</th>
<th>Five Years</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Directional Hedge Funds</strong></td>
<td>1.5%</td>
<td>8.7%</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>HFRI Fund of Funds Composite Index</td>
<td>0.5</td>
<td>6.0</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td><strong>Difference</strong></td>
<td>+1.0</td>
<td>+2.7</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td><strong>Total Public Equity</strong></td>
<td></td>
<td></td>
<td>7.2</td>
<td>17.4</td>
</tr>
<tr>
<td>Public Equity Benchmark</td>
<td>1.0</td>
<td>14.0</td>
<td>6.9</td>
<td>17.3</td>
</tr>
<tr>
<td><strong>Difference</strong></td>
<td>-0.2</td>
<td>+1.2</td>
<td>+0.3</td>
<td>+0.1</td>
</tr>
<tr>
<td><strong>Total Private Equity</strong></td>
<td></td>
<td></td>
<td>15.2</td>
<td>16.5</td>
</tr>
<tr>
<td>Private Equity Benchmark</td>
<td>5.9</td>
<td>17.9</td>
<td>12.0</td>
<td>21.0</td>
</tr>
<tr>
<td><strong>Difference</strong></td>
<td>+1.3</td>
<td>+5.9</td>
<td>+3.2</td>
<td>-4.5</td>
</tr>
</tbody>
</table>

*Note: The excess returns shown in this presentation may differ from State Street statements due entirely to rounding. These differences are generally within a few basis points and are not material.*

<table>
<thead>
<tr>
<th></th>
<th>First Quarter</th>
<th>One Year</th>
<th>Three Years</th>
<th>Five Years</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Stable Value</strong></td>
<td>4.9%</td>
<td>-1.9%</td>
<td>6.3%</td>
<td>8.6%</td>
</tr>
<tr>
<td>Total Stable Value Benchmark</td>
<td>5.4</td>
<td>-1.6</td>
<td>7.5</td>
<td>4.8</td>
</tr>
<tr>
<td>Difference</td>
<td>-0.5</td>
<td>-0.3</td>
<td>-1.2</td>
<td>+3.8</td>
</tr>
<tr>
<td><strong>Long Treasuries</strong></td>
<td>7.1</td>
<td>-4.1</td>
<td>8.8</td>
<td>5.6</td>
</tr>
<tr>
<td>Treasury Benchmark</td>
<td>7.1</td>
<td>-4.2</td>
<td>8.3</td>
<td>4.8</td>
</tr>
<tr>
<td>Difference</td>
<td>+0.0</td>
<td>+0.1</td>
<td>+0.5</td>
<td>+0.8</td>
</tr>
<tr>
<td><strong>Stable Value Hedge Funds</strong></td>
<td>0.8</td>
<td>3.5</td>
<td>1.8</td>
<td>4.9</td>
</tr>
<tr>
<td>Hedge Funds Benchmark</td>
<td>1.3</td>
<td>6.1</td>
<td>4.8</td>
<td>3.8</td>
</tr>
<tr>
<td>Difference</td>
<td>-0.5</td>
<td>-2.6</td>
<td>-3.0</td>
<td>+1.1</td>
</tr>
<tr>
<td><strong>Other Absolute Return</strong></td>
<td>3.1</td>
<td>4.5</td>
<td>12.1</td>
<td>18.8</td>
</tr>
<tr>
<td>Other Absolute Return Benchmark</td>
<td>0.6</td>
<td>2.3</td>
<td>2.3</td>
<td>2.4</td>
</tr>
<tr>
<td>Difference</td>
<td>+2.5</td>
<td>+2.2</td>
<td>+9.8</td>
<td>+16.4</td>
</tr>
<tr>
<td><strong>Cash Equivalents</strong></td>
<td>0.1</td>
<td>1.2</td>
<td>0.9</td>
<td>0.0</td>
</tr>
<tr>
<td>Cash Benchmark</td>
<td>0.0</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>Difference</td>
<td>+0.1</td>
<td>+1.1</td>
<td>+0.8</td>
<td>-0.1</td>
</tr>
</tbody>
</table>

Note: Performance of Cash Equivalents is shown net of fees paid to TRS Strategic Partners

Note: The excess returns shown in this presentation may differ from State Street statements due entirely to rounding. These differences are generally within a few basis points and are not material.

<table>
<thead>
<tr>
<th></th>
<th>First Quarter</th>
<th>One Year</th>
<th>Three Years</th>
<th>Five Years</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Real Return</strong></td>
<td>3.1%</td>
<td>5.2%</td>
<td>8.0%</td>
<td>10.0%</td>
</tr>
<tr>
<td>Real Return Benchmark</td>
<td>2.7</td>
<td>7.6</td>
<td>9.2</td>
<td>9.7</td>
</tr>
<tr>
<td><strong>Difference</strong></td>
<td>+0.4</td>
<td>-2.4</td>
<td>-1.2</td>
<td>+0.3</td>
</tr>
<tr>
<td><strong>TIPS</strong></td>
<td>2.0</td>
<td>-6.4</td>
<td>3.6</td>
<td>5.9</td>
</tr>
<tr>
<td>U.S. TIPS Benchmark</td>
<td>1.9</td>
<td>-6.5</td>
<td>3.5</td>
<td>5.8</td>
</tr>
<tr>
<td><strong>Difference</strong></td>
<td>+0.1</td>
<td>+0.1</td>
<td>+0.1</td>
<td>+0.1</td>
</tr>
<tr>
<td><strong>Real Assets</strong></td>
<td>3.9</td>
<td>12.5</td>
<td>12.3</td>
<td>12.0</td>
</tr>
<tr>
<td>Real Asset Benchmark</td>
<td>2.9</td>
<td>12.9</td>
<td>12.5</td>
<td>5.0</td>
</tr>
<tr>
<td><strong>Difference</strong></td>
<td>+1.0</td>
<td>-0.4</td>
<td>-0.2</td>
<td>+7.0</td>
</tr>
<tr>
<td><strong>Energy and Natural Resources</strong></td>
<td>-0.6</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Energy and Natural Resources Benchmark</td>
<td>2.6</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td><strong>Difference</strong></td>
<td>-3.2</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td><strong>Commodities</strong></td>
<td>11.7</td>
<td>-25.7</td>
<td>-17.9</td>
<td>-1.9</td>
</tr>
<tr>
<td>Commodities Benchmark</td>
<td>2.9</td>
<td>1.1</td>
<td>-3.4</td>
<td>6.8</td>
</tr>
<tr>
<td><strong>Difference</strong></td>
<td>+8.8</td>
<td>-26.8</td>
<td>-14.5</td>
<td>-8.7</td>
</tr>
</tbody>
</table>

Note: The excess returns shown in this presentation may differ from State Street statements due entirely to rounding. These differences are generally within a few basis points and are not material.
Appendix – Supplemental Reporting
Historical Excess Performance

Quarterly and Cumulative Excess Performance
Total Fund vs. Total Fund Benchmark

Quarterly Excess Performance

Ratio of Cumulative Wealth - 10 Years
TRS Asset Growth

Total Fund Historical Growth (September 1997 - March 2014)

Market Value (Billions)

$126.1
External Manager Program:
Public Equity Performance as of 3/31/2014

<table>
<thead>
<tr>
<th>Allocation ($ in billions)</th>
<th>First Quarter</th>
<th>One Year</th>
<th>Three Years</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EP Total Global Equity</strong></td>
<td>$35.2</td>
<td>1.1%</td>
<td>14.7%</td>
</tr>
<tr>
<td>EP Global Equity Benchmark</td>
<td>--</td>
<td>0.9</td>
<td>12.7</td>
</tr>
<tr>
<td>Difference</td>
<td>--</td>
<td>+0.2</td>
<td>+2.0</td>
</tr>
<tr>
<td><strong>EP U.S. Large Cap</strong></td>
<td>$7.8</td>
<td>1.8</td>
<td>21.5</td>
</tr>
<tr>
<td>EP Large Cap Benchmark</td>
<td>--</td>
<td>1.8</td>
<td>22.0</td>
</tr>
<tr>
<td>Difference</td>
<td>--</td>
<td>+0.0</td>
<td>-0.5</td>
</tr>
<tr>
<td><strong>EP U.S. Small Cap</strong></td>
<td>$2.0</td>
<td>0.8</td>
<td>24.2</td>
</tr>
<tr>
<td>EP Small Cap Benchmark</td>
<td>--</td>
<td>2.5</td>
<td>25.5</td>
</tr>
<tr>
<td>Difference</td>
<td>--</td>
<td>-1.7</td>
<td>-1.3</td>
</tr>
<tr>
<td><strong>EP Non-U.S. Developed</strong></td>
<td>$5.8</td>
<td>1.1</td>
<td>22.2</td>
</tr>
<tr>
<td>MSCI EAFE + Canada Index</td>
<td>--</td>
<td>0.7</td>
<td>16.5</td>
</tr>
<tr>
<td>Difference</td>
<td>--</td>
<td>+0.4</td>
<td>+5.7</td>
</tr>
<tr>
<td><strong>EP Emerging Markets</strong></td>
<td>$8.0</td>
<td>-0.3</td>
<td>-0.6</td>
</tr>
<tr>
<td>MSCI Emerging Markets Index</td>
<td>--</td>
<td>-0.4</td>
<td>-1.4</td>
</tr>
<tr>
<td>Difference</td>
<td>--</td>
<td>+0.1</td>
<td>+0.8</td>
</tr>
<tr>
<td><strong>EP World Equity</strong></td>
<td>$5.4</td>
<td>0.9</td>
<td>19.4</td>
</tr>
<tr>
<td>EP World Equity Benchmark</td>
<td>--</td>
<td>1.1</td>
<td>16.6</td>
</tr>
<tr>
<td>Difference</td>
<td>--</td>
<td>-0.2</td>
<td>+2.8</td>
</tr>
<tr>
<td><strong>EP Directional Hedge Funds</strong></td>
<td>$6.2</td>
<td>1.7</td>
<td>9.7</td>
</tr>
<tr>
<td>HFRI Fund of Funds Composite Index</td>
<td>--</td>
<td>0.5</td>
<td>6.0</td>
</tr>
<tr>
<td>Difference</td>
<td>--</td>
<td>+1.2</td>
<td>+3.7</td>
</tr>
</tbody>
</table>

Note: The excess returns shown in this presentation may differ from State Street statements due entirely to rounding. These differences are generally within a few basis points and are not material.
## External Manager Program:
### Stable Value/Total Program Performance as of 3/31/2014

<table>
<thead>
<tr>
<th>Allocation ($ in billions)</th>
<th>First Quarter</th>
<th>One Year</th>
<th>Three Years</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EP Total Stable Value</strong></td>
<td>$5.4</td>
<td>1.2%</td>
<td>4.4%</td>
</tr>
<tr>
<td>EP Stable Value Benchmark</td>
<td>--</td>
<td>0.0</td>
<td>0.1</td>
</tr>
<tr>
<td>Difference</td>
<td>--</td>
<td>+1.2</td>
<td>+4.3</td>
</tr>
<tr>
<td><strong>EP Stable Value Hedge Funds</strong></td>
<td>$5.1</td>
<td>0.8</td>
<td>3.5</td>
</tr>
<tr>
<td>EP Stable Value Hedge Funds Benchmark</td>
<td>--</td>
<td>1.3</td>
<td>6.1</td>
</tr>
<tr>
<td>Difference</td>
<td>--</td>
<td>-0.5</td>
<td>-2.6</td>
</tr>
<tr>
<td><strong>EP OAR</strong></td>
<td>$0.3</td>
<td>8.5</td>
<td>25.1</td>
</tr>
<tr>
<td>EP OAR Benchmark</td>
<td>--</td>
<td>0.6</td>
<td>2.3</td>
</tr>
<tr>
<td>Difference</td>
<td>--</td>
<td>+7.9</td>
<td>+22.8</td>
</tr>
<tr>
<td><strong>Total External Public Program</strong></td>
<td>$40.6</td>
<td>1.1</td>
<td>13.4</td>
</tr>
<tr>
<td>EP External Public Benchmark</td>
<td>--</td>
<td>1.0</td>
<td>11.9</td>
</tr>
<tr>
<td>Difference</td>
<td>--</td>
<td>+0.1</td>
<td>+1.5</td>
</tr>
</tbody>
</table>

*Note: The excess returns shown in this presentation may differ from State Street statements due entirely to rounding. These differences are generally within a few basis points and are not material.*
Public Strategic Partnership Program (SPN): Performance Summary as of 3/31/2014

<table>
<thead>
<tr>
<th></th>
<th>Allocation ($ in billions)</th>
<th>First Quarter</th>
<th>One Year</th>
<th>Three Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Strategic Partnership</td>
<td>$6.2</td>
<td>2.5%</td>
<td>11.9%</td>
<td>9.1%</td>
</tr>
<tr>
<td>Public SPN Benchmark</td>
<td>--</td>
<td>2.6</td>
<td>9.3</td>
<td>8.3</td>
</tr>
<tr>
<td>Difference</td>
<td>--</td>
<td>-0.1</td>
<td>+2.6</td>
<td>+0.8</td>
</tr>
<tr>
<td>Blackrock</td>
<td>$1.5</td>
<td>2.6%</td>
<td>12.0%</td>
<td>8.3%</td>
</tr>
<tr>
<td>J.P. Morgan</td>
<td>$1.6</td>
<td>1.8%</td>
<td>11.4%</td>
<td>9.1%</td>
</tr>
<tr>
<td>Neuberger Berman</td>
<td>$1.5</td>
<td>2.4%</td>
<td>9.1%</td>
<td>7.8%</td>
</tr>
<tr>
<td>Morgan Stanley</td>
<td>$1.5</td>
<td>3.4%</td>
<td>15.3%</td>
<td>11.0%</td>
</tr>
</tbody>
</table>

- The Public SPNs in aggregate slightly underperformed the benchmark during the first quarter, however have outperformed the benchmark for trailing one-year and three-year periods
  - Neuberger Berman was the only SPN with a 3-year return below benchmark

Note: The excess returns shown in this presentation may differ from State Street statements due entirely to rounding. These differences are generally within a few basis points and are not material.
Benchmarks

- **Total Fund Performance Benchmark** – 18% MSCI US Standard, 2% MSCI US Small Cap, 10% MSCI Emerging Markets, 15% MSCI EAFE plus Canada, 5% HFRI FoF Composite Index, 11% State Street Private Equity (1 qtr lagged), 13% BC Long Term Treasury, 4% HFRI FoF Conservative Index, 1% Citigroup 3 Mo T-Bill, 5% BC US TIPS, 13% NCREIF ODCE (1 qtr lagged), and 3% Energy and Natural Resources Benchmark.

- **Global Equity Benchmark** – 24% MSCI EAFE plus Canada, 29% MSCI US Standard, 3% MSCI US Small Cap, 16% MSCI Emerging markets index, 8% HFRI FoF Composite Index, and 19% State Street Private Equity (1 qtr lagged)
  - US Large Cap Benchmark - MSCI US Standard Index
  - US Small Cap Benchmark - MSCI US Small Cap Index
  - Emerging Markets Benchmark – MSCI Emerging Markets
  - Non-US Developed Benchmark – MSCI EAFE plus Canada
  - Directional Hedge Funds – HFRI Fund of Funds (FoF) Composite Index
  - Private Equity Benchmark - State Street Private Equity (1 qtr lagged)

Note: Returns and market values (based on account level) reported are provided by State Street. Net additions/withdrawals are reported on a gross (adjusted for expenses) total fund level as provided by State Street. All rates of return for time periods greater than one year are annualized. The excess returns shown in this presentation may differ from State Street statements due entirely to rounding. These differences are generally within a few basis points and are not material.
Benchmarks (cont’d)

- **Stable Value Benchmark** – 22% HFRI FoF Conservative Index, 72% BC Long Term Treasury, and 6% Citigroup 3 mo T-Bill.
  - US Treasuries Benchmark – Barclays Capital (BC) Long Term Treasury
  - Stable Value Hedge Funds – HFRI Fund of Funds (FoF) Conservative Index
  - Other Absolute Return Benchmark - 3 Mo LIBOR + 2%
  - Cash Benchmark - Citigroup 3 Mo T-Bill

- **Real Return Benchmark** – 23.8% BC US TIPS, 61.9% NCREIF ODCE, and 14.3% Energy & Natural Resources Benchmark
  - US TIPS Benchmark – BC US TIPS Index
  - Real Assets Benchmark – NCREIF ODCE (1qtr lagged)
  - Energy and Natural Resources – 75% Cambridge Associates Natural Resources (rewighted) / 25% quarterly Seasonally-Adjusted Consumer Price Index (1qtr lagged)
  - Commodities Benchmark – Goldman Sachs Commodity Index

*Note: Returns and market values (based on account level) reported are provided by State Street. Net additions/withdrawals are reported on a gross (adjusted for expenses) total fund level as provided by State Street. All rates of return for time periods greater than one year are annualized. The excess returns shown in this presentation may differ from State Street statements due entirely to rounding. These differences are generally within a few basis points and are not material.*
Description of Performance Attribution

- A measure of the source of the deviation of a fund's performance from that of its policy benchmark. Each bar on the attribution graph represents the contribution made by the asset class to the total difference in performance. A positive value for a component indicates a positive contribution to the aggregate relative performance. A negative value indicates a detrimental impact. The magnitude of each component's contribution is a function of (1) the performance of the component relative to its benchmark, and (2) the weight *(beginning of period)* of the component in the aggregate.

- The individual Asset Class effect, also called Selection Effect, is calculated as:
  
  Actual Weight of Asset Class × (Actual Asset Class Return – Asset Class Benchmark Return)

- The bar labeled Allocation Effect illustrates the effect that a Total Fund's asset allocation has on its relative performance. Allocation Effect calculation = (Asset Class Benchmark Return – Total Benchmark Return) × (Actual Weight of Asset Class – Target Policy Weight of Asset Class).

- The bar labeled Other is a combination of Cash Flow Effect and Benchmark Effect:
  
  
  - Benchmark Effect results from the weighted average return of the asset classes' benchmarks being different from the Total Funds’ policy benchmark return. Benchmark Effect calculation = Total Fund Policy Return – (Asset Class Benchmark Return × Target Policy Weight of Asset Class)

- Cumulative Effect
  
  Cumulative Effect calculation = Current Effect t *(1+Cumulative Total Fund Actual Return t-1) + Cumulative Effect t-1*(1+Total Fund Benchmark Return t)
Teacher Retirement System of Texas

TEAM Program:

Independent Program Assessment Board Presentation

June 2014
Objectives

• Independent Program Assessment (IPA):
  ➢ Provide independent reporting and oversight to the TRS Board and Executive Director or designee regarding critical risks related to the TRS Enterprise Application Modernization (TEAM) Program to enable informed decision-making.

  ➢ Critical Risks Focus:
    ➢ Failure to meet TEAM objectives
    ➢ Lack of user acceptance
    ➢ Program substantially delayed
    ➢ Program substantially over budget
Overview of Work Performed

- Bridgepoint Consulting reviewed and evaluated the DM, LOB and FSR baseline and updated project schedules, related Project Management documentation.

- Observed Project Team meetings and LOB High Level requirements review working sessions.

- Interviewed functional Subject Matter Experts (SMEs) stakeholders and project managers.

- Reviewed accepted milestone deliverable artifacts.

- Evaluated project progress and performance based on best practices and PMBOK Monitoring and Controlling standards.
Area of focus – Execution Risks

1. Tracking to baseline project plan – verify that each project is executing work according to approved published schedule:
   – Line of Business (LOB) Project schedule developed by HP, baseline set in January 2014
   – Data Management (DM) Project schedule baseline set in July 2013
   – Financial System Replacement (FSR) Envision Phase only plan

2. Quality and acceptance of deliverables – verify quality of deliverables, acceptance documentation and confirm conformance to vendor contract

3. Risks and Issues Management – verify that project issues are addressed timely, including tracking of Risk, Action and Decision items
### IPA Overall Scorecard

#### TEAM Program Governance

<table>
<thead>
<tr>
<th>Category</th>
<th>Prior Score</th>
<th>Current Score</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Program/Project Management</td>
<td>2</td>
<td>2</td>
<td>4, 5, 16</td>
</tr>
<tr>
<td>2. Risk Management</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>3. Issues Management and Tracking</td>
<td>1</td>
<td>2</td>
<td>19</td>
</tr>
<tr>
<td>4. Program Communication</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>5. Change Management/ Quality Control</td>
<td>1</td>
<td>2</td>
<td>18</td>
</tr>
<tr>
<td>6. Staffing and Organization</td>
<td>3</td>
<td>3</td>
<td>4, 13 - 15</td>
</tr>
<tr>
<td>7. Budget Tracking</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

#### TEAM Projects

<table>
<thead>
<tr>
<th>Category</th>
<th>Prior Score</th>
<th>Current Score</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. LOB Implementation</td>
<td>1</td>
<td>2</td>
<td>13, 15, 16, 17, 18</td>
</tr>
<tr>
<td>2. FSR Implementation</td>
<td>2</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>3. Data Management</td>
<td>1</td>
<td>2</td>
<td>16</td>
</tr>
<tr>
<td>4. Reporting Entity Outreach</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>5. Organizational Change Management</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>6. Business Rules Development</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>7. Business Procedures and Training</td>
<td>NA</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>8. Legacy System Decommissioning</td>
<td>NA</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>9. External Website Enhancement</td>
<td>NA</td>
<td>NA</td>
<td></td>
</tr>
</tbody>
</table>

**Legend**

1 = LOW  
2 = GUARDED  
3 = CAUTION  
4 = ELEVATED  
5 = SEVERE  
N/A = Project not started, rating is not applicable at this time
Observations – Strengths

1. Improved Data Management Vendor oversight and Deliverable Review and Acceptance process:
   – DM Project Manager is doing a great job managing deliverable artifact review process and project task related vendor issues

2. LOB High Level Requirements sessions scheduling logistics well organized and meetings well managed:
   – All meetings were scheduled and communicated to key stakeholders
   – Meetings were posted on shared TEAM calendar and agenda’s issued prior to each meeting
   – Minutes were well documented
During the current reporting period the following four new observations with risk significance were identified:

- **Observation #16: LOB and Data Management Projects Schedule Delays**
  - Risk: 2 - Guarded

- **Observation #17: LOB Project Missing Gap Analysis**
  - Risk: 2 - Guarded

- **Observation #18: Inconsistent Quality of LOB Deliverables**
  - Risk: 2 - Guarded

- **Observation #19: Aging of Project Issues (Actions and Decisions)**
  - Risk: 2 - Guarded

**Legend**

1 = LOW  
2 = GUARDED  
3 = CAUTION  
4 = ELEVATED  
5 = SEVERE
## LOB Phases and All Major Milestones

<table>
<thead>
<tr>
<th>LOB Phases and All Major Milestones</th>
<th>Baseline Finish</th>
<th>Actual Finish</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>MS Phase 0 – Project Management and Environment Setup</td>
<td>1/31/14</td>
<td>1/31/14</td>
<td>✔</td>
</tr>
<tr>
<td>MS Phase 1 – High Level Requirements Definitions (Active Membership)</td>
<td>4/22/14</td>
<td>4/30/14</td>
<td>✔</td>
</tr>
<tr>
<td>MS Phase 1 – Detail Level Requirements Definitions</td>
<td>9/22/14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MS Phase 1A – Design and Build All Increments</td>
<td>1/08/15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MS Phase 1A – User Acceptance Testing All Increments</td>
<td>2/09/15</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MS Phase 1A – GO LIVE (Active Membership REO Cert only)</strong></td>
<td><strong>2/20/15</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MS Phase 1B – Design and Build All Increments</td>
<td>7/02/15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MS Phase 1B – User Acceptance Testing</td>
<td>9/04/15</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MS Phase 1B – GO LIVE (Active Membership)</strong></td>
<td><strong>9/21/15</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MS Phase 2 – Requirements Definition Complete (Benefits)</td>
<td>5/27/16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MS Phase 2 – Design and Build all Increments</td>
<td>2/17/17</td>
<td></td>
<td></td>
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<tr>
<td>MS Phase 2 – User Acceptance Testing All Increments</td>
<td>5/23/17</td>
<td></td>
<td></td>
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<tr>
<td><strong>MS Phase 2 – GO LIVE (Benefits)</strong></td>
<td><strong>5/23/17</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Reviewed 22 Key LOB Milestones Due – Tracking to Baseline

Milestone Dates Tracking to Baseline Schedule - Trend
## Data Management – All Major Milestones

<table>
<thead>
<tr>
<th>Project Description</th>
<th>Baseline Finish</th>
<th>Actual/Forecast Finish</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>MS Phase 1 Business Rules – Active membership</td>
<td>2/6/14</td>
<td>3/21/14</td>
<td>✔</td>
</tr>
<tr>
<td>MS Phase 1 Active Membership Data Assessment</td>
<td>6/20/14</td>
<td>7/25/14</td>
<td></td>
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<tr>
<td>MS Phase 1 Active Membership Data Conditioning</td>
<td>8/28/14</td>
<td>1/14/15</td>
<td></td>
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<tr>
<td>MS Phase 1 Active Membership Data Migration to LOB Sample</td>
<td>n/a</td>
<td>7/24/14</td>
<td></td>
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<tr>
<td>MS Phase 1 Active Membership Data Migration to LOB All Data</td>
<td>n/a</td>
<td>11/21/14</td>
<td></td>
</tr>
<tr>
<td>MS Phase 2 Benefits Data Assessment</td>
<td>1/21/16</td>
<td>4/27/16</td>
<td></td>
</tr>
<tr>
<td>MS Phase 2 Benefits Data Conditioning</td>
<td>6/2/16</td>
<td>8/16/16</td>
<td></td>
</tr>
<tr>
<td>MS Phase 2 Benefits Data Migration to LOB Sample</td>
<td>n/a</td>
<td>6/29/16</td>
<td></td>
</tr>
<tr>
<td>MS Phase 2 Benefits Data Migration to LOB All Data</td>
<td>n/a</td>
<td>6/29/16</td>
<td></td>
</tr>
</tbody>
</table>
Milestone Tracking – DM Project
Current Period

Reviewed 12 Key Milestones Due – Tracking to Baseline

- Completed On Time or Early: 50%
- Completed Late No LOB Date Impact: 17%
- Delayed Due Dates No LOB Date Impact: 8%
- Past Due: 25%

Milestone Dates Tracking to Baseline Schedule - Trend
Observation #16 – Project Schedule Delays

LOB and Data Management project milestone due dates were completed late against baseline project schedule. Although none of these late and past due milestones have impact on the end LOB date, it is indication that perhaps tasks may take longer than anticipated.

Risk: If this trend continues key milestone delays may impact critical path and could result in increased project cost, timeline and other implementation issues. (this is an emerging risk - an issue that is perceived to be potentially significant, but which may not be fully understood or identified)

Recommendations:
Improve project schedule estimating task duration and monitoring progress, including resource allocations.

Management Responses:
- Management does not dispute that a number of High Level Requirements were approved behind schedule according to the baseline. However, we disagree with the conclusion drawn.
Observation #16 - Management Responses continued:

- As noted in the observation, none of the late tasks reported had an impact on the overall project schedule at this point and they did not represent the major milestone to which TRS was managing: the overall completion of High Level Requirements for the LOB project. This milestone was completed by the end of April, meeting the payment schedule and the kick-off of the next phase of Detailed Level Requirements. Several tasks that were assumed to take longer than anticipated were actually asked to be moved to a later completion date by TRS in order to accommodate more critical items. On the Data Management project milestones, we have been managing to the “Need By” date because that is what’s critical. Project management best practices for meeting critical milestone dates will continue to involve prioritizing critical tasks and deliverables, while allowing some task and deliverables to take longer than planned.

- **Action:** HP will use experience gained to date to inform future estimates. HP’s Rolling Wave scheduling methodology, which updates the schedule every 3-6 months, is designed to address this risk by adjusting task duration based on previous experience. The next iteration of HP’s schedule is expected by the end of June. The Data Management schedule will also be rebaselined as planned now that final decisions regarding the LOB phasing have been made.

- **Owner:** Project Management Office. The TRS PMO will work with HP and Allied/ICON on improving schedule estimates and rebaselining schedules.

- **Implementation Date:** June 2014
Observation # 17 - LOB Missing Gap Analysis

Phase 1 LOB High Level Requirements artifacts were accepted without a Gap Analysis results included in the final Functional Organization Documentation

- Per the HP contract, Deliverable Expectation Documentation and High Level Requirements methodology kick off presentation, the Gap analysis should have been completed to document commitment fulfilment method.
- The HP contract indicates that the proposed Clarety solution has an approximately 75% functional fit to the requirements for TRUST.

Risk: There is a risk that the LOB project may take longer and require more effort than anticipated if the contract functional fit estimate is incorrect.

Recommendations:
Ensure that vendor deliverables conform to contract required Gap Analysis documentation before acceptance.

Management Responses:

➢ Management partially agrees with the observation.
Observation #17 - Management Responses continued:

• The GAP Analysis described in the methodology kick-off session refers to an internal gap analysis that HP conducts to fully understand the additional development that will be needed. The Gap Analysis is an indicator of the work effort that HP is responsible to perform, not an indicator of the TRUST functionality that will be delivered. It does not change their commitment to meet the TRS functional requirements; it is used to inform future development estimates. As noted in the observations, HP has estimated a 75% fit and for each commitment, and TRS does have information (included in the Best and Final Offer) on whether or not the Clarety solution needs to be customized to meet particular requirements.

• **Action:** TRS has requested that HP present their gap analysis findings, but we will not change the Functional Organization Documents (FODs) that have been accepted. If the gap analysis indicates that HP’s prior estimates were inaccurate, it could present a risk (i.e. additional effort) to the project that will need to be monitored.

• **Owner:** PMO

• **Implementation Date:** August 2014
Accepted Deliverables Reviewed – LOB Current Period

25 Accepted LOB Vendor Deliverable Artifacts Reviewed

Milestone Dates Tracking to Baseline Schedule - Trend
Observation # 18 - Quality of LOB deliverables
Inconsistent quality of accepted LOB High Level Requirements documentation
- Analysis of commitment coverage not consistently included
- Some deliverables missing evidence of Functional SMEs/Business Process owners review and/or signoff
- Missing revision history for updates made after acceptance signoff
- Commitment traceability could not be verified due to pending and transferred requirements

Risk: LOB deliverables are potentially incomplete or inaccurate.

Recommendations:
Improve quality control of LOB deliverables and consider assigning first level review/approval responsibility to Subject Matter Experts (SME) instead of having all artifact’s approved by PMO only.

Management Responses:
- Management partially agrees with the recommendation.
Observation #18 - Management Responses continued:

- There are improvements that can and will be made to the deliverable approval process. However, we want to emphasize that the likelihood of the risk (LOB deliverables are potentially incomplete or inaccurate) that Bridgepoint has identified in this observation is low based on the examples cited. TRS disagrees with the recommendation of assigning initial approval by subject matter experts (SMEs). While SMEs are consulted in the review process and provide input, it is the responsibility of the Business Process Managers to approve the deliverables. Multiple sign-offs would increase the risk of project delays and cost overruns because there would be no single deliverable owner to resolve conflicting perspectives of SMEs.

- **Action:**
  - Explore a configuration change on SharePoint to make capturing Version History comments easier
  - Use of Application Lifecycle Manager to improve commitment traceability

- **Owner:** PMO
- **Implementation Date:** June 2014
TEAM Issues and Risks Management – Open Current Period
Observation #19 – Issues (Actions & Decisions) Aging

Based on analysis completed as of 5/6/2014, 56% of Open Project Action and Decision Items may have been open for 30 days and longer. Aging of issues (actions/decisions) cannot be accurately determined, as the original “Estimated Resolution date” is not retained and frequently modified.

- 37 open Decision Items logged over one month ago
- 23 open Action Items logged over one month ago

**Risk:** Actions/Decisions may not be completed or resolved on time and may result in delayed or incomplete project tasks.

**Recommendation:**
Improve issues (Actions/Decisions) management by keeping original assigned due date and add another column for “revised” due date in order to accurately determine aging and impact of delays.

**Management Responses:**
- TRS Management agrees that it is important to tracking revisions to estimated resolution dates, however, we believe that this can be accomplished through notations on the tracking log. Decisions open for longer than 30 days are not necessarily a cause for concern.
Observation #19 - Management Responses continued

- We do not believe that this represents significant risk to the project and do not believe TRS will gain value from an aging report on Action/Decision Items. It’s important to note that many Action and Decision items are not due within a 30 day time period and are future dated to actually depict the due date. Thus they will be on the log for more than 30 days. This illustrates that we are being proactive about capturing Action and Decision items that need to be made in the future.

- **Action:** When the date is changed on an Action or Decision Item, Project Managers will record the date change and the reason for that change in the Resolution Notes field of the Action or Decision Item.

- **Owner:** PMO

- **Implementation Date:** June 2014
TEAM Issues and Risks Management – as of May 6, 2014 Report

- **Total Open Issue:**
  - Only 1 open issues logged for TEAM (FSR, medium priority)

- **Total Open Decisions:**
  - 48 open decision items logged
  - 17 HIGH priority open decision items
  - 37 logged over a month ago (77%); accurate aging cannot be determined as estimated resolution dates are frequently adjusted

- **Total Open Actions:**
  - 58 open action items logged
  - 6 HIGH priority open action items
  - 23 logged over a month ago (40%); accurate aging cannot be determined as estimated resolution dates are frequently adjusted

- **Total Open Risks:**
  - 126 open risk items logged
  - 51 risks with HIGH risk scores (12 and above)
TEAM Risks Identified – Open Current Period

TEAM Program Risk Distribution by Project

- **TEAM**
- **REO**
- **DLS**
- **OCM**
- **DM**
- **FSR**
- **LOB**
- **WEB**

**Open Risks**

- Total Risk
- High Risk
Activities Completed – Current Period

1. Attended weekly CMT status meetings, Executive Briefing or ESC, LOB, Project Interdependency, DM and PMO Team Meetings.

2. Continued with a detailed project management documentation review, including: overall TEAM Program Management status report, individual project schedules and status reports, project Action and Decision Logs and other program/project related reports.

3. Assessed LOB and Data Management Project Team meetings, observed interaction between vendors and TRS teams, current project issues and risks identified during team meetings.

4. Completed the review of Phase 1 HP LOB deliverables and artifact acceptance documentation such as – 9 LOB Functional Organizational documentation (FOD) and other milestone deliverable artifacts, LOB Quality Management Plan and HP Proposed Technical Architecture. Discussed minor follow up questions/suggestions with PMO and LOB Program Managers.

5. Attended several LOB High Level Requirements development sessions, related to the following functional areas: Benefit Calculations, Member Statements, Audit, Health Insurance and Security requirement sessions.


7. Reviewed the FSR Project Draft go/no-go criteria/plan and spreadsheet in order to evaluate the robustness of the process for making the final decision.
Activities for Next Period

1. Continue to attend and observe weekly Executive Steering Committee (ESC) and Core Management Team (CMT) meetings.

2. Review LOB Detail Level Requirements Acceptance criteria and procedures and observe Detail Level Requirements working sessions.

3. Continue interviews of key LOB Business Subject Matter Experts to assess their involvement with LOB detail requirements sessions.

4. Assess FSR Project Team meetings, observe interaction between vendor staff and TRS teams, current project issues and risks identified during team meetings.

5. Review and evaluate consolidated TEAM Program level resource allocation plans; verify that resource requirements are aligned with schedule within each project plan and resource contentions across projects are clearly identified.

6. Review and evaluate updated and consolidated TEAM Interdependency schedule, including updated LOB, FSR and Data Management project schedules and related interdependencies.

7. Review and evaluate FSR GO/No-Go Criteria documentation and accepted CGI deliverables from Phase 1 – the “Implementation Analysis Documentation”.

8. Continue to monitor TRS risk mitigation activities related to execution risks.
IPA Financial summary status through April 30, 2014

- Total hours incurred: 1,868
- Total calculated cost incurred: $331,560
- Total billings for deliverables: $325,000
- Variance: $6,560
Tab 8
TEAM Program Management Update

Adam Fambrough
David Cook
Jamie Pierce
Jay Masci (Provaliant)

June 6, 2014
TEAM PROGRAM

Update Items

- TEAM Program Progress
- TEAM Program Budget Summary
- TEAM Program Project Interdependencies
- Line of Business (LOB) Update
- Financial System Replacement (FSR) Update
- TEAM Project Milestones
- TEAM Project Accomplishments
## TEAM PROGRAM

### TEAM Progress as of March 6, 2014

<table>
<thead>
<tr>
<th></th>
<th>FY2014</th>
<th>FY2015</th>
<th>FY2016</th>
<th>FY2017</th>
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<tbody>
<tr>
<td><strong>RE Outreach</strong></td>
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<tr>
<td><strong>Website Redesign</strong></td>
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<tr>
<td><strong>Pension Line Of Business</strong></td>
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<tr>
<td><strong>FSR</strong></td>
<td></td>
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<tr>
<td><strong>Data Management</strong></td>
<td></td>
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<td><strong>Business Rules</strong></td>
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<td><strong>Organizational Change Management</strong></td>
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<td><strong>Decommission Legacy</strong></td>
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<tr>
<td><strong>Bus. Procedures &amp; Training</strong></td>
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<td></td>
</tr>
</tbody>
</table>

### STATUS

- [Green](green.png)
- [Blue](blue.png)
- [Red](red.png)
- [White](white.png)
TEAM PROGRAM

TEAM Progress as of May 12, 2014

FY2014  FY2015  FY2016  FY2017

RE Outreach
Website Redesign
Pension Line Of Business
FSR
Data Management
Business Rules
Organizational Change Management
Decommission Legacy
Bus. Procedures & Training

STATUS
# TEAM PROGRAM

Program Budget by Project (% spent indicated)

![Bar chart showing budget distribution by project](chart.png)

<table>
<thead>
<tr>
<th>Program Wide</th>
<th>29%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support Projects</td>
<td>50%</td>
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<tr>
<td>Data Mgt</td>
<td>14%</td>
</tr>
<tr>
<td>Program Mgt</td>
<td>36%</td>
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<tr>
<td>FSR</td>
<td>13%</td>
</tr>
<tr>
<td>LOB</td>
<td>8%</td>
</tr>
<tr>
<td>Total</td>
<td>18%</td>
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</table>

### Table: Program Budget by Project

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Expended</th>
<th>Encumbered</th>
<th>Remainder</th>
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<tbody>
<tr>
<td>Total</td>
<td>$17,224,419</td>
<td>$10,439,717</td>
<td>$68,921,491</td>
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<tr>
<td>LOB</td>
<td>$3,658,030</td>
<td>$3,016,645</td>
<td>$36,994,630</td>
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<tr>
<td>FSR</td>
<td>$1,874,961</td>
<td>$1,082,720</td>
<td>$11,561,856</td>
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<tr>
<td>Program Mgt</td>
<td>$5,877,049</td>
<td>$2,305,883</td>
<td>$7,974,851</td>
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<tr>
<td>Data Mgt</td>
<td>$646,166</td>
<td>$2,135,806</td>
<td>$1,881,475</td>
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<tr>
<td>Support Projects</td>
<td>$1,486,055</td>
<td>$817,782</td>
<td>$675,738</td>
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<tr>
<td>Program Wide</td>
<td>$3,681,359</td>
<td>$1,083,080</td>
<td>$7,828,941</td>
</tr>
</tbody>
</table>

**Notes:**
Total Project cost is $96.6 million. Does not include services or maintenance beyond 2017. FSR figure is estimate only.
4/30/14 – The LOB project needs the business rules for detailed requirements.
<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Project Phase</th>
<th>Team Program Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY2014</td>
<td>(Jun – Aug)</td>
<td>Pension Line Of Business (LOB)</td>
</tr>
<tr>
<td>FY2015</td>
<td>(Sep - Nov)</td>
<td>Business Rules (BR)</td>
</tr>
<tr>
<td>FY2015</td>
<td>(Dec - Feb)</td>
<td>Reporting Entity Outreach (REO)</td>
</tr>
<tr>
<td>FY2015</td>
<td>(Mar - May)</td>
<td></td>
</tr>
<tr>
<td>FY2015</td>
<td>(Jun - Aug)</td>
<td></td>
</tr>
</tbody>
</table>
TEAM PROGRAM

TEAM Project Interdependencies

<table>
<thead>
<tr>
<th>FY2014 (Jun – Aug)</th>
<th>FY2015 (Sep - Nov)</th>
<th>FY2015 (Dec - Feb)</th>
<th>FY2015 (Mar - May)</th>
<th>FY2015 (Jun - Aug)</th>
</tr>
</thead>
</table>

Decommissioning Legacy System (DLS)

Data Management (DM)

Pension Line Of Business (LOB)

Reporting Entity Outreach (REO)
TEAM Program

TEAM Project Interdependencies

- **10/10/14** – The REO project needs the employer reporting file layout
- **11/24/14** – The LOB project needs assessed and migrated data for testing
- **01/12/15** – The REO project needs assessed and migrated data for user acceptance testing
- **03/02/15** – The REO project needs the certification environment available to begin Reporting Entity certification
- **07/07/15** – The LOB project needs the unit testing of the revised DLS functionality to be completed so that the integration between this functionality and pension line of business system can be tested during User Acceptance Testing
TEAM PROGRAM

Line of Business Update

• High Level Requirements
  – Over 100 requirements meetings
  – Over 50 subject matter experts from the business and IT were engaged
  – Over 500 pages of High Level Requirements documents reviewed and approved
  – Completed on April 30, 2014
TEAM PROGRAM

Line of Business Update

• Detail Level Requirements
  – Currently in progress
  – Defining use cases, business rules, user interfaces, reports, letters

• Phasing
  – MyTRS presented unique challenges to project plan
  – Difficult to keep data in-sync between legacy applications, MyTRS and HP Clarety Solution
  – Decision – TRS will decommission pieces of MyTRS to ease the bridging of data
    • Some functionality will be removed completely
    • Some functionality will remain but data will become static between Phase 1 and Phase 2 deployments
TEAM PROGRAM

Line of Business Update

• MyTRS Phasing
  – September 2014
    • Begin mailing all annual statements and all 1099R forms
    • Remove service purchase forms and the display of beneficiary data.
  – September 2015
    • Remove online registration for group retirement sessions and field office visits
    • Annual statements and account balance information will become static as of 8/31/15
    • Retain request for retirement estimate form, address change form, request for withdrawn bill, and retirement calculators
TEAM PROGRAM

Financial System Replacement Update

• Envision Phase Completed
• Go/No Go Process and Decision
# TEAM PROGRAM

## Milestones

<table>
<thead>
<tr>
<th>Planned Milestones (from March Board Meeting)</th>
<th>Previous Planned Date</th>
<th>Current Planned Date</th>
<th>Status</th>
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<tbody>
<tr>
<td>Website LOB Sequencing Decision Made</td>
<td>3/19/2014</td>
<td>3/19/2014</td>
<td>Completed</td>
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<tr>
<td>LOB Phase 1 - High Level Requirements Definition Complete</td>
<td>4/22/2014</td>
<td>4/30/2014</td>
<td>Completed</td>
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<tr>
<td>FSR Consolidated Envision Phase Completed</td>
<td>5/31/2014</td>
<td>5/31/2014</td>
<td>Completed</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Upcoming Milestones (next fiscal quarter: June - August)</th>
<th>Previous Planned Date</th>
<th>Current Planned Date</th>
<th>Status</th>
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</thead>
<tbody>
<tr>
<td>Issue Website Redesign RFO</td>
<td></td>
<td>8/29/2014</td>
<td>On Schedule</td>
</tr>
<tr>
<td>Assessment of Level 1 Data</td>
<td></td>
<td>7/23/2014</td>
<td>On Schedule</td>
</tr>
</tbody>
</table>
TEAM PROGRAM

Accomplishments

1. Completed FSR Envision Phase
2. Completed LOB High Level Requirements Phase
3. Completed work with Forrester Consulting on the Website Redesign Project
4. Populated phase 1/Level 1 LOB-TSD database
5. Completed Phase 1/Level 4 Assessment
6. Completed Phase 1/Level 3 database design
7. Started the following projects:
   a) Business Procedures and Training
   b) Decommissioning Legacy Systems
Request for Fiscal Year 2014 Budget Amendment for TRS-ActiveCare

Pursuant to Section 3.1.3. (b) of the Bylaws of the Board of Trustees of the Teacher Retirement System of Texas as Amended September 15, 2011, which states “The Board shall have a Budget Committee, which shall meet as necessary at the call of its chairman to recommend intra-budget transfer and budget amendments for approval by the Board”, TRS management requests a $630,000 increase to the TRS-ActiveCare budget for Professional Services for FY 2014 due to the following unanticipated but mission-critical activities:

- The Request for Proposals (RFPs) for TRS-ActiveCare Health Plan Administrator and Pharmacy Benefit Manager were planned, however, due to changes to the health care marketplace, the evaluation processes were more complex, lengthy, and difficult. The contractor vendor engaged to assist in the RFPs, Gabriel, Roeder, Smith & Co. (GRS), was therefore required to perform more work than was initially expected at the time of Fiscal Year 2014 budget development.

- Compounded prescription drugs became a significant cost driver since late last fiscal year. This information came to the TRS Active Care Program’s attention in the first quarter of FY 2014. Since that time, the TRS Active Care Program has engaged GRS and its pharmacy consultants to do extensive analytical/investigative work to identify the issues and model possible solutions. The compounded prescription drug issue was initially identified with TRS-ActiveCare and but it impacts TRS-Care as well.

- It has been a number of years since TRS issued an RFP for TRS-ActiveCare Health Maintenance Organization (HMO) services and following the February 2014 TRS Board meeting, TRS issued a RFP for HMOs to provide services for the 2014-2015 TRS-ActiveCare plan year. This unplanned activity has required extensive professional services from GRS.

- While an update to the TRS-Care Sustainability Study for the Texas Legislature was planned, TRS management determined that a new, separate sustainability study for TRS-ActiveCare should be developed as well. This will entail a significant amount of GRS services in order to model the financial implications of each identified option.

It is respectfully requested that the Budget Committee of the Teacher Retirement System recommend to the Teacher Retirement System Board of Trustees and seek Board approval of an increase to the TRS-ActiveCare budget for Professional Services for FY 2014 by $630,000 at the June 5-6, 2014 Board Meeting.
Board of Trustees of the Teacher Retirement System of Texas

RESOLUTION

AMENDING THE FISCAL YEAR 2014 ADMINISTRATIVE OPERATIONS BUDGET FOR THE TEXAS SCHOOL EMPLOYEES UNIFORM GROUP HEALTH COVERAGE PROGRAM (TRS-ACTIVECARE)

June 5-6, 2014

Whereas, Section 1579.303 of the Insurance Code authorizes the Teacher Retirement System of Texas TRS as trustee of the Texas School Employees Uniform Group Health Coverage Program (TRS-ActiveCare) to use amounts in the Texas school employees uniform group coverage trust fund (TRS-ActiveCare fund) to provide health benefits under Chapter 1579 of the Insurance Code and to pay the expenses of administering the program;

Whereas, On June 13, 2013, the TRS Board of Trustees (board) adopted the Fiscal Year (FY) 2014 Administrative Operations Budget and General Provisions for the TRS-ActiveCare program and provided that program operations be funded from the TRS-ActiveCare fund;

Whereas, the FY 2014 TRS-ActiveCare Administrative Operations Budget currently includes an amount budgeted for Professional Fees and Services;

Whereas, Unanticipated but mission-critical activities have resulted in additional operating expenses above those budgeted for Professional Fees and Services in FY 2014, including the performance of additional services for TRS-ActiveCare by TRS' health benefits consultant and actuary, Gabriel, Roeder, Smith & Co.; and

Whereas, TRS management and the Budget Committee of the board recommend that the TRS-ActiveCare Administrative Operations Budget for Professional Fees and Services for FY 2014 be increased by $630,000; now, therefore, be it

Resolved, That the board hereby amends the FY 2014 TRS-ActiveCare Administrative Operations Budget to increase the amount budgeted for Professional Fees and Services by $630,000.
Tab 11
DATES: May 22, 2014
TO: Policy Committee of the Board of Trustees
FROM: Rebecca M. Smith, Assistant General Counsel
COPY: Brian Guthrie, Executive Director
Ken Welch, Deputy Director
Carolina de Onís, General Counsel
RE: Proposed Amendments to Chapter 23, relating to Administrative Procedures

REQUESTED ACTION
At its March 2014 meeting, the Policy Committee authorized publication for public comment proposed amendments to one rule in Chapter 23, relating to Administrative Procedures. Specifically, the Policy Committee authorized publication of proposed amendments to §23.5, relating to Nomination for Appointment to the Board of Trustees. The proposed amendments were published for at least 30 days and no comments were received at the time of submission of this memorandum. If comments are received prior to the meeting of the Policy Committee, staff will address the comments at the meeting. The proposed amendments are before the Policy Committee now for a recommendation to the Board of Trustees regarding adoption.

WHY THE ACTION IS REQUESTED
The proposed rule changes to §23.5 clarify that members employed in charter schools and regional education service centers may nominate, pursue the nomination, and vote for the public school district candidate for the Board of Trustees. TRS requested and received statutory authority in the last legislative session to specifically address how members employed by charter schools and regional education service centers may participate in the nomination of candidates to serve on the TRS Board of Trustees. This clarification is consistent with the practice of TRS to allow members employed by these entities to nominate and to participate in the nomination of the candidate to serve in the public school district position of the TRS Board of Trustees.

BACKGROUND OF THE REQUESTED ACTION
Section 23.5, relating to Nomination for Appointment to the Board of Trustees. Plan terms do not consistently identify members based on the type of employer. In some instances members will be
characterized as employees serving in membership eligible positions with Texas public schools. In other instances, the terms may distinguish between public school districts and institutions of higher education. In this section regarding the nomination of candidates to serve in the positions on the Board of Trustees that represent members and retirees, the statute previously authorized public school district members to nominate, pursue nomination, and vote for candidates for the public school district position on the Board of Trustees; however, members serving in charter schools and regional education service centers are not employees of public school districts. Although TRS historically included these members in the nomination and voting process, statutory authority to do so was expressly clarified in HB 3357 enacted during the most recent legislative session. The proposed changes to this rule reflect the statutory changes that specifically authorize employees of charter schools and regional education service centers to nominate, pursue nomination, and vote for candidates for the public school district position of the Board of Trustees.

RECOMMENDATION

Staff recommends that the Policy Committee of the Board of Trustees consider recommending to the Board of Trustees the adoption of the amendments to §23.5, relating to Nomination for Appointment to the Board of Trustees, as outlined herein and without changes to the text as published in the Texas Register for public comment.
RULE §23.5 Nomination for Appointment to the Board of Trustees

(a) During any calendar year in which the term of office expires for one of the four trustees of the Teacher Retirement System of Texas (TRS or system) for which an election is required, TRS will conduct the required election between March 15 and May 5 of that calendar year to select the nominees to be considered by the governor for appointment to the position.

(b) Public school district members of the system who are currently employed by a public school district, a charter school, or a regional education service center may have their names listed on the official ballot as candidates for nomination to a public school district position by filing an official petition bearing the signature, printed or typed name, first five digits of the member's current residential zip code, and last four digits of the member's Social Security numbers of 250 members of the retirement system whose most recent credited service is or was performed for a public school district, a charter school, or a regional education service center.

(c) Retirees may have their names listed on the official ballot as candidates for nomination to the retiree position by filing an official petition bearing the signature, printed or typed name, first five digits of the retiree's current residential zip code, and last four digits of the retiree's Social Security numbers of 250 retirees of the system.

(d) Retirees or members of the system who are currently employed by either a public school district, a charter school, a regional education service center, or an institution of higher education may have their names listed on the official ballot as candidates for nomination to the at-large position by filing an official petition bearing the signature, printed or typed name, first five digits of the signatory's current residential zip code, and last four digits of the signatory's Social Security numbers of 250 signatories who are retirees or who are members of the system whose most recent credited service is or was performed for an institution of higher education, or for a public school district, a charter school, or a regional education service center.

(e) Official petition forms, as required under subsections (b), (c), and (d) of this section, shall be available from the Teacher Retirement System of Texas, 1000 Red River Street, Austin, Texas 78701-2698. Official petitions must be received by the system by January 20 of the calendar year in which the election is to be held. If January 20 is a Saturday, Sunday or legal holiday, the filing period is extended to include the next day that is not a Saturday, Sunday or legal holiday.

(f) A qualified public school district member who is employed by a public school district, a charter school, a regional education service center, or an institution of higher education member, or who is a retiree may sign more than one candidate's petition in any election in which the member or retiree, respectively, is eligible to vote. The signature of a member or retiree shall not be counted on a petition for a candidate in an election in which the member or retiree is ineligible to vote.

(g) Upon verification of petitions by the system or its designated agent, the names of qualified candidates shall be represented on the ballot. The system may designate an agent to implement and to monitor the voting process. Voting may be conducted by paper ballot or in another manner established by the board of trustees under subsection (h) of this section, including by telephone or other electronic means. Upon request by a qualified voter, the system or its designated agent shall provide the voter the means to vote for a candidate who is not represented on the ballot, and such means shall be in a manner consistent with the method by which the election is conducted. Voting instructions shall be sent on or before March 15 of the year in which the election is held to the last known home address of each active member or retiree or to an electronic mail address designated by the active member or retiree. To be counted, a completed ballot must be received by the system or its designated agent by May 5 of the year in which the election is held and in accordance with the provided voting instructions. If May 5 is a Saturday, Sunday or legal holiday, the voting period is extended to include the next day that is not a Saturday, Sunday or legal holiday. The executive director shall cause the votes to be counted. Names of
the candidates for each position receiving the three highest number of votes shall be certified by the executive director to the governor.

(h) The board of trustees may establish the manner by which the system or its designated agent conducts the election, provided that the manner of voting is secure, effective, verifiable, and is conducted using:
(1) paper ballot;
(2) telephone, including an automated telephone system;
(3) electronic mail, an internet-enabled service or other application or other electronic means of transmission; or
(4) a combination of paper ballot and one or more of the means authorized under this subsection.

(i) When a vacancy in a public school district position, at-large position, or retiree position occurs for a reason other than the expiration of a term of office, the board of trustees may conduct an election at any time it determines appropriate.

(j) In conducting an election under subsection (i) of this section, the board of trustees shall establish deadlines for filing petitions, the date of mailing ballots, the date for returning ballots, and any other necessary details related to the election process, and the executive director or a designee shall ensure:
(1) that each nominee placed on the ballot for any public school district position vacancy is employed by a public school district, a charter school, or a regional education service center and has submitted an official petition consistent with subsections (b) and (e) of this section;
(2) that each nominee placed on the ballot for any retiree position vacancy is a retiree of the system and has submitted an official petition consistent with subsections (c) and (e) of this section; and
(3) that each nominee placed on the ballot for any at-large position vacancy is employed by a public school district, a charter school, a regional education service center, or an institution of higher education or is a retiree of the system and has submitted an official petition consistent with subsections (d) and (e) of this section.

(k) Beginning on September 1, 2011 the higher education trustee position has been expanded and is referred to as the at-large position. If a vacancy in the institution of higher education trustee position appointed by the governor on August 30, 2011 occurs for a reason other than the expiration of the term of office, the board of trustees shall conduct an election in the same manner it would to fill any other vacancy. The executive director or a designee shall ensure each nominee placed on the ballot is a retiree or is employed by a public school district, a charter school, a regional education service center, or an institution of higher education and that each nominee has submitted an official petition consistent with subsections (d) and (e) of this section. This subsection expires August 31, 2017 or upon the appointment of an at-large trustee, whichever occurs earlier.

(l) When more than one position on the board of trustees is being contested during the same election period, each candidate shall specify on his or her official petition which position he or she is seeking by indicating the name and expiration date of the office sought. Petitions that fail to specify the position sought shall be returned to the candidates for completion if time permits. Failure to designate a specific position by the deadline shall disqualify the candidate. When more than one position is contested during the same election period, a person may be a candidate for only one of the positions.

(m) Terms of board members run for six years and expire August 31. Terms expire on the following dates and every six years thereafter:
(1) Public school district appointment, Place One, August 31, 2013.
(2) Gubernatorial appointment, Place One, August 31, 2013.
(3) State Board of Education appointment, Place One, August 31, 2013.
(4) Public School district appointment, Place Two, August 31, 2015.
(5) Gubernatorial appointment, Place Two, August 31, 2015.
(6) State Board of Education appointment, Place Two, August 31, 2015.
(7) At-large appointment, formerly the Higher Education appointment, August 31, 2023. If there is a vacancy in the Higher Education appointment prior to August 31, 2017, then the remainder of the term that expires August 31, 2017 will be filled with an at-large appointment.

(8) Retiree appointment, August 31, 2017.

(9) Gubernatorial appointment, Place Three, August 31, 2017.

(10) Higher education appointment, August 31, 2017. This paragraph expires August 31, 2017 or upon the appointment of an at-large trustee, whichever occurs earlier.
DATE: May 22, 2014
TO: Policy Committee of the Board of Trustees
FROM: Rebecca M. Smith, Assistant General Counsel
COPY: Brian Guthrie, Executive Director
       Ken Welch, Deputy Director
       Carolina de Onis, General Counsel
RE: Proposed Amendments to Chapter 25, relating to Membership Credit

REQUESTED ACTION
At its March 2014 meeting, the Policy Committee authorized publication for public comment proposed
amendments to five rules and three new rules in Chapter 25, relating to Membership Credit. Specifically, the Policy Committee authorized publication of staff proposed amendments to §25.1, relating to Full-time Service; §25.25 relating to Required Deposits; §25.36, a new rule relating to Employer Payments for Members Not Covered under the Federal Old-Age, Survivors, and Disability Insurance Program; §25.37, a new rule relating to Employer Payments from Public Junior Colleges and Public Junior College Districts; §25.77 relating to USERRA Service Creditable but not Established; §25.113 relating to Transfer of Credit between TRS and ERS; §25.302 relating to Calculation of Actuarial Costs of Service Credit; and §25.303, a new rule relating to Calculation of Actuarial Cost for Purchase of Compensation Credit. The proposed amendments and new rules were published for at least 30 days and no comments were received at the time of submission of this memorandum. If comments are received prior to the meeting of the Policy Committee, staff will address the comments at the meeting. The proposed amendments and new rules are before the Policy Committee now for a recommendation to the Board of Trustees regarding adoption.

WHY THE ACTION IS REQUESTED
The proposed changes to the rules in Chapter 25 address statutory changes in the plan’s terms adopted
during the most recent legislative session.

Proposed changes to §25.1 clarify that employees of open enrollment charter schools or open
enrollment charter holders who are performing services on behalf of the Texas open enrollment charter
school are eligible for membership in TRS. The changes also reflect statutory changes and clarify that
employees of a public school district performing services on behalf of a campus or program charter
school and employees of open enrollment charter holders that are contracted to provide services to a
campus or program charter school are eligible for membership in TRS. The changes further clarify that employees of a management company or other entity retained by an open enrollment charter school, open enrollment charter holder, or campus or program charter school to provide services to the charter school are not eligible for membership in TRS.

Proposed changes to §25.25 reflect the increase in the member contribution rate that takes effect on September 1, 2014 and in subsequent school years. The current rule reflects the rate of 6.4 percent and the amendments reflect the increase to 6.7 percent beginning September 2014; to 7.2 percent beginning September 2015; and 7.7 percent beginning September 2016. The changes also reflect the possible reduction in the member contribution rate for service rendered on or after September 1, 2017, if the state contribution rate is reduced.

Proposed changes to §25.36 and §25.37 address the method of making the new employer contributions required for employers who are not contributing to the Federal Old-Age, Survivors, and Disability Insurance Program (Social Security) on employees eligible for TRS membership and by public junior colleges and public junior college districts on 50 percent of the compensation paid to certain instructional and administrative employees who are eligible for TRS membership and on 100 percent of compensation paid to all other employees who are eligible for TRS membership.

Proposed changes to §25.77 describe how the new five year service credit requirement will affect members who have USERRA service that was rendered on or before August 31, 2014 and who were also members on August 31, 2014.

Proposed changes to §25.113 address how TRS will administer the five years of service credit requirement when a member who has five years of service credit on August 31, 2014 and then transfers TRS service credit to ERS and retires from ERS.

BACKGROUND OF THE REQUESTED ACTION

Section 25.1, relating to Full-time Service. The proposed changes to this rule reflect statutory changes adopted in HB 3357. Prior to the clarification in the statute, there was confusion regarding whether employees of an open enrollment charter holder were eligible for membership in TRS and whether employees of an open enrollment charter holder that contracted to manage a campus or program charter school were eligible for membership in TRS. With the increase in popularity of the use of an open enrollment charter holder to manage campus or program charter schools and the increased interest of the Internal Revenue Service in the appropriateness of allowing charter school employees to participate in a governmental plan, TRS felt it was prudent to seek clarification of the eligibility of these employees for membership in TRS.

HB 3357 provided the clarification needed, and the proposed amendments to §25.1 provide notice of how TRS will administer the statutory changes. In short, employees of a campus or program charter school to which employees of a school district have been assigned are eligible for membership in TRS. Employees of an open enrollment charter holder are eligible for membership in TRS if they are working at the Texas open enrollment charter school or are working at a Texas campus or program charter school under a contract for services to be provided to that campus or program charter school.

Section 25.25, relating to Required Deposits. The proposed changes to this rule reflect the graduated increase in member contribution rates adopted in SB 1458. The increase from the current rate of 6.4 percent to 6.7 percent takes effect on September 1, 2014. On September 1, 2015, the member contribution rate increases to 7.2 percent and to 7.7 percent on September 1, 2016. For service rendered on or after September 1, 2017, the member contribution rate is the lesser of 7.7 percent or a percentage of the member’s annual compensation equal to 7.7 percent reduced by one-tenth of one
percent for each one-tenth of one percent that the state contribution rate is less than the state contribution rate established for the 2014-2015 school year.

Section 25.36, relating to Employer Payments for Members Not Covered under the Federal Old-Age, Survivors, and Disability Insurance Program. This section is a proposed new rule that addresses the new statutory requirement adopted in SB 1458. Except for employers that are institutions of higher education, SB 1458 requires employers who are not contributing to the Federal Old-Age, Survivors, and Disability Insurance Program (Social Security) on employees who are eligible for membership in TRS to make a 1.5 percent contribution based on salary reportable to TRS, up to the statutory minimum. For salaries that are not subject to the statutory minimum, the employer is required to make the contribution on 100 percent of the salary reportable to TRS. The rule does not include the detail provided in the statute but directs that the employer contribution must be made with the regular monthly report, that the contribution must be made based on amounts reportable to TRS, and that the employer must make records that are necessary to administer the requirement available to TRS.

Section 25.37, relating to Employer Payments from Public Junior Colleges and Public Junior College Districts. This section is a proposed new rule that addresses the new statutory requirement adopted in SB 1812 that requires employers who are public junior colleges and public junior college districts to make the state’s contribution on 50 percent of the compensation paid to certain instructional and administrative employees. SB 1812 establishes the specific requirements, including that the employer must make the state’s contribution on 50 percent of the compensation paid to instructional or administrative employees whose salaries may be fully paid from funds appropriated under the General Appropriations Act, regardless of whether such salaries are actually paid from the appropriated funds. The statute also provides that the number of employees on whose compensation the contribution must be made may not be increased from one biennium to the next in a proportion greater than the change in student enrollment at each college during the same reporting period. The rule further reflects the statutory requirement that the employer must also make the state’s contribution on 100% of the compensation paid to all other employees who are eligible for membership in TRS. The rule does not include the detail provided in the statute but directs that the contributions from the public junior colleges and public junior college districts must be made with the regular monthly report, that the contribution must be made based on amounts reportable to TRS, and that the employer must make records that are necessary to administer the requirement available to TRS.

Section 25.77, relating to USERRA Service Creditable but not Established. The proposed changes to this rule reflect statutory changes adopted in SB 1458 changing retirement eligibility criteria for members who do not have five years of service credit on August 31, 2014. The proposed amendments clarify that USERRA service credit may be used to meet the five year requirement whether or not it is purchased, provided the following conditions are met: the person was a member of TRS on August 31, 2014; the USERRA service was rendered on or before August 31, 2014; membership is retained until the time of retirement; and the USERRA service is verified by the time of retirement.

Section 25.113, relating to Transfer of Credit between TRS and ERS. The proposed amendments to this rule reflect how TRS will administer statutory changes adopted in SB 1458 changing retirement eligibility criteria for members who do not have five years of service credit on August 31, 2014. The proposed amendments clarify that if a member has five years of service credit on August 31, 2014 but transfers TRS service credit to ERS in order to retire from ERS and later resumes membership in TRS, the member is subject to the new retirement eligibility provisions.

Section 25.302, relating to Calculation of Actuarial Costs of Service Credit. The proposed changes to this rule reflect statutory changes adopted in SB 1458 changing retirement eligibility criteria for members
who do not have five years of service credit on August 31, 2014 or who had five years of service credit on that date but do not maintain the service credit until the time of purchase. The proposed amendments address how the change in retirement eligibility requirements affect the actuarial cost to purchase service credit, and they include new cost factor tables. The proposed changes also delete language related to the cost to purchase compensation credit because that language is proposed in a new rule, §25.303. In addition to the new cost factors reflected in the tables for members who do not have five years of service credit on August 31, 2014, the cost factors for all other members are being updated based on the TRS actuary's recommendation.

Section 25.303, relating to Calculation of Actuarial Cost for Purchase of Compensation Credit. This is a proposed new rule that contains language proposed for deletion from current §25.302 relating to the calculation of actuarial costs because that rule had become very complex and addressed the costs to purchase service credit as well as compensation credit. The proposed changes to this rule include not only the language moved from §25.302 but also reflect statutory changes adopted in SB 1458 changing the retirement eligibility criteria for members who do not have five years of service credit on August 31, 2014 or who had five years of service credit on that date but do not maintain membership in TRS until the time of purchase. The proposed amendments address how the change in retirement eligibility affects the actuarial cost to purchase compensation credit, and they adopt new cost factor tables.

RECOMMENDATION

Staff recommends that the Policy Committee of the Board of Trustees consider recommending to the Board of Trustees the adoption of the amendments to the rules in Chapter 25 and adoption of the new rules proposed for Chapter 25, as outlined herein and without changes to the text as published in the Texas Register for public comment.
(a) Employment of a person by a TRS covered employer for one-half or more of the standard full-time work load at a rate comparable to the rate of compensation for other persons employed in similar positions is regular, full-time service eligible for membership.

(b) Any employee of a public state-supported educational institution in Texas shall be considered to meet the requirements of subsection (a) of this section if his or her customary employment is for 20 hours or more for each week and for four and one-half months or more.

(c) Membership eligibility for positions requiring a varied work schedule is based on the average of the number of hours worked per week in a calendar month and the average number of hours worked must equal or exceed one-half of the hours required for a similar full-time position.

(d) For purposes of subsection (a) of this section, full-time service is employment that is usually 40 clock hours per week. If the TRS-covered employer has established a lesser requirement for full-time employment for specified positions that is not substantially less than 40 hours per week, full-time service includes employment in those positions. In no event may full-time employment require less than 30 hours per week.

(e) Beginning on the first day of the 2011-2012 school year and thereafter:

(1) Except as provided in subsection (j) of this section regarding adjunct faculty, if there is no equivalent full-time position of a given position, the minimum number of hours required per week that will qualify the position for TRS membership is 15.

(2) The requirement in this subsection applies to all positions, including bus drivers.

(f) For school years prior to the 2011-2012 school year:

(1) If there is no equivalent full-time position of a given non-certified position, the minimum number of hours required per week that will qualify the position for TRS membership is 15.

(2) If there is no equivalent full-time position of a given certified position, the minimum number of hours required per week that will qualify the position for TRS membership is 20.

(3) Persons regularly employed as bus drivers for routes approved by the Transportation Department of the Texas Education Agency are eligible for membership. A person will be considered regularly employed as a bus driver if his or her customary employment requires driving at least one such route per day.

(g) For purposes of subsection (a) of this section, regular employment is employment that is expected to continue for four and one-half months or more. Employment with an institution of higher education (including community and junior colleges) is regular employment if it is expected to continue for more than one full semester or continues for more than one full semester in the same school year. Employment that is expected to continue for less than four and one-half months or for no more than one full semester in a school year is temporary employment and is not eligible for membership.

(h) For purposes of subsection (a) of this section, a rate of compensation is comparable to other persons employed in similar positions if the rate of compensation is within the range of pay established by the Board of Trustees for other similarly situated employees or is the customary rate of pay for persons employed by that employer in similar positions.

(i) For purposes of this section, employment in institutions of higher education (including community and junior colleges) measured or expressed in terms of the number of courses; semester or course hours/credits; instructional units; or other units of time representing class or instructional time must be converted to clock hours and counted as a minimum of two clock hours for each clock hour of instruction or time in the classroom or lab in order to reflect instructional time as well as preparation, grading, and other time typically associated with one hour of instruction. If the employer has established a greater amount of preparation time for each hour in the classroom or lab, the employer's standard will be used to determine the number of clock hours scheduled for work.
(j) Beginning on the first day of the 2013-2014 school year, the minimum number of hours required per week that will qualify an adjunct faculty position for TRS membership is 20. For purposes of this section, an adjunct faculty position is an instructor position that is filled on a semester-by-semester basis, compensated on a per class basis, and the duties include only those directly related to instruction of students.

(k) A person employed by an open enrollment charter school authorized under Subchapter D, Chapter 12, Education Code, or the open enrollment charter holder is eligible for membership in TRS if the person is performing services on behalf of the Texas open enrollment charter school and the employment otherwise meets the requirements of this section. A person employed by a management company or other entity retained by the charter school or charter holder to provide management or other services on behalf of the open enrollment charter school is not eligible for membership in TRS.

(l) A person employed by a Texas public school district and performing services on behalf of a campus or program charter school authorized under Subchapter C, Chapter 12, Education Code, is eligible for membership in TRS if the employment otherwise meets the requirements of this section. An employee of an open enrollment charter holder that is contracted to provide services to a campus or program charter school is eligible for membership in TRS if the person is performing services on behalf of the campus or program charter school and the employment otherwise meets the requirements of this section. An employee of a management company or other entity retained to provide management or other services on behalf of the campus or program charter school is not eligible for membership in TRS.
RULE §25.25 Required Deposits

(a) Members shall deposit with the Teacher Retirement System of Texas 6.4% of the compensation received each pay period, including compensation received for part-time, irregular, seasonal, or temporary employment in a school year in which the member rendered service eligible for membership.

(b) Deposits due for a pay period must be deducted by the employer from the member's salary for that pay period.

(c) The employer must submit the deposits with each regular payroll report to TRS.

(d) A member employed in an eligible position or in a combination of positions that together qualifies as service eligible for membership, as defined in TRS laws and rules, must make contributions on all eligible compensation received from all TRS-covered employers.

(e) Beginning September 1, 2014, the rate of contribution for each member that must be deposited under this section is 6.7 percent of the member’s annual compensation for service rendered after August 31, 2014 and before September 1, 2015; 7.2 percent of the member’s annual compensation for service rendered after August 31, 2015 and before September 1, 2016; and 7.7 percent of the member’s annual compensation for service rendered after August 31, 2016 and before September 1, 2017. For service rendered on or after September 1, 2017, the rate of contribution for each member shall be the lesser of 7.7 percent of the member’s annual compensation or a percentage of the member’s annual compensation equal to 7.7 percent reduced by one-tenth of one percent for each one-tenth of one percent that the state contribution rate for the fiscal year to which the service relates is less than the state contribution rate established for the 2014-2015 school year.
(a) An employer required to make contributions under §825.4035, Government Code, shall submit the contributions and reports related to the contributions in a form required by TRS along with the regular payroll report required monthly by TRS. Upon request by TRS, an employer or an employee shall provide copies of, or otherwise make available, any records that TRS determines are necessary to administer this section.

(b) Employer contributions required under §825.4035, Government Code, shall be made based on compensation paid by the employer that is reportable to TRS.
(a) A public junior college or public junior college district required to make contributions under §825.4071, Government Code, shall submit the contributions and reports related to the contributions in a form required by TRS along with the regular payroll report required monthly by TRS. Upon request by TRS, an employer or an employee shall provide copies of, or otherwise make available, any records that TRS determines are necessary to administer this section.

(b) Employer contributions required under §825.4071, Government Code, shall be made based on compensation paid by the employer that is reportable to TRS.
RULE §25.77  USERRA Service Creditable but not Established

(a) A member who performs USERRA service creditable in the retirement system but who does not establish credit for the service by making the deposits required by this subchapter is entitled to have the USERRA service considered as if it were credited in TRS to the extent required by USERRA. To use USERRA service in this manner, the member must submit a written request to TRS before the later of the date of application for retirement or the effective date of retirement. With respect to benefits payable after the death of a member, a beneficiary must submit a written request to TRS before any part of a death benefit is paid by TRS. To use USERRA service to meet other provisions of the TRS retirement plan that are conditioned on years of TRS service credit, the member must submit a written request to TRS before action is taken under that plan provision.

(b) The USERRA service described in subsection (a) of this section is usable only in determining eligibility for, but not the amount of, service or disability retirement benefits or death benefits, and eligibility for other retirement plan features conditioned on years of service credit, but in no event shall such service be used to calculate the amount due to the member under such plan features.

(c) The USERRA service described in subsection (a) of this section is usable in determining eligibility for TRS-Care and is applicable to other provisions of TRS-Care that are based on years of TRS service credit. To use USERRA service in this manner, the member must submit a written request to TRS before the later of the date of application for retirement or the effective date of retirement.

(d) USERRA service described in subsection (a) of this section shall not be eligible for use in the manner described in this section if the member has established military service credit under §25.61 of this title (relating to Service Credit for Eligible Military Duty) for the same service or has established military service credit or USERRA credit under any other Texas public retirement system for the same service.

(e) A person who is a member on August 31, 2014 and who rendered USERRA service before September 1, 2014 may use the USERRA service in determining if the member has accrued the five years of service credit by August 31, 2014 necessary to establish eligibility to retire under the terms of the plan existing on that date, provided the person maintains membership in TRS until retirement and the USERRA service is verified before retirement.
(a) Purpose. These rules are intended to implement the provisions of the Government Code, Chapter 805, concerning the transfer of credit between the Teachers Retirement System of Texas and the Employees Retirement System of Texas and to provide a systematic method of funding the actuarial value of the annuity resulting from transferred service.

(b) Definitions. The following words and terms, when used in this section, shall have the following meanings, unless the context clearly indicates otherwise.

1. Receiving system--The system which will pay benefits based upon service credit transferred from the other system.

2. Transferring system--The system from which service credit is transferred for the purpose of obtaining additional benefits from the other system.

3. TRS--The Teacher Retirement System of Texas.

4. ERS--The Employees Retirement System of Texas.

5. Crediting system--means the system in which service credit is established prior to any transfer.

6. ORP--The Optional Retirement Program described in Government Code, Chapter 830.

(c) Forms.

1. Applicants for transfer must use forms prescribed by the receiving system.

2. Applicants for the establishment of any service credit must use the forms prescribed by the crediting system.

3. The systems will cooperate in adopting forms necessary to facilitate the exchange of information between the systems.

(d) Notice.

1. A person electing to transfer service credit pursuant to this section must file the appropriate form with the receiving system not later than the person's intended effective date of retirement or the last day of the month in which their retirement application is filed, whichever is later.

2. A beneficiary eligible to transfer service to the receiving system for the payment of death benefits shall make the election on an application form not later than 90 days after the date of death of the member, unless both systems agree to extend the deadline for an election, but in any event the beneficiary shall make the election before either system has paid the death benefit.

3. The receiving system will notify the transferring system of the pending transfer not later than 30 days following date of receipt of an application form.

(e) Manner of Transfer.

1. Service credit and funds will be transferred through electronic and hard copy documentation pursuant to this section, and the receiving system will maintain records of such transfers permanently.

2. The transferring system shall provide documentation of years of credit, periods of service, military service credit, average salary, method of calculation of service credit and average salary, information necessary to comply with all federal tax regulations, interest credited, fees and interest paid, and any other dollar amount which will be a part of the transfer.

(f) Transfer of funds. The ERS and the TRS agree on the following method of transferring funds. Each system shall certify on a monthly basis the total dollar amount of annuities paid by the system which are based on service credit transferred pursuant to Government Code, Chapter 805. The amount certified shall exclude any portion of annuities paid consisting of post-retirement increases. Each system shall remit to the other system the amount certified within thirty days of receipt of such certification. It is recognized that adjustments will be made from month-to-month as a result of such things as administrative errors, the death of the annuitant or a beneficiary, return-to-work, and recovery from disability by an annuitant. The systems will jointly agree on the administrative and accounting procedures to be established in order to ensure the transfer of funds pursuant to this section.
(g) Reinstatement of withdrawn service credit.
(1) An ERS member with at least 36 months service credit in ERS may reinstate service credit in TRS that was canceled by the person’s withdrawal of a TRS membership account.
(2) Such reinstatement of TRS credit shall be in the amounts and rates applicable to TRS members eligible to repurchase such credit.
(3) A TRS member with three years’ service credit may reinstate, through ERS, service credit canceled by withdrawal of an ERS membership account.
(4) No service credit may be transferred based in whole or in part upon reinstated credit under this section unless the applicant meets all conditions for membership, amount of service credit, and payments required for the reinstatement of the credit.
(5) Any TRS membership service credit reinstated under this subsection may be applied toward the service credit requirements of TRS laws and rules for the purchase of out-of-state, military or other special service credit.

(h) Termination of membership. The transfer of TRS service credit to ERS will terminate TRS membership and cancel all rights to benefits from TRS based on that service.

(i) Service in the month following retirement. Both TRS and ERS laws require a separation from employment with any employer covered by the respective system for a period following a member’s effective retirement date as a condition for retirement with a benefit from the respective system. A member retiring under TRS whose last place of employment is with an ERS-covered employer shall provide a certification of termination of employment to TRS in the manner directed by the retirement system, specifying the last date of employment. With respect to a service or disability retirement by persons using credit transferred between the systems, the following provisions apply:
(1) An ERS retiree whose last place of employment is with a TRS-covered employer must be off the payroll of any TRS-covered employer for the first full calendar month following retirement under ERS, or the ERS retirement will be canceled. A TRS retiree whose last place of employment is with an ERS-covered employer must be off the payroll of any ERS-covered employer for the first full calendar month following retirement under the TRS, or the TRS retirement will be canceled.
(2) An ERS retiree whose last place of employment is with an ERS-covered employer may begin work for a TRS-covered employer after retirement under ERS without a one month break in service. A retiree from the TRS whose last place of employment is with a TRS-covered employer may begin work for an ERS-covered employer after retirement under TRS without a one month break in service.

(j) Average salary.
(1) In determining average salary used in computing benefits available to a person transferring credit under this section, the receiving system will use the higher of the average salary derived solely from the service originally established in each system respectively. In comparing average salaries and determining benefits payable, the receiving system shall accept the transferring system’s determination of its average salary, applying all laws and policies of the transferring system in the calculation of that system’s average salary.
(2) Each system will be responsible for determining its respective average salary. The transferring system will certify its average salary to the receiving system.
(3) If there is less service than is required in the applicable formula to compute the average salary in TRS under the laws and rules applicable to that system, the average salary will be computed using salaries for the service for which credit was established. This average salary shall be used in the comparison of average salaries to determine which system’s average salary is higher.

(k) Transfer of Certain State Employees to ERS.
(1) Certain state employees have been transferred to ERS membership as a result of legislation enacted by the 73rd Texas Legislature, Regular Session. Among these are employees of the Texas Education Agency, employees of the Texas Surplus Property Agency transferred to the General Services
Commission, some employees of the Texas Rehabilitation Commission, the Texas School for the Deaf, the Texas School for the Blind, the Higher Education Coordinating Board, and the Texas Youth Commission. Such employees are eligible to transfer TRS credit to ERS for benefit purposes under the Government Code, Chapter 805 subject to the modifications contained in this section.

(2) Employees whose agencies have been transferred to ERS coverage, including the Texas Education Agency and the Texas Rehabilitation Commission, the Texas School for the Deaf, the Texas School for the Blind, the Higher Education Coordinating Board, and the Texas Youth Commission, may not retire under TRS after the effective date of the transfer, unless they again become TRS members based on other employment and subsequently obtain TRS service credit qualifying them for TRS retirement, except as provided for in Government Code, §805.002(a).

(3) Employees described in paragraph (1) of this subsection are not eligible for TRS death benefits other than a return of accumulated contributions.

(4) Notwithstanding subsection (j) of this section, the average compensation of employees described in paragraph (1) of this subsection qualifying for ERS benefits may be determined by combining monthly rates of pay while a TRS member with ERS credited monthly salary to obtain the highest 36 months of pay.

(i) Death benefits. Service credit of a person may not be transferred between systems if:

(1) one of the systems has paid or begun to pay death benefits based on the person's account; or
(2) the beneficiaries for death benefits in each system are not identical. However, when only reinstated service is being transferred and no beneficiary designation was made at or after the time of reinstatement, a transfer will be allowed.

(m) Service credit.

(1) TRS will make and accept transfers of service credit in whole plan year increments based upon TRS rules for crediting service. No partial years will be transferred.

(2) TRS and ERS service in a plan year will not be combined to obtain a year of TRS service credit.

(3) A person who transfers credit to TRS or ERS may not receive more than a total of five years of service credit for military service. The retirement system from which credit is transferred may refund contributions made for military service, other than any amount that represents a fee, that exceeds the maximum amount creditable. A person who retires under Government Code, Chapter 805, who returns to work under TRS or ERS may not purchase additional military service credit if the purchase would cause the total of all military service credit to exceed five years.

(4) A person who purchased out of state service credit before retirement under Government Code, Chapter 805, may not purchase additional out of state service credit upon return to work under TRS if the purchase would cause the total of all out of state service credit to exceed fifteen years.

(n) ORP participants. A person who has elected to participate in ORP but who is an ERS member may repurchase TRS service credit canceled by the election of ORP for purpose of transferring it to ERS under the Government Code, Chapter 805, provided TRS will not transfer or pay benefits for such service credit if the member actively participates in ORP between the date the TRS service credit is purchased and the date of the member’s retirement or death. TRS will refund without interest any amounts deposited for such credit in the event the person returns to active ORP participation. The person must agree to refund the amount of any benefits erroneously paid to the person as a result of any such return to ORP.

(o) Return to TRS covered employment.

(1) A person who transferred service to ERS and retired under Government Code, Chapter 805, and who returns to employment in a position eligible for TRS membership continues to be governed by the provisions of state law as described under §51.12(a) of this title (relating to Applicability of Certain Laws in Effect Before September 1, 2005) upon resumption of TRS membership, if, while a member of TRS, the person met at least one of the requirements of §51.12(a) of this title by August 31, 2005.
(2) Regardless of status under paragraph (1) of this subsection, a person who transferred service to ERS and retired under Government Code, Chapter 805, and who returns to employment in a position eligible for TRS membership after August 31, 2007, is subject to the provisions of Government Code §824.202(a-1) and (d-1) and §29.1(a) of this title (relating to Eligibility for Service Retirement) for eligibility for retirement under TRS.

(3) A person who has at least five years of TRS service credit on August 31, 2014 and transfers that service credit to ERS, retires from ERS under Government Code, Chapter 805, and returns after September 1, 2014 to employment in a position eligible for TRS membership is subject to the provisions of Government Code §824.202(a-2), (b-2), and (d-2) and §29.1(e) of this title (relating to Eligibility for Service Retirement).
(a) When a member is purchasing TRS service credit for which the law requires that the actuarial cost or actuarial present value be deposited and for which the method in this section is referenced by another section of this title, TRS will calculate the cost using the cost factors obtained from the Actuarial Cost Tables adopted and method described in subsections (b), (c), (d), and (e) of this section.

(b) To calculate the actuarial cost of additional service credit, TRS will use the cost factors obtained from the Actuarial Cost Tables furnished by the TRS actuary of record. The factors for individuals whose membership was established before September 1, 2007 and who have five years of service credit on August 31, 2014 and maintain membership in TRS until the time of purchase, are shown in the tables adopted as part of this subsection, which shall be used when the service credit cost is paid on or after September 1, 2012, or an installment agreement is entered into on or after September 1, 2012. The factors for individuals whose membership was established on or after September 1, 2007 are shown in the tables described in subsection (d) of this section. Within each set of tables, the number of years of service credit to be purchased will determine which specific table will be used. Each of the tables cross-references the member's age in rows with years of credited service (before purchase) in columns. The intersection of the participant's age and service is the cost per $1,000 of salary. The cost factor for a participant with more years of service credit than shown on the table is the same as the factor shown for the highest number of years of service credit on the table for the participant. TRS will calculate the cost to purchase service credit under this section by dividing the participant's salary by 1000 and multiplying the resulting quotient by the appropriate cost factor obtained from the table. The tables set forth the cost, per $1,000 of salary, to purchase from one year to fifteen years of service credit. The number of years of service credit available for purchase is determined by the laws and rules applicable to the type of service credit to be purchased. For the purpose of calculating the required amount for a member who is grandfathered to use a three-year salary average under §51.12 of this title (relating to Applicability of Certain Laws in Effect before September 1, 2005), the term "salary" is defined as follows:
(1) For the upper region of the table (where the factors appear above the line), salary is the greater of current annual salary or the average of the member's highest years of compensation, with either two or three years of compensation used for the average, depending on whether the member has only two years or has three or more years of service credit at the time of the calculation; or
(2) For the lower region of the table (where the factors appear below the line), salary is the average of the member's highest three years of compensation. A member's highest three years of compensation shall be calculated as if the member were retiring at the time the service credit is purchased. The lower region of the table (where the factors appear below the line) reflects those age and service combinations where the purchase of service credit results in immediate eligibility of the member for unreduced retirement benefits.

(c) For the purpose of calculation of actuarial cost for service credit for a member described in subsection (b) of this section who is not grandfathered to use a three-year salary average, the term "salary" shall have the same meaning as in subsection (b) of this section except that a five-year salary average shall be used instead of a three-year salary average. Additionally, the cost shall be 96 percent of the cost as calculated under subsection (b) of this section when a factor in the upper region of the table is used.

(d) For individuals whose membership was established on or after September 1, 2007 and who have five years of service credit on August 31, 2014 and maintain membership in TRS until the time of purchase, the methodology described in subsection (b) of this section shall be used to determine cost of additional service credit, but TRS shall use the factors in the tables adopted as part of this subsection, which shall be used when the service credit cost is paid on or after September 1, 2012, or an
installment agreement is entered into on or after September 1, 2012. If the member is not
grandfathered to use a three-year salary average, the term "salary" shall have the same meaning as in
subsection (b) of this section except that a five-year salary average shall be used instead of a three-year
salary average.

(e) If an individual established membership on or after September 1, 2007 and has five years of service
credit on August 31, 2014 and maintains membership in TRS until the time of purchase, but is
grandfathered to use a three-year salary average, the term "salary" shall have the same meaning as in
subsection (b) of this section. The cost of establishing additional service credit for a grandfathered
member described in this subsection who established membership on or after September 1, 2007, shall
be 1.04 times the cost as calculated under subsection (d) of this section when a factor in the upper
region of the table is used.

(f) An individual who first was a member of TRS before September 1, 2007, but who terminated
membership through withdrawal of accumulated contributions and then again joined TRS on or after
September 1, 2007 and has five years of service credit on August 31, 2014 and maintains membership in
TRS until the time of purchase, is subject to the calculation of cost for additional service credit under
subsections (d) and (e) of this section.

g) When a member is purchasing TRS compensation credit for which the law requires that the actuarial
cost or actuarial present value be deposited and for which the method in this section is referenced by
another section of this title, TRS will calculate the cost using the tables and method described in
subsections (h), (i), and (j) of this section.

(h) To calculate the actuarial cost of additional compensation credit, TRS will use the cost factors
obtained from the actuarial cost tables furnished by the TRS actuary of record. The factors for
individuals whose membership was established before September 1, 2007, are shown in the tables
adopted as part of subsection (i) of this section. The factors for individuals whose membership was
established on or after September 1, 2007, are shown in the tables described in subsection (j) of this
section. Each of the tables cross-references the member’s age in rows with years of credited service in
columns. The intersection of the participant’s age and service is the cost factor that shall be applied to
the additional final average compensation that may result from the purchase. TRS will calculate the cost
to purchase compensation credit under this section by dividing the additional compensation by three or
five years, as determined by the standard annuity calculation applicable to the member, and dividing
that quotient by 1,000 and multiplying the resulting quotient by the appropriate cost factor obtained
from the table. The eligibility of additional compensation credit available for purchase is determined by
the laws and rules applicable to the type of compensation sought to be credited.

(i) For individuals whose membership was established before September 1, 2007, the methodology
described in subsection (h) of this section shall be used to determine cost of additional compensation
credit, but the retirement system shall use the factors in the tables adopted as part of this subsection.

(j) For individuals whose membership was established on or after September 1, 2007, the methodology
described in subsection (h) of this section shall be used to determine cost of additional compensation
credit, but the retirement system shall use the factors in the tables adopted as part of this subsection.

(gk) For the cost calculations described in subsections (b) and (d) of this section, when the cost is
calculated for a purchase that is paid in full before September 1, 2012, or for a purchase for which an
installment agreement is entered into before September 1, 2012, the factors in the tables adopted as
part of this subsection shall be used.

Figure: 34 TAC §25.302(g)(1)
Figure: 34 TAC §25.302(g)(2)
(h) Effective September 1, 2014, for members who do not have five years of service credit on August 31, 2014 or whose current membership began after August 31, 2014, the methodology described in subsections (b) and (c) of this section shall be used to determine the cost of additional service credit, but TRS shall use the factors in the tables adopted as a part of this subsection.

(i) For the purpose of calculation of actuarial cost for service credit for a member described in subsection (h) of this section who is not grandfathered to use a three-year salary average, the term “salary” shall have the same meaning as in subsection (b) of this section except that a five-year salary average shall be used instead of a three-year salary average.

(j) If the individual did not have five years of service credit on August 31, 2014 or whose current membership began after August 31, 2014 but is grandfathered to use a three-year salary average, the term “salary” shall have the same meaning as in subsection (b) of this section. The cost of establishing additional service credit for a grandfathered member described in this subsection shall be 1.04 times the cost as calculated under subsection (h) of this section when a factor in the upper region of the table is used.
(a) When a member is purchasing TRS compensation credit for which the law requires that the actuarial cost or actuarial present value be deposited and for which the method in this section is referenced by another section of this title, TRS will calculate the cost using the cost factors obtained from the Actuarial Cost Tables adopted and the method described in this section.

(b) Each of the tables cross-references the member's age in rows with years of credited service in columns. The intersection of the participant's age and service is the cost factor that shall be applied to the additional final average salary that may result from the purchase. TRS will calculate the cost to purchase compensation credit under this section by dividing the additional compensation by three or five years, as determined by the standard annuity calculation applicable to the member, and dividing that quotient by 1,000 and multiplying the resulting quotient by the appropriate cost factor obtained from the table. The eligibility of additional compensation credit available for purchase is determined by the laws and rules applicable to the type of compensation sought to be credited.

(c) For individuals whose membership was established before September 1, 2007 and who have five years of service credit on August 31, 2014 and maintain membership in TRS until the time of purchase, the methodology described in subsection (b) of this section shall be used to determine cost of additional compensation credit, but TRS shall use the factors in the tables adopted as part of this subsection.

(d) For individuals whose membership was established on or after September 1, 2007 and who have five years of service credit on August 31, 2014 and maintain membership in TRS until the time of purchase, the methodology described in subsection (b) of this section shall be used to determine cost of additional compensation credit, but TRS shall use the factors in the tables adopted as part of this subsection.

(e) Effective September 1, 2014, for members who do not have five years of service credit on August 31, 2014 or whose current membership began after August 31, 2014, the methodology described in subsection (b) of this section shall be used to determine the cost of additional compensation credit, but TRS shall use the factors in the tables adopted as a part of this subsection.

(f) If the member described in subsection (e) of this section is grandfathered to use a three-year salary average, the cost of establishing additional compensation credit shall be 1.04 times the cost as calculated under subsection (e) of this section when a factor in the upper region of the table is used.
Memorandum

DATE: May 22, 2014

TO: Policy Committee of the Board of Trustees

FROM: Rebecca M. Smith, Assistant General Counsel

COPY: Brian Guthrie, Executive Director
Ken Welch, Deputy Director
Carolina de Onís, General Counsel

RE: Proposed Amendments to Chapter 27, relating to Termination of Membership and Refunds

REQUESTED ACTION

At its March 2014 meeting, the Policy Committee authorized publication for public comment proposed amendments to one rule in Chapter 27, relating to Termination of Membership and Refunds. Specifically, the proposed changes are to §27.5, relating to Termination of Right to Benefits. The proposed amendments were published for at least 30 days and no comments were received at the time of submission of this memorandum. If comments are received prior to the meeting of the Policy Committee, staff will address the comments at the meeting. The proposed amendments and new rules are before the Policy Committee now for a recommendation to the Board of Trustees regarding adoption.

WHY THE ACTION IS REQUESTED

The proposed rule change to §27.5 describes how TRS will administer the statutory change in SB 1458 related to retirement eligibility criteria for members who have five years of service credit on August 31, 2014 but terminate membership and withdraw the account and later resume membership in TRS and reinstate the account.

BACKGROUND OF THE REQUESTED ACTION

Section 27.5, relating to Termination of Right to Benefits. The changes in retirement eligibility requirements established in SB 1458 do not specifically address how the new requirements will be applied to a reinstated account. With the change in the retirement eligibility for members who do not have five years of service credit on August 31, 2014 or who have five years of service credit on that date but subsequently terminate membership and withdraw the account, it is important to communicate to members how TRS will administer the change in the law when the account is reinstated. The proposed
amendments clarify that if a member has five years of service credit on August 31, 2014 but terminates membership in TRS by withdrawing the account and later resumes membership and reinstates the account, the member is subject to the new retirement eligibility provisions, i.e., the member does not retain his/her former tier status.

RECOMMENDATION

Staff recommends that the Policy Committee of the Board of Trustees consider recommending to the Board of Trustees the adoption of the amendments to §27.5, relating to Termination of Right to Benefits, as outlined herein and without changes to the text as published in the Texas Register for public comment.
Withdrawal of an account terminates the right to benefits for all service prior to the date of withdrawal, unless credit is reinstated as provided by the retirement law. However, if a member has five years of service credit on or before August 31, 2014 but terminates membership by withdrawal and resumes membership on or after September 1, 2014 and reinstates the withdrawn service credit, the member is subject to the provisions of Government Code §824.202(a-2), (b-2), and (d-2) and §29.1(e) of this title (relating to Eligibility for Service Retirement).
DATE:    May 22, 2014
TO:     Policy Committee of the Board of Trustees
FROM:  Rebecca M. Smith, Assistant General Counsel
COPY:  Brian Guthrie, Executive Director
        Ken Welch, Deputy Director
        Carolina de Onís, General Counsel
RE:    Proposed Amendments to Chapter 29, relating to Benefits

REQUESTED ACTION
At its March 2014 meeting, the Policy Committee authorized publication for public comment proposed amendments to one rule and proposed amendments to the actuarial tables in another rule in Chapter 29, relating to Benefits. Specifically, the proposed changes are to §29.1, relating to Eligibility for Service Retirement. The proposed changes would also update certain actuarial tables regarding early age reductions and adopt new actuarial tables for early age reductions for members who do not have five years of service credit on August 31, 2014 or who had five years of service credit on that date but do not maintain that service credit until retirement in §29.11, relating to Actuarial Tables. The proposed amendments were published for at least 30 days and no comments were received at the time of submission of this memorandum. If comments are received prior to the meeting of the Policy Committee, staff will address the comments at the meeting. The proposed amendments and new rules are before the Policy Committee now for a recommendation to the Board of Trustees regarding adoption.

WHY THE ACTION IS REQUESTED
The proposed rule changes to §29.1 state how TRS will administer the statutory changes in SB 1458 related to retirement eligibility criteria and the requirement to have the five years of service credit on August 31, 2014. The changes are significant and the statute does not specifically address what eligibility criteria will be applied to members who meet the five year requirement but later terminate and resume membership. Staff proposes the changes to give notice to members of how TRS will administer the law. The proposed changes provide which retirement eligibility criteria will apply to members in the following situations: those who became members after September 1, 2007 but who have the required five years of service credit on August 31, 2014; those who were members before September 1, 2007 but terminated membership and returned to membership after September 1, 2007
but have the required five years of service credit on August 31, 2014; and those who do not have five
years of service credit on August 31, 2014 or who had five years of service credit on that date and
terminated membership in TRS and later resume membership and reinstate the account.

BACKGROUND OF THE REQUESTED ACTION

Section 29.1, relating to Eligibility for Service Retirement. The change in retirement eligibility
requirements established in SB 1458 do not specifically address how the new requirements will be
applied when a member initially meets the five year requirement but later terminates and resumes
membership at a later date. With the change in the retirement eligibility for members who do not have
five years of service credit on August 31, 2014 or who have five years of service credit on that date but
subsequently terminate membership and withdraw the account, it is important to communicate to
members how TRS will administer the change in the law when the account is reinstated. The proposed
amendments clarify that if a member has five years of service credit on August 31, 2014 but terminates
membership in TRS by withdrawing the account and later resumes membership and reinstates the
account, the member is subject to the new retirement eligibility provisions, i.e., the member does not
retain his/her former tier status.

Section 29.11, relating to Actuarial Tables. Proposed changes to this rule are included only in the
actuarial tables in subsection (b). In the course of reviewing the actuarial tables that may have been
affected by statutory changes authorized in SB 1458, staff discovered an error in one of the early age
reduction tables. Rather than a 2 percent reduction for each year a member had at least 30 years of
service credit but was less than age 50, the error resulted in a 2 percent reduction for each year a
member had at least 30 years of service credit but did not meet rule of 80. Staff is proposing the
adoption of an amended table that correctly reflects the required statutory deduction.

Also, new actuarial tables are needed to address early age reduction factors for members who did not
have five years of service credit on August 31, 2014 or who had five years of service credit on that date
but did not maintain their membership after that date and are now subject to the new retirement
eligibility requirements. The tables address the reductions applicable under the following conditions: to
a member who is required to meet the new retirement eligibility standards and has at least 30 years of
service credit but is less than age 62; to a member who is required to meet the new retirement eligibility
standards and meets the rule of 80 with at least five years of service credit but is less than age 62; and
to a member who is required to meet the new retirement eligibility standards but does not meet rule of
80, does not have at least 30 years of service credit, but has at least 5 years of service credit and is at
least 55 years of age.

RECOMMENDATION

Staff recommends that the Policy Committee of the Board of Trustees consider recommending to the
Board of Trustees the adoption of the amendments to one rule and actuarial tables in another rule in
Chapter 29, as outlined herein and without changes to the text as published in the Texas Register for
public comment.
(a) The provisions of subsections (a-1) and (b-1) of §824.202, Texas Government Code, apply only to a person who becomes a member of the retirement system on or after September 1, 2007 and before September 1, 2014 and who has at least five years of service credit in TRS on or before August 31, 2014 and maintains that service credit in TRS until retirement.

(b) A member who met at least one of the requirements of §51.12(a) of this title (relating to Applicability of Certain Laws in Effect Before September 1, 2005) on or before August 31, 2005, while a member of the Teacher Retirement System before termination of membership through withdrawal of member contributions or absence from service shall be considered as continuing to be eligible to be governed by provisions of state law as described under §51.12(a) of this title upon resumption of membership on or after September 1, 2007.

(c) A person who was a member of the retirement system before September 1, 2007, but who terminates membership through withdrawal of accumulated contributions, then resumes membership on or after September 1, 2007 and before September 1, 2014 and who has at least five years of service credit in TRS on or before August 31, 2014 and maintains that service credit in TRS until retirement, is subject to the provisions of subsections (a-1), (b-1), and (d-1) of §824.202, Texas Government Code, regardless of whether the withdrawn service credit is reinstated.

(d) The eligibility for service retirement of a member who terminates membership due to absence from service without withdrawal of contributions and reactivates the account under §823.501(f), Texas Government Code, on or after September 1, 2007, shall be determined based on the earliest date of service associated with the account.

(e) A member who does not have at least five years of service credit in TRS on or before August 31, 2014 is eligible for retirement under the provisions of §824.202 (a-2), (b-2), and (d-2), Texas Government Code. A member who has at least five years of service credit in TRS on or before August 31, 2014 but terminates membership in TRS by withdrawal of accumulated contributions after August 31, 2014 and later resumes membership in TRS on or after September 1, 2014 is also subject to §824.202 (a-2), (b-2), and (d-2), Texas Government Code, regardless of whether the withdrawn service credit is reinstated.
(a) Actuarial tables furnished by the TRS actuary of record will be used for computation of benefits. Factors for ages or types of annuities not included in the tables will be computed from the same data by the same general formulas.

(b) The Teacher Retirement System adopts the actuary’s June 1997 early age reduction factors based on 8.0% interest, with modifications to the early age reduction factor table to reflect the amendment of Government Code §824.202 effective September 1, 2005, including the repeal of §824.202(c). These actuarial tables shall be effective beginning September 1, 1997, except for the early age reduction factor modifications, which shall be effective September 1, 2005. The factor tables are as follows:

(c) The Teacher Retirement System adopts the actuary's June 1997 factors for service retirement options based on 8.0% interest. These actuarial tables shall be effective beginning September 1, 1997. The factor tables are as follows:

(d) The Teacher Retirement System adopts the actuary's June 1997 factors for disabled member retirement options based on 8.0% interest. These actuarial tables shall be effective beginning September 1, 1997. The factor tables are as follows:

(e) The Teacher Retirement System adopts the actuary's reserve transfer factors effective beginning September 1, 1991, based on 8.0% interest. The reserve transfer factor tables are as follows:

(f) The board of trustees may change the tables or adopt new tables from time to time by amending this section; provided, however, that any such change does not result in any retiree or member eligible for service retirement with an unreduced annuity as of the date of the change receiving a smaller benefit than the benefit computed immediately before the change.
DATE: May 22, 2014
TO: Policy Committee of the Board of Trustees
FROM: Rebecca M. Smith, Assistant General Counsel
COPY: Brian Guthrie, Executive Director
      Ken Welch, Deputy Director
      Carolina de Onís, General Counsel
RE: Proposed Amendments to Chapter 43, relating to Contested Cases

REQUESTED ACTION
At its March 2014 meeting, the Policy Committee authorized publication for public comment proposed amendments to one rule in Chapter 43 relating to Contested Cases. Specifically, the proposed changes are to §43.43, relating to Subpoenas and Commissions. The proposed amendments were published for at least 30 days and no comments were received at the time of submission of this memorandum. If comments are received prior to the meeting of the Policy Committee, staff will address the comments at the meeting. The proposed amendments and new rules are before the Policy Committee now for a recommendation to the Board of Trustees regarding adoption.

WHY THE ACTION IS REQUESTED
The proposed changes to §43.43 address the protection given in HB 3357 to doctors serving on the TRS Medical Board. Specifically, HB 3357 provides that members of the TRS Medical Board are not subject to a subpoena regarding matters referred to them by TRS. Because the rules of the State Office of Administrative Hearings appear to authorize the issuance of a subpoena to compel the testimony of a witness and do not provide for a specific exemption, it is important for TRS rules to reflect this protection.

BACKGROUND OF THE REQUESTED ACTION
Section 43.43, relating to Subpoenas and Commissions. While TRS has not recently received an administrative appeal regarding a decision by the TRS Medical Board, the potential for an appeal and a request that TRS issue a subpoena to compel the testimony of one of the members of the Medical Board regarding the basis for decision not to certify a disability is a viable one. Other retirement systems, including ERS, frequently receive administrative appeals regarding disability matters, and adopting the
proposed amendment clarifies that a member of the TRS Medical Board cannot be required to give testimony in an administrative hearing.

RECOMMENDATION

Staff recommends that the Policy Committee of the Board of Trustees consider recommending to the Board of Trustees the adoption of the amendments to §43.43, relating to Subpoenas and Commissions, as outlined herein and without changes to the text as published in the Texas Register for public comment.
RULE §43.43 Subpoenas and Commissions

(a) Except as provided in subsection (d) of this section, the issuance of a subpoena in any proceeding shall be governed by the Administrative Procedure Act, Government Code, §2001.089. Upon a written request by a party showing good cause and payment of required fees, or upon the request of the executive director, board of trustees, or administrative law judge, TRS may issue a subpoena addressed to the sheriff or a constable to require the attendance of witnesses or the production of books, records, papers, or other objects as may be necessary and proper for the purposes of a hearing.

(b) The issuance of a commission in any proceeding shall be governed by the Administrative Procedure Act, Government Code, §2001.094. Upon a written motion of a party and payment of required fees, or on the request of the administrative law judge, the executive director, or the board of trustees, TRS may issue a commission addressed to the officers authorized by statute to take a deposition, requiring that the deposition of a witness be taken.

(c) Subpoenas and commissions shall be issued by the executive director only after a deposit of sums sufficient to ensure payment of expenses incident to the subpoenas. Payment of witness fees shall be made in the manner prescribed in the Administrative Procedure Act, Government Code, §2001.103.

(d) Members of the Medical Board may not be the subject of a subpoena regarding findings or determinations made in assisting the executive director or the board of trustees in all matters referred to it.
DATE: May 22, 2014

TO: Policy Committee of the Board of Trustees

FROM: Rebecca M. Smith, Assistant General Counsel

COPY: Brian Guthrie, Executive Director
     Ken Welch, Deputy Director
     Carolina de Onís, General Counsel

RE: Proposed New Rule in Chapter 51, relating to General Administration

REQUESTED ACTION

At its March 2014 meeting, the Policy Committee authorized publication for public comment one proposed new rule in Chapter 51, relating to General Administration. Specifically, the proposed rule is new §51.13, relating to Five-Year Service Credit Requirement Effective August 31, 2014. The proposed new rule was published for at least 30 days and no comments were received at the time of submission of this memorandum. If comments are received prior to the meeting of the Policy Committee, staff will address the comments at the meeting. The proposed amendments and new rules are before the Policy Committee now for a recommendation to the Board of Trustees regarding adoption.

WHY THE ACTION IS REQUESTED

Proposed new §51.13 states how TRS will administer the statutory changes in SB 1458 related to retirement eligibility and the requirement to have five years of service credit on August 31, 2014. The changes to eligibility are significant and the statute does not specifically address all of the different scenarios that may apply when applying the five-year requirement. The proposed new rule would give notice to members of how TRS will administer the law, including how the deadline for establishing service credit to meet the requirement will be counted, how eligible USERRA service may be utilized, and how ERS service credit and proportionate service credit established with other retirement systems participating in the program may be used to meet the requirement.

BACKGROUND OF THE REQUESTED ACTION

Section 51.13, relating to Five-Year Service Credit Requirement Effective August 31, 2014. Because the changes in retirement eligibility requirements established in SB 1458 do not specifically address how the new requirements will be administered, it is important to address interpretations of the law by TRS that could affect a member’s decision to retain membership or to purchase service credit in order to meet
the August 31, 2014 deadline. The proposed new rule addresses how USERRA service may be verified but not purchased and used in meeting the five years of service credit requirement. It also notifies members that the August 31, 2014 deadline is the deadline for completing the purchase of service credit to be used in establishing the five years of service credit by that date. Subsection (c) of the new rule explains how TRS will extend the August 31, 2014 deadline, which falls on the Saturday before Labor Day, until 11:59 p.m. on Tuesday September 2, 2014. That subsection also explains how TRS will calculate the deadline for members who do not receive the bill for the purchase of service credit in time to purchase the service credit by the deadline. The new rule also addresses how a member may use ERS service credit that was established before September 1, 2014 to meet the five-year requirement if the person was a member of TRS on August 31, 2014. It also addresses how combined service credit with another retirement system participating in the Proportionate Retirement Program may be used to meet the five-year requirement.

RECOMMENDATION

Staff recommends that the Policy Committee of the Board of Trustees consider recommending to the Board of Trustees the adoption of the proposed new rule in Chapter 51, as outlined herein and without changes to the text as published in the Texas Register for public comment.
(a) A member with less than five years of service credit on August 31, 2014 and/or a person whose membership begins on or after September 1, 2014, must meet the requirements of §Section 824.202(a-2), Government Code, to be eligible for a standard service retirement annuity.

(b) An eligible member may purchase any withdrawn, unreported, waiting period, and/or USERRA service credit in order to meet the five years of service credit requirement. Except as provided in subsection (c) of this section, the purchase of any withdrawn service credit must be completed, i.e. amount required to purchase the service credit paid in full, by August 31, 2014. If the purchase of service credit includes any years of service credit that may be purchased one year at a time, only the amount required to purchase the number of years of service credit needed to meet the five years of service credit requirement must be paid in full by August 31, 2014.

(c) An eligible member seeking to purchase service credit in order to meet the five years of service credit requirement must submit a request to purchase the service credit to TRS. The request to purchase the service credit and all documentation required to establish eligibility to purchase the service credit must be received by TRS before 12:00 a.m. on September 3, 2014. A member meeting this requirement will be given until the later of 11:59 p.m. on September 2, 2014 or a 30-day period from the date TRS mails the bill for the purchase of service credit to submit full payment for the service credit to be used in meeting the five years of service credit requirement.

(d) A member who meets the five years of service credit requirement on August 31, 2014 or as described in subsection (c) of this section, but terminates membership by withdrawal of accumulated contributions after that date and later resumes membership in TRS must meet the requirements of §Section 824.202(a-2), Government Code, to be eligible for a standard service retirement annuity.

(e) A person who was a member of TRS on August 31, 2014 and who has verified but not purchased USERRA service credit for eligible military service performed before September 1, 2014 may use the USERRA service credit to meet the five years of service credit requirement provided membership is maintained until retirement. The USERRA service may be verified any time before retirement.

(f) A person who is a member of TRS on August 31, 2014 and who has service credited on August 31, 2014 in the Employees Retirement System of Texas (ERS) or another retirement system participating in the Proportionate Retirement Program established in Chapter 803, Government Code and maintains the combined service credit until retirement, may use the combined service credit to meet the five years of service credit requirement described in this section.
The Board of Trustees (board) of the Teacher Retirement System of Texas (TRS) has decided to adopt amended TRS Rules 34 Tex. Admin. Code §§ 23.5, 25.1, 25.25, 25.77, 25.113, 25.302, 27.5, 29.1, 29.11, and 43.43, and new §§ 25.36, 25.37, 25.303, and 51.13, as set out below. The proposed rules were published for public comment in the April 25, 2014 issue of the Texas Register (39 TexReg 3376-3389) for 30 days before being considered for adoption. No public comments were received in response to the published notice of the proposed amendments. The board has decided to adopt the amended and new rules without changes to the published text of the proposed rules.

§ 23.5

Amended §23.5, relating to nomination for appointment to the board, is located in Chapter 23 (Administrative Procedures) of TRS' rules. In the 2013 legislative session, the Legislature clarified how members employed by charter schools and regional education service centers may participate in the nomination of candidates to serve on the TRS Board of Trustees. Amended § 23.5 reflects the statutory changes that expressly authorize employees of charter schools and regional education service centers to nominate, pursue nomination, and vote for candidates for the public school district position of the Board of Trustees.


Sections 25.1, 25.25, 25.77, 25.113, and 25.302, are located in Chapter 25 (Membership Credit) of TRS' rules. New §§25.36, 25.37, and 25.303 will be added to Chapter 25.

Amended §25.1, relating to Full-time Service, reflects statutory changes adopted in HB 3357. HB 3357 (2013) provided the clarification needed regarding whether employees of an open enrollment charter holder were eligible for membership in TRS and whether employees of an open enrollment charter holder that contracted to manage a campus or program charter school were eligible for membership in TRS. The amendments to §25.1 provide notice of how TRS will administer the statutory changes. In short,
employees of a campus or program charter school to which employees of a school district are assigned, are eligible for membership in TRS. Employees of an open enrollment charter holder are eligible for membership in TRS if they are working at the Texas open enrollment charter school or are working at a Texas campus or program charter school under a contract for services to be provided by an open enrollment charter holder to that campus or program charter school.

Amended §25.25, relating to Required Deposits, reflects the graduated increase in member contribution rates adopted in SB 1458 (2013). The increase from the current rate of 6.4 percent to 6.7 percent takes effect on September 1, 2014. On September 1, 2015, the member contribution rate increases to 7.2 percent and to 7.7 percent on September 1, 2016. For service rendered on or after September 1, 2017, the member contribution rate is the lesser of 7.7 percent or a percentage of the member’s annual compensation equal to 7.7 percent reduced by one-tenth of one percent for each one-tenth of one percent that the state contribution rate is less than the state contribution rate established for the 2014-2015 school year.

New §25.36, relating to Employer Payments for Members Not Covered under the Federal Old-Age, Survivors, and Disability Insurance Program, addresses the new statutory requirement adopted in SB 1458 (2013). Except for employers that are institutions of higher education, SB 1458 requires employers that are not contributing to the Federal Old-Age, Survivors, and Disability Insurance Program (Social Security) on behalf of employees who are eligible for membership in TRS to make a 1.5 percent contribution based on salary reportable to TRS, up to the statutory minimum. SB 1458 further provides that the employer must continue to make the state contribution on amounts paid that are above the statutory minimum. For salaries that are not subject to a statutory minimum, the employer is required to make the contribution on 100 percent of the salary reportable to TRS. The rule does not duplicate the detail provided in the statute but directs that the employer contribution must be made with the regular monthly report, that the contribution must be made based on amounts reportable to TRS, and that the employer must make available to TRS records that are necessary to administer the requirement.

New §25.37, relating to Employer Payments from Public Junior Colleges and Public Junior College Districts, addresses the new statutory requirement adopted in SB 1812 (2013) that requires employers that are public junior colleges and public junior college districts to make the state’s contribution on 50 percent of the compensation paid to certain instructional and administrative employees. SB 1812 establishes the specific requirements, including that the employer must make the state’s contribution on 50 percent of the compensation paid to instructional or administrative employees whose salaries may be fully paid from funds appropriated under the General Appropriations Act, regardless of whether such salaries are actually paid from the appropriated funds. The statute also provides that the number of employees on whose compensation the contribution must be made may not be increased from one biennium to the next in a proportion greater than the change in student enrollment at each college during the
same reporting period. The rule further reflects the statutory requirement that the employer must also make the state’s contribution on 100 percent of the compensation paid to all other employees who are eligible for membership in TRS. The rule does not duplicate the detail provided in the statute but directs that the contributions from the public junior colleges and public junior college districts must be made with the regular monthly report, that the contribution must be made based on amounts reportable to TRS, and that the employer must make records that are necessary to administer the requirement available to TRS.

Amended §25.77, relating to USERRA Service Creditable but not Established, reflects statutory changes adopted in SB 1458 (2013) changing retirement eligibility criteria for members who do not have five years of service credit on August 31, 2014. The amended section clarifies that USERRA service credit may be used to meet the five year requirement whether or not it is purchased, provided that the following conditions are met: the person was a member of TRS on August 31, 2014; the USERRA service was rendered on or before August 31, 2014; membership is retained until the time of retirement; and the USERRA service is verified by the time of retirement.

Amended §25.113, relating to Transfer of Credit between TRS and ERS, reflects how TRS will administer statutory changes adopted in SB 1458 (2013) changing retirement eligibility criteria for members who do not have five years of service credit on August 31, 2014. The amended section clarifies that if a member has five years of service credit on August 31, 2014, but transfers TRS service credit to ERS in order to retire from ERS and later resumes membership in TRS, the member is subject to the new retirement eligibility provisions.

Amended §25.302, relating to Calculation of Actuarial Cost of Service Credit, reflects statutory changes adopted in SB 1458 (2013) changing retirement eligibility criteria for members who do not have five years of service credit on August 31, 2014 or who had five years of service credit on that date but do not maintain the service credit until the time of purchase. The amended section addresses how the change in retirement eligibility requirements affect the actuarial cost to purchase service credit, includes new cost factor tables, and migrates the language related to the cost to purchase compensation credit to a new rule, §25.303. The amended section also updates cost factors in the form of revised cost factor tables for members who became members after September 1, 2007 and who have five years of service credit on August 31, 2014 and maintain their membership until the time of purchase.

New §25.303, relating to Calculation of Actuarial Cost for Purchase of Compensation Credit, contains language deleted from §25.302 relating to Calculation of Actuarial Costs for Service Credit Purchase because that rule had become very complex. The new section includes not only the language moved from §25.302 but also reflects statutory changes adopted in SB 1458 (2013) changing the retirement eligibility criteria for members who do not have five years of service credit on August 31, 2014 or who had five years of service credit on that date but do not maintain the service credit until the
time of purchase. The new section also addresses how the change in retirement eligibility affects the actuarial cost to purchase compensation credit and adopts new cost factor tables.

§ 27.5

Section 27.5 is located in Chapter 27 (Termination of Membership and Refunds) of TRS’ rules.

Amended §27.5, relating to Termination of Rights to Benefits, describes how TRS will administer the statutory change in SB 1458 (2013) and clarifies that if a member has five years of service credit on August 31, 2014, but terminates membership in TRS by withdrawing the account and later resumes membership and reinstates the account, the member is subject to the new retirement eligibility provisions, i.e., the member does not retain his/her former tier status.

§ 29.1 and § 29.11

Sections 29.1 and 29.11 are located in Chapter 29 (Benefits) of TRS’ rules.

Amended §29.1, relating to Eligibility for Service Retirement, states how TRS will administer the statutory changes in SB 1458 (2013) related to retirement eligibility criteria and the requirement to have the five years of service credit on August 31, 2014. The amended section clarifies that if a member has five years of service credit on August 31, 2014 but terminates membership in TRS by withdrawing the account and later resumes membership in TRS and reinstates the account, the member is subject to the new retirement eligibility provisions, i.e., the member does not retain his/her former tier status.

Amended §29.11, relating to Actuarial Tables, corrects an error discovered by staff in one of the early age reduction tables. Rather than a 2 percent reduction for each year a member had at least 30 years of service credit but was less than age 50, the error resulted in a 2 percent reduction for each year a member who had at least 30 years of service credit but did not meet the rule of 80. The amended section includes an amended table that correctly reflects the required statutory deduction.

§ 43.43

Section 43.43 is located in Chapter 43 (Contested Cases) of TRS’ rules.

Amended §43.43, relating to Subpoenas and Commissions, addresses the protection given in HB 3357 (2013) to doctors serving on the TRS Medical Board. Specifically, HB 3357 provides that members of the TRS Medical Board are not subject to a subpoena regarding matters referred to them by TRS.
§ 51.13

New §51.13 will be added to Chapter 51 (General Administration) of TRS' rules.

New §51.13, relating to Five-Year Service Credit Requirement Effective August 31, 2014, states how TRS will administer the statutory changes in SB 1458 (2013) related to retirement eligibility and the requirement to have five years of service credit on August 31, 2014. The new section addresses how USERRA service may be verified but not purchased and used in meeting the five years of service credit requirement. It also notifies members that the August 31, 2014 deadline is the deadline for completing the purchase of service credit to be used in establishing the five years of service credit by that date and explains how TRS will extend the August 31, 2014 deadline, which falls on the Saturday before Labor Day, until 11:59 p.m. on Tuesday September 2, 2014 and how TRS will calculate the deadline for members who do not receive the bill for the purchase of service credit in time to purchase the service credit by the deadline. The new rule also addresses how a member may use ERS service credit that was established before September 1, 2014 to meet the five-year requirement if the person was a member of TRS on August 31, 2014. It also addresses how combined service credit with another retirement system participating in the Proportionate Retirement Program may be used to meet the five-year requirement.

The board certifies that the sections as adopted have been reviewed by legal counsel and found to be within TRS' legal authority to adopt. The new and amended rules described in this Order are adopted under Government Code § 825.102, which authorizes the board of trustees to adopt rules for eligibility of membership, the administration of the funds of the retirement system, or the transaction of the business of the board.

The following amended and new rules are also adopted under other authorizing statutes:

- Amended § 25.77 is also adopted under Government Code § 823.304, which authorizes the Board to adopt rules in order to comply with the federal law relating to USERRA service credit.

- Amended § 25.113 is also adopted under Government Code § 805.008, which authorizes TRS and ERS to adopt rules for determining the value of the monthly annuity to be paid by the system from which service credit is transferred, and § 805.009, which authorizes TRS and ERS to adopt rules for the administration of the TRS-ERS service credit transfer program.

- Amended § 25.302 and new § 25.302 are also adopted under Government Code § 823.406, which authorizes the board to adopt rules for the administration of this statute concerning the purchase of membership waiting period service credit, and § 825.105, which requires the board to adopt rates and tables the board considers necessary for the retirement system.
• Amended § 29.1 and 29.11 are also adopted under Government Code § 2001.006, which authorizes TRS, in preparation for the implementation of legislation that has become law but has not taken effect, to adopt a rule that TRS determines is necessary or appropriate and that TRS would have been authorized to adopt had the legislation been in effect at the time of the action.

NOW, THEREFORE, IT IS


ORDERED, That the board authorizes TRS staff to prepare and to file with the Secretary of State’s Office in proper form and based on this Order the adopted rule preambles and the adopted rule texts, including preparing and filing other rulemaking documents as required for publication in the Texas Register or Texas Administrative Code, or both, as appropriate;

ORDERED, That the board authorizes TRS staff to work with the Secretary of State’s Office and to make any technical changes required for publication of the adopted rule documents; and

ORDERED, That the related adopted rule texts, applicable board and committee materials and deliberations considered in the adoption of the rules, and adopted rule preambles published in the Texas Register are adopted by reference and made part of this Order.

SIGNED ON BEHALF OF THE BOARD THIS_____DAY OF JUNE 2014.

_______________________________
R. David Kelly, Chairman
TRS Board of Trustees

ATTEST:

_______________________________  ________________________________
Brian K. Guthrie    Carolina de Onís
TRS Executive Director   TRS General Counsel
Tab 14 A
Retirees Advisory Committee Meeting Agenda
Date: Thursday, May 22, 2014
Time: 1 p.m. to 3 p.m.
Location: Board Room (East Building 5th floor)
Teacher Retirement System of Texas
1000 Red River Street, Austin, TX 78701

1. Call to order – Ignacio Salinas, Jr., Ph. D – Chair
2. Roll call of Committee Members
3. Approval of Minutes from the February 3, 2014 RAC meeting
4. Public comments
5. RAC Workshop & Update on TRS-Care Sustainability Study–Brian Guthrie,
   Executive Director, TRS; Ignacio Salinas, Jr. Ph. D., RAC Chair & Betsey Jones,
   Chief Health Care Officer , TRS
6. Discuss TRS-Care Rates and Benefits for FY 2015 – Betsey Jones, Chief Health
   Care Officer, TRS
7. TRS-Care Communications Materials & Packets Presentation – Charmaine
   Drummond, Communications Coordinator, Health & Insurance Benefits, TRS
8. TRS-Care Eligibility, Enrollment & Benefits Presentation – Averi Mullins,
   Program Manager, Health & Insurance Benefits, TRS
9. TRS-Care Quality Initiative – Susan Greb, Quality & Training Specialist, Health &
   Insurance Benefits, TRS & Edward Esquivel, Assistant Director, Health &
   Insurance Benefits, TRS
10. Open Discussion – All Attendees
Tab 14 B
• Retirees and dependents who previously chose not to participate in the Medicare Advantage and Medicare Part D plans may enroll effective January 1, 2015
  • Enrollment period October 15 – November 15
TRS-Care Enrollment

- Medicare Advantage participation rate 68%
- Medicare Part D participation rate 81%
- Auto-enrollment of age-ins effective April 1, 2014
  - Medicare Advantage 76%
  - Medicare Part D 80%
Topics

- What is a Compound Prescription?
- What is a Specialty Drug?
What is a Compound Prescription?

- Compounding is the process by which a licensed pharmacist “combines, mixes, or alters ingredients of a drug [or multiple drugs] to create a medication tailored to the needs of the individual patient.”

- Compound drugs are not approved by the FDA

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1[www.FDA.gov](http://www.FDA.gov)
At current growth rate, compounds are expected to make up at least 15% of TRS-ActiveCare plan costs within the next year.
Aggregate plan cost is increasing at an annual rate of over 500%.
TRS Initiatives

- April 15, 2014
  - Implemented Prior Authorization for 5 bulk chemicals

- May 1, 2014
  - Increased Prior Authorization to 10 bulk chemicals

- July 15, 2014
  - Exclude coverage of over 1,100 bulk chemicals

- September 1, 2014 for TRS-ActiveCare
  - Exclude coverage of all compounds containing bulk chemicals
  - Prior Authorization for all other compounds if the plan cost is greater than $300
What is a Specialty Drug?

- Specialty drugs are approved by the FDA
  - However, they are not defined by the FDA
- Defined by the PBM industry
  - Characteristics of a Specialty Drug can include:
    - High cost
    - High need for focused clinical applications and/or oversight
    - Used to treat rare conditions
    - Drug has limited channel of distribution options
    - Requires special shipping and handling
  - Can be Oral, Injected or Infused
Why are specialty drugs so expensive?
- Very high cost of R&D
  - Not a chemically based drugs but are now large, complex, biologically based drugs
  - No approved biosimilar pathway
- Treats a very small population segment
  - Rate diseases not prevalent to the population
- Treats a disease that has limited treatment options
- Current focus of Pharmaceutical Manufacturers

Specialty drug spending is expected to jump by more than 40% by the end of 2015
- Specialty costs are expected to be 40%-50% of an average plan’s total drug costs by the end of the decade
Example – Hepatitis C

- Estimated that up to 12% of the US Population has Hepatitis C
  - 50%-80% of those treated can be cured with combination of older specialty medications
  - New treatments on the marketplace:
    - Olysio and Solvadi
      - Oral
      - 90%+ cure rate
      - $66,000 to $84,000 for 12 week treatment cycle
Specialty Medications
Medical Benefit Insights

Teacher Retirement System of
Texas
Manage Across Benefits to Optimize Savings

**Current State: Medical**

- Highly variable allowed amounts, use of costly sites of care
- Choice of drug influenced by non-clinical incentives
- Inappropriate use, excessive billed units
- Missed opportunity to ensure lowest cost drug is utilized first

**Future State: Comprehensive Trend Management**

- Exclusive specialty network
- Carve out select drugs from medical to pharmacy
- Manage site of care selection
- Prior authorization /clinical guidelines
- Dose/waste management
- Claims management
- Formulary strategies
  - Exclusions
  - Step edits
  - Generic first strategies
Medical Carve Out and Site of Care

OBJECTIVE

Achieve savings and consistent quality by moving select specialty drugs to the pharmacy benefit for dispensing and clinical management (inclusive of clinically appropriate, cost effective site of care selection)

- Self Administered Drugs
- Office Injected Drugs
- Clinician Infused Drugs (non-oncology)
- Site of Care Management

Lower Touch
- CVS CAREMARK
  - Provides drug list for carve out
  - Process documents for medical vendor, program specifications, member and provider services content
  - Conducts member and provider outreach
  - Manages PA/Preferred Drug
  - Dispenses drug, coordinates nursing
  - Dispenses and bills drug, nursing and associated per diems
  - Manages waiver process

Transition Approach

Higher Touch
- MEDICAL VENDOR
  - Codes medical claims system to block designated drugs, EOB messaging, grace fill
  - Provides list of members and providers for outreach
  - Supports re-direction of members and providers to CVS Caremark as needed
Objective:

Provide utilization management for specialty drugs billed under the medical benefit (including buy-and-bill drugs). Applies to all provider types.

- Core capabilities:
  - Helps ensure safe, effective and appropriate use with initial, ongoing and retrospective clinical evaluation
  - Automates administration of UM policies & protocols - reduce administrative costs
- Enables other cost control strategies, including:
  - Medical Carve Out
  - Site of Care Alignment
  - Preferred Drug
## Summary of Total Medical Benefit Expected Savings

<table>
<thead>
<tr>
<th>Solution</th>
<th>Description</th>
<th>Estimated Savings</th>
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</thead>
<tbody>
<tr>
<td>Medical Carve Out</td>
<td>Identification of specialty drugs billed/paid under the medical benefit that could be transitioned to the pharmacy benefit in order to ensure high quality clinical management, to decrease costs and increase data transparency</td>
<td>$2,670,208 - $3,337,760</td>
</tr>
<tr>
<td>Site of Care Alignment</td>
<td>Identify circumstances where a lower total cost could potentially be achieved by shifting the member to an alternative site of care or dispensing entity (Comprehensive - All sites).</td>
<td>$2,910,829 - $3,234,255</td>
</tr>
<tr>
<td>Medical Prior Authorization</td>
<td>Prior Authorization for drugs billed and paid for under the medical benefit.</td>
<td>$2,078,378 - $4,156,755</td>
</tr>
</tbody>
</table>

**Totals**

<table>
<thead>
<tr>
<th>Estimated Savings</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>$7,544,102</td>
<td>$10,464,250</td>
<td></td>
</tr>
</tbody>
</table>

**% Savings**

| % Savings | 10% | 14% |

This analysis is an estimate for information purposes only. These estimates do not represent an existing or future contractual guarantee provided by CVS Caremark. This information is subject to change and will not represent any specific offer by CVS Caremark of return on investment in the future.
Managing Specialty Pharmacy Long Term

- Key considerations
  - Increasing number of conditions treated with multiple agents that cross medical and pharmacy benefits (Cancer, autoimmune disease, pulmonary arterial hypertension, multiple sclerosis, etc.)
  - Consolidation of hospitals/MDs driving costs up dramatically
- Opportunity is to manage the patient and their condition NOT the ‘claim’
  - Clinical management to guidelines (generics first in RA for example)
  - Alignment of benefit to avoid unintended consequences
  - Create the broadest competitive environment to better leverage pharmaceutical manufacturers (current opportunity that grows with bio-similars in the future)
  - Edit and pay medical claims with the same accuracy one expects from pharmacy claims
- Approaches
  - Carve-out of all medical pharmacy drugs
  - Force greater collaboration between medical/pharmacy vendors
Tab 14 D
TRS-Care and TRS-ActiveCare Study

Betsey Jones and Bill Hickman, Gabriel Roeder and Smith
June 6, 2014
In 2011, the 82nd Legislative Session charged TRS to conduct a study

- Comprehensive review of potential plan design and other changes that would improve the sustainability of the program
- Report finds and recommendations by September 1, 2012
• Update the TRS-Care Study
• Expand to include TRS-ActiveCare
  • Projected completion - September 2014
On April 10, 2014 an RAC Workshop was held to review possible options for the study
On May 22, 2014 the RAC met to discuss the options
TRS-Care Plan Structure

- **TRS-Care 1** offers a high deductible plan at no cost for employee only coverage with different deductibles based on Medicare status.

- **TRS-Care 2** and **Care 3** offer comprehensive benefits with a carve out prescription drug benefit.

- **TRS-Care 2** and **3 Medicare Advantage and Medicare Part D plans** with richer benefits and lower premiums.
TRS-Care Enrollment

- **As of April 30, 2014**
  - 243,100 participants
    - TRS-Care 1 30,100 12%
    - TRS-Care 2 55,000 23%
    - TRS-Care 3 158,000 65%

- **Distribution by Medicare status**
  - Medicare A & B 60%
  - Medicare B only 8%
  - Non-Medicare 32%
TRS-Care Enrollment

- Medicare Advantage participation rate 68%
- Medicare Part D participation rate 81%
TRS-Care Medical Claims by Medicare Status
Fiscal Year 2013

PMPY Medical Claims Cost

<table>
<thead>
<tr>
<th>TRS-Care 1</th>
<th>TRS-Care 2</th>
<th>TRS-Care 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>$418</td>
<td>$1,108</td>
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<tr>
<td>$488</td>
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<td>$4,407</td>
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<td></td>
<td>$3,882</td>
<td>$8,545</td>
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</table>

- Medicare Part A&B
- Medicare Part B Only
- Non Medicare
State contributes 1.0% of active district payroll
School districts contribute between 0.25% and 0.75% of active district payroll. Current rate is 0.55%
Active employees contribute 0.65% of payroll
Retirees pay premiums based on plan option, years of service, and Medicare status
Federal programs for Medicare population
  • Retiree drug subsidy
  • PDP subsidy
  • Coverage gap discounts
  • Catastrophic reinsurance
Investment income
Fund Balance
(Incurred Basis in Millions)

FY 2011: $890.9
FY 2012: $741.0
FY 2013: $551.0
FY 2014: $445.8
FY 2015: $113.1
FY 2016: -$326.2
FY 2017: -$874.8
Three legged stool

- Benefits/eligibility (including how benefits are managed)
- Retiree premiums
- Other contributions (state, school district, active employee, federal)
TRC-Care Options

- Short-term and long-term challenges
- Menu of options will span the spectrum from pre-funding TRC-Care to a defined contribution arrangement
- Some options will focus specifically on the Medicare population and some on the non-Medicare population
- Many options are not mutually exclusive and can be combined to increase the positive financial impact
Option 1

- Prefund the long-term liability
  - OPEB combined annual required contribution (ARC)
    - Current state, school district, and active employee contributions total 2.20%
    - FY 13 ARC to advance fund is 5.21%
Option 2
- Fund on a pay-as-you-go basis for the biennium
  - Increase in state contribution only
  - Increase proportionally shared by the state, school districts, and employees
  - Increase proportionally shared by the state, school districts, employees, and retirees
  - Consider state contribution based on covered retirees instead of active employee payroll
Option 3

- Fund for 10-year solvency
  - Increase in state contribution only
  - Increase proportionally shared by the state, school districts, and employees
  - Increase proportionally shared by the state, school districts, employees, and retirees
  - Consider state contribution based on covered retirees instead of active employee payroll
Option 4

- Retiree pays full cost for optional coverage
  - Law requires TRS-Care 1, catastrophic coverage at no cost for retiree only coverage
  - Optional coverage for dependents or upgrade to TRS-Care 2 or TRS-Care 3 is subsidized significantly
  - Premiums for non-Medicare population would more than double
Option 5

- Mandatory participation in the Medicare Advantage and Medicare Part D plans
  - Otherwise their only option is TRS-Care 1
    - Appeal process to opt out if inadequate access to providers accepting Medicare Advantage plan
Option 6

- Defined contribution—Establish a Health Reimbursement Account (HRA) for non-Medicare retirees. Retirees would shop for coverage:
  - Public exchange
    - Low income retirees should consider forfeiting an HRA to be eligible for subsidized coverage
  - Private exchange
- Retirees turning age 65 could enroll in TRS-Care Medicare Advantage and Medicare Part D plans
Option 7

- Modify eligibility for TRS-Care 3 standard plan
  - Grandfather current enrollees
  - Allow new enrollees over age 65 who do not have Medicare Part A

- Create a hybrid TRS-Care 2 / TRS-Care 3 plan for non-Medicare new enrollees (retirees under age 65)
Option 8

- Steerage plan design for the non-Medicare population
  - Network/ACO: tiered in urban areas
    - Premium differential
    - Copay differential
  - Value based plan design (reference based pricing, etc.)
  - Mandatory participation in disease management program
Option 9

• Combine TRS-Care and TRS-ActiveCare
  – Combine both Medicare and non-Medicare retirees with TRS-ActiveCare
  – Combine only non-Medicare retirees with TRS-ActiveCare
Eliminated Options

- Require participants to purchase Medicare Part B to be able to enroll in TRS-Care 2 or 3
  - Otherwise their only option is TRS-Care 1

- Non-Medicare retirees eligible for TRS-Care 1 only until age 65
  - Includes new retirees and retirees already enrolled in the plan
Possible combinations?

- Option 2 or Option 3: Increase contributions
- Option 5: Mandatory Medicare Advantage and Medicare Part D
- Option 6: Defined contribution for non-Medicare population
Possible combinations?

- Option 2 or Option 3: Increase contributions
- Option 5: Mandatory Medicare Advantage and Medicare Part D
- Option 7: Modify eligibility for TRS-Care 3
- Option 8: Steerage plan design
- PPO plans
  - ActiveCare 1 HD
  - ActiveCare 2
  - ActiveCare 3
- HMO plans in select service areas
  - Scott & White
  - First Care
  - Valley Baptist
TRS-ActiveCare Enrollment
(employees by plan, december 2013)

- ActiveCare 1-HD: 126,274 (44.3%)
- ActiveCare 2: 130,159 (45.7%)
- ActiveCare 3: 4,425 (1.6%)
- HMO Plans: 23,910 (8.4%)

FirstCare Health Plans 3.6%
Scott & White Health Plan 3.7%
Valley Baptist Health Plans 1.0%

284,768 contracts (employees) • 468,308 members
TR-S-ActiveCare Funding

- Sole source of funding is premiums for coverage selected.
- Districts must contribute a minimum of $150 per month per employee (districts may elect to contribute more)
- State contributes $75 per month per employee, through school finance formulas
• Funding requirements for Districts and State have not changed since program inception of September 1, 2002

• Survey of districts
  • 38% contribute the minimum
  • 22% contribute up to $50 more than the minimum
  • 3% contribute to dependent coverage
  • 34% administer a health savings account (HSA)
  • 5% make contributions to the HSA
There has been a significant shift in enrollment as premiums have increased and benefits have been reduced.
Historical Premiums
TRS-ActiveCare 2 - Employee Only Coverage Tier

The employee share of the premium has doubled since the inception of the plan.

*Assumes a $75 state and $150 minimum district contribution per month toward the cost of coverage.
Historical Premium Increases
TRS-ActiveCare 2 - Employee Only Coverage Tier

Employee contributions for TRS-ActiveCare 2 have increased 238% since the inception of the plan.

*Assumes a $75 state and $150 minimum district contribution per month toward the cost of coverage.
Option 1

- Increase funding
  - What percent increase in state and district funding is needed to achieve a FY2003 State/District contribution rate of 70%?
  - What benefit changes would be necessary to achieve the FY2003 actuarial value?
  - Increase state and district funding each year by the medical index
Option 2

• Health Savings Account (HSA)
  – Eliminate ActiveCare 2
  – Offer a qualifying HSA associated with one or two high deductible plan options
  – Network/ACO: tiered in urban areas
    o Premium differential
    o Deductible/Coinsurance differential
  – Value based plan design (reference based pricing, etc.)
  – Mandatory participation in disease management program
  – Offer incentives for wellness (health risk assessment, maternity program, wellness program, etc.)
Option 3

- Establish premiums based on:
  - Age
  - Geographic location
  - Years of Service
Option 4

- Offer only a self-funded or fully-insured statewide HMO
Option 5

- Eliminate coverage for spouses
  - Low income spouses may qualify for a subsidy on the exchange
Option 6

- Defined Contribution - Establish a Health Reimbursement Account (HRA)
  - HRA must be offered in conjunction with an employer-sponsored group health plan.
  - Employees would shop in a private exchange offering employer-sponsored group health plan(s).
Possible combinations?

- Option 1: Increase contributions
- Option 2: HSA with high deductible plans and steerage
- Option 3: Premiums based upon age, geographic area and years of service
- Option 5: Eliminate coverage for spouses
Possible combinations?

- Option 1: Increase contributions
- Option 3: Premiums based upon age, geographic area and years of service
- Option 5: Eliminate coverage for spouses
- Option 6: Defined Contribution
Tab 15
TRS-Care Rates and Benefits for FY 15

Betsey Jones and Bill Hickman, Gabriel Roeder and Smith

June 6, 2014
Law requires a basic plan at no cost for retiree only coverage.

Optional coverage may be offered at a cost to retirees.

Retiree premiums for optional coverage is based on:
- Medicare status
- Years of service
Laws impacting TRS-Care
Premiums and Benefits

- **HB 3357**
  - Trustee may spend a part of the money for part of the cost of optional coverage if program is projected to remain solvent during the currently funded biennium.

- **Rider added to Appropriations Bill**
  - It is the intent of the Legislature that the TRS Board of Trustees shall not increase retiree health insurance premiums for the 2014-2015 biennium.
Law requires that retirees pay at least 30% of the total costs.

Reasonable interpretation is that retirees share is a combination of both premiums and out-of-pocket costs of covered charges.
Laws impacting TRS-Care Premiums and Benefits

- Affordable Care Act
  - For TRS-Care standard plans
    - Effective FY 15: $6,350 out-of-pocket maximum for medical benefits
      - Includes deductible, co-insurance, and copays
    - Effective FY 16: The out-of-pocket maximum will include pharmacy copays as well
TRS-Care Distribution of Cost
Projected FY15

FY2015 Distribution of Costs

- State Contributions, 23.0%
- Active Employee Contributions, 14.9%
- District Contributions, 13.3%
- Other Contributions, 11.0%
- Retiree Premiums & Cost Sharing, 37.8%
## TRS-Care Funding Projection

**TRS Care Fund Balance Projection**

Financial History and Projection through FY2023

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Contributions</th>
<th>Expenditures</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Revenue</td>
<td>Medical Incurred</td>
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<tr>
<td>FY 1986</td>
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<td>$0</td>
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<tr>
<td>FY 1987</td>
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<td>FY 1988</td>
<td>$23,948,600</td>
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<tr>
<td>FY 1989</td>
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<td>FY 1991</td>
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<td>FY 2006</td>
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<td>FY 2010</td>
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<td>FY 2015</td>
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<td>FY 2017</td>
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<td>FY 2018</td>
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<tr>
<td>FY 2019</td>
<td>$400,024,480</td>
<td>$0</td>
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**Note:** Figures may not add due to rounding.

As of February 28, 2014
TRS-Care Funding Projection

Fund Balance
(Incurred Basis in Millions)

<table>
<thead>
<tr>
<th>Year</th>
<th>Fund Balance</th>
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<tbody>
<tr>
<td>2011</td>
<td>$850.9</td>
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<tr>
<td>2012</td>
<td>$741.9</td>
</tr>
<tr>
<td>2013</td>
<td>$551.0</td>
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<tr>
<td>2014</td>
<td>$445.8</td>
</tr>
<tr>
<td>2015</td>
<td>$113.1</td>
</tr>
<tr>
<td>2016</td>
<td>$-426.2</td>
</tr>
<tr>
<td>2017</td>
<td>$-874.8</td>
</tr>
</tbody>
</table>
Each 1% increase in TRS-Care premiums for FY 15 = $3.8 million

A 10% increase in TRS-Care premiums for FY 15 = $38 million

$754 negative fund balance for the FY 16- FY17 biennium with 10% increase
- No premium increase for FY 15
- Out-of-pocket maximum changes to be consistent with Affordable Care Act requirements
- TRS-Care 2 and TRS-Care 3 add Quest lab benefit – plan pays 100% for Quest lab services for non-Medicare participants
### TRS-Care Rates and Benefits Recommendation

<table>
<thead>
<tr>
<th>Individual</th>
<th>TRS-Care 2</th>
<th>TRS-Care 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>From</td>
<td>To</td>
<td>From</td>
</tr>
<tr>
<td>Deductible</td>
<td>$1,000</td>
<td>$1,000</td>
</tr>
<tr>
<td>Co-Insurance Limit</td>
<td>$3,000</td>
<td>$3,000</td>
</tr>
<tr>
<td>Maximum Out-of-Pocket</td>
<td>$4,000</td>
<td>$4,400</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Family</th>
<th>TRS-Care 2</th>
<th>TRS-Care 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>From</td>
<td>To</td>
<td>From</td>
</tr>
<tr>
<td>Deductible</td>
<td>$2,000</td>
<td>$2,000</td>
</tr>
<tr>
<td>Co-Insurance Limit</td>
<td>$6,000</td>
<td>$6,000</td>
</tr>
<tr>
<td>Maximum Out-of-Pocket</td>
<td>$8,000</td>
<td>$8,800</td>
</tr>
</tbody>
</table>
Plan to issue an RFP for the TRS-Care Pharmacy Benefits Manager
- Current contract went into effect 9/1/12 for two years with 4 one-year renewals
- FY 15 will be third year of contract
- Market is extremely competitive

New contract will be effective:
- 9/1/15 for the standard plans
- 1/1/16 for the Medicare Part D plans
Whereas, Chapter 1575, Insurance Code, authorizes the Teacher Retirement System of Texas ("TRS"), as trustee, to implement and administer the uniform group health benefits program ("TRS-Care") under the Texas Public School Retired Employees Group Benefits Act, as described in the statute;

Whereas, TRS-Care offers coverage in three standard plans ("TRS-Care Standard plans"), historically known as TRS-Care 1, TRS-Care 2, and TRS-Care 3; offers coverage in two qualified fully-insured Medicare Advantage plans ("TRS-Care Medicare Advantage plans"), available to eligible TRS-Care 2 and TRS-Care 3 participants who have Medicare Parts A and B; and offers coverage in two Medicare Prescription plans ("TRS-Care Medicare Prescription plans"), available to eligible TRS-Care 2 and TRS-Care 3 participants who have either Medicare Part A or Medicare Part B or both;

Whereas, due to the funding available to TRS-Care, TRS staff and the TRS health benefits consultant, Gabriel, Roeder, Smith & Company ("GRS") have recommended that for the 2015 plan year, beginning September 1, 2014, premium rates in the TRS-Care Standard plans remain unchanged from the current premium rates for these plans for the 2014 plan year;

Whereas, TRS staff and GRS have further recommended that for the plan year commencing on January 1, 2015, premium rates in the TRS-Care Medicare Advantage plans remain unchanged from the current premium rates for these plans for the plan year that commenced on January 1, 2014;

Whereas, TRS staff and GRS have further recommended that for the 2015 plan year, beginning September 1, 2014, benefit plan design for the TRS-Care 1 Standard plan remain unchanged from the current benefit plan design for this plan for the 2014 plan year;
Whereas, TRS staff and GRS have further recommended that for the 2015 plan year, beginning September 1, 2014, benefit plan designs for the TRS-Care 2 and TRS-Care 3 Standard plans remain unchanged from the current benefit plan designs for these plans, subject to the benefit plan design changes set out in Exhibit A, attached to this resolution and incorporated herein by reference;

Whereas, TRS staff and GRS have further recommended that for the plan year commencing on January 1, 2015, benefit plan designs for the TRS-Care Medicare Advantage Plans and the TRS-Care Medicare Prescription plans remain unchanged from the current benefit plan designs for these plans; and

Whereas, the TRS Board of Trustees ("Board") desires to adopt the recommendations of TRS staff and GRS; now, therefore, be it

Resolved, That for the TRS-Care Standard plans, for the 2015 plan year beginning September 1, 2014, and for all plan years thereafter, until further action by the Board, the Board hereby adopts and authorizes the current premium rates for these plans in place for the 2014 plan year;

Resolved, That for the TRS-Care Medicare Advantage plans, for the plan year commencing on January 1, 2015, and for all plan years thereafter, until further action by the Board, the Board hereby adopts and authorizes the current premium rates for these plans in place for the plan year that commenced on January 1, 2014;

Resolved, That for the TRS-Care 1 Standard plan, for the 2015 plan year beginning September 1, 2014, and for all plan years thereafter, until further action by the Board, the Board hereby adopts and authorizes the current benefit plan design for this plan in place for the 2014 plan year;

Resolved, That for the TRS-Care 2 and TRS-Care 3 Standard plans, for the 2015 plan year beginning September 1, 2014, and for all plan years thereafter, until further action by the Board, the Board hereby adopts and authorizes the current benefit plan designs for these plans in place for the 2014 plan year, subject to the benefit plan design changes set out in Exhibit A;

Resolved, That for the TRS-Care Medicare Advantage plans and the TRS-Care Medicare Prescription plans, for the plan year commencing on January 1, 2015, and for all plan years thereafter, until further action by the Board, the Board hereby adopts and authorizes the current benefit plan designs for these plans in place for the plan year that commenced on January 1, 2014;
Resolved, That the Board finds that, considering the actions taken in the resolutions above, TRS-Care is projected to remain financially solvent during the currently funded biennium; and

Resolved, That for the 2015 plan year commencing on September 1, 2014 for the TRS-Care Standard plans, and for the plan year commencing on January 1, 2015 for the TRS-Care Medicare Advantage plans and the TRS-Care Medicare Prescription plans, and for all plan years thereafter, until further action by the Board, the Board authorizes the Executive Director or his designees to take any actions that he or his designee in his or their discretion deem to be necessary or advisable to implement this resolution, and to otherwise implement and continue the TRS-Care Standard plans, the TRS-Care Medicare Advantage plans, and the TRS-Care Medicare Prescription plans until further action by the Board.
Benefit Plan Design Changes

TRS-Care 2 Standard Plan

The Board hereby approves and adopts the following benefit plan design changes for the TRS-Care 2 Standard plan, subject to all other plan requirements and restrictions, beginning in the 2015 plan year commencing on September 1, 2014 and for all plan years thereafter, until further action by the Board:

<table>
<thead>
<tr>
<th>Plan Feature</th>
<th>From 2013-2014 Plan Year</th>
<th>To 2014-2015 Plan Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual Co-Insurance Limit</td>
<td>$3,000</td>
<td>N/A</td>
</tr>
<tr>
<td>Family Co-Insurance Limit</td>
<td>$6,000</td>
<td>N/A</td>
</tr>
<tr>
<td>Individual Out-of-pocket maximum</td>
<td>$4,000</td>
<td>$4,400</td>
</tr>
<tr>
<td>Family Out-of-pocket maximum</td>
<td>$8,000</td>
<td>$8,800</td>
</tr>
<tr>
<td>(Out-of-pocket maximums exclude deductibles and copayments)</td>
<td></td>
<td>(Out-of-pocket maximums include deductibles and copayments)</td>
</tr>
<tr>
<td>Quest Lab Services</td>
<td>N/A</td>
<td>100% covered for non-Medicare enrollees</td>
</tr>
</tbody>
</table>
TRS-Care 3 Standard Plan

The Board hereby approves and adopts the following benefit plan design changes for the TRS-Care 3 Standard plan, subject to all other plan requirements and restrictions, beginning in the 2015 plan year commencing on September 1, 2014 and for all plan years thereafter, until further action by the Board:

<table>
<thead>
<tr>
<th>Plan Feature</th>
<th>From 2013-2014 Plan Year</th>
<th>To 2014-2015 Plan Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual Co-Insurance Limit</td>
<td>$3,000</td>
<td>N/A</td>
</tr>
<tr>
<td>Family Co-Insurance Limit</td>
<td>$6,000</td>
<td>N/A</td>
</tr>
<tr>
<td>Individual Out-of-pocket maximum</td>
<td>$3,300</td>
<td>$3,700</td>
</tr>
<tr>
<td>Family Out-of-pocket maximum</td>
<td>$6,600</td>
<td>$7,400</td>
</tr>
<tr>
<td>(Out-of-pocket maximums exclude deductibles and copayments)</td>
<td>(Out-of-pocket maximums include deductibles and copayments)</td>
<td></td>
</tr>
<tr>
<td>Quest Lab Services</td>
<td>N/A</td>
<td>100% covered for non-Medicare enrollees</td>
</tr>
</tbody>
</table>
Tab 16 A
Current TRS-ActiveCare HMOs

- Scott and White
- FirstCare
- Valley Baptist
Current TRS-ActiveCare HMOs
TRS-ActiveCare
Funding Impact

Bar chart showing funding impact for various categories:
- ActiveCare 1 and 1-HD: FY2013 - 150,000, FY2014 - 334,679
- ActiveCare 2: FY2013 - 193,722, FY2014 - 222,211
- ActiveCare 3: FY2013 - 11,150, FY2014 - 6,415
HMO Procurement Timeline

- Request for Proposals issued April 1
- Proposals due April 22
Tab 17
TRS-ActiveCare Rates and Benefits for FY 15

Betsey Jones and Bill Hickman, Gabriel Roeder, and Smith
June 6, 2014
TRS-ActiveCare Enrollment
(Employee by Plan, December 2013)

FirstCare Health Plans 3.6%
Scott & White Health Plan 3.7%
Valley Baptist Health Plans 1.0%

284,768 Contracts (Employees) • 468,308 Members
63% females, 37% males
Self-funded program

Sole source of funding is premiums for coverage selected.

Districts must contribute a minimum of $150 per month per employee (districts may elect to contribute more)

State contributes $75 per month per employee, through school finance formulas
Funding requirements for Districts and State have not changed since program inception of September 1, 2002

Survey of districts
- 38% contribute the minimum
- 22% contribute up to $50 more than the minimum
- 3% contribute to dependent coverage
- 34% administer a health savings account (HSA)
  - 5% make contributions to the HSA
There has been a significant shift in enrollment as premiums have increased and benefits have been reduced.
The employee share of the premium has doubled since the inception of the plan.

*Assumes a $75 state and $150 minimum district contribution per month toward the cost of coverage.
Employee contributions for TRS-ActiveCare 2 have increased 238% since the inception of the plan.

*Assumes a $75 state and $150 minimum district contribution per month toward the cost of coverage.
Tab 18
Whereas, Chapter 1579, Insurance Code, authorizes the Teacher Retirement System of Texas (TRS), as trustee, to implement and administer the uniform group health benefits program (TRS-ActiveCare) under the Texas School Employees Uniform Group Health Coverage Act, as described in the statute;

Whereas, 34 TEX. ADMIN. CODE § 41.36 provides that the TRS Board of Trustees may set the plan enrollment periods for TRS-ActiveCare by resolution;

Whereas, TRS staff has recommended that the plan enrollment period for TRS-ActiveCare coverage during the 2015 plan year, which begins on September 1, 2014, occur from July 21, 2014 through August 31, 2014;

Whereas, the above plan enrollment period does not affect the alternative plan enrollment dates established under 34 Texas Administrative Code §41.36 (a) through (h) for any employee of any entity that becomes a participating entity after September 1, 2014; and

Whereas, the Board desires to adopt the above recommended plan enrollment date; now, therefore, be it

Resolved, subject to the alternative plan enrollment dates established under 34 Texas Administrative Code §41.36 (a) through (h) for any employee of any entity that becomes a participating entity after September 1, 2014, the plan enrollment period for TRS-ActiveCare coverage during the 2015 plan year, which begins on September 1, 2014, shall occur from July 21, 2014 through August 31, 2014.
Tab 19
Date: May 22, 2014

To: TRS Board of Trustees
   Brian Guthrie, Executive Director
   Ken Welch, Deputy Director

From: Betsey Jones, Chief Health Care Officer
      Bob Jordan, Director, TRS Health & Insurance Benefits

Subject: Evaluation of Health Care Consultant, Gabriel, Roeder, Smith & Company for the period September 2013 through May 2014

Summary of Work Performed

During this period, Gabriel, Roeder, Smith & Company (GRS) provided continued professional advice and technical support for TRS staff in a timely manner. Services performed included the following:

- **TRS-Care**
  - Provided monthly monitoring and status of TRS-Care fund balance.
  - Provided recommendations for TRS-Care rates and benefits.
  - Prepared the OPEB actuarial valuation.
  - Provided actuarial attestation for the Medicare D subsidy and whether plans met Medicare D creditable coverage standards.
  - Provided periodic utilization reports for medical and drug expenses.
  - Participated in year-end reviews of Aetna and Express Scripts.
  - Provided compound drug analysis.

- **TRS-ActiveCare**
  - Provided monthly monitoring and status of TRS-ActiveCare fund balance.
  - Assisted in developing RFPs and analyzing bids for Health Care Administrator, Pharmacy Benefits Manager, and HMOs.
  - Provided recommendations for TRS-ActiveCare PPO rates and benefits.
  - Determined whether PPO plans met Medicare D creditable coverage standards.
  - Provided periodic utilization reports for medical and drug expenses.
  - Participated in year-end reviews for BCBSTX and Express Scripts.
  - Provided compound drug analysis.
Assessment of Performance

Feedback from TRS staff interfacing with GRS was extremely positive. It was noted that GRS was very flexible and always responded quickly to requests for information. GRS staff readily made themselves available for conference calls and meetings on short notice, and the quality of information provided was exceptional. Their experience in the industry and their in-depth knowledge of TRS programs also proved to be invaluable to TRS.

TRS staff especially appreciates the professional services provided by Mr. Bill Hickman and his team. They are highly committed to serving the needs of TRS. In summary, GRS’ performance overall is outstanding and exceeds expectations.
Tab 20
MEMORANDUM

To: TRS Board of Trustees
From: Rebecca Merrill, Director of Strategic Initiatives
Date: May 23, 2014
Subject: Evaluation of Gabriel, Roeder, Smith & Company Pension Fund Actuarial Services for the period September 2013 through April 2014

Summary of Work Performed

During this period, Gabriel, Roeder, Smith & Company (GRS) provided continued professional advice and technical support for Pension related matters to TRS staff in a timely manner. Services performed included the following:

- Prepared actuarial valuation;
- Presented results of valuation to the Board and Legislative staff, Associations and Interested Parties;
- Prepared information for GASB/CAFR reporting, including meeting with staff in preparation for implementation of new GASB 67 and 68; and
- Provided updated actuarial tables for implementation of benefit design changes adopted during the last regular legislative session.

Assessment of Performance

Feedback from TRS staff interacting with GRS was positive. It was noted that GRS was generally responsive and provided a high quality product. GRS staff readily made themselves available for conference calls and meetings on short notice. Their experience in the industry and their in-depth knowledge of TRS programs has also proved invaluable to TRS. Finally, GRS is skilled in presenting and is able to make difficult actuarial concepts easier to understand.
Tab 22
Since late 2013, TRS has worked with The University of North Texas (UNT) Survey Research Center to plan the TRS 2014 Member Satisfaction Survey. This year’s survey was conducted by telephone and, for the first time, by email. TRS conducts the survey every other year and reports findings to the Governor’s Office and Legislative Budget Board. It is only one of several satisfaction surveys administered by TRS, including those that we conduct monthly.

Shortly after TRS began work on the 2014 survey, UNT Survey Research Center Director Paul Ruggiere announced that he was leaving the university. Veronica Kronvall then assumed responsibility for managing the survey. Ms. Kronvall has played a key role in past TRS member satisfaction surveys so she was able to use that experience to help guide this year’s project.

In the third week of May, TRS received the preliminary 2014 survey report. Results were positive and showed very favorable ratings among TRS members and retirees. Overall, 97.9 percent of retirees (compared with 98.7 percent in 2012), and 97.3 percent of active members (compared to 97.4 percent in 2012) reported being satisfied or very satisfied with TRS member services. These variances in approval ratings from 2012 to 2014 are within the margin of error and reflect essentially the same level of satisfaction as was present two years ago.

Satisfaction ratings for benefit counselors, the TRS Telephone Counseling Center and the agency’s website were all positive, with a large majority of respondents stating they were satisfied. Courtesy ratings for representatives of TRS were also strongly positive.

Regarding health care issues, 96.1 percent of retirees and 79 percent of active members were very satisfied or satisfied with the TRS-Care and TRS-ActiveCare services respectively. For respondents participating in TRS-ActiveCare, 95.7 percent were very satisfied or satisfied with the services provided by Blue Cross and Blue Shield of Texas when they called customer service. Of the members who use the prescription home delivery service, 81.8 percent of retirees and 90.1 percent of active members were very satisfied or satisfied with the service.
Respondents were also generally satisfied with the various publications provided by TRS. A notable difference between retirees and active members was that retirees more often preferred printed formats to obtain information and communicate with TRS than active members. Active members were more open than retirees to using the Internet and email to receive TRS updates.

Forty-seven percent of retirees and 25 percent of active members were aware of MyTRS email subscriptions, which enable members and retirees to receive email notification of TRS publications and announcements. Twenty-nine percent of retiree respondents and 46.9 percent of active member respondents had signed up for MyTRS email subscriptions. When respondents who were unaware of MyTRS email subscriptions were asked if they would consider receiving TRS information by email, 62.9 percent of retirees and 72.6 percent of active members indicated they would consider participating in this program. The most common reason cited by both groups for not wishing to participate was a preference for a hard copy that could be received in the mail.

Facebook, YouTube, and Pinterest had higher reported usage among retirees and active members than other types of social media. Active members were more willing to use all forms of social media to obtain TRS-related information than retirees. However, a larger percentage of retirees reported they were aware of TRS’ presence on all social media outlets than active members.

Retirees would be more likely to refer to the TRS Benefits Handbook if they needed to obtain general TRS information, while a large majority of active members would prefer to go to the TRS website. Both retirees and active members indicated they would be likely to correspond by email with a TRS counselor if they wanted to discuss TRS account-specific benefits. Sixty-one percent of active members would be likely to speak with a TRS counselor via live text chat to discuss benefits.

TRS offices generally received good reviews. However, the number of people responding to these questions was small so this must be considered when analyzing these survey results. The vast majority of respondents who visited TRS offices viewed parking as excellent or good although 39.1 percent of the active members rated parking as fair. Access to TRS facilities also received fairly positive ratings by respondents who visited the facilities, with the exception of 27 percent of active members who gave fair or poor ratings for ease of accessing TRS facilities. Factors related to ease of access include but are not limited to traffic, time of day, number of parking spaces, and distance traveled to reach TRS.

Staff is now reviewing the full report in detail. Survey highlights will be provided under separate cover and presented at the June board meeting.
Tab 23
Per the approved *Fiscal Year 2014 Audit Plan*, amendments to the approved Audit Plan deemed to be significant will be submitted to the Audit Committee for recommendation to the Board of Trustees for approval. The State Auditor’s Office also requires notification of material changes to the Audit Plan. Below is a list of proposed changes for your consideration:

### Proposed Changes to Fiscal Year 2014 Audit Plan\(^1\)

<table>
<thead>
<tr>
<th>Project</th>
<th>Proposed Change</th>
<th>Reason</th>
<th>Substitution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electronic Records</td>
<td>Deferred to Fiscal Year 2015</td>
<td>• Management has activity underway with electronic records • Allocate additional resources to TEAM</td>
<td>Resources allocated to TEAM Internal Controls Project and other TEAM related activities</td>
</tr>
<tr>
<td>Health Care Governance, Risk Management and Reporting</td>
<td>Deferred - Timing TBD</td>
<td>• Potential significant changes with healthcare plans may occur</td>
<td>Resources allocated to Purchasing and Contract Administration Audit</td>
</tr>
<tr>
<td>TEAM Internal Controls Project</td>
<td>Added</td>
<td>Planning and activities need to begin this fiscal year</td>
<td>N/A</td>
</tr>
</tbody>
</table>

\(^1\) Changes proposed will not impact TRS Internal Audit’s ability to meet its performance measure: Execute 80% of [original] audit and agreed-upon procedures projects.

June 2014 Board Audit Committee Meeting
Tab 24
Teacher Retirement System of Texas

Cash Disbursements
March and April, 2014
Don Green, Chief Financial Officer
Board of Trustees Meeting
June 6, 2014
## Pension Trust Fund
### Cash Disbursements

<table>
<thead>
<tr>
<th>Month</th>
<th>FY 2013</th>
<th>FY 2014</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>September</td>
<td>$6,956,188</td>
<td>$6,970,179</td>
<td>$13,991</td>
</tr>
<tr>
<td>October</td>
<td>7,527,488</td>
<td>6,917,337</td>
<td>($610,151)</td>
</tr>
<tr>
<td>November</td>
<td>7,342,717</td>
<td>6,708,686</td>
<td>($634,030)</td>
</tr>
<tr>
<td>December</td>
<td>5,384,514</td>
<td>6,566,553</td>
<td>$1,182,039</td>
</tr>
<tr>
<td>January</td>
<td>13,588,764</td>
<td>15,411,211</td>
<td>$1,822,447</td>
</tr>
<tr>
<td>February</td>
<td>5,410,553</td>
<td>6,792,019</td>
<td>$1,381,465</td>
</tr>
<tr>
<td>March</td>
<td>7,046,291</td>
<td>9,006,093</td>
<td>$1,959,802</td>
</tr>
<tr>
<td>April</td>
<td>5,272,203</td>
<td>7,342,010</td>
<td>$2,069,807</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>$58,528,718</strong></td>
<td><strong>$65,714,088</strong></td>
<td><strong>$7,185,370</strong></td>
</tr>
</tbody>
</table>

*FY 2013 Cash disbursements totaled $82,959,217 at August 31, 2013*