

April 2022

TRUSTEES

TRS Board of Trustees Meeting



**Teacher Retirement System of
Texas**

1000 Red River Street
Austin, Texas
78701-2698

**TEACHER RETIREMENT SYSTEM OF TEXAS MEETING
BOARD OF TRUSTEES**

AGENDA

April 28, 2022 – 8:00 a.m.

April 29, 2022 – 8:00 a.m.

*All or part of the April 28 - 29, 2022 meeting of the TRS Board of Trustees may be held by telephone or video conference call as authorized under Sections 551.130 and 551.127 of the Texas Government Code. The Board intends to have the presiding officer and a quorum physically present at the following location, which will be open to the public during the open portions of the meeting: **1000 Red River, Austin, Texas 78701 in the TRS East Building, 5th Floor, Boardroom.***

Members of the public may provide virtual public comment by registering first with the Board Secretary by submitting an email to Katherine.Farrell@trs.texas.gov identifying the name of the speaker and topic, no later than 5:00 pm on April 28, 2022.

The open portions of the Board meeting are being broadcast over the Internet. Access to the Internet broadcast and agenda materials of the Board meeting is provided at www.trs.texas.gov. A recording of the meeting will be available at www.trs.texas.gov.

NOTE: The Board may take up any item posted on the agenda during its meeting on April 28 – 29, 2022 beginning at the time and place specified on this agenda.

1. Call roll of Board members.
2. Consider the following administrative matters – Jarvis V. Hollingsworth:
 - A. Approval of the February 2022 proposed meeting minutes; and
 - B. Excusing Board Member absences from the February Board Meeting.
3. Review and discuss the Executive Director's report on the following matters – Brian Guthrie:
 - A. Administrative operational matters, including updates on financial, audit, legal, staff services, special projects, strategic planning, legislative, classification status update and personnel matters.
 - B. Board operational matters, including a review of draft agendas for upcoming meetings.
 - C. Event notices or reminders; holiday and other schedules of interest; board member, employee or other individual recognitions; and expressions of thanks, congratulations, or condolences.

4. Receive TRS Quarterly Ombudsman's Report – Lori LaBrie.
5. Review and consider procurements and contracts, including the following – Martin Cano:
 - A. Receive Procurement and Contracts Update;
 - B. Consider accepting the Procurement and Contracting Report.
6. Receive the Deputy Director's Update formerly the Chief Operations and Administration Officer (COAO) update – Andrew Roth.

***NOTE:** The Board meeting likely will recess after the last item above to take up posted committees and will resume April 28, 2022, Thursday afternoon, to take up items listed below.*

7. Consider selecting a master custody services and security lending provider, including receiving presentations from vendor finalists including considering a finding that to deliberate or confer in open meeting would have a detrimental effect on the position of the retirement system in negotiations with a third person – Jase Auby, Kendall Courtney, LaTresa Stroud and Aundre Petty.
8. Receive an update and consider long term facilities planning, including the disposition of the Red River campus, status updates on the TRS Headquarters project, and lease at 816 Congress, including considering a finding that to deliberate or confer in open meeting would have a detrimental effect on the position of the retirement system in negotiations with a third person – Brian Guthrie, Andrew Roth, and Martin Cano.
9. Receive an annual update on TRS Data Protection and Security update – Andrew Roth, Heather Traeger, Frank Williams and Kristi Glasgall.
10. Receive an update from Organizational Excellence regarding Executive Succession Planning, including the Deputy Director, Chief Financial Officer and Chief Benefits Officer – Brian Guthrie, Janet Bray and Michelle Gray.
11. Review the report of the General Counsel on pending and contemplated litigation, including updates on litigation involving benefit-program contributions, retirement benefits, health-benefit programs, investment matters and open records and on legal or regulatory matters involving certain TRS vendors, investment managers, or other counterparties– Heather Traeger and J.R. Morgan.

***NOTE:** The Board meeting likely will recess after the last item above and will resume April 29, 2022, Friday morning, to take up items listed below.*

12. Provide an opportunity for public comment – Jarvis V. Hollingsworth

13. Receive the report of the Strategic Planning Committee on its April 28, 2022 meeting and consider adopting the proposed fiscal year 2023 – 27 Strategic Plan Goals, Objectives and Strategies – Committee Chair.
14. Receive the report of the Benefits Committee on its April 28, 2022 meeting and consider the following - Committee Chair:
 - A. Acceptance of the Medical Board Meeting minutes of November 2021 and January 2022 meetings;
 - B. Approval of the Benefit Payments for December 2021 to February 2022;
 - C. Approval of plan benefits and rates to be offered under TRS-ActiveCare for FY 2023; and
 - D. Approval of HMO plan benefits and rates to be offered in association with TRS-ActiveCare during FY 2023.
15. Receive the report of the Budget Committee on its April 28, 2022 meeting – Committee Chair.
16. Receive the report of the Policy Committee on its April 28, 2022 meeting and consider adopting the fololowing - Committee Chair:
 - A. Proposed amendments to TRS Rule § 25.21 relating to Compensation Subject to Deposit and Credit in Subchapter B of Chapter 25 of Title 34, Part 3 of the Texas Administrative Code; and
 - B. Adopting or amending the Board Resolution Designating Persons Authroized to sign TRS Vouchers.
17. Receive the report of the Investment Management Committee on its April 28, 2022 meeting – Committee Chair.
18. Receive the report of the Audit, Compliance, and Ethics Committee on its April 29, 2022 meeting and consider revisions to the fiscal year 2022 Audit Plan – Committee Chair.
19. Review and consider the TRS Experience Study findings and recommendations, including considering the Return Assumption – Joe Newton and Dan Siblik, Gabriel, Roeder, Smith & Co.; Steve Voss and Mike McCormick, AON.
20. Receive an update from the TEAM Program Independent Program Assessment (IPA) Vendor – Jonathan Scofield and Richard Holt, EY.
21. Overview of IMD Compensation – Katy Hoffman, Christine Bailey and Mike Oak, McLagan.
22. Receive governance and risk management training – Amanda Jenami.

The Board may convene in Executive Session under the following, but not limited to:

- A. Texas Government Code, Section 551.071: Consultation with Attorney;
- B. Texas Government Code, Section 551.072: Deliberation Regarding Real Property;
- C. Texas Government Code, Section 551.074: Personnel Matters Relating to Appointment, Employment, Evaluation, Assignment, Duties, Discipline, or Dismissal of Officers or Employees including but not limited to the Executive Director, Chief Audit Executive, Chief Investment Officer.
- D. Texas Government Code, Section 551.076: Deliberation Regarding Security Devices or Security Audits;
- E. Texas Government Code, Section 551.089: Deliberation Regarding Security Devices or Security Audits; or
- F. Texas Government Code, Section 825.115: Applicability of Certain Laws;
- G. Texas Government Code, Section 825.3011: Certain Consultations Concerning Investments.

Minutes of the Board of Trustees

February 17, 2022

The Board of Trustees of the Teacher Retirement System of Texas met on Thursday, February 17, 2022, in the boardroom located on the Fifth Floor in the East Building of TRS' offices located at 1000 Red River Street, Austin, Texas, 78701.

The following Board members were present:

Jarvis V. Hollingsworth, Chair
Nanette Sissney
Michael Ball
David Corpus
John Elliott
James Nance

Others present:

Brian Guthrie, TRS	Suzanne Dugan, Cohen Millstein
Andrew Roth, TRS	Keith Brown, Investment Advisor
Heather Traeger, TRS	Steve Voss, AON
Jase Auby, TRS	Michael McCormick, AON
Don Green, TRS	David Rosenfeld
Barbie Pearson, TRS	Kate Merrill
Katrina Daniel, TRS	Jack Smith
Amanda Jenami, TRS	Melva Smith
Janet Bray, TRS	Jeffrey Aronowitz, Private Equity Stakeholder Project
Martin Cano, TRS	Aneta Molenda, Private Equity Stakeholder Project
Lori LaBrie, TRS	Daniella Stromberg, Private Equity Stakeholder Project
Katherine Farrell, TRS	Phil Miller, Private Equity Stakeholder Project
Bernie Bozzelli, TRS	Dr. Craig Campbell, ARTA
Billy Lowe, TRS	
Jennifer Whitman, TRS	
Adam Fambrough, TRS	
Katie Linczer, TRS	

Mr. Hollingsworth called the meeting to order at 8:02 a.m.

1. Call roll of Board members.

Ms. Farrell called the roll. A quorum was present with Mr. Moss and Mr. Walls being absent.

2. Consider the following administrative matters, including approval of the December 7-8, 2021 proposed meeting minutes – Jarvis V. Hollingsworth

Mr. Hollingsworth noted that the meeting had been condensed from two days to one due to scheduling issues and therefore agenda items will be called out of order today. He then called on Mr. Ball who had an announcement.

Mr. Ball announced his recent retirement from Fort Worth ISC, and since he is no longer an active member, until a replacement is appointed, he would continue to serve as a holdover trustee on an ongoing basis. Mr. Hollingsworth stated they will be reporting the change of status to the Governor's Office as well as to the Attorney General's Office. He thanked Mr. Ball for his continued to service on the Board.

On a motion by Mr. Corpus, seconded by Mr. Elliott, the Board unanimously voted to approve the September 2021 proposed meeting minutes as presented.

3. Resolution memorializing the service of Rebecca Merrill – Jarvis V. Hollingsworth.

Mr. Hollingsworth prior to reading the resolution recognized Ms. Rebecca Merrill's family in the audience:, her husband, David Rosenfeld, her daughter, Kate Merrill, and her parents Mr. and Mrs. Jack Smith.

Resolution

Whereas, Rebecca Katherine Smith Merrill Rosenfeld joined the Legal Department of the Teacher Retirement System of Texas (TRS) in August 2010, after spending the first half of her career as an attorney and policy analyst with the Public Utility Commission, Governor's Office, and the city of Dallas; and

Whereas, she then became Director of Special Projects in 2013, and was promoted to TRS' first Chief Strategy Officer the following year; and

Whereas, she oversaw strategic planning, enterprise risk management, actuarial policy, external communications, and content for the popular brochure - *A Great Value for All Texans* - illustrating the economic benefits TRS and our members provide to the State of Texas; and

Whereas, Rebecca was instrumental in promoting the statutorily required *Strategic Plan* and worked diligently to bring meaning to it by regularly communicating, measuring, and reporting on TRS' goals and objectives. She was integral in the development of the TRS Board of Trustees Strategic Planning Committee in 2018 which enhanced discussion of TRS strategy and Board input on a wide array of issues involving strategy and major projects, but most importantly focused on the mission of TRS; and

Whereas, Rebecca created a sense of shared ownership in the *Strategic Plan* by leading an educational campaign so that all employees – from the front line to the executives – understood how their work contributed to the mission of TRS. She believed this work would help TRS to become a more intentional and resilient organization; and

Whereas, Rebecca also worked extensively on special projects and pension policy matters; particularly during a critical time facing all pension systems. She developed a study comparing the TRS defined benefit plan to a defined contribution plan that provided salient information used by the 83rd Legislature to pass landmark legislation that stabilized the TRS pension fund and set it on a path to actuarial soundness; and

Whereas, Rebecca developed an elegant methodology that clearly demonstrates that defined benefit plans are more cost effective, offer more value and less risk, and provide greater benefits at a lower cost than alternative structures. Her groundbreaking work provided a model for pension systems around the country to conduct similar studies that contributed greatly to the retirement security for teachers and public employees nationwide; and

Whereas, Rebecca was always striving to ensure our members, active and retired, understood the options available to them and how best to prepare for retirement. She advocated for the creation, and oversaw the development of the well-received TRS Financial Awareness Video Series; and

Whereas, through pure determination (and lots of diet coke) she led TRS through the initial Sunset review process which included many late hours finalizing the Self-Evaluation Report submitted in 2019 that positioned TRS to successfully emerge from the Sunset Review in a better and stronger position to serve our members; and

Whereas, Rebecca had a gift for making public presentations by clearly and concisely communicating complex policies and facts. She had a remarkable ability to think like an attorney without sacrificing clarity or practicality; and

Whereas, throughout her years in leadership, Rebecca's colleagues held her in the highest esteem for her affable nature and strong work ethic. She was admired for her approach to managing the Strategy Office and working with Trustees, elected officials, and various stakeholders; and

Whereas, she was the epitome of diplomatic candor, never afraid to walk into the Executive Director's office and suggest that he may need to change tactics, or that he should consider other options that were more viable, practical or just plain better; and

Whereas, Rebecca's quick wit, warm smile, and dedication to TRS made her a pleasure to work with. She championed enterprise leadership, helping to break down siloed thinking and promoting a leadership culture where TRS executives see the big picture and act collectively to create purpose, strategy, and value across the organization. Her vision, bright mind, and willingness to "wade in" will be sorely missed; and

Whereas, Rebecca was a beautiful soul who touched all that she met. She was passionate about her work, but even more so about her faith and family –

especially her beloved daughter Kate and husband David. She always encouraged those close to her to do their best at work, but also make sure to spend quality time making memories with family because time is precious. Though her time on this earth was cut short, her impact on TRS, our members, and her colleagues will be known for years to come. She will be dearly missed;

Now, therefore, be it resolved, that the board of trustees and staff of the Teacher Retirement System of Texas recognizes, posthumously, the accomplishments and contributions of Rebecca Katherine Smith Merrill Rosenfeld during her storied career with the retirement system and expresses appreciation on behalf of TRS members both present and future,

And be it further resolved, that the Teacher Retirement System of Texas extends its sympathy to Rebecca's family after her death on November 11, 2021 and decrees that they be presented a copy of this resolution, which is entered into the record of the board for February 17, 2022.

On a motion by Ms. Sissney, seconded by Mr. Nance, the board unanimously approved the resolution with the following standing voice vote:

Ms. Sissney: Aye.

Mr. Ball: Aye.

Mr. Corpus: Aye

Mr. Elliott: Aye.

Mr. Nance: Aye.

Chair Hollingsworth: Aye.

After a moment of silence, Mr. Hollingsworth then provided Mr. Guthrie an opportunity to provide his and staff's perspective. Mr. Guthrie then read the resolution signed by Dade Phelan, Speaker of the House, and a letter from Governor Greg Abbott to the Merrill Family. Mr. Guthrie stated it was his privilege, honor and a very sad day to stand and share thoughts on behalf of himself and staff that worked with Rebecca closely over the years. He said Rebecca was a special soul, she inspired so many people and that she was passionate about her work, taking great pride in serving the teachers of Texas. He said it was his privilege to be Rebecca's colleague and friend for the last 20 years. She was a trusted friend and part of his kitchen cabinet in his role as ED. Mr. Guthrie noted that the flag flying over the Capitol today was being done so in Rebecca's honor.

Mr. David Rosenfeld thanked everybody from TRS for all the gifts and support during Rebecca's sickness. Mrs. Smith said on behalf of Rebecca's father, Jack, and herself, she thanked TRS and the Board saying Rebecca loved working at TRS.

Mr. Hollingsworth called for a brief recess.

Mr. Hollingsworth then called up agenda item 2 without objection.

2. **Consider the following administrative matters, including approval of the December 7-8, 2021 proposed meeting minutes – Jarvis V. Hollingsworth.**

On a motion by Mr. Elliott and seconded by Mr. Nance, the Board voted to approve the proposed minutes of the December 7-8, 2021 meeting as presented.

Mr. Hollingsworth then called up agenda item 4 without objection.

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

- A. Administrative operational matters, including updates on financial, audit, investments, legal, staff services, board administration activities, special projects, risk assessment, workforce matters, long term facilities including El Paso Regional Office, Red River headquarters and new headquarters.**
- B. Board operational matters, including a review of draft agendas for upcoming meetings.**
- C. Event notices or reminders; holiday and other schedules of interest; board member, employee or other individual recognitions; and expressions of thanks, congratulations, or condolences.**

Mr. Brian Guthrie reviewed how the February meeting is designed for trustee training, education and a deeper dive into salient issues that Trustees need to know. He reviewed upcoming and past conferences, noting that the Trustees were provided a list of conferences for the upcoming year. He provided an update on headquarters. For the Alpha building the core and shell construction is complete and the team hopes to start the interior build-out this summer as scheduled. For Bravo, the earth-moving work has begun, preparing the site for the laying of the foundation, which should happen in the next couple of months. For Red River disposition effort, he reported the offering memorandum was released yesterday to the market and offers are due by April. For the El Paso office, he said the lease was signed earlier this month with the Education Service Center in El Paso and the team is currently in the process of training the regional office director and six counselors.

Mr. Guthrie reviewed TRS' workforce. He noted the workforce is comprised of 16 percent baby boomers, 29 percent are considered Gen X, and 53 percent Millennials and 2 percent Gen Z. He reported the current tenure is below seven years which is symptomatic of some of the turnover experienced recently. He said the turnover rate is alarming at 14.6 percent, the state turnover is currently at 23 percent.

Mr. Guthrie provided an updated spotlight report that typically is talked about in the Strategic Planning Committee. He noted the category for business continuity was most recently reclassified as an enterprise risk due to the enterprise-wide involvement in this function, and recent improvements and enhancements related to business continuity and disaster recovery planning. He pointed out the budget category was changed from stable to increasing due to inflation and watching very carefully the impact of supply chain issues as we are building our new headquarters.

Mr. Guthrie recognized Ms. Barbie Pearson as the president of the Board of the National Pension Education Association. He also noted he was selected to participate on an advisory council at the LBJ School to refine and improve their executive master's program. Mr. Guthrie announced TRS winning Top Workplace for the United States.

Mr. Guthrie reviewed the upcoming board meeting proposed agendas, noting many items from the originally two-day meeting condensed to one this February will now be taken up in April.

5. Receive an overview of the proposed Fiscal Year 2023 – 2027 Strategic Plan Goals, Objectives and strategies – Caasi Lamb.

Ms. Caasi Lamb provided background of the Strategic Plan that the state required TRS to submit in the even-numbered years. She reviewed how the executive council (EC) met and discussed priority issues facing the organization that provides a guide for the updates to the Strategic Plan. Ms. Lamb then reviewed the proposed updates to the goals, objectives and strategies contained in the Strategic Plan. She said the plan will be brought back to the April Board meeting for consideration with the suggested changes she received.

6. Receive an update on Customer Service Improvement Plan – Brian Guthrie, Andrew Roth, Barbie Pearson, Janet Bray and Chris Cutler.

Mr. Guthrie introduced the update by stating staff had a number of different items related to customer service improvement. He noted the sea change in terms of how to implement the authority the Board has given staff to add additional employees, additional resources to customer service.

Mr. Andrew Roth reviewed the five key areas of opportunity to focus on as a team to improve customer service. Ms. Barbie Pearson provided an in-depth review of the analysis done to identify opportunities including process improvements, system enhancements, procedures or policy changes needed for each of the five key areas. Mr. Roth stated this is a three-year holistic plan that concludes with the final deployment of the TRUST system in FY 25.

Ms. Jennifer Whitman reviewed the roadmap the TEAM Program has developed with the intent of deploying multiple releases over the course of this calendar year. She said the releases will contain features and functionality specifically targeted toward the key areas of improvement outlined by Ms. Pearson. Mr. Billy Lowe reviewed the resources needed to be successful with such releases. Mr. Adam Fambrough provided a demonstration of the new MyTRS. Ms. Janet Bray reviewed the talent acquisition roadmap for hiring Benefit Services in the Austin area. Mr. Roth noted how the overtime in Benefit Services for FY 21 equated to 22 FTEs based on pay. He concluded by stating with the increase in staff for one line-of-business area impacts the shared services such as payroll and benefits.

Mr. Hollingsworth then called up agenda item 8 without objection.

8. Receive the Ombudsman's Annual Report – Lori LaBrie.

Ms. Lori LaBrie reviewed the function and purpose of the Ombudsman's Office. She referenced the newly created Ombud's web page and reviewed the incoming communications to the Ombuds Office. Ms. LaBrie then reviewed how a communication is evaluated as a complaint and the types of complaints that have come in over the past year. She concluded by noting the office is fully established, functioning and members are utilizing the office on a daily basis.

Mr. Hollingsworth then called up agenda item 7 without objection.

- 7. Receive an update TRS health plans including key legislation and consider the adoption of a resolution directing staff to apply funds appropriated by Senate Bill 8 as passed by the 87th Texas Legislature in the Third Called Special Session to issue a one-time payment for TRS-Care and offset future plan year premium costs for TRS-ActiveCare participants – Katrina Daniel and Monica Bernal.**

Ms. Monica Bernal provided some highlights of TRS-Care and ActiveCare customer service based on 2021 stats. She reported 85 to 90 percent of the total call volume is handled by the health care vendors and the rest is handled directly by the HIB operations department. She noted the health care vendors are held to very high standards in their servicing, they have performance guarantees. She said they and TRS staff meet or exceed their targets, month over month.

Ms. Katrina Daniel discussed the engagement effort among the school districts and participants in ActiveCare. She said Senate Bill 1444 allows districts to leave ActiveCare for the first time by December 31, 2021. She said they worked hard to provide the districts information for them to make an informed decision. She reported ActiveCare retained 90 percent of the business. Ms. Bernal reported that House Bill 2022 provided TRS-Care individuals who left the plan between 2017 -2019 and who are Medicare eligible the opportunity to re-enroll into TRS-Care. She reported as of January 1st 324 individuals have enrolled back into the plan.

Ms. Daniel discussed the funds that the federal government set aside to cover COVID costs. She reported the legislature had designated nearly \$300 million for our members. She stated that due to TRS-Care having a positive fund balance, they are able to return that money to the members in the form of a check, to act as a premium offset. She said that equates to sending out 180,000 checks of \$448.12 by mid-March. She said the balance of the \$286 million will go to ActiveCare to offset premium costs by five percent for the coming plan year.

On a motion by Mr. Corpus, seconded by Ms. Sissney, the Board unanimously voted to approve the following resolution to authorize a one-time payment of \$448.12 to TRS retirees or surviving spouses in March of 2022:

**Resolution Approving the Issuance of a One-Time Payment for TRS-Care Retirees and to Offset Future Plan Year Premium Costs for TRS-ActiveCare as authorized and funded by Senate Bill 8 of the 87th Legislature, 3rd Special Session
February 17, 2022**

WHEREAS, Senate Bill 8 (SB 8), relating to making supplemental appropriations and giving direction regarding appropriations, was passed by the State of Texas 87th Legislature, Third Called Special Session, and signed by the Governor of Texas with an immediate effective date of November 8, 2021;

WHEREAS, through the adoption of SB 8, the Texas Legislature appropriated \$286,337,761 to the Teacher Retirement System of Texas (TRS) from money

received by the State of Texas from the Coronavirus State Fiscal Recovery Fund (42 U.S.C. § 802) established under the American Recovery Rescue Plan Act of 2021 ("ARPA") (Pub. L. No. 117-2), for the purpose of providing funding during the two-year period beginning on the effective date of the Act for coronavirus-related claims in the TRS-Care and TRS-ActiveCare programs;

WHEREAS, through such appropriation, it is the intent of the Legislature that premiums for TRS-Care and TRS-ActiveCare plan coverage not increase as a result of coronavirus-related claims, and that such premiums be calculated and adjusted taking into consideration the appropriated funds;

WHEREAS, because of the appropriated funds, the claims experience under the TRS-Care program has improved enough to justify TRS giving a one-time payment of \$448.12 to eligible retirees and surviving spouses enrolled in TRS-Care as of January 1, 2022;

WHEREAS, because of the appropriated funds, TRS may also offset future plan year premium costs resulting from Coronavirus-related care and improve affordability for the TRS-ActiveCare program;

WHEREAS, TRS staff has made recommendations to the Board of Trustees (Board) that the Board direct TRS staff to prepare for and issue the one-time payment in March 2022 and to offset future plan year premium costs for TRS-ActiveCare participants, in accordance with the provisions in SB 8; and

WHEREAS, the Board desires to adopt the recommendations of TRS staff; now, therefore, be it

RESOLVED, that the Board hereby adopts the recommendation of TRS staff and authorizes a one-time payment to eligible retirees and surviving spouses enrolled in TRS-Care as of January 1, 2022, in accordance with SB 8; and directs TRS staff to prepare for and to issue in March 2022 to eligible retirees and surviving spouses enrolled in TRS-Care as of January 1, 2022 a \$448.12 one-time payment in accordance with SB 8; and be it

FURTHER RESOLVED, that the Board directs TRS staff to issue the one-time payment to the TRS-Care eligible retirees and surviving spouses that receive annuity payments by direct deposit . Otherwise, the Board directs TRS staff to issue the one-time premium payment to eligible retirees and surviving spouses through a physical check to be mailed to the eligible retiree's and surviving spouse's address of record on TRS' file; and be it

FURTHER RESOLVED, that the Board hereby adopts the recommendation of TRS staff and authorizes an offset to future plan year premium costs for TRS-Active-Care participants, in accordance with SB 8.

Mr. Hollingsworth then called up agenda item 13 without objection.

13. Provide an opportunity for public comment.

Mr. Jeffrey Aronowitz, representing the Private Equity Stakeholder Project, spoke on behalf of the Greenbrook Tenant Coalition. He expressed concern regarding the Texas State Board of Education investing in a private equity firm that in turn invested money into Greenbrook Partners who is using harassment tactics to push tenants out of their homes.

Ms. Aneta Molenda, representing the Private Equity Stakeholder Project, spoke on behalf of the Greenbrook Tenant Coalition. She expressed concern over Greenbrook Partners who increased her rent by 50 percent when her lease ended leaving her in an impossible situation as Omicron surged.

Ms. Daniella Stromberg, representing the Private Equity Stakeholder Project, spoke on behalf of the Greenbrook Tenant Coalition. She expressed concern over Greenbrook Partners giving her no rent concessions and forcing her into bankruptcy.

Mr. Phil Miller, representing the Private Equity Stakeholder Project, spoke on behalf of the Greenbrook Tenant Coalition. He expressed concern over Greenbrook Partners management of the building he resides in noting a number of neighbors received non-renewal notices in the middle of a pandemic.

Dr. Craig Campbell, legislative Chair for ARTA, expressed concern over the economic status of the TRS retiree, requested a survey be performed, and the need for a cost of living adjustment (COLA).

Mr. Hollingsworth then called up agenda item 21 without objection.

21. Receive an update and consider an amendment to the proxy voting services contract with ISS related to the use of certain proxy voting benchmarks – Ryan Leary.

Mr. Ryan Leary provided an update on the proxy voting guidelines. He reported the TRS Proxy Committee evaluated the new ISS benchmark policy guidelines for 2022. He said the committee is recommending that TRS use a custom policy with custom voting guidelines that make modifications to the benchmark policy guidelines sections on climate change and special purchase acquisition company (SPAC) mergers. He provided further background on the proposed modifications. Mr. Leary concluded by stating a custom policy enables voting according to TRS' best economic interests.

Dr. Brown supported the adoption of the proposal noting voting is very much an asset of the System and it is important for the Board to retain control over how that asset is managed when the voting policy is not aligned with your interests.

Mr. Steve Voss added such a small change allows IMD's investment beliefs and philosophies to be executed vis-à-vis proxy voting.

Ms. Suzanne Dugan stated the voting of these rights that are the proxy voting, that's pertinent to the shares, is a fiduciary duty. She noted the proxy voting policy specifically allows to customize.

On a motion by Mr. Nance, seconded by Mr. Ball, the board voted to approve the following resolution to amend the proxy voting services contract with ISS.

**RESOLUTION CONCERNING MODIFICATIONS TO THE BENCHMARK
GUIDELINES FOR PURPOSES OF TRS PROXY VOTING**

February 17, 2022

WHEREAS, Pursuant to the TRS Proxy Voting Policy, the Board of Trustees (the “Board”) of the Teacher Retirement System of Texas (“TRS”) shall retain a reputable, independent proxy advisory service (the “Proxy Advisor”) to analyze proxy issues, make voting recommendations, and vote proxies as TRS’ agent;

WHEREAS, Under the Board Procurement Policy, the Board considers and authorizes the selection of one or more proxy advisors;

WHEREAS, On July 17, 2020, the Board selected Institutional Shareholder Services (ISS) as TRS’ proxy advisor and determined that engaging the firm represented the best overall value for TRS;

WHEREAS, On July 17, 2020, the Board authorized the Executive Director or a designee, with the assistance of legal counsel, to negotiate and to execute a contract with the ISS that is consistent with the best interests of TRS for an initial term not to exceed five (5) years in duration beginning on December 1, 2020 or as soon thereafter as practicable, with one option for an extension not to exceed a total of one (1) year;

WHEREAS, ISS annually conducts a global policy review process and updates the ISS Benchmark Proxy Voting Guidelines for the upcoming year;

WHEREAS, IMD Proxy Committee reviews updates to the ISS Benchmark Proxy Voting Guidelines, confirms the updates are appropriate for TRS, and prepares a summary to the Board to highlight key changes;

WHEREAS, IMD Proxy Committee reviewed the 2022 updates to the ISS Benchmark Proxy Voting Guidelines to ensure alignment with TRS’ objectives;

WHEREAS, IMD recommends modifications to the ISS Benchmark Proxy Voting Guidelines for purposes of TRS proxy voting pertaining to climate change and Special Purpose Acquisition Company (SPAC) mergers;

WHEREAS, IMD Proxy Committee recommends the Board institute a custom policy with ISS to vote proxies according to the Board’s directions; now, therefore, be it

RESOLVED, That the Board approves voting TRS proxies through a custom policy for voting guidelines related to climate: 1) Following management

recommendations with regard to action plans, including management recommendations on related shareholder proposals; 2) Opposing management and shareholder proposals that seek to restrict business with fossil fuel companies if contrary to shareholder value maximization; and 3) Generally removing climate-related criteria for evaluating directors and voting in director elections.

Mr. Hollingsworth then called up agenda item 11 without objection.

11. Receive and consider an update from Organizational Excellence – Andrew Roth, Janet Bray and Chris Bailey:

a. TRS Classification Review

Ms. Janet Bray provided background as to how the pandemic, the great resignation or the great reassessment, has affected the workforce in general and TRS' workforce specifically. She reported from September 2021 to December 2021, TRS paid out for departing employees \$1.3 million in accrued leave and overtime. She said there are currently 142 vacancies at TRS. She stated last year TRS hired 160 employees but lost 151 to attrition. She said the State Classification System limits TRS' ability to offer market-competitive compensation packages. She noted the last salary change to the State Plan was six years ago.

Ms. Bray said in 2019 there was a proposal to the Board to leave the State Classification System and create a TRS-specific system modernizing TRS compensation practices. She said there was a plan to bring additional information in April 2020 but the pandemic intervened and diverted attention. She stated a new structure would provide TRS with the agility to address shifts in the market and allow a system that is unique to TRS. She noted there will be governance and guidelines that will go along with this system and it will parallel the State's system wherever possible. Ms. Bray reviewed other state agencies that operate outside the State Classification System. Ms. Chris Bailey described the proposed process to transfer from the State to a TRS classification system. She noted this would be a two-to-three year implementation.

On a motion by Mr. Nance, seconded by Mr. Corpus, the board voted to approve the following resolution with Ms. Sissney voting no:

**Resolution Implementing a TRS-Specific Classification System
February 17, 2022**

WHEREAS, Chapter 654 of the Texas Government Code provides the Position Classification Plan ("Plan") which provides the salary structure for specified state employments. Section 654.011, which identifies the agencies required to use the State Classification Plan, does not apply to the Teacher Retirement System of Texas ("TRS");

WHEREAS, Chapter 659, Subchapter K of the Texas Government Code sets forth the provisions related to promotions, reclassifications, and other adjustments to salary for employees of the executive or judicial branch of state government.

WHEREAS, Section 825.208(b) of the Texas Government Code specifies that TRS is exempt from Chapter 659, Subchapter K of the Government Code, including the use of the state classification schedule, to the extent the TRS Board determines an exemption is necessary for the performance of fiduciary duties;

WHEREAS, TRS engaged with Deloitte Consulting in late June 2019 to assess TRS' classification structure and approach to compensation;

WHEREAS, TRS staff updated the Board on the classification and compensation review during the December, 2019 Board meeting; and

WHEREAS, One of the objectives set forth in TRS' Strategic Plan 2021-2025 is to attract, retain, and develop a diverse and highly competent staff;
Now, therefore, be it

Resolved, Based on the results of the classification and compensation review, the Board determines that it is necessary for the performance of fiduciary duties to implement a classification plan specific to TRS which will ensure TRS can meet future business needs;

Resolved, Further, the Board determines that an exemption from the Plan is necessary in order to be able to implement a specific plan to recruit and retain a qualified workforce, by providing a structure that increases flexibility, allows for TRS to adapt to changes in the market, and increases efficiency and reduces administrative burden.

Resolved, The Board authorizes the Executive Director, or his designee, to take all necessary actions to remove TRS employees from the Plan and to begin full implementation of a classification plan specific to TRS.

Mr. Hollingsworth then called up agenda item 9 without objection.

9. Receive annual ethics and fiduciary training – Heather Traeger, Alice McAfee and Suzanne M. Dugan, Cohen Milstein.

Ms. Heather Traeger, Ms. Alice McAfee and Ms. Suzanne Dugan, provided the annual ethics and fiduciary training focusing on transparency, conflicts of interest, the roles and responsibilities of the Trustees especially regarding the Open Meetings Act and the Public Information Act which all tied back to the Trustees fiduciary responsibilities.

Mr. Hollingsworth then called up agenda item 16 without objection.

16. Receive CIO Update including Fleet Strategy; Talent Management; Accomplishments; Notices; Awards; Key Dates and Upcoming Events; and Market Update – Jase Auby.

Mr. Jase Auby provided the CIO update and the semi-annual market update. He noted the Trust ended the calendar year 2021 at \$204 billion in value and it had a one-year return of 18.4 percent, exceeding the assumed actuarial rate by about 11 percent. He reviewed past meetings including the Emerging Managers Conference. He stated they are actively recruiting for 28 positions, 24 are due to vacancies. He concluded by providing the market update commenting on the markets in general.

Mr. Hollingsworth then called up agenda item 10 without objection.

10. Receive a Diversity, Equity and Inclusion Update – Kellie Sauls.

Ms. Kellie Sauls provided an overview of the DE&I's strategic plan, achievements for FY 21, goals and objectives for FY 22 and an update on the outstanding RFP to track metrics and measurement for DE&I. She reviewed the business case for diversity, stating when there is a strong culture of diversity and inclusion working together, there is a strong correlation to business outcomes.

Mr. Hollingsworth then called up agenda item 15 without objection.

15. Discuss Internal Audit's upcoming External Quality Assurance Review – Katie Linczer.

Ms. Amanda Jenami and Ms. Katie Linczer reviewed the External Quality Assurance plan that was described as an audit of the internal audit function at TRS. Ms. Jenami said the independent team assessment will be used, introduced the proposed team and the timeline.

Mr. Hollingsworth then called up agenda item 11 without objection.

11. Receive and consider an update from Organizational Excellence – Andrew Roth, Janet Bray and Chris Bailey:

b. Executive Succession Planning, including the Executive Director, Chief Investment Officer, Chief Audit Executive and the Executive Council Members.

Mr. Guthrie introduced this item stating to make sure an organization has a good succession plan is a fiduciary responsibility. He noted TRS had the process of updating its succession planning prior to the pandemic, paused during the pandemic, and is now back working on the process in earnest. He then described the process and assessments performed to identify and help to develop the high-profile, high-potential candidates or employees for each of the executive positions.

22. Review the report of the General Counsel on pending and contemplated litigation, including updates on litigation involving benefit-program contributions, retirement benefits, health benefit programs, investment matters and open records and on legal or regulatory matters involving certain TRS vendors, investment matters, or other counterparties – Heather Traeger.

At 5:28 p.m., Mr. Hollingsworth announced the board would recess into executive session on the following agenda items and sections of the Government Code: Items 11.B to discuss executive succession planning, including Executive Director, Chief Investment Officer, Chief Audit

Executive and the Executive Council members under Section 551.074 of the Government Code for personnel; and Item 22, under Section 551.071 of the Government Code to consult with legal counsel.

At 6:23 p.m., Mr. Hollingsworth reconvened the Board meeting.

12. Receive an annual update on TRS Data Protection and Security – Andrew Roth, Frank Williams, Kristi Glasgall and Heather Traeger.

This item was not taken up.

14. Receive governance and risk management training – Amanda Jenami.

This item was not taken up.

17. Receive Merging Manager Annual Update – Kirk Sims.

This item was not taken up.

18. Receive IMD Legal & Compliance Update – Heather Traeger and Denise Lopez.

This item was not taken up.

19. Receive an overview of IMD Compensation – Horacio Zambrana, Christine Bailey; and Michael Vosler, McLagan.

This item was not taken up.

20. Receive the annual update on ESG – Lauren Gellhaus; Meredith Jones and Steve Voss, AON.

This item was not taken up.

At 6:24 p.m., Mr. Hollinsworth noted there was no more scheduled business before the Board and announced the meeting was adjourned.

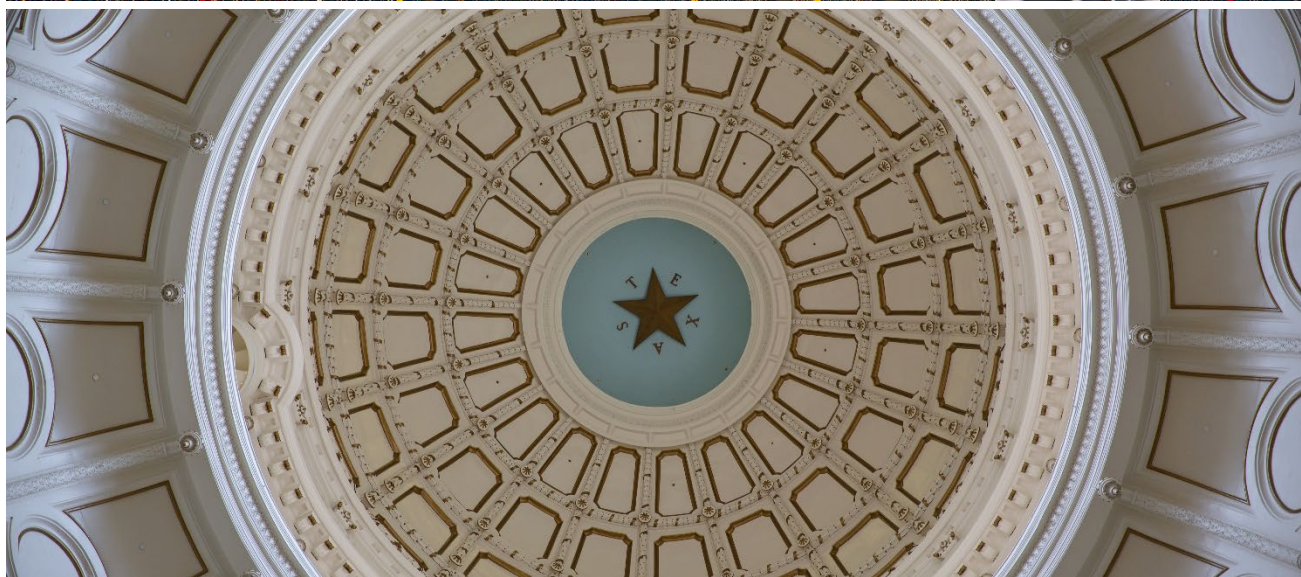
APPROVED BY THE BOARD OF TRUSTEES OF THE TEACHER RETIREMENT SYSTEM OF TEXAS ON THE __ DAY OF APRIL 2022.

ATTESTED BY:

Katherine H. Farrell
Secretary to the TRS Board of Trustees

Date

TAB 3



Executive Director's Report

Brian Guthrie

April 28, 2022





General Updates

Legislative Interim Charges

Update on Classification System Project

Trustee Election Timeline

Moving Forward Together

Upcoming Board Meeting Agenda

Upcoming Conferences and Meetings:

- May 21 – 25, 2022: NCPERS Annual Conference & Exhibition, Washington, D.C.
- July 13 – 15, 2022: PPI Summer Roundtable, Vancouver, Canada
- July 24 – 27, 2022: NCTR 22nd Annual Trustee Workshop, Berkeley, CA
- August 6 – 10, 2022: NASRA Annual Conference, Long Beach, CA

Past Meetings and Updates:

- February 26-28, 2022: NASRA Winter Meeting, Washington, D.C.
- March 7 – 9, 2022: Council of Institutional Investors Spring Conference, Washington, D.C.
- March 30, 2022: TRS Public SPN Summit, Austin, TX
- April 7 – 9, 2022: NASRA Executive Committee Spring Meeting, Ft. Myers, FL

2022 Interim Legislative Charges

The Speaker of the House issues interim charges for House committees to study, and the Lt. Governor, who presides over the Senate, issues interim charges for Senate committees.



There are 150 interim charges in the House and 84 in the Senate.



Legislative committees have begun holding hearings and will continue throughout the summer and fall to gather research on interim charges and issue recommendations to the 88th Legislative Session.



Interim charges that pertain to state entities generally are related to the state workforce and remote work, cybersecurity, contracting and procurement, and inflation.

2022 Interim Legislative Charges: Senate

Senate Finance Committee: Hearing Scheduled for May 4, 2022

- **Federal Funds:** Report on the state use of federal COVID-19 relief funds provided under the Coronavirus Aid, Relief, and Economic Security Act, Coronavirus Response and Relief Supplemental Appropriations Act, the American Rescue Plan Act, Infrastructure Investment and Jobs Acts, and similar federal legislation....Evaluate the overall fiscal impact of the COVID-19 pandemic on state agencies, including costs incurred due to federal mandates. Identify barriers to the effective utilization of funds and make recommendations on the expenditure of unappropriated funds....
- **Inflation:** Review and report on the effect inflation is having on the business community and state government, including state salaries, retiree benefits, the state economy, and cost of state services.
- **Russia Divestiture:** Examine and report on options for state asset owners to divest their positions in companies that invest in the Russian Federation.
- **State Pension Reforms:** Monitor the implementation of recent statewide pension reforms to the Employees Retirement System of Texas and the Teacher Retirement System of Texas.

2022 Interim Legislative Charges: Senate

Senate Natural Resources and Economic Development Committee

- Monitoring: Monitor the implementation of legislation addressed by the Senate Committee on Natural Resources and Economic Development passed by the 87th Legislature, as well as relevant agencies and programs under the committee's jurisdiction. Specifically, make recommendations for any legislation needed to improve, enhance, or complete implementation of the following: **Senate Bill 13, Relating to state contracts with and investments in certain companies that boycott energy companies.**

Senate State Affairs Committee

- Investment Practices: **Study the investment practices** of financial services firms and how those practices affect the state's public pensions. Make recommendations to ensure the state's public pension funds are not being invested to further political or social causes.

2022 Interim Legislative Charges: House

House Appropriations Committee

- Monitor and oversee the implementation of appropriations bills and other relevant legislation passed by the 87th Legislature, including the following: **SB 1 (87R - General Appropriations Act)**, **HB 5 (87S2 - Supplemental Payment Funding)** and **SB8 (87S3 - ARPA)**

House Pensions, Investments & Financial Services Committee

- Monitor the agencies and programs under the Committee's jurisdiction and oversee the implementation of relevant legislation...including the following: **HB 1585 (Sunset)...****SB 1444 (ActiveCare)**.
- Review and evaluate the **actuarial soundness** of the Employees Retirement System (ERS) and Teacher Retirement System (TRS) pension funds.
- **Review the impact of investments** by public retirement systems of their endowment and other trust funds in businesses and funds owned or **controlled by the Russian government** or Russian nationals, and **determine the need for investment restrictions**. Consider the impact of any proposed investment restrictions on fund performance.

TRS Staffing and Turnover: Spring 2022 Update

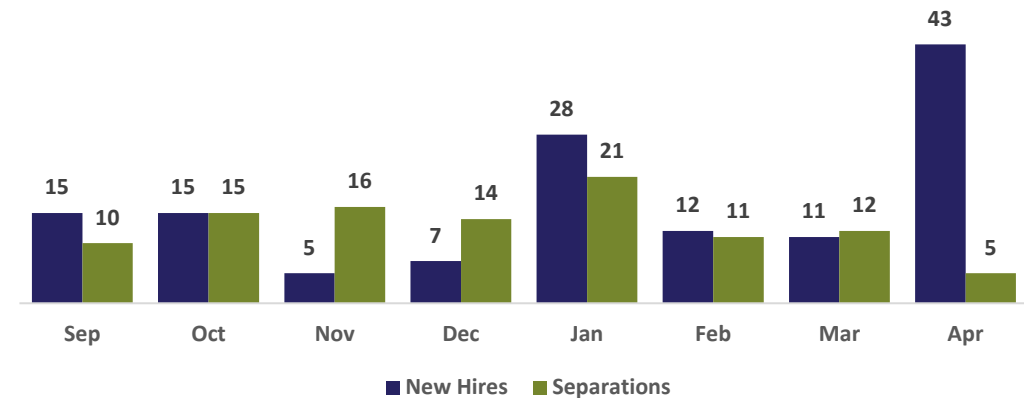
Staffing is improving, and April hires set a new TRS record

- 125 employees have been hired between September and mid-April for FY 2022
- Upcoming hires include:
 - 38 hires on April 1, including 10 in El Paso
 - 17 hires on April 14
- As of April, TRS currently has 193 contractors

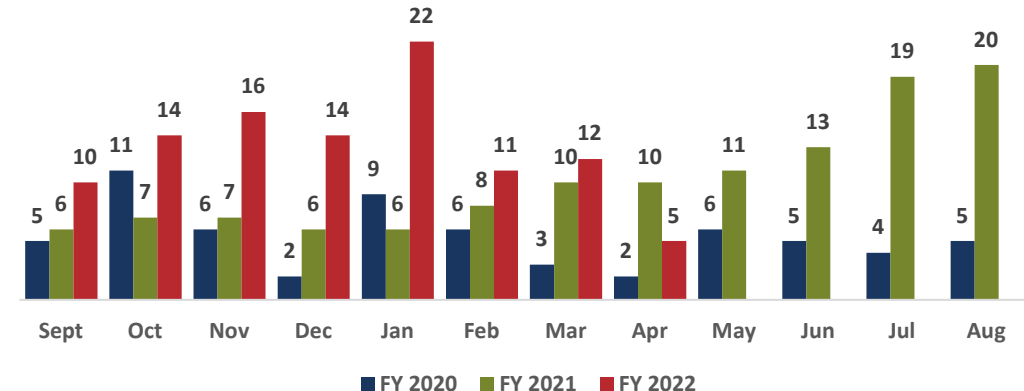
Turnover is trending lower, but is still higher than last fiscal year

- Turnover for FY 2022 (10.2% YTD) is still higher than FY 2021 (4.8% YTD), but total separations are declining
- TRS has 94 vacant positions, but anticipates that number to drop with May and June new hires

FY 2022 - Staffing by Month



Turnover by Month



TRS Classification Plan: Spring 2022 Update

- **Job Postings and Recruiting**

- All job postings have been updated to reflect market competitive ranges
- Recruiters are seeing engagement on positions that historically have been hard to fill

- **Retention and Internal Equity**

- Adjustments for priority positions are being addressed on a case-by-case basis
- Meetings between division leadership and the Compensation Team are scheduled in April/May to review and finalize targeted adjustments for positions behind market
- Non-IMD adjustments are targeted for June/July implementation, IMD positions will be evaluated as part of their annual merit planning
- Current cost estimate for market adjustments is on track with the original \$5 million annually, with \$1.4 to \$1.6 million expected to be spent by the end of this fiscal year

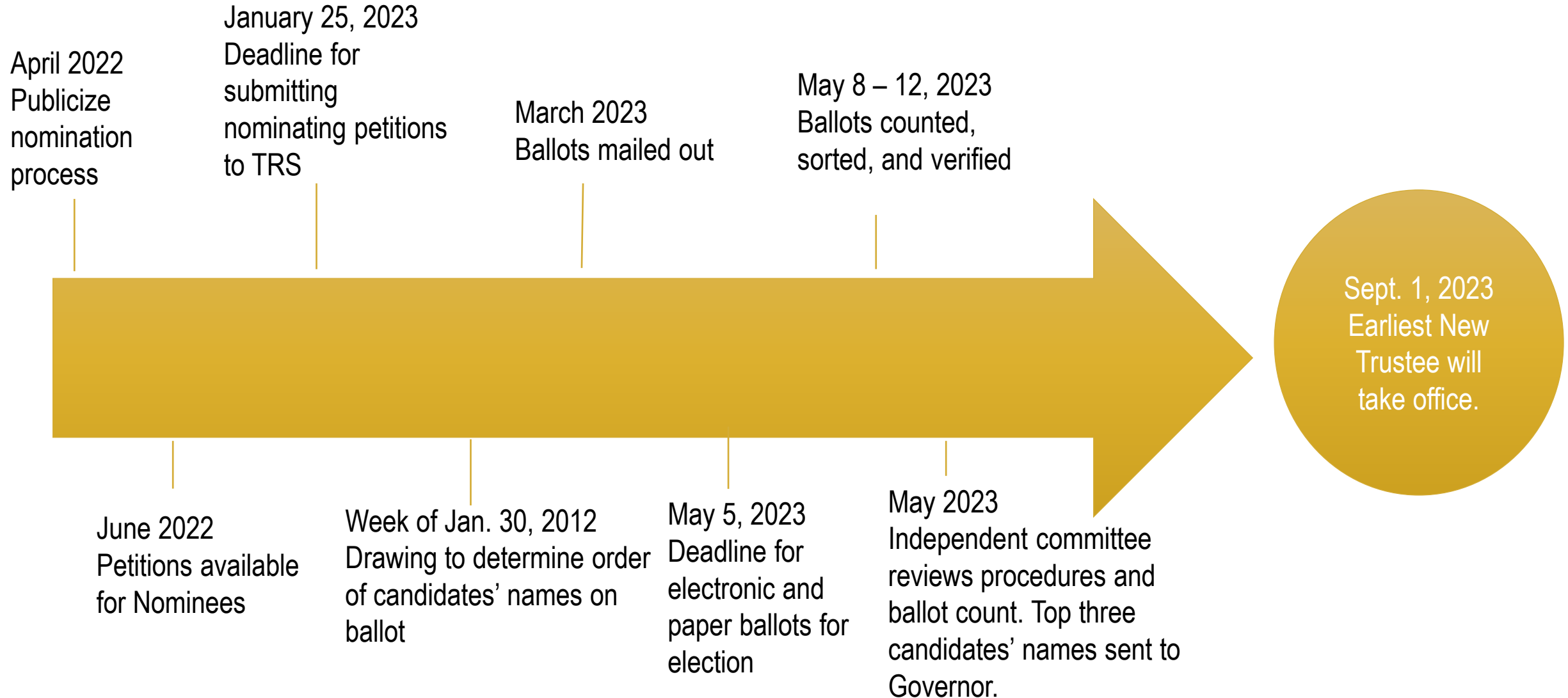
- **Project Implementation**

- After Board approval in February, the implementation process is underway, and the process will unfold over the next 12-18 months
- Notification to the Comptroller's Office (CPA) and SAO are complete, with favorable responses to the plan
- Meetings with CPA in process to discuss fiscal year roll that will allow TRS to move employees to new plan, effective September 1, 2022
- The OCM Team is developing communication materials to help managers and employees understand shifts in terminology and processes

TRS Classification Plan: Spring 2022 Update

[illegible]

Timeline for 2023 At-Large and Retiree Elections



Moving Forward Together Update



Alpha Building:

- Core and shell construction activities continue
- Design Development activities complete; moving into construction documents and permitting
- General Contractor selected for the Interior Build-Out
- Build-out activities scheduled to begin in Summer 2022
- Leasing Broker and Property Manager selected



Bravo Building:

- Construction started
- Second-level concrete pours underway
- General Contractor selection for interior build-out to begin late spring
- Preliminary design activities complete; moving through schematic design

Upcoming Board Agenda

July 14 – 15, 2022

July 14, 2022

Committees

Strategic Planning Committee

- Results Forum Report Out

Benefits Committee

- Operational Updates
- Approval of Benefits

Budget Committee

- Propose Adoption of FY2023 Budget
- HUB Goals
- LAR Review (submit early Aug.)

Compensation Committee

- Classification Plan Update
- Turnover & Hiring Update

Policy Committee

- Rule Review

Investment Management Committee

- CIO Update
- 1st Quarter Performance Review
- External Private Market Update

Audit, Compliance and Ethics Committee

- Internal Audit and Compliance reports

July 15, 2022

Board

Committee Reports

- ED Report
- Ombuds Report
- TEAM Update
- Procurement Report
- Experience Study
- COAO Report
- Red River Disposition Update

Upcoming Board Agenda

September 15 – 16, 2022

September 15, 2022

Committees

Strategic Planning Committee

- FY 23 ED Areas of Focus
- Results Forum Report Out

Benefits Committee

- Operational Updates
- Approval of Benefits

Compensation Committee

- ED & IMD PIPP
- Classification Plan Update
- Turnover & Hiring Update

Policy Committee

- Policy Review Schedule
- Resolution Re: Corrections & Errors
- Benefit Counseling Policy
- Bylaw Rvw
- Pension Funding Policy
- Rule Review

Investment Management Committee

- CIO Update
- 2nd Quarter Performance Review
- Semi Annual Risk Report

Audit, Compliance and Ethics Committee

- FY 23 Audit Plan
- SAO Plan for ACFR & TRICOT Audits

September 16, 2022

Board

CY 23 Meeting Dates
Election of Vice Chair
Ombuds Report
GRS Evaluation
TEAM Update
Procurement Report
ED Report
Deputy Director Report
Red River Disposition Update
Experience Study

TAB 4



TRS Ombud's Office Quarterly Report

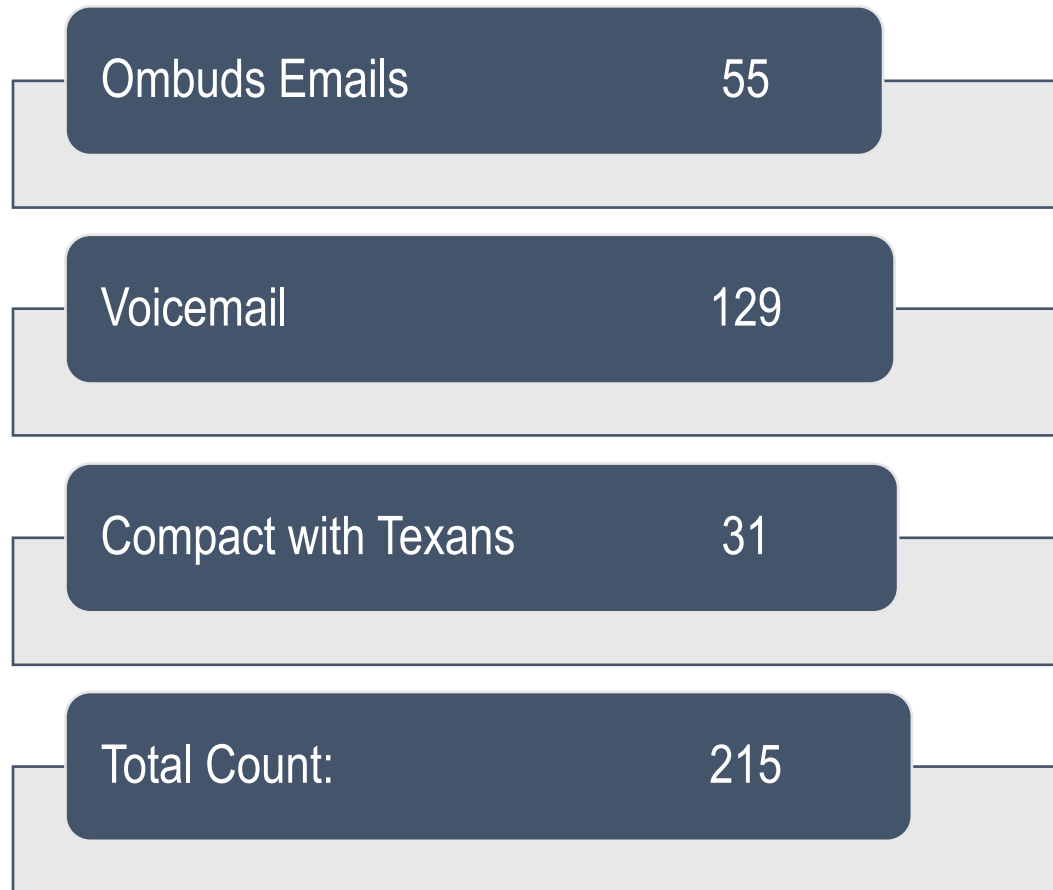


Lori A. LaBrie

April 28, 2022



Q4 2021 Communications



Communications on Large-Scale Agency Issues	
LTF/MFT	1054
Supplemental Payments	11
Other Large-Scale Agency Issues	0
Total Count:	1065

Jan-Feb 2022 Communications

Ombuds Emails

64

Voicemail

16

Compact with Texans

16

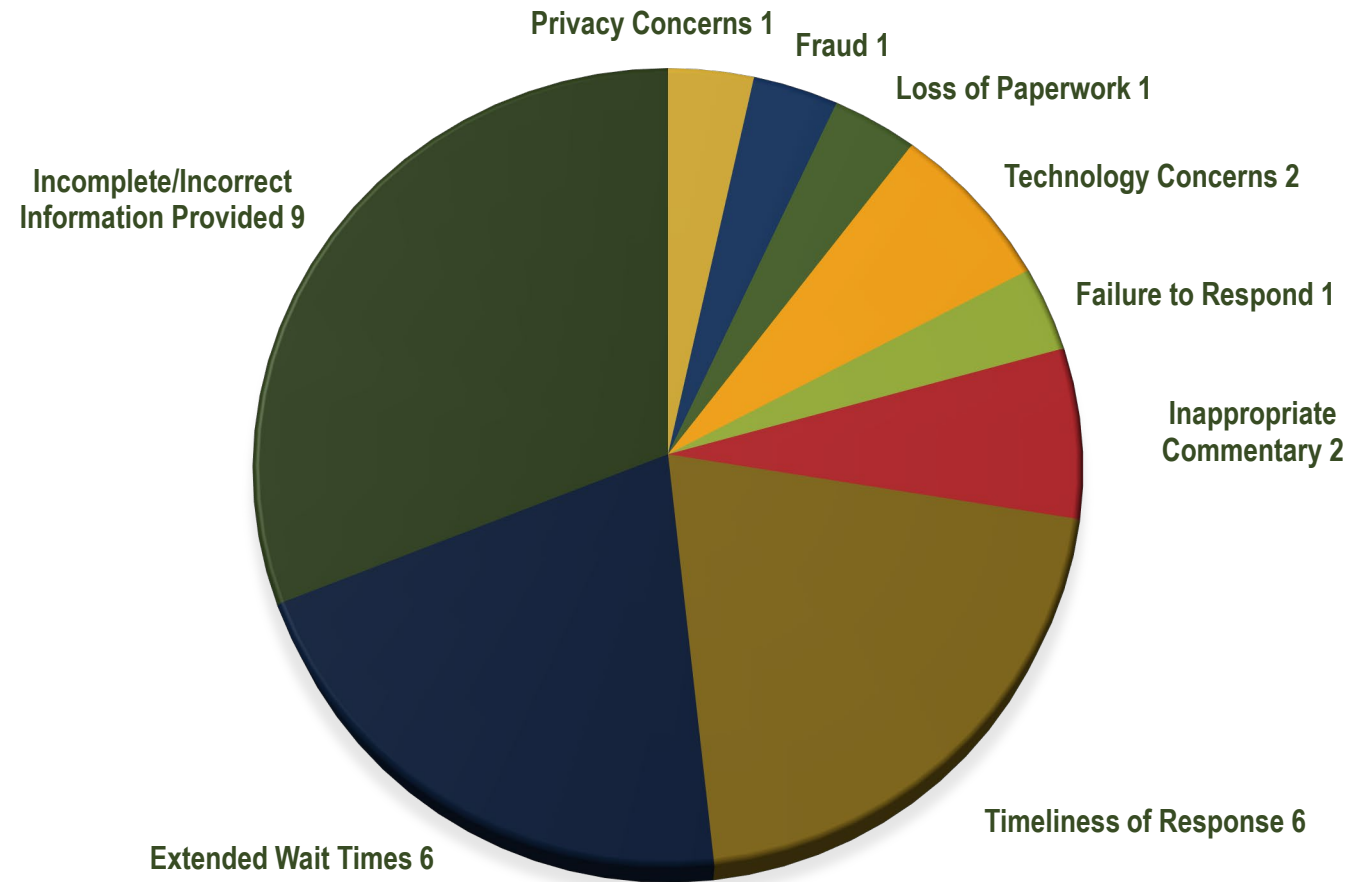
Total Count:

96

Communications on Large-Scale Agency Issues

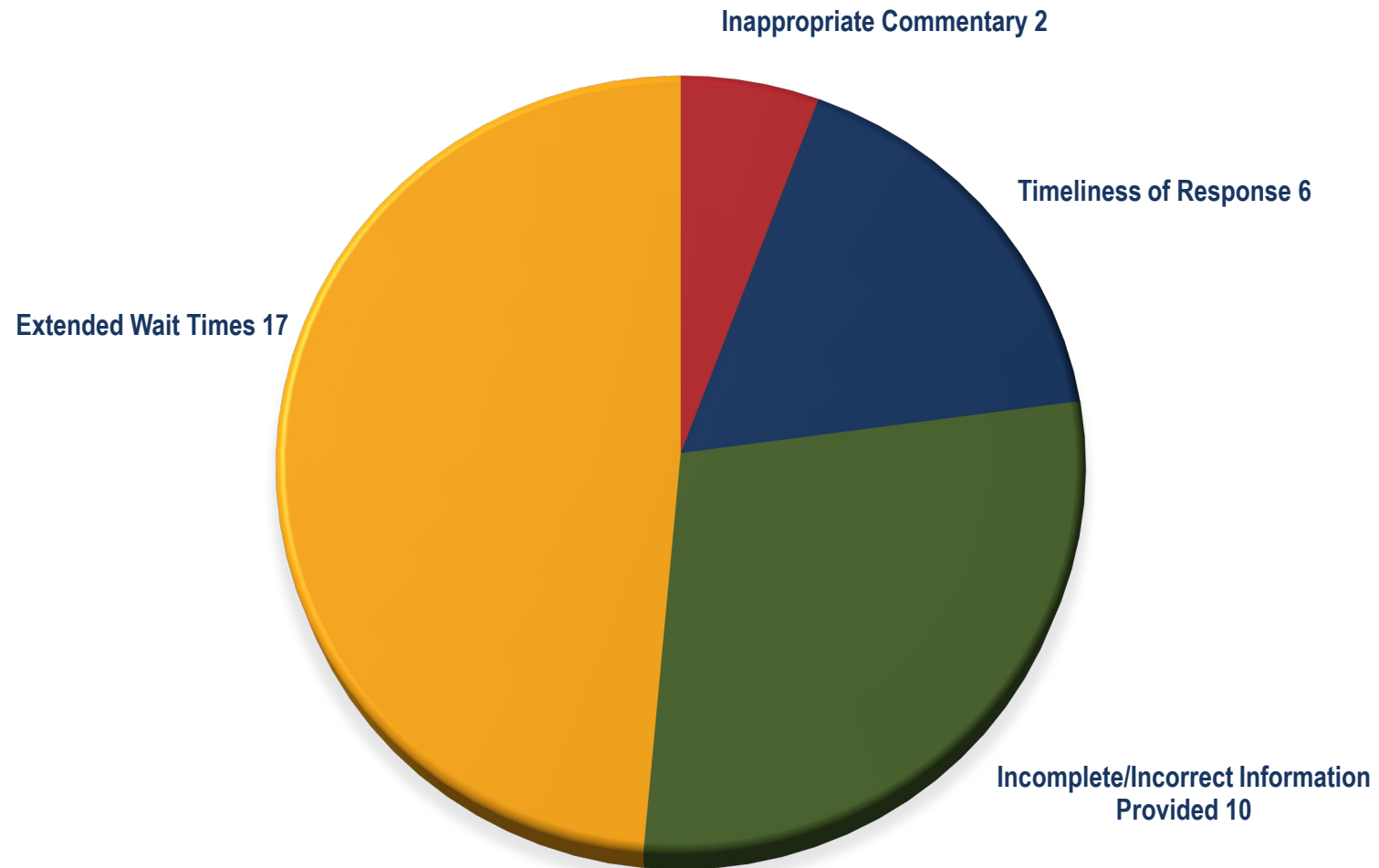
LTF/MFT	2
Supplemental Payments	185
Other Large-Scale Agency Issues	95
<i>Total Count:</i>	282

Quarter 4 2021 Complaints



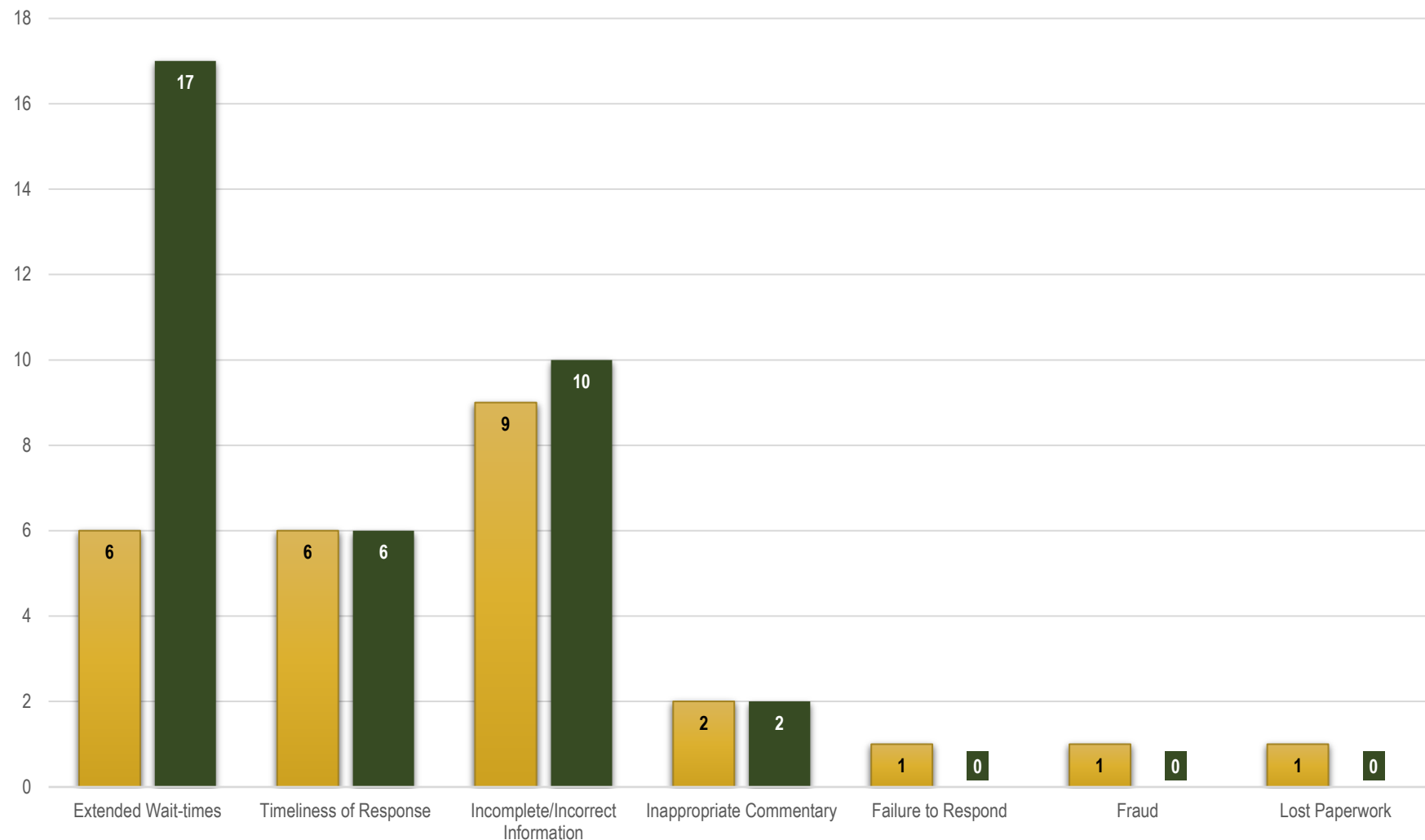
Total Complaints Received-- 29
Outstanding-- 0

Jan-Feb 2022 Complaints



Total Complaints Received– 35
Outstanding-- 0

Complaint Log Comparison for Q4 2021 & Jan-Feb 2022



➤ Q4 2021 - 29 Complaints

➤ Jan-Feb 2022 - 35 Complaints

Claims of:

- Inconsistent information provided by TRS resulting in needless payments of health coverage;
- Waited for over two months for address change request to be met. Also did not receive cost statement for two years;
- Incomplete information in the packet and regarding in-person appointment availability;
- Mishandling of documents resulting in delayed refund;
- Phone wait time;
- Incorrect paperwork sent to member.





Milestones and Next Steps:

- ✓ *The Partial Lump Sum Option Election (form TRS 30P) is done and now available on the website.*
- ✓ *Phase I of the Ombuds Office IT enhancements are underway and slated to be completed between May/June.*
- ✓ *Continue outreach activities of explaining the office services to members, meeting with associations, and fostering collaborative relationships with other service providers in and around TRS.*
- ✓ *Serve the members in ways that are needed and desired, so TRS continues to be a compassionate, caring, respectful community for years to come.*



TAB 5



Business Administration – Procurement and Contracting Report

Martin Cano

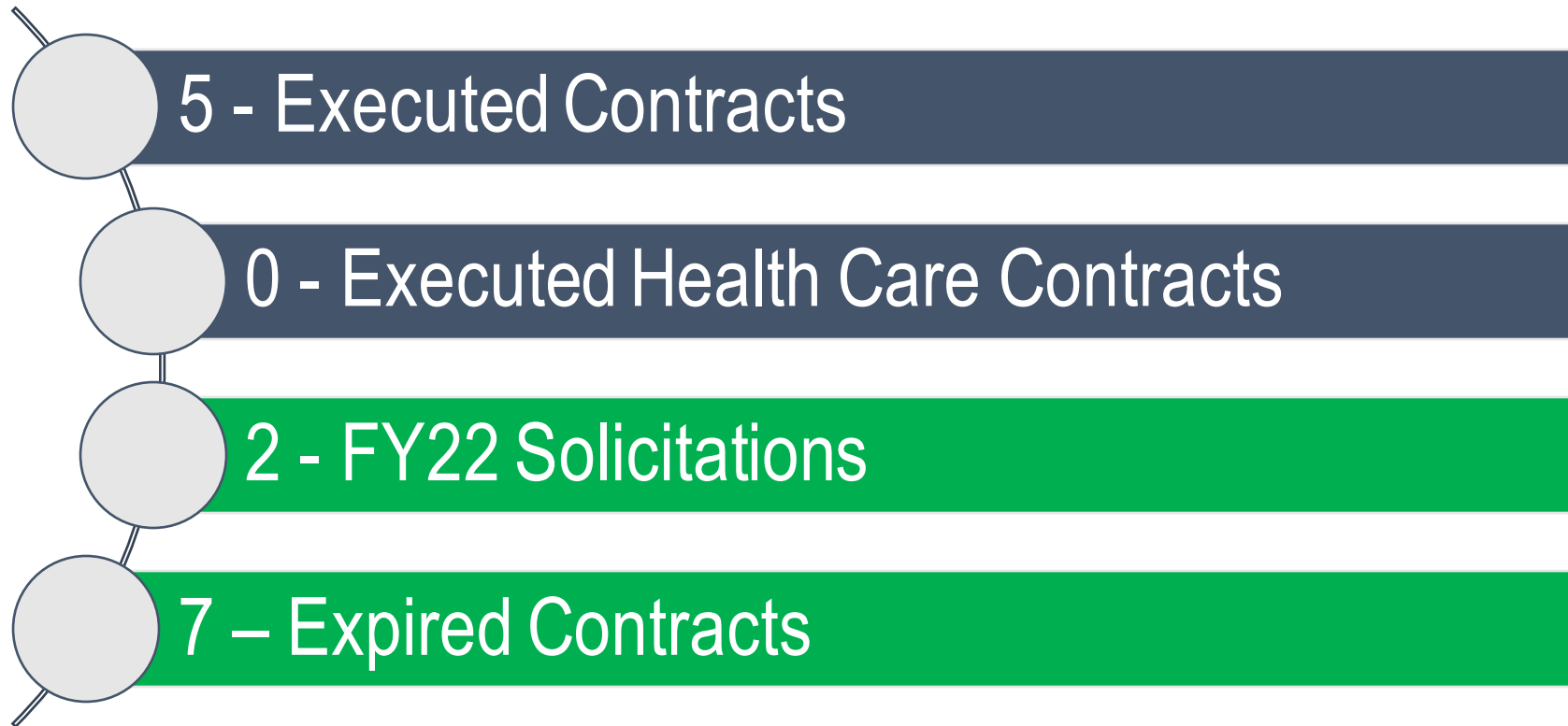
April 28, 2022



Procurement and Contracts Update

- Governor Greg Abbott proclaimed March as Procurement Month. TRS celebrated with games and activities to help educate TRS staff about the procurement process and the associated work performed every day by all those involved at the agency.
- A PAVES procedure manual and a procurement process manual has been released for TRS contract managers.
- Procurements and Contracts and Organizational Excellence are working on developing an online contract management training due to be released by the end of the fiscal year.
- TRS HUB Forum will be in person this year on June 7th.

Review of TRS contracts and solicitations with a value of \$1 million or more a year



TAB 6



Deputy Director Presentation

Andrew Roth

April 28, 2022



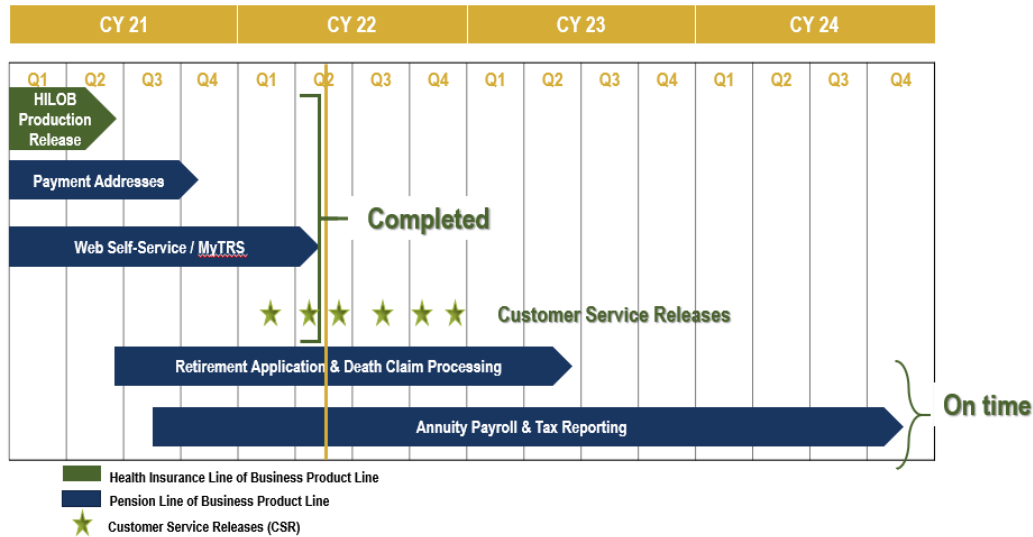
AGENDA

I. TEAM Update

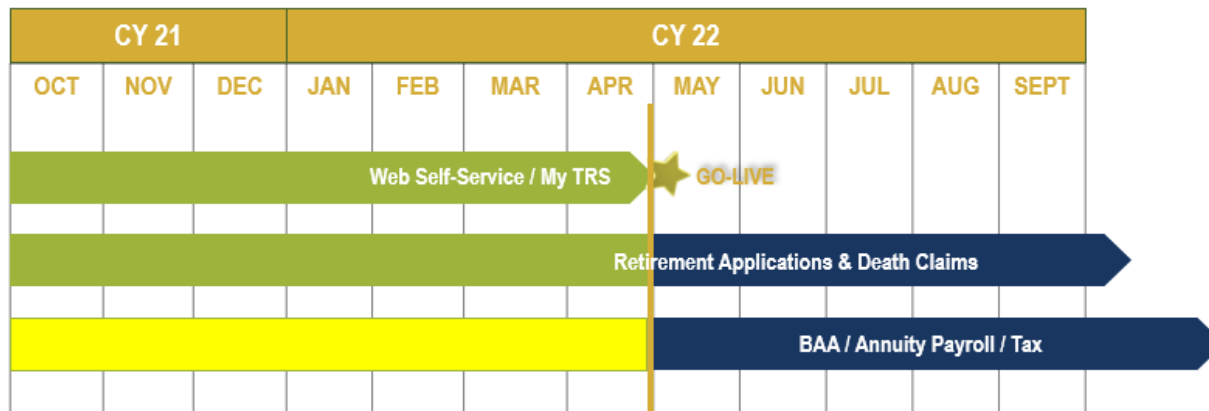
II. DE&I Tool Procurement Update

III. Information Technology Projects and Staffing

TEAM – WHERE WE ARE NOW



INCREMENTAL RELEASE PROGRESS



Current Date

TEAM Budget Update

Amounts in millions



• TEAM actual cost are currently trending under Budget

*Projected TEAM budget remains under targeted spend for duration of the project

KEY STATUS UPDATES

Achievements

- 02/13/2022 – Pension & Health Line of Business Systems Production Release (Customer Service Roadmap Release #1)
- 04/12/2022 - Pension Web Self-Service User Acceptance Testing (END)
- 04/18/2022 – Pension Web Self-Service Quality Gate Exit
- 04/25/2022 – Pension Web Self-Service GO-LIVE
- 04/25/2022 - Pension & Health Line of Business Systems Production Release (Customer Service Roadmap Release #2)

Key Goals Upcoming

- 06/26/2022 - Pension & Health Line of Business Systems Production Release (Customer Service Roadmap Release #3)
- 05/25/2022 - Retirement Application & Death Claims Processing End to End testing by IT Round 2 (START)

SCHEDULE ANALYSIS



- **Retirement Application & Death Claims Processing Release** - ON SCHEDULE (Green) for original Spring 2023 Go-Live date.
- **Payroll/BAA/Tax Release** - Moved to Yellow (Caution) status as analysis and schedule re-baselining efforts continue.

Measurement and Tracking Service — Lenox Park

Service includes the following:

1. A measurement of TRS' diversity, equity and inclusion that includes major and emerging demographic categories, levels within the organization, and asset management considerations
2. A measurement of TRS' diversity impact, as part of a benchmark scoring element, within the asset management industry specifically and overall. Includes real time data updates, visualization and insights.
3. Cross organizational networking as a Lenox Park customer

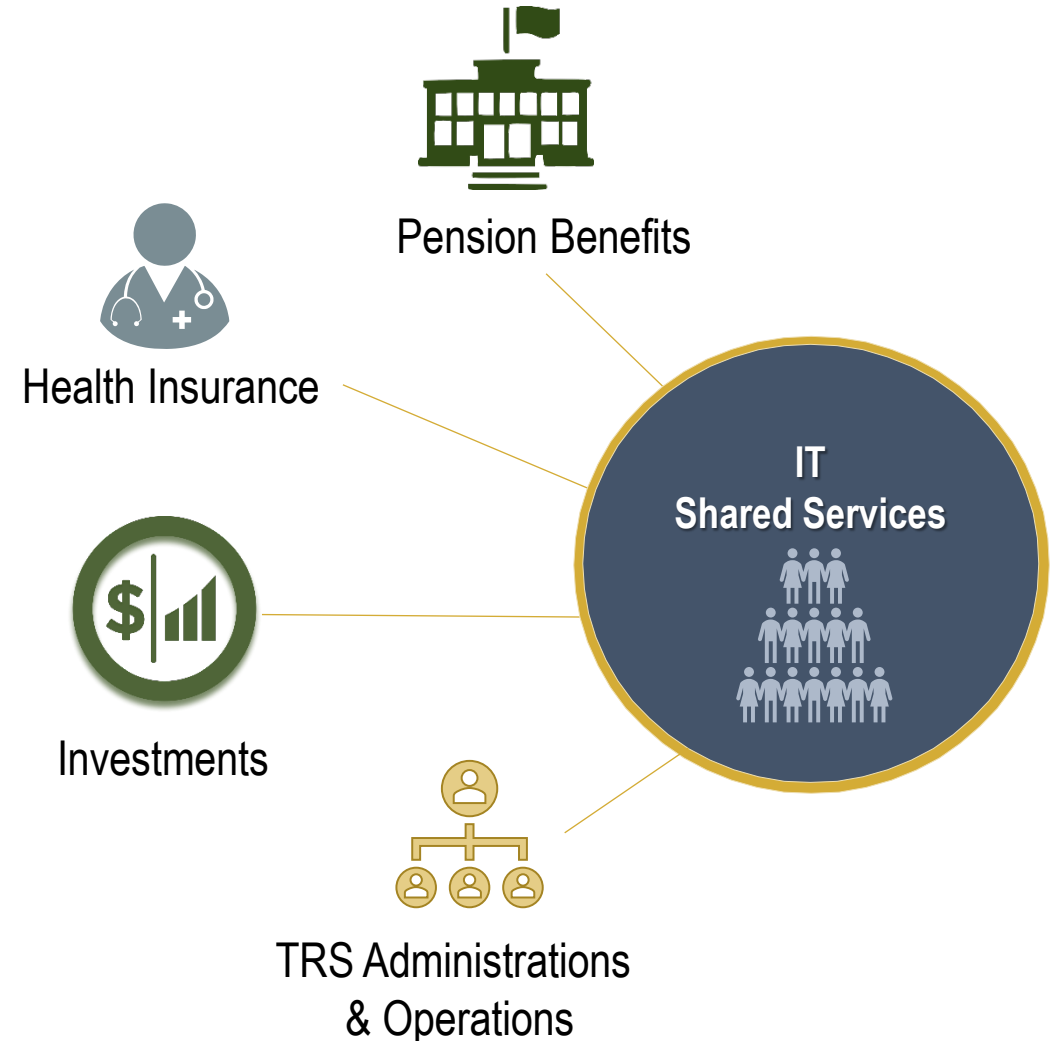
IT Growth at TRS

- Information Technology (IT) provides the foundation for business success
- Technology, data and automation are critical for TRS to meet key business objectives
- The growth of projects that involve IT components continues to increase exponentially
- Professionally managed projects enjoy an improved success rate



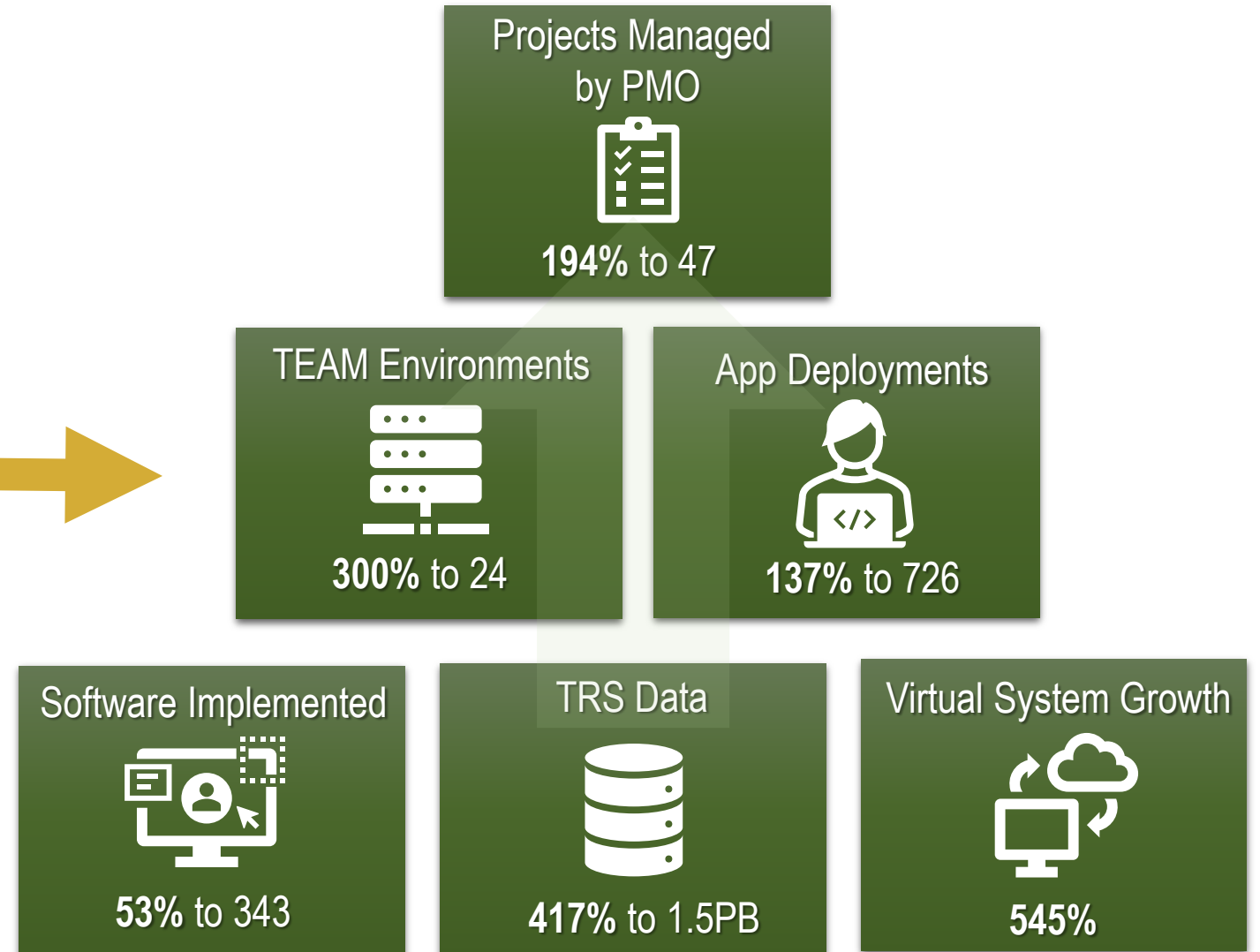
IT Growth at TRS

- Many organizations dedicate specialized IT teams aligned to lines of business
- At TRS, that includes Pension, Health, and Investments
- As a \$200 billion financial institution, the ability to handle multiple major projects is critical to business success
- Lack of adequate staff results in:
 - Leveraging vendors to bring in contractors
 - More expensive solutions with greater third-party risk
 - Issues with business continuity due to reliance on “superheroes”



IT Growth at TRS

**Examples of IT growth
over the last 5-7 years**



IT Growth at TRS

Key Business Priorities

TEAM Program

- TEAM Roadmap
- TEAM-related Customer Service Improvement Initiatives
- Ongoing TEAM Maintenance & Enhancements (M&E)

IMD Modernization

- Investment Book of Record
- Parallel Accounting System
- Intelligent Document Management
- Data Hub & Master Data Management

Operational Requirements

- TRS growth and increased technical complexity across all Divisions
- Service Now – ITSM, ITBM
- IT Technology Speed of Change across all platforms
- Managing the business side of IT
(*Budget, Contracts, Staffing, Purchasing, Risk, Audits, etc...*)

Enterprise Projects (Examples)

- OneTRS- New HQ
- Regional Service Center
- Health & Financial Data Warehouse/Hubs
- Fraud Prevention Tool

Job Roles Needed

TEAM Program

- Application Developers
- Project Manager
- Business Analysts
- Infrastructure & Operational Specialist

IMD Modernization

- Data Architects & Engineers
- Project Manager
- Business & Data Analysts
- Infrastructure & Operational Specialist

Operational Requirements

- Enterprise Architect
- Client & Desktop Specialist
- Application Developers
- Infrastructure & Operational Engineers
- Project Managers and Business Analysts

Projects – Other

- Application Developers
- Project Managers and Business Analysts



Questions?

TAB 7



Master Custodian and Securities Lending Services Request for Proposal

LaTresa Stroud, Director of Procurement and Contracts
Aundre Petty, Contract Specialist
Kendall Courtney, Director of Investment Operations

April 29, 2022



Master Custodian and Securities Lending Services

TRS is seeking to support its investment operations with a contracting partner who can provide custodian and security lending services to successfully execute all transactions from investment decision to book of record.

Custodian Services range from custody (trade operations, account management) to accounting (investment accounting) to compliance (investment compliance) to performance and everything in between (data, systems, securities lending, risk management, partnership), the custodian supports TRS through all stages of the investment life cycle for all investments (pre-trade, trade, post-trade).



The Solicitation Process

On September 13, 2021, TRS issued a Request for Proposal to solicit a qualified Master Custodian and Securities Lending contractor.

Request for Proposal - Schedule of Events	
September 13, 2021	Issuance of RFP
September 23, 2021	Non-mandatory pre-proposal Conference. Pre-proposal conference will be held by Microsoft Teams Meeting.
September 30, 2021	Deadline for submission of questions
November 2, 2021	Proposals were received by TRS
November 30, 2021, presentations and interviews began	Presentations or Interviews by top-ranked Respondents that score within the competitive range, if requested. TRS may elect to conduct presentations or interviews as part of the evaluation process.

The Evaluation Process

11 Subject matter experts (SMEs) evaluated the proposals from these key areas:

Risk Management	Trade Settlement	Cash & Collateral Management	Limited Partner Services	Account Management	Securities Lending	Performance & Analytics	Investment Data & Systems	Investment Accounting	Investment Compliance
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Pass/Fail	Minimum Qualifications
15 Points	Custody Bank Qualifications and References
35 Points	Governance Model, Key Personnel & Experience
35 Points	Service Delivery
15 Points	Cost
20 Points	Presentations or Interviews
120 Points	Total Points

The Finalists

The top two respondents will be presenting to the board in alphabetical order:

- **BNY Mellon**



- **State Street**



Master Custodian and Securities Lending Services Staff Recommendation

Jase Auby, Chief Investment Officer
Kendall Courtney, Head of Investment Operations

April 2022



Agenda

- Executive Summary
- TRS Custody Services
- TRS Securities Lending Services
- Current Market Landscape for Service Providers
- The Two Respondents
- Evaluation Committee Results
- Transition Costs
- Recommendation

Executive Summary

- As stated in the Bylaws of the Board of Trustees of the Teacher Retirement System of Texas, Article 1.7, members of the Board are TRS fiduciaries and are responsible for the selection of one or more **custodian banks** to provide custodial services for TRS assets
 - The Board will select the vendor that, in the Board's judgment, represents the best overall value for TRS based on the candidates' qualifications, experience, proposed contract terms and conditions, proposed fees, and other relevant factors. **"Best overall value"** means a combination of factors that, in the judgment of the Board, are most consistent with the best interests of TRS.
- In addition, under the Securities Lending Policy, the Board will select the **lending agent(s)** that will perform the securities-lending function.
 - The selection will be made in accordance with applicable statutory requirements and any other factors deemed appropriate pursuant to a competitive evaluation process and due diligence by the staff.
- **Two vendors responded** to the TRS solicitation process
 - Bank of New York Mellon (BNY)
 - State Street Bank (SSB)

TRS Custody Services

Description of services provided

Trade automation

56 markets

Portfolio risk system

56,000 positions

Comprehensive governance model

17 governance forums

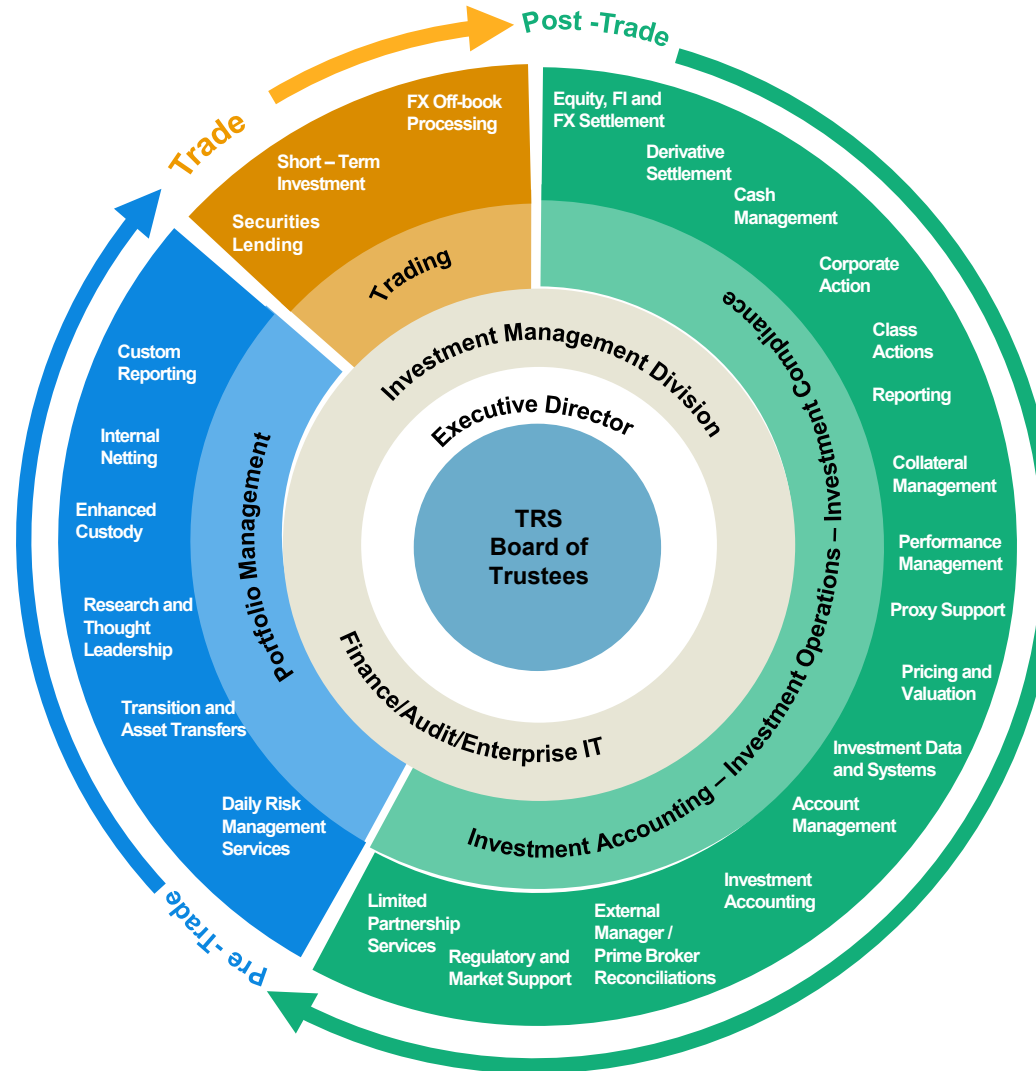
Self-borrow ability

Margining system

including uncleared margin rules compliance

Performance measurement

185 daily benchmarks, 988 composites



Internal netting

Derivatives processing and collateral management

Investment compliance

rules and reporting
852 rules tested daily

Limited partner reporting and data management services (private markets, hedge funds)

725 external managers

Data Management and

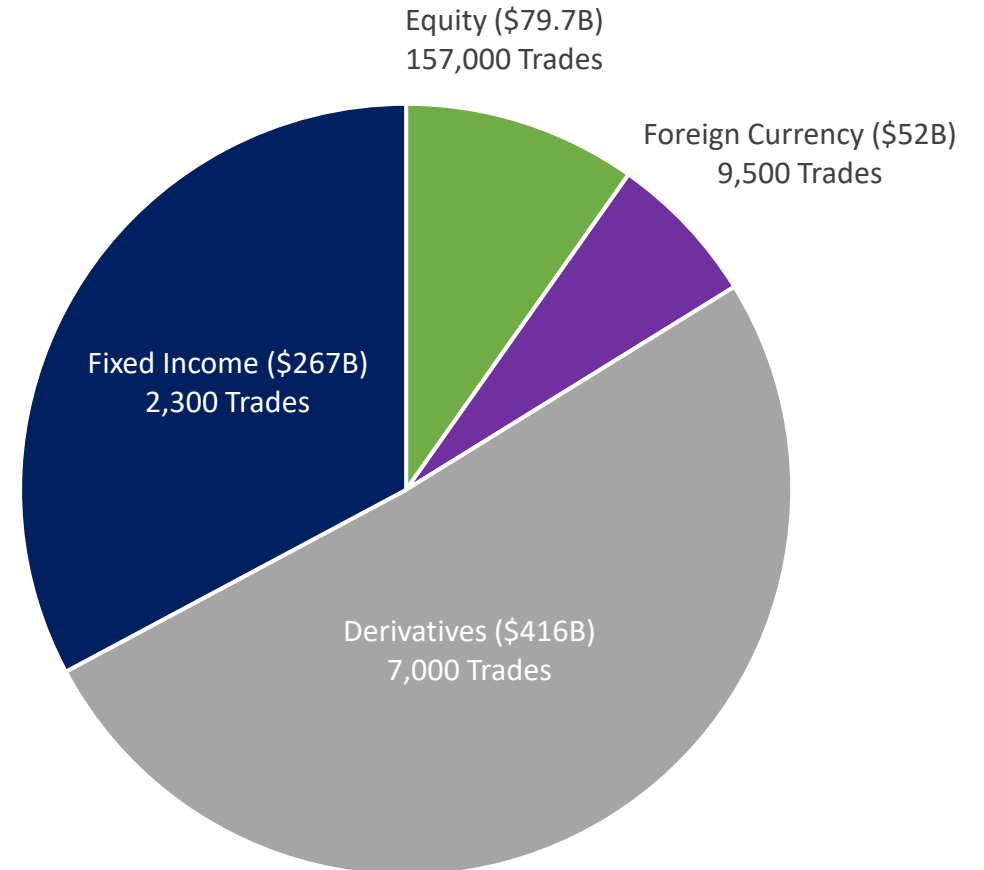
information delivery
113 data feeds and interfaces

TRS Custody Services

Scope of investment program

- **Trading Volume**
 - 56 markets
 - 22,000 positions
 - 175,000 trades of \$815.1 billion
 - 7,000 cash and collateral moves of \$70.5 billion
- **Account Structure**
 - 46 asset classes managed across 16 IMD groups
 - 560 accounts
 - 128 investment software applications
- **External Managers**
 - 690 private markets limited partnerships (LPs) and principal investments
 - 55 public LPs and 15 investment management agreements
 - 64 hedge funds
- **External Service Providers**
 - 64 brokers, 7 bilateral repo counterparties, 2 cleared Repo
 - 15 bilateral derivative agreements
 - 3 futures commission merchants
 - 1 prime broker
 - Global Tax Consultant

Notional Trade Volume (2021)



TRS Securities Lending Services

- As of December 31, 2021, TRS had \$8.2 billion of assets on loan to market participants via our agent lending program
 - In exchange, the market participants give TRS cash which is invested to achieve an enhanced return
- The Securities Lending Policy describes the goals of the securities lending program
 - Earn a competitive market return on securities lending through conservative securities lending practices, consistently with the preservation of capital
 - Manage risk to a reasonable and acceptable level with respect to both the broker and borrower and the collateral
 - Operate the securities lending program so that it will not interfere with the management of the TRS portfolios
 - Participate in an enhanced custody program that facilitates both TRS borrowing of securities and lending of securities to the lending agent as a principal

Executive Session Slides

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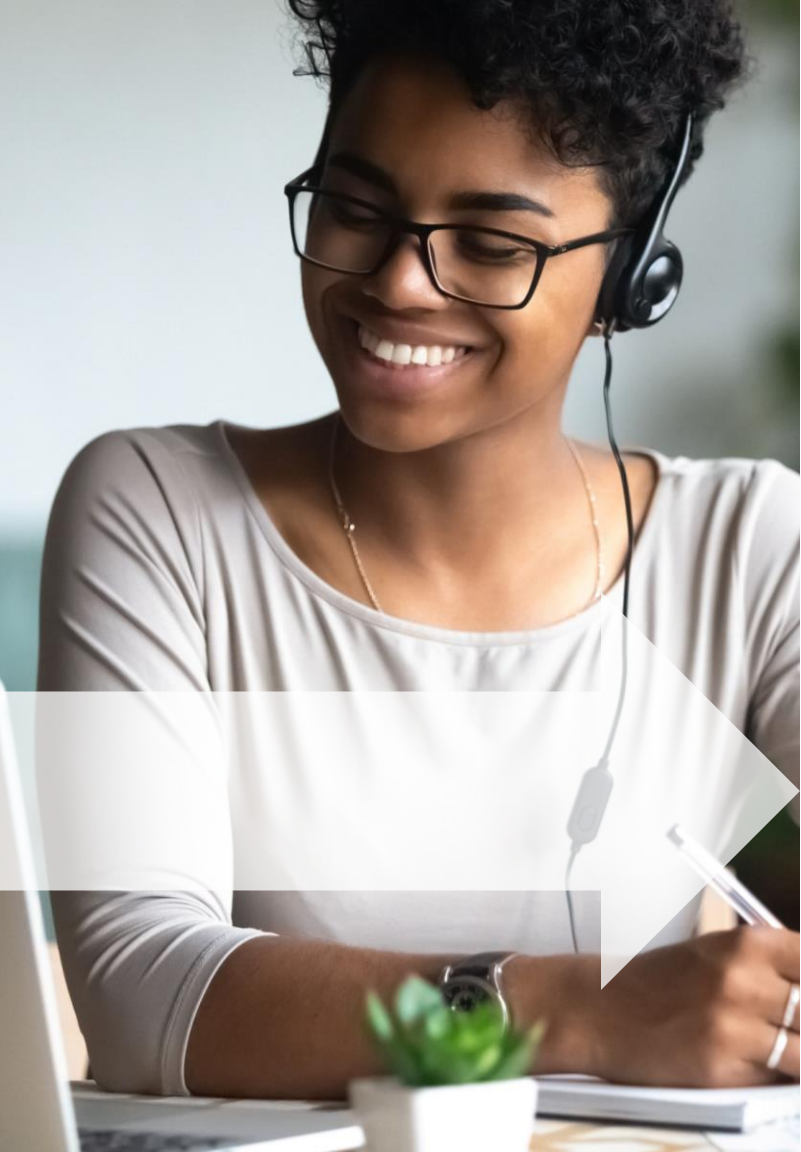
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APPENDIX

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TAB 9



TRS Data Protection & Security

Andrew Roth
Heather Traeger
Frank Williams
Kristi Glasgall



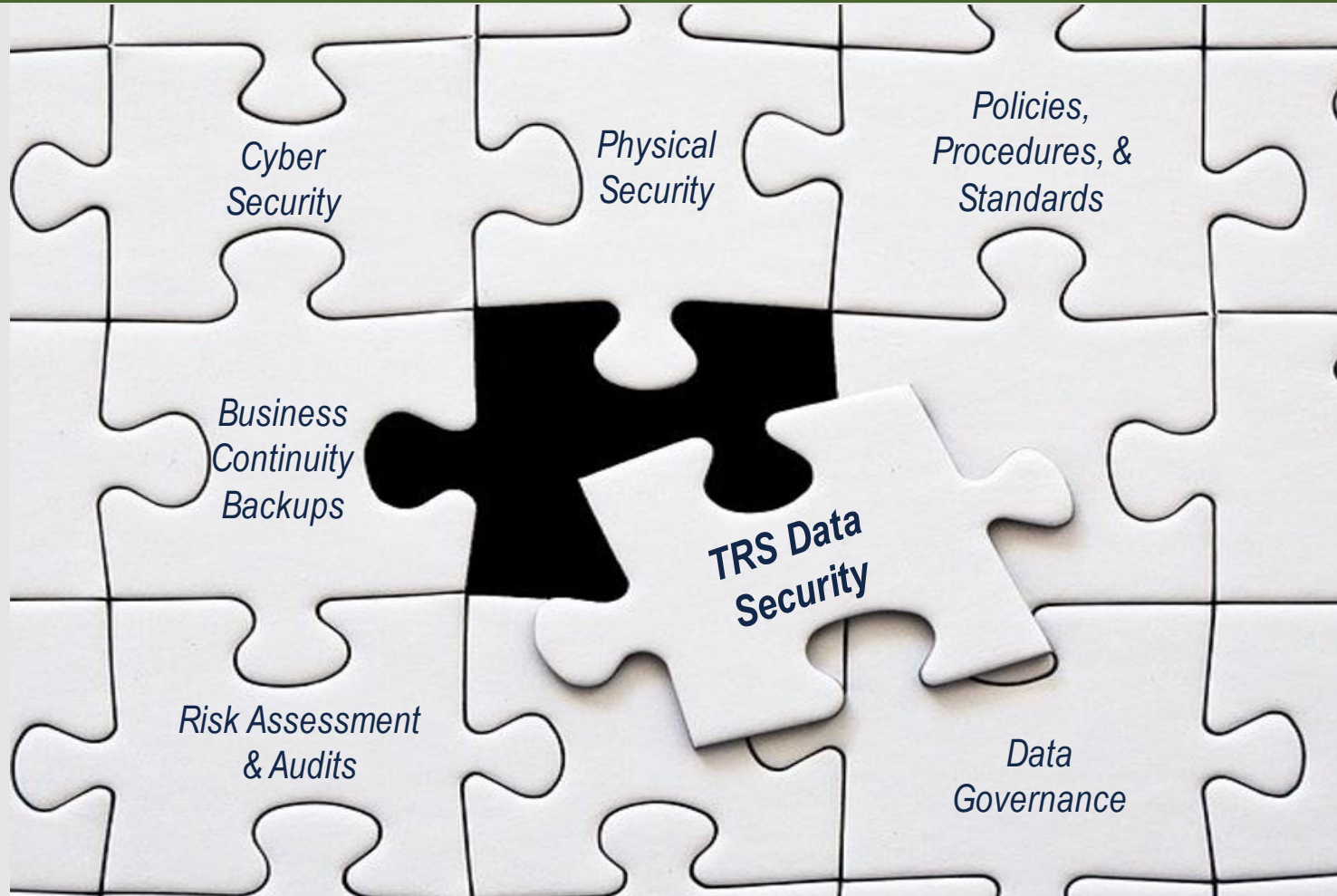


TRS Data Protection & Security

Andrew Roth – Deputy Director

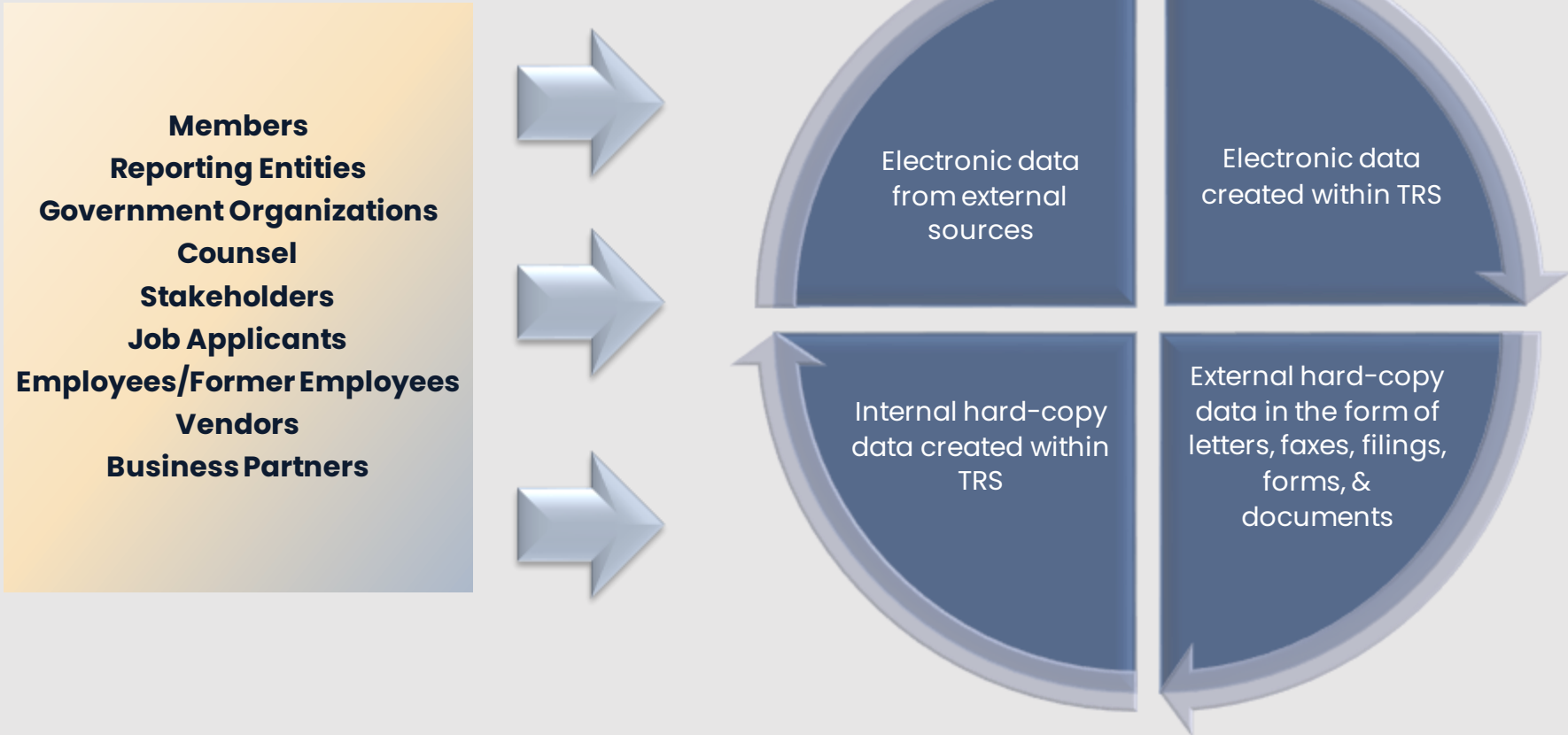


Protecting TRS Data





Sources of TRS Data





Protecting TRS Data in All Its Forms



Physical & Facilities Protection:

Locked Buildings

Employee-Issued Photo ID Cards

Locked Offices

Locked Cabinets & Desks

Secure Shredding

Document Retention Requirements

Policies, Procedures, Monitoring, & Training



Electronic Data Safeguards:

Risk Management Program

Information Security Standards

System Monitoring/Testing

Passwords

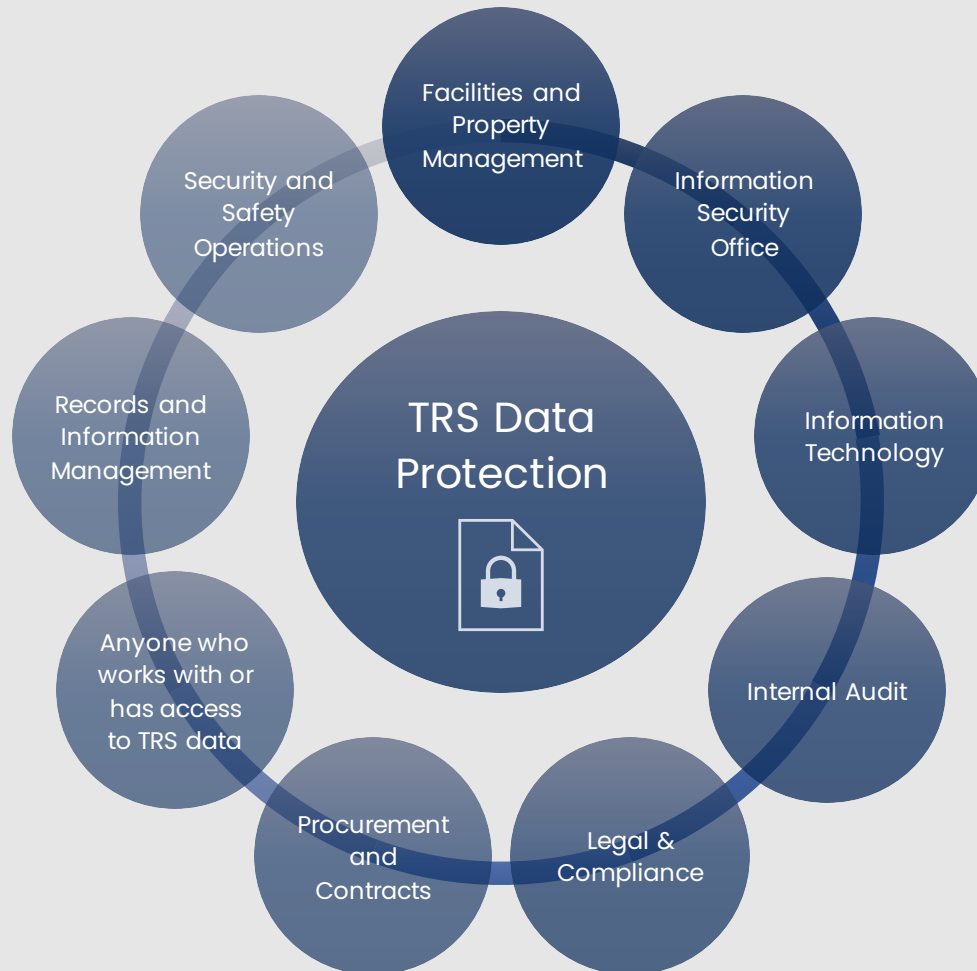
Assigned System Access

Data Encryption

Policies, Procedures, Monitoring, & Training



TRS Data Protection Roles



Protecting TRS data
is everyone's
responsibility!



Enterprise Data Governance Council



To provide direction and an agency-wide framework, TRS has created an Enterprise Data Governance Council (EDGC).

The EDGC will:

- Provide leadership, strategic direction and oversight of TRS data governance, ensuring effective management of all data assets including its authenticity, reliability, accuracy, accessibility and security.
- Review, assess, and authorize advancement of proposed projects in compliance with TRS data governance framework and alignment with agencies strategic priorities.





Cyber Insurance

Heather Traeger – General Counsel



Constant & Increasing Risk

Continuous & Increasingly
Sophisticated Cyberattacks



Attacks That Lead to Data Breaches

- Malware
(including Ransomware)
- Phishing
- Denial of Service



TRS-Specific Exposure Factors

- Business Interruption
- Third-Party Liability
- Regulatory Liability
- Reputational Risk
- Financial Risk
- Data Loss



Peer Surveys: Cyber Insurance

National Association of State Retirement Administrators (NASRA)

National Association of Public Pension Attorneys (NAPPA)

17 responses:

- 13 have some form of cyber insurance (2 have filed claims);
- 1 had cyber insurance but didn't renew;
- 1 has been trying to acquire cyber insurance for a year but premiums "have skyrocketed" due to the rise in cybercrime since the pandemic started.

Reasons identified for obtaining cyber insurance: (responders could choose multiple reasons)

- Post-breach resources: 10
- Risk-mitigation assistance: 8
- Risk transfer: 7
- Contract compliance: 1



Cyber Insurance



PROS

- Crisis Management
- People Experienced With Breaches
- Reputational Risk Assistance
- Shifts Certain Responsibilities to Insurer



CONS

- Limited Coverage
- Increasing Policy Costs
- Restrict Ability for Agency to Respond
- Illegal to Pay Certain Bad Actors
- Add'l Obligations as Part of Coverage
- False Sense of Security
- May Attract Criminal Element

Other Measures (Mosaic)



OPTIONS

- Optimize Incident Response Process
- Obtain SME Staff and Specialized Tools
- Employ Continuous Monitoring
- Employ Testing and Training
- Follow Data Protection Best Practices
- Retain Cyber Incident Vendor
- Retain Specialized Outside Counsel
- Retain Marketing Firm

TRS Model:

**Enrich the Mosaic of Other Measures with Limited/Measured Insurance
(to the Extent Available and When Valuable)**

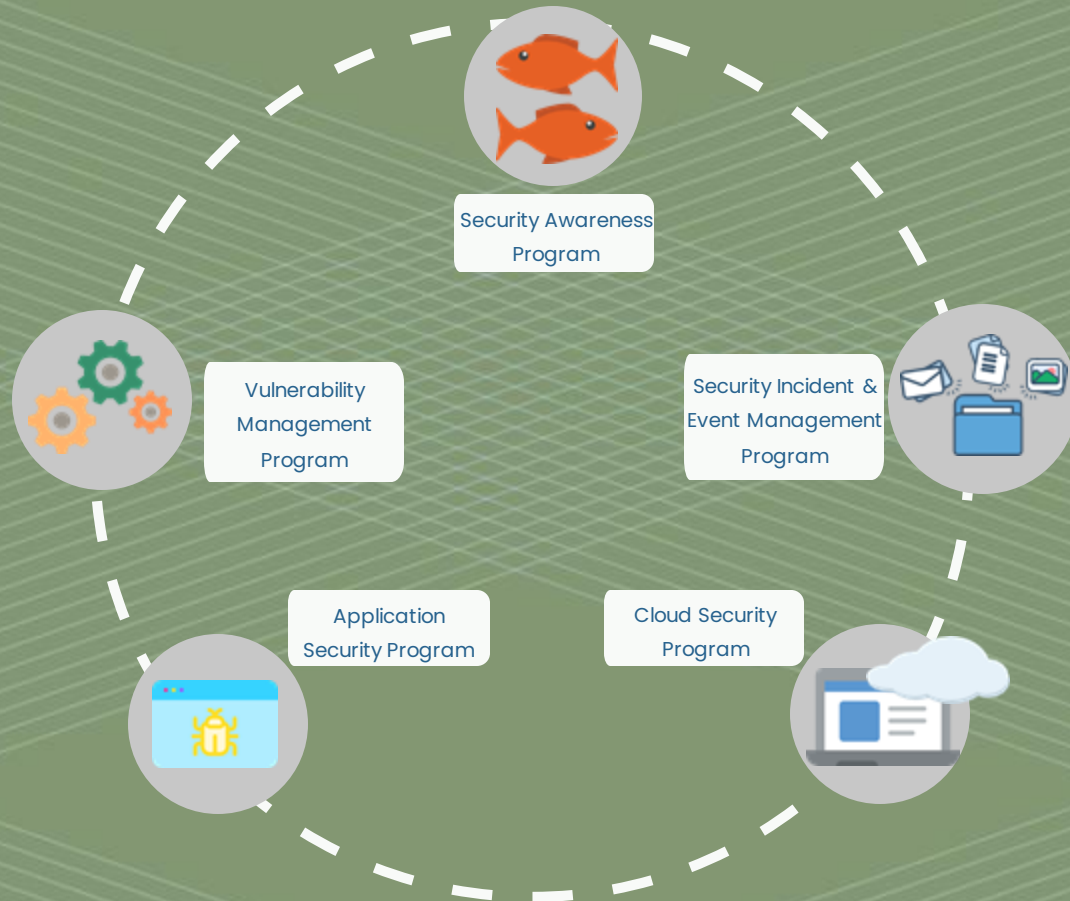


Cybersecurity Department

Frank Williams – Chief Information Security Officer



Cybersecurity Operations



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Information Security Department

Kristi Glasgall – Information Security Officer



Cybersecurity vs Information Security

Cybersecurity

Ensures TRS Digital Data is Defended
From Unauthorized Digital Attacks, Access, & Damage

Oversee the Prevention of Data Breaches

Monitor & Respond to Cyber-Related Attacks

Direct the Analysis & Assessment of
Infrastructure & Application Vulnerabilities

Recommend Solutions & Best Practices

< VS >

Information Security

Ensures TRS Digital & Physical Data Is Safeguarded
From Unauthorized Use, Disruption, & Modification

Develop & Implement Strategies, Policies, & Solutions

Develop & Administer Risk Management Program

Direct & Determine Enterprise-Wide
Information Security Standards

Ensure That All Information Systems Are
Functional & Secure



Governance



Statutory/Regulatory



Standards



Controls

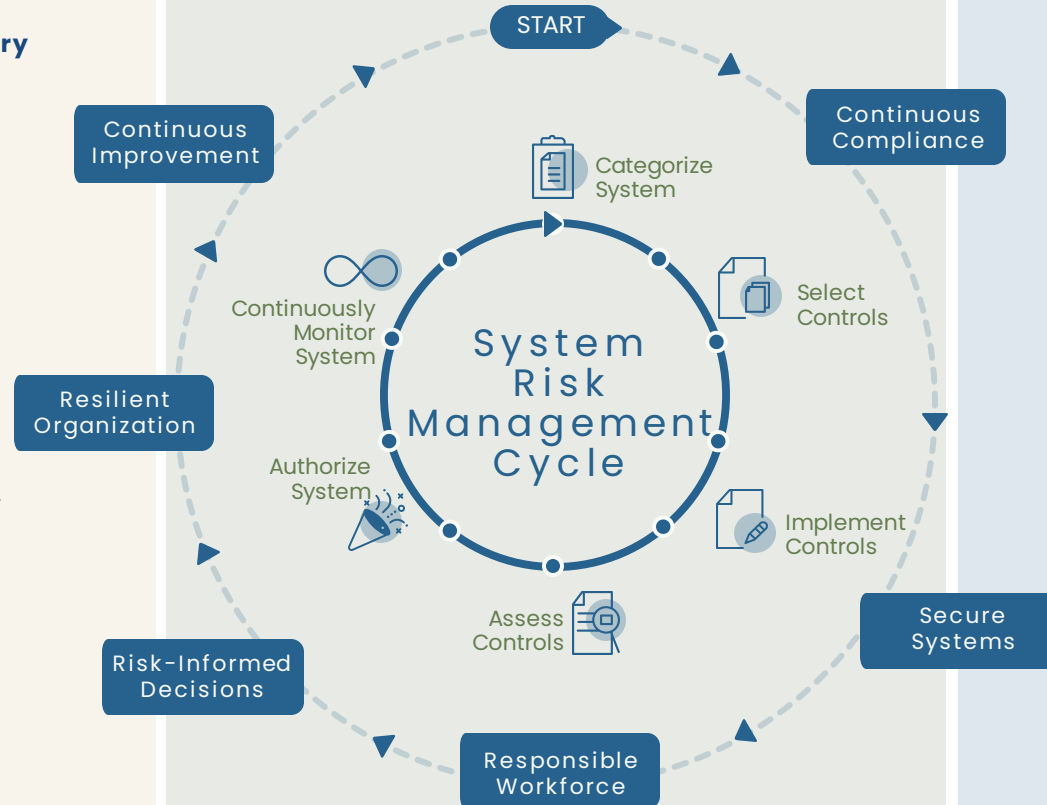


**Policies, Processes,
& Procedures**



**Contracts &
Commitments**

Risk



Compliance



Monitor



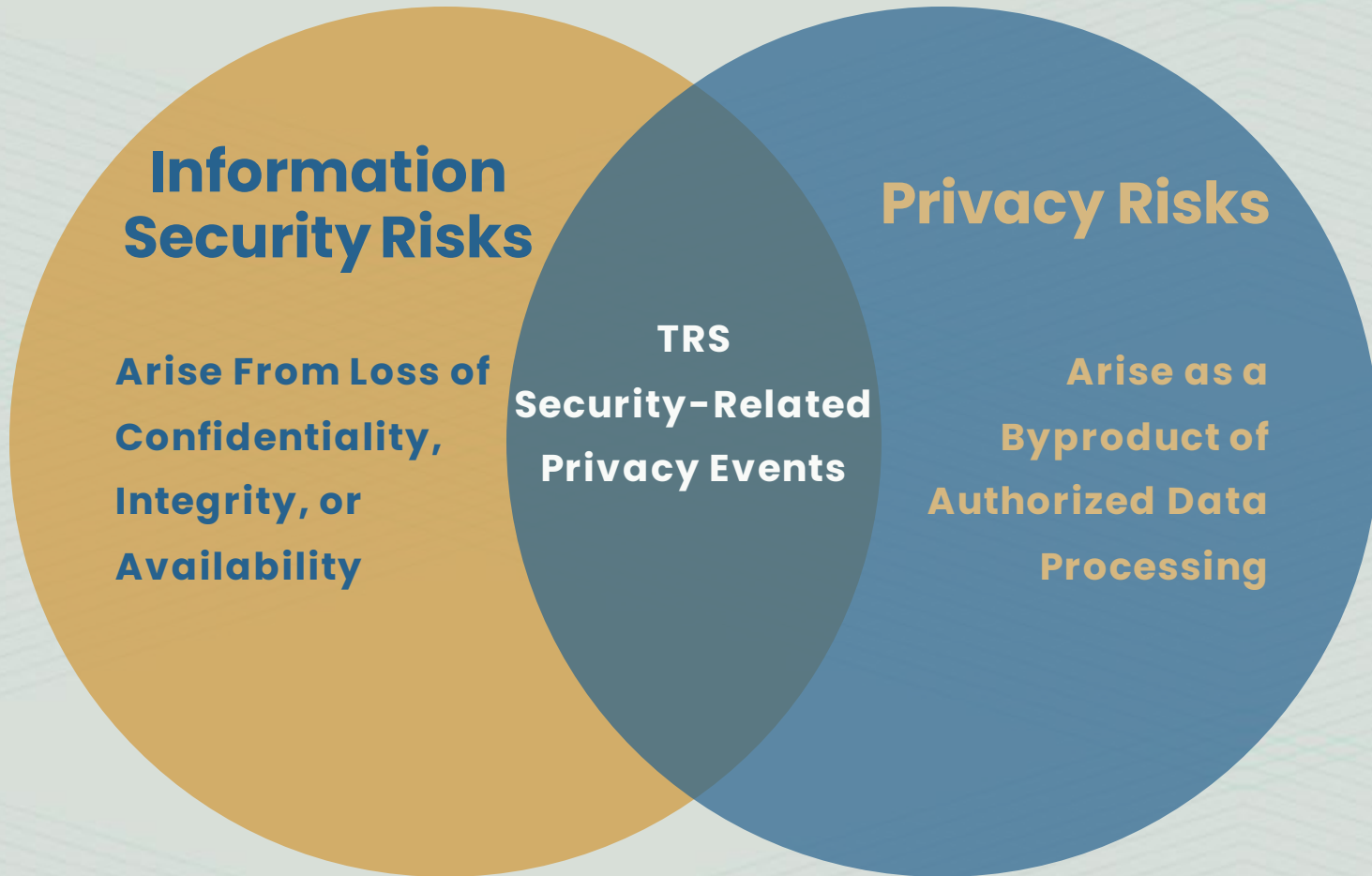
Self-Assessment



Audits



Reporting



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Security & Privacy Awareness Training



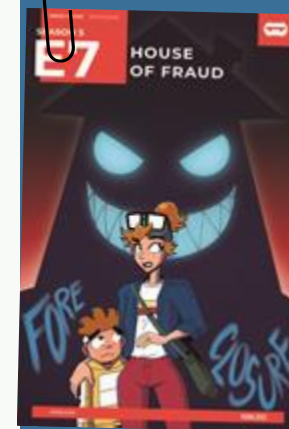
**Quarterly
Lunch & Learns**



**Microlearning &
Gamification**



**Cybersecurity
Awareness Month**



**HB 3834
Training**



Fraud Risk Management Program



LET'S TALK ABOUT

FRAUD



Wrongful or Criminal
Deception Intended
to Result in Financial
or Personal Gain



Examples of Fraud That May Occur at TRS

INTERNAL FRAUD

When an Employee Commits Fraud
Against His or Her Employer

EXTERNAL FRAUD

FIRST-PARTY FRAUD

Deceit With the Intention to
Illegally or Unethically Gain Something
at the Expense of an Organization

EXTERNAL FRAUD

VICTIM FRAUD

The Use of a Stolen Identity to Obtain
Goods or Services by Deception

FAMILIAR FRAUD

Specific Type of Victim Fraud –
Family/Friend/Caregiver Has Access to
a Victim's Information



Current Progress



Working Collaboratively with:



Benefits



Health & Insurance Benefits (HIB)



Information Technology (IT)



Legal & Compliance



Organizational Excellence (OE)



Fraud Enhancements



Fraud Solution



Fraud Detection: Establishing Fraud Risk Management Program

Fraud Risk Governance/Control Environment

Establish and communicate a Fraud Risk Management Program that demonstrates the expectations of the board and senior management and their commitment to high integrity and ethical values regarding managing fraud risk

Fraud Risk Assessment

Perform comprehensive fraud risk assessments to identify specific fraud schemes and risks, assess their likelihood and significance, evaluate existing fraud control activities, and implement actions to mitigate residual fraud risks

Fraud Control Activity

Select, develop, and deploy preventive and detective fraud control activities to mitigate the risk of fraud events occurring or not being detected in a timely manner

Fraud Investigation and Corrective Action

Establish a communication process to obtain information about potential fraud and deploys a coordinated approach to investigation and corrective action to address fraud appropriately consistent with TRS policies and procedures and in a timely manner.

Fraud Risk Management Monitoring Activities

Select, develop, and perform ongoing evaluations to ascertain whether each of the five principles of fraud risk management is present and functioning and communicates Fraud Risk Management Program deficiencies in a timely manner to parties responsible for taking corrective action, including senior management and the board of trustees.



Thank you!

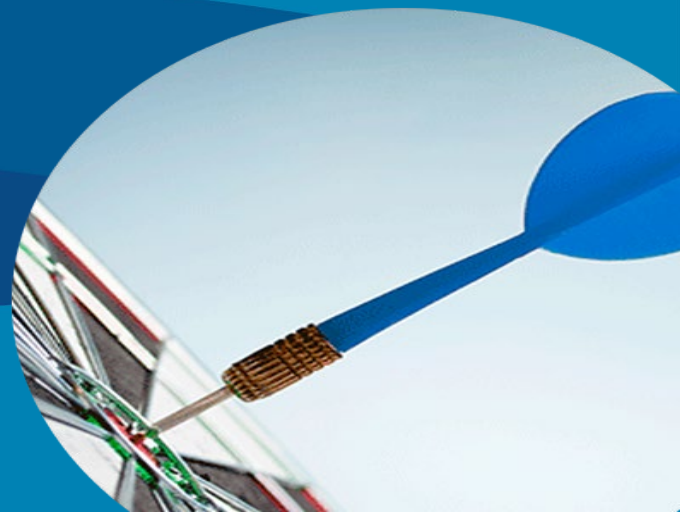
Questions?

TAB 19



TRS of Texas Experience Study Findings and Recommendations

April 29, 2022



Purpose of the Experience Study Starts With the Purpose of the Valuation

- The **primary** purpose of the annual actuarial valuation is to assess the adequacy of the contribution policy
 - For TRS, the funding policy is a fixed contribution rate from members, employers, and the State set in Statute
 - The valuation does not directly impact the actual amount of contributions or benefits paid from the trust
 - The valuation communicates to stakeholders the health of TRS and sets the baseline information for legislative decisions to be based upon

Purpose of Experience Study

- The calculations inside the valuation process are based on a series of assumptions about future membership behavior and economic realities
- Those assumptions should occasionally change to reflect
 - New information and changing knowledge
 - Changing patterns of retirements, terminations, mortality, etc.
- Experience study is a regularly scheduled review of those assumptions and methods
 - TRS' Funding Policy places these every four years, with 2022 being the normal schedule
- General process for setting assumptions and methods
 - Actuary gathers data and performs the analysis
 - Actuary makes recommendations
 - Board considers actuary's recommendation and makes the final decision for the TRS valuations

General Findings

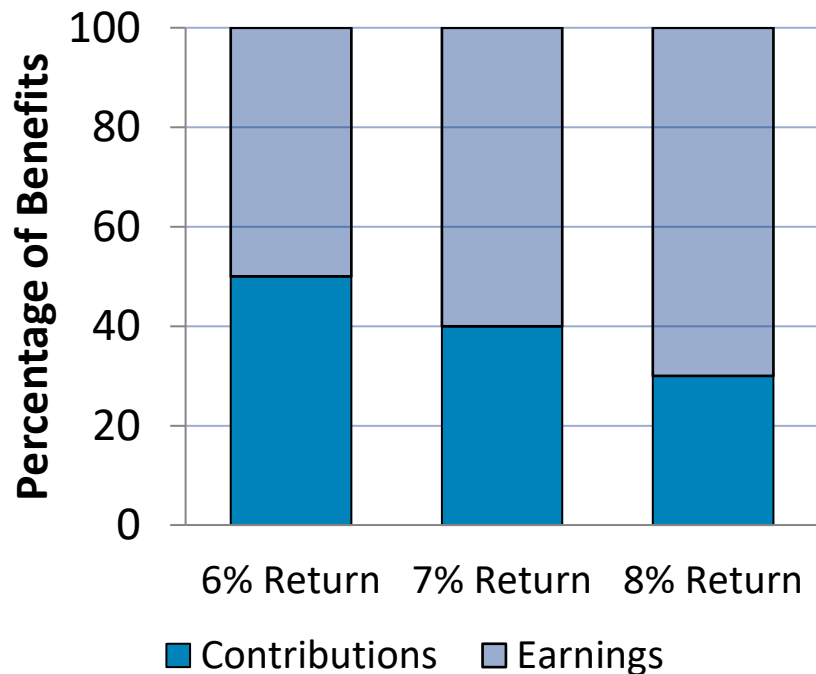
- The current assumption set was found to generally be appropriate, but the current investment return and general wage inflation assumptions are at the upper end of their respective ranges
 - We are recommending lowering both closer to the middle of their respective ranges
 - Lower the investment return assumption from 7.25% to 7.00%
 - Lower the general wage assumption from 3.00% to 2.90%
 - We are also providing a mechanism to balance the impact from any possible changes
 - Most other recommended changes to the assumption set are simplifications or updating dates, and have no meaningful impact
 - Full list of recommendations is in the Appendix and the full report, summarized in the Executive Summary

Investment Return Assumption

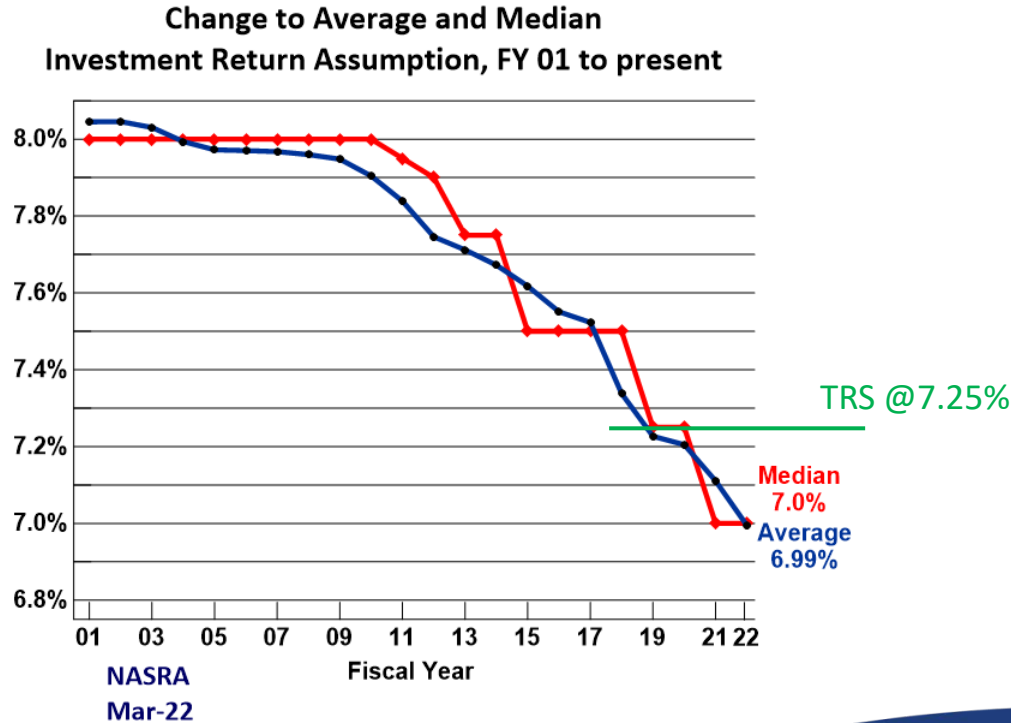
- It is the most meaningful assumption in the process
 - Changes the current results the most when changed
 - Impacts future results the most if experience deviates from the assumption
- Unfortunately, it is also the most subjective of the assumptions

Why Is the Return Assumption So Important?

- This assumption is used to predict what percentage of future benefit payments will be covered by investment return and what percentage by contributions.
- Lower Returns/Higher Contributions

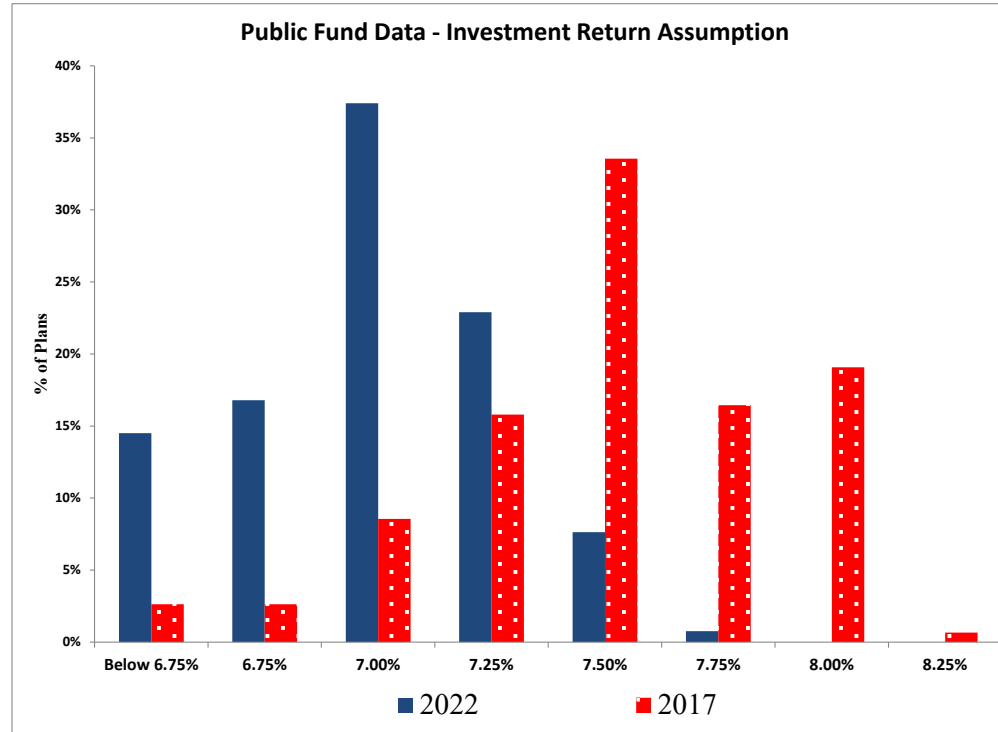


Investment Return Assumption – National Trends



Investment Return Assumption – Distribution of National Trends

2 out of 3
plans are at or
below 7.00%.



This information is
also stale, as some
plans (like TRS)
haven't looked at the
assumption in 3-4
years

Using only Plans that
have done
experience studies in
the past year would
have a median below
7.00% and very few
above 7.00%

Investment Return Assumption – Comparison to Largest National Public Pension Plans

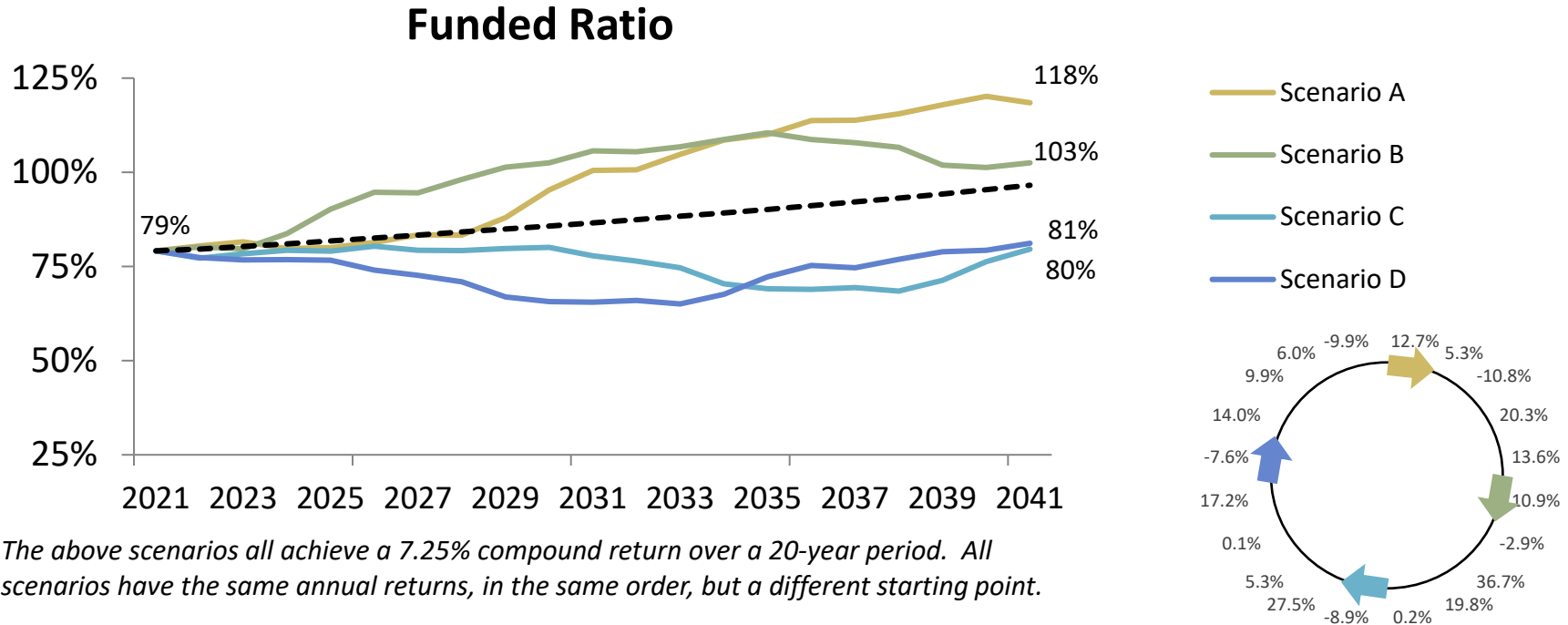
Fund	Assumed Rate of Return*
Texas TRS	7.25%
CalSTRS	7.00%
New York City Retirement	7.00%
Washington State Retirement Systems	7.00%
New York State Teachers	6.95%
Ohio PERS	6.90%
CalPERS	6.80%
Florida State Board of Administration	6.80%
Wisconsin Retirement System	6.80%
North Carolina Retirement	6.50%
New York State Common Retirement Fund	5.90%

**Source: NASRA.com, March 2022*

The average return for the 10 plans listed above is 6.77% and the median is 6.85%

Impact of Volatility on Projected Funded Status

All Scenarios Generate 7.25% Compound Return Over 20 years



Volatility Scenarios

- Takeaways:
 - Without cash flows, order doesn't matter when compounding returns
 - With cash flows, ORDER MATTERS!
 - Benefits will be paid with trust assets (dollars), not returns
 - Two scenarios can have the same “rate of return” and produce very different ending asset values
 - For assumption setting, it's not enough to simply say, we are “long-term” investors, must also pay attention to the shorter-to-intermediate term, especially for a fixed-rate contribution strategy
 - Thus, we must focus on a timeframe between the two sets of provided expectations

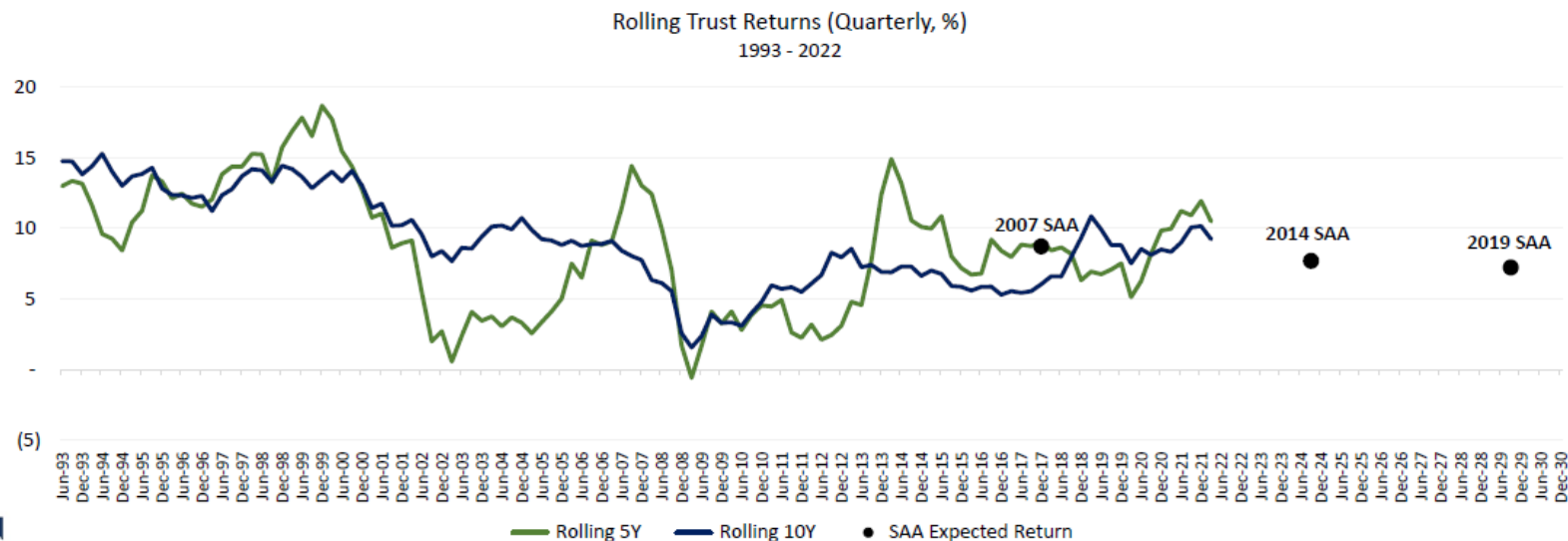
Capital Market Assumptions and Expected Results – 4th Quarter 2021 (Aon)

			10 Year		30 Year	
TRS Asset Class	Aon Asset Class	Policy	Expected Return	Expected Risk	Expected Return	Expected Risk
Stable Value						
Treasuries	Long Duration Government	16%	2.3%	9.5%	2.5%	9.5%
Stable Value Hedge Funds	Allocation based blend	5%	4.5%	7.7%	4.9%	8.4%
Absolute Return	Absolute Return	0%	3.2%	12.0%	4.1%	13.0%
Global Equity						
Public Equity						
USA	US market weighted blend	18%	5.7%	17.9%	6.2%	18.5%
Non-US Developed	Non-US Developed Equity	13%	6.5%	20.0%	6.9%	20.5%
Emerging Markets	Non-US Emerging Equity	9%	7.0%	27.0%	7.5%	27.5%
Private Equity	Private Equity	14%	8.8%	26.0%	9.3%	26.8%
Real Return						
Real Estate & Other Real Assets	Private Real Estate (Core)	15%	5.6%	15.0%	5.4%	15.5%
Energy & Natural Resources	Infrastructure & Commodities	6%	7.1%	14.5%	7.2%	15.0%
Commodities	Commodities	0%	4.0%	17.0%	4.4%	17%
Risk Parity						
Risk Parity	Risk Parity (12% Vol)	8%	5.0%	12.0%	5.2%	12.0%
Leverage						
Cash	Cash (Government)	2%	1.5%	1.0%	1.9%	1.5%
Asset Allocation Leverage	Cash (Libor)	-6%	1.7%	1.5%	2.2%	1.5%
Expected Results		100%	6.9%	13.7%	7.2%	14.1%



Total Trust Rolling 5-Year and 10-Year Return History

- The rolling returns below represent the annualized total Trust return for the given timeframe (5-year and 10-year), ending with the listed quarterly date on the chart
 - Example – The 10-year return as of 12/31/21 represents the 12/31/11 to 12/31/21 timeframe*
- The long-term expected passive returns from the Strategic Asset Allocation (SAA) studies over time are represented by the black dots



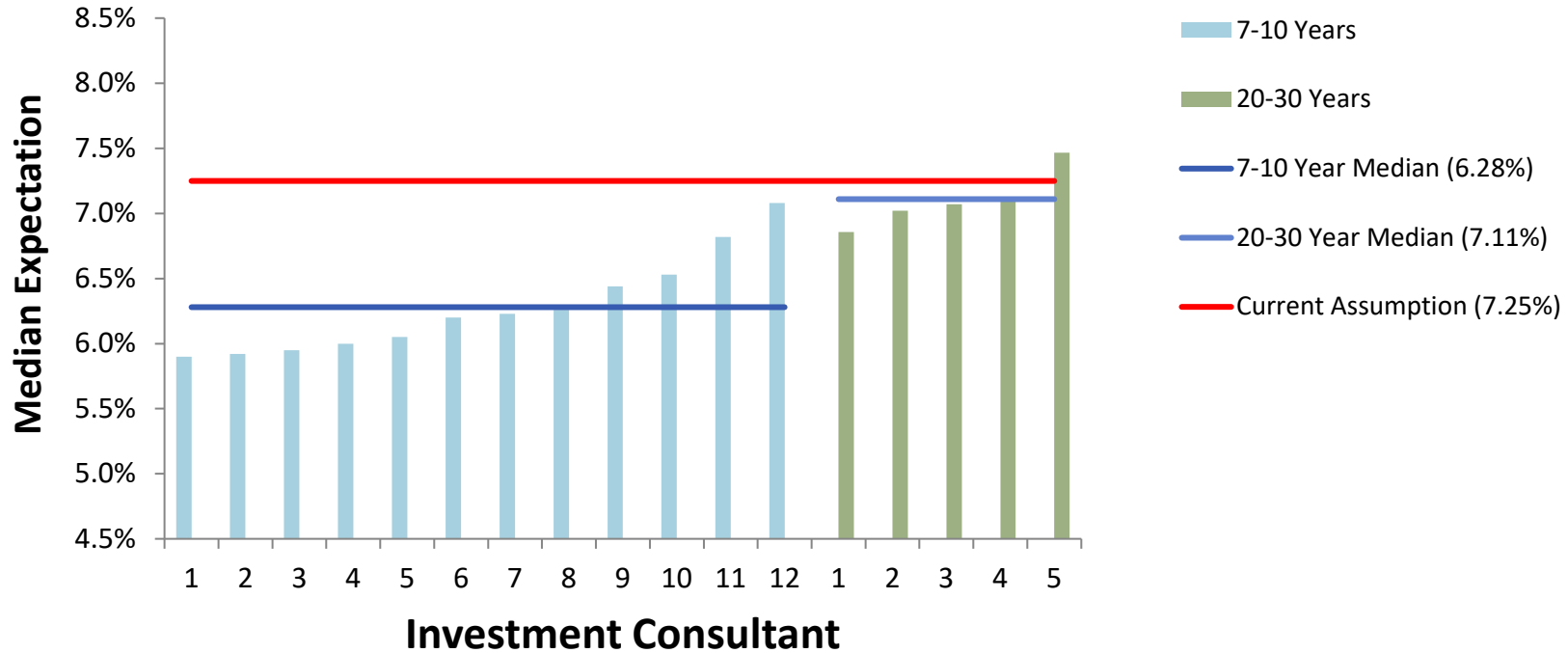
Source: State Street Bank, TRS IMD



GRS Survey of Investment Consultants

- GRS analyzed the current asset allocation using TRS' Asset Allocation and 2021 capital market return assumptions from our survey
 - GRS Surveyed 12 investment consulting firms
 - All 12 gave a set of 7-10 year expectations
 - 5 also gave a set of 20-30 year expectations

GRS Survey: Distribution of Forward-Looking Returns Expectations



Definition of a Reasonable Assumption

From the Actuarial Standards of Practice

- An economic assumption is reasonable if it:
 - Is appropriate for the purpose of the measurement
 - Reflects the actuary's professional judgement
 - Takes into account historical and current economic data that is relevant as of the measurement date
 - Reflects the actuary's estimate of future experience
 - Has no significant bias (i.e., it is not significantly optimistic or pessimistic)
 - Although some allowance for adverse experience may be appropriate

Range of Expected Returns

Comparisons to Previous Study

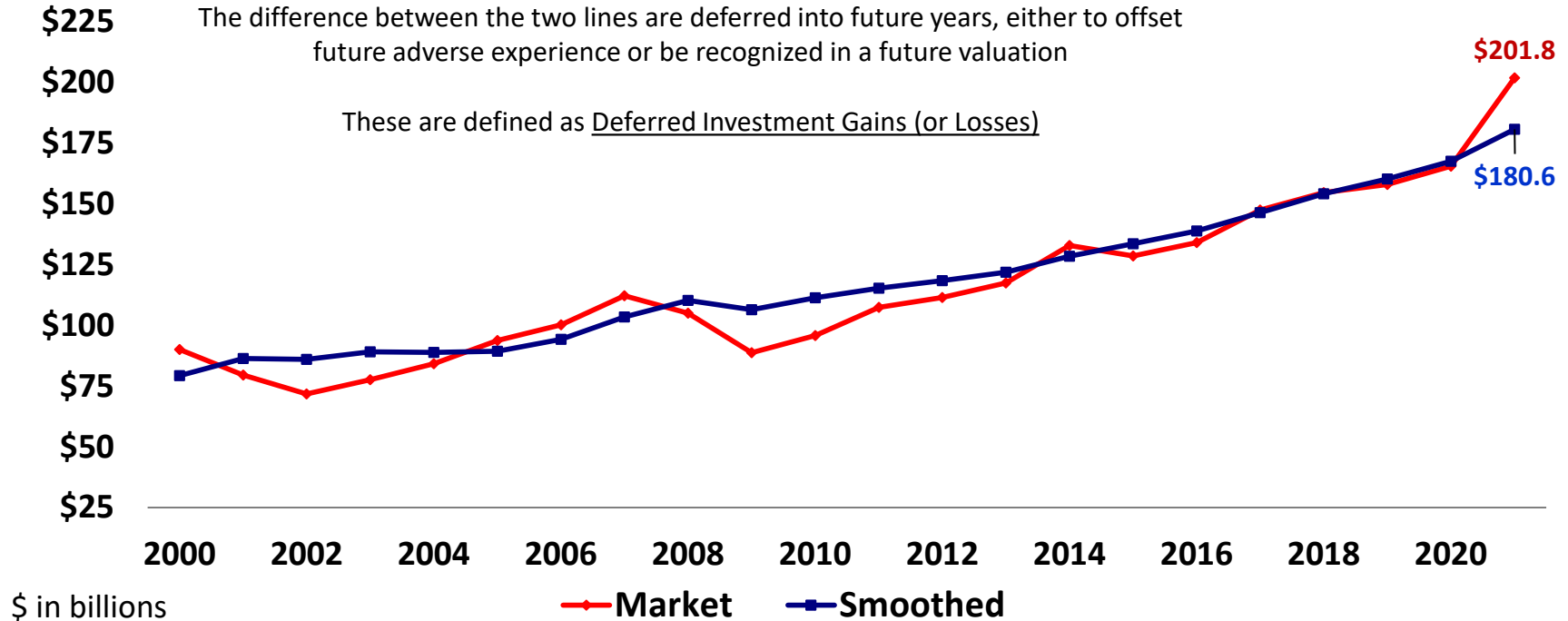
	2017	2021	Change	Comment
Forward Looking Projections				
Aon – Short Term	7.14%	6.90%	-0.24%	10 years
Aon – Longer Term	7.34%	7.23%	-0.11%	30 years
GRS Survey Results – Short Term	7.07%	6.28%	-0.79%	Generally, 7 to 10 year horizon
GRS Survey Results – Longer Term	7.32%	7.11%	-0.21%	Generally, 20 to 30 year horizon
Peer Assumptions				
NASRA Fund Survey - Average	7.54%	6.99%	-0.55%	
NASRA Fund Survey - Median	7.50%	7.00%	-0.50%	

Aon and GRS Survey expectations are based on the expected forward looking return from the current market value of assets

Actuary's Recommendations

- In our opinion, while 7.25% is still likely reasonable, it is in the high end of the range and the data points universally point to a 7.00% assumption being more defensible
 - 7.00% is closer to the median recently chosen by peer systems in the country, the midpoint of the two time horizons provided by Aon, and the results from our own survey
 - The forward looking expectations have generally decreased 0.25% - 0.50% since the previous study
 - Leaving the assumption at 7.25% would create a high hurdle in the next SAA study, perhaps leaving the Board no choice but to either increase risk in the portfolio or lower the assumption not on the normal schedule of the cycle
 - Lowering the assumption will increase the probability of achieving the assumption over the long term and decrease the impact if the assumption is not achieved
- Thus, we are recommending a decrease in the assumption to 7.00%

Market and Smoothed Values of Assets



Deferred Investment Gains from FY21

- Investment returns from FY21 generated a meaningful amount of investment gains that are deferred to be recognized over the next four valuation cycles (\$21.2 billion as of 8/31/2021)
- Deferred asset gains are a hedge against short term market returns not meeting the 7.25% assumption
 - Can be used to make up for any underperformance
- A 7.00% return assumption would be a longer term hedge against market returns not meeting the 7.25%
 - Lowers the hurdle for all future years and lessens the impact if not achieved
- Thus, lowering the return assumption, but using some of the deferred gains to lessen the current impact on the valuation results, could be seen as transitioning a short term hedge into a longer term hedge

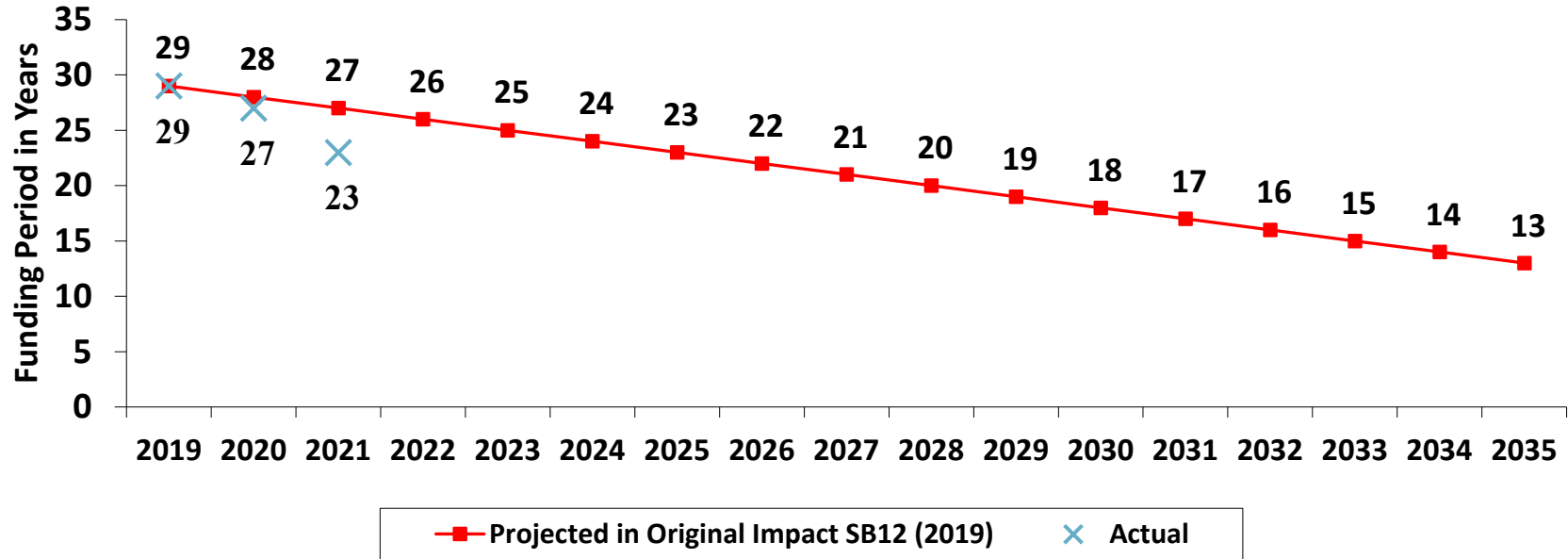
7.00% ROA Alternatives

Projected 2022 Valuation Scenarios Assuming 7.00% Market Return in FY22

			Projected 2022 Valuation Results	
			(A)	(B)
	2021 Valuation		Proposed Assumptions including 7.00%	(A), but advance recognizing \$5B deferred gains
Investment Return Assumption	7.25%		7.00%	7.00%
UAAL in \$B	\$47.6		\$49.7	\$44.7
Funded Ratio	79.1%		79.6%	81.7%
Funding Period (years)	23		26	22

Projected 2022 results assume all assumptions are met for FY22

Historical Funding Period Compared to 2019 Impact Statement



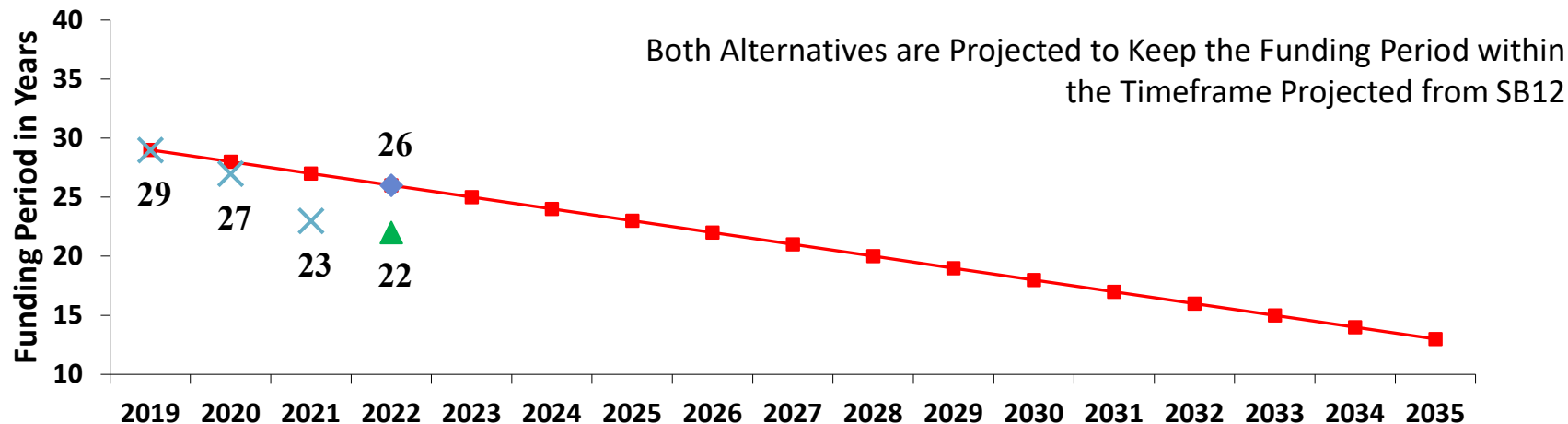
Assumes all assumptions are met

Assumes no changes to benefit policy

Assumes SB12 contribution policy remains throughout projection period

Projected Funding Period as of 2022

Compared to 2019 Impact Statement and 2021 Projections



- Projected in Original Impact SB12 (2019)
- × Actual
- ◆ Projected 2022 based on Proposed Assumptions
- ▲ Projected 2022 based on Proposed Assumption, Advance Recognize \$5B in Deferred Investment Gains

Projected 2022 Results assume all assumptions are met for FY22

Assumes no changes to benefit policy

Assumes SB12 contribution policy remains throughout projection period

Proposed Alternatives

Alternative	Comments/Message
1. Recommended Assumptions, except keep 7.25% return assumption	2022 Valuation will appear further ahead than even the 2021 Valuation did. However, risk of having to change assumption in 2026 is high, as is risk of having to change before 2026 during an off cycle, possibly not giving full picture of future expectations for decision makers.
2. Recommended Assumptions, including 7.00% return assumption	Keep on same Funding Period path from SB12 Impact Statement
3. Recommended Assumptions, including 7.00% return assumption and advance recognition of \$5B in deferred investment gains	Keep on same Funding Period path from 2021 Valuation

Appendix contains full list of recommendations.

Summary

- Again, the primary purpose of the valuation is to:
 - Communicate to stakeholders about the health of TRS and
 - Set the baseline information for decisions to be based on during the legislative session
- The Board will need to approve a final set of assumptions and methods for use in the 2022 valuation to be used in the 2023 legislative session
 - The full set of recommendations (and recommended changes) is in the Appendix and is also outlined in the Executive Summary of the report

Actuary's Qualifications

- We believe the recommended set of actuarial assumptions should present an accurate portrayal of TRS' financial condition and should reduce the magnitude of future experience gains and losses.
- The study was conducted in accordance with generally accepted actuarial principles and practices and with the Actuarial Standards of Practice issued by the Actuarial Standards Board
- All signing actuaries meet the Qualification Standards of the American Academy of Actuaries

APPENDIX

Experience Study Recommendations

Appendix: Experience Study Recommendations

Economic Assumptions:

- We recommend no change to the inflation assumption of 2.30%.
- This analysis finds the current 7.25% investment return assumption to be in the high range of data points produced from this analysis. 7.00% would be closer to the midpoint of the 10 and 30-year results above. Recommend lowering the investment return to 7.00%.
- We recommend no change to the assumption that administrative expenses will be 0.14% of covered payroll. This expense is included in the required contribution rate.
- This analysis finds the current general wage inflation (GWI) assumption of 3.00% to be in the high end of the range and a lower assumption would be more defensible. As such, we recommend a decrease of 0.10% in this assumption (which would impact all wage related assumptions).

Appendix *(cont.)*: Experience Study Recommendations

- We currently assume there will be no cost of living increases (COLAs) or supplemental payments provided to retirees. The statute does not allow for automatic COLAs for retired members. It has been past practice for the legislature to periodically grant COLAs when it is determined that the system can afford to absorb the cost in the current contribution strategy. While there has been a supplemental payment provided to retirees in each of the last two legislative sessions, there has also been a lump sum contribution to immediately pay the costs associated with those payments. Future COLAs require Legislative action and whether or not there will be contribution increases or lump sum appropriations at the time is currently unknown. As there has not been an authorized COLA without additional financing for more than a decade, at this time we recommend continuing to assume no future COLAs in the annual valuations. If future Legislatures begin to authorize COLAs without additional funding, then this provision could be considered substantively automatic and would require some level of recognition in the actuarial liabilities as described under the Actuarial Standards of Practice No 4. “Measuring Pension Obligations and Determining Pension Plan Costs or Contributions” Section 3.5.3 Plan Provisions That are Difficult to Measure and an assumption of no future enhancement would no longer be appropriate.

Appendix *(cont.)*: Experience Study Recommendations

Mortality Assumptions:

- Due to the impact of COVID-19 on mortality patterns in fiscal years 2020 and 2021, we utilized the five-year period ending August 31, 2019 for the mortality patterns in this analysis.
- We recommend updating the post-retirement mortality tables for non-disabled retirees to reflect recent TRS member experience. These tables will be labeled the 2021 TRS of Texas Healthy Pensioner Mortality Tables. We also recommend continuing to assume mortality rates will improve in the future using a fully generational approach, and updating that assumption based on the ultimate rates of the most recently published projection scale (“U–MP”).
- We recommend updating post-retirement mortality tables for disabled retirees to reflect recent TRS member experience, with no change to the current procedures. We also recommend continuing to assume mortality rates will improve in the future using a fully generational approach, but with the ultimate rates of the most recently published projection scale (“U–MP”).
- We recommend updating pre-retirement mortality tables for active employees to the recently published PUB(2010) mortality tables for Teachers, using the below median table. For males, we recommend including a 2-year setback. We also recommend continuing to assume mortality rates will improve in the future using a fully generational approach, but with the ultimate rates of the most recently published projection scale (“U–MP”).

Appendix *(cont.)*: Experience Study Recommendations

Other Demographic Assumptions:

- We recommend small decreases to the retirement probabilities for members consistent with experience and future expectations, focusing in the years after the changes to TRS-Care.
- We recommend combining male and female experience into one termination pattern for members consistent with experience and future expectations. Overall, the proposed assumptions will slightly decrease the probabilities of termination.
- We recommend combining male and female experience into one disability pattern for members consistent with experience and future expectations. The proposed assumptions will expect more disabilities in the future than the current tables, but it will still be a very small minority of the population. We propose continuing to add 1% increase on top of the proposed pattern for members in cohorts that reach rule of 80 but are not eligible for unreduced benefits.
- For members that become disabled in the future, no change to the assumption that 20% of them will choose a 100% joint and survivor annuity option.
- We recommend no change to the current marriage assumption and spousal age difference.

Appendix *(cont.)*: Experience Study Recommendations

Actuarial Methods and Policies:

- We recommend no change to the current process of estimating the valuation payroll for the upcoming fiscal year, which is to use the actual known covered payroll for the previous fiscal year and increase it by one year's payroll growth assumption.
- We recommend no change to how the contributions from employers on non-OASDI payroll are projected.
- We recommend no change to the current asset smoothing method or the smoothing period.
- We recommend no change to the use of the Individual Entry Age (IEAN) actuarial cost method.
- We recommend continuing to use individual data records in the valuation process. However, the use of individual data extends the computer run time dramatically. Thus, we will continue to use celled data in legislative analyses and adjust for any difference between the two data sets.

TAB 20



Board of Trustees IPA Update

For reporting period 11-09-21 to 03-18-22

Agenda



- 01 > Overview of Methodology
- 02 > Grading Scale
- 03 > Setting the Stage
- 04 > Summary of Findings
- 05 > Trends & KPIs
- 06 > Q/A

Program Assessment – Cube Methodology Overview

A One-Team culture

Communicate and collaborate with consistency, transparency and bridging the gap from dev team to leadership

Embedding within the Team

Provide solutions and expert guidance to key TRS and partner stakeholders

Being Independent

Speak the truth with open dialogue with senior leaders

Forward Looking

Identify issues and risk before they become critical

Solution Focused

Assesses the program with effective program governance model, technical solution and program management

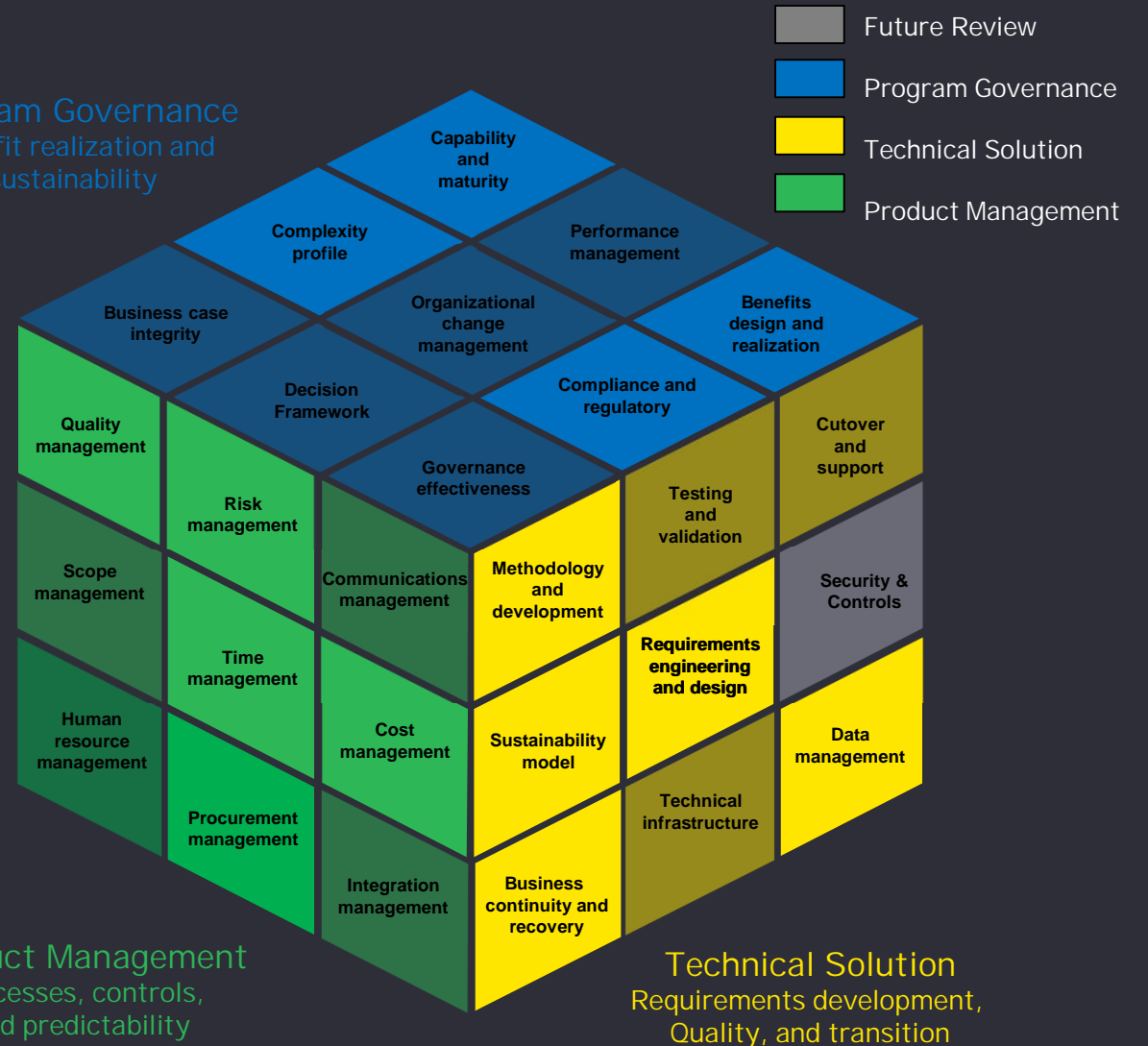
Success Driven

Everything we do is anchored to what will make the TRS TEAM program successful

Program Governance
Benefit realization and sustainability

Product Management
Processes, controls, and predictability

Technical Solution
Requirements development, Quality, and transition



Setting the stage

Background

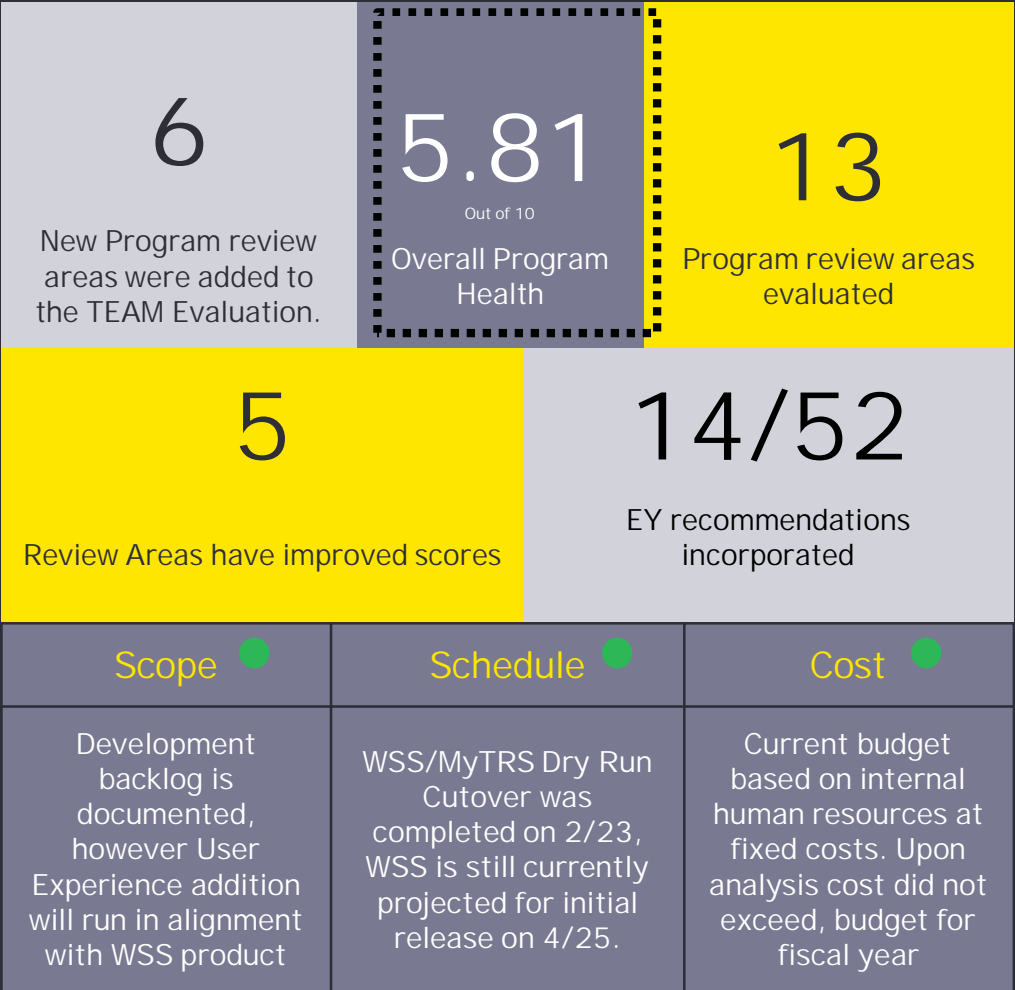
- ▶ TEAM is efficient in selecting components to test as they develop and refine their process
- ▶ Use of scenario modeling to comprehend potential program delays and impact to budget and scope
- ▶ TEAM has adopted concrete Agile data quality techniques to improve quality control.
- ▶ Risk planning effectiveness has improved. Risk identification is occurring earlier coupled with proper mitigation plans.

Grading scale

0	1	2	3	4	5	6	7	8	9	10
Not defined and performed in an ad-hoc manner				Are defined, fairly stable and consistent across functions and teams			High performing, aligned, continually optimizing and leading practices			
Process aren't stable and consistent				Performed at a proficient level			High level of automation.			



EY IPA team is working daily with the TRS TEAM program to cultivate relationships and a robust understanding across the entire program



TEAM Program summary

Overall Rating:
5.81 

Trends and KPI's



Program Governance



Product Management



Technical Solution

Wall of Fame



Scenario Modeling



WSS Successful Demo



Risk Identification
Success

Quick Wins



Case Management
Prioritization



Customer
Valuation

Risks



Transparency in
Procurement Requirements



Legislative Session Delays

Areas of Opportunity






















































Single Source Portfolio Management
System



Development of Earned
Value Management
Methodology








Full Transparency of
Procurement/Requirements for Feature
Prioritization

Facet	Area of Review	Initial	Nov '21	March '22	Target
TEAM Program	Overall Program Health	4.42	 5.44	 5.81	7.5
Program Governance Overall: 6.0 	Decision framework	4	 5	 5	7
	Organizational change management	7	 7	 7	7
	Performance management	4	 5	 5	7
	Governance effectiveness	5	 6	 6	8
	Benefits Design and Realization	3	 5	 5	8
	Business Case Integrity	6	 7	 7	8
	Compliance and Regulatory	6		 6	
	Complexity Profile	7		 7	
	Capability and Maturity	6		 6	
Product Management Overall: 5.4 	Quality management	2	 4	 6	7
	Risk management	5	 5	 6	8
	Communications management	6	 6	 6	8
	Scope Management	5	 5	 5	7
	Time Management	5	 5	 5	7
	Cost Management	5	 5	 5	8
	Integration Management	5	 6	 6	7
	Human Resource Management	5	 5	 5	7
	Procurement Management	7		 7	8
Technical Solution Overall: 6.0 	Methodology and development	3	 5	 6	7
	Testing and validation	4	 6	 6	8
	Cutover and support	5	 6	 6	8
	Sustainability model	4	 5	 6	7
	Requirements Engineering	4	 4	 6	
	Technical Infrastructure	6	 6	 6	
	Data Management	6		 6	
	Business Continuity and Recovery	6		 6	
	Security & Controls				

Trends and KPIs

Legend

-  Increase over previous month
-  No improvement over previous month
-  Decrease over previous month
-  Detailed review not prioritized.
-  Review Area assessed during period.

*As the program advances, we will bring in additional areas of review and rank them.

A woman with blonde hair tied back, wearing a red lanyard and a patterned blouse, is speaking into a microphone. She is gesturing with her left hand. In the background, several people are seated, listening. The setting appears to be a conference or meeting room with large windows and modern decor.

Questions?

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The diversity and skills of 70,000+ people will help clients realize transformation by putting humans at the center, delivering technology at speed and leveraging innovation at scale.

These core drivers of "Transformation Realized" will create long-term value for people, clients and society.

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TAB 21

McLagan

Investment Management Pay Update Teacher Retirement System of Texas

February 2022

About McLagan

Overview	McLagan is the financial services industry's leading compensation consulting and pay and performance benchmarking firm. McLagan is part of Aon's Human Capital Solutions business.	
Services	<ul style="list-style-type: none">▪ Compensation consulting/advisory▪ Compensation studies▪ Business performance and productivity benchmarking (headcount, payout rates, margins)	
Clients	<ul style="list-style-type: none">▪ 800+ asset management organizations, including 49 of top 50 advisory firms, 100+ corporate and public plan sponsors, 60+ endowments and foundations, hedge funds, PE firms, banks, insurance companies, and family offices	<ul style="list-style-type: none">▪ Investment and commercial/retail banks▪ Investor services companies▪ Private client/wealth management firms▪ Specialized real estate firms
Value Proposition	<ol style="list-style-type: none">1. In-depth financial services industry focus and experience2. Unparalleled, proprietary pay and performance data3. Seamless global coverage and consulting support4. General management perspective5. Experienced, long-tenured consultants6. Integrity and discretion	
Size & Scope	<ul style="list-style-type: none">▪ Employees: ~250▪ Offices: Stamford, NY, Chicago, Minneapolis, London, Dubai, Hong Kong, Tokyo and Sydney.	
Aon	<ul style="list-style-type: none">▪ Since 1999, McLagan has been a wholly owned subsidiary of Aon (NYSE).▪ McLagan's clients benefit from: (1) the flexibility and entrepreneurial culture of a small company; and (2) the resources of Aon, the world's largest HR consulting firm.	

McLagan's Work with Leading Institutional Investors

- McLagan provides institutional asset owners with a wide range of pay-related services, including:
 - Pay level benchmarking through our annual compensation surveys.
 - Compensation consulting/advisory including:
 - Executive compensation.
 - Compensation philosophy development.
 - Peer group evaluation.
 - Short- and long-term performance-based incentive plan design.
 - Salary structures / pay band development.
- Some of our institutional asset owner consulting clients are listed below:

Institutional Asset Owner Consulting Clients – Selected Organizations		
Public Funds	Corporate Plan Sponsors	Endowments & Foundations
CPPIB CalPERS Colorado PERA Mass PRIM New Zealand Super Ohio STRS State of Wisconsin IB Virginia Retirement Sys.	DuPont General Motors Asset Mgt. Kodak Lockheed Martin Nokia NRRIT US Steel UPS	Harvard Management Co. KAUST Kellogg Foundation Rice University Stanford Management Co. Texas Christian University Washington U in St. Louis Yale University

McLagan's Work with Public Asset Management Firms

- Beyond our work with institutional asset owners, McLagan is the leading compensation consulting firm for the broader investment industry.
- Our ongoing compensation consulting work and proprietary surveys provide us with unique insights and perspectives about market pay practices and pay trends.
- The following table: (1) permits us to highlight our involvement, since these relationships are publicly-disclosed in proxy statements; and (2) underscores the breadth and quality of our asset management-related consulting capabilities.

Firm	McLagan's Role
AB	Provide management with ongoing compensation support
Artisan Partners	Board compensation consultant
BlackRock	Provide management with ongoing compensation support
Brightsphere	Board compensation consultant
Cohen & Steers	Provide management and the Board with ongoing consulting support
Franklin	Provide management with ongoing compensation support; meet with the Board annually
Janus Henderson	Board compensation consultant
Schroders	Provide management and the Board with ongoing consulting support
Victory Capital	Provide management and the Board with ongoing consulting support
Virtus	Provide management with ongoing compensation support

Investment Management Compensation Trends – Public Funds

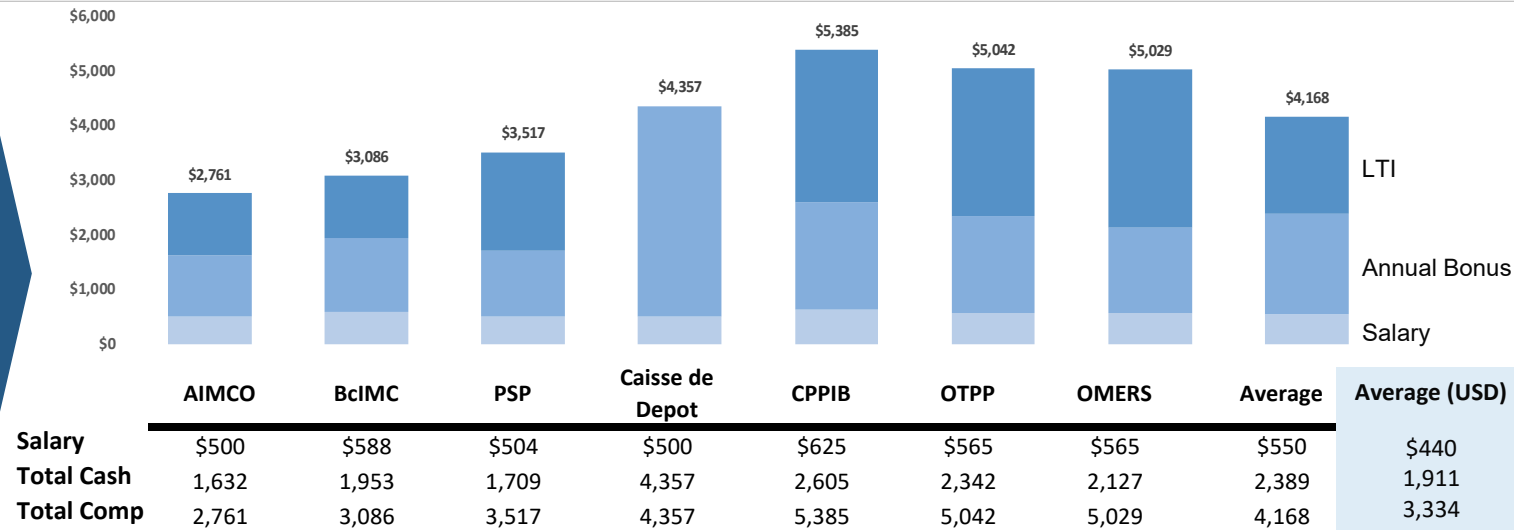
- YE 2020 salaries and total cash compensation stay the course (i.e., up +3% at median).
- While many funds froze base salaries due to the pandemic, these freezes have been lifted as the labor market and asset levels have rebounded.
- Significant turnover for EDs and CIOs across leading public funds, mostly due to retirements and departures to the private sector (e.g., Maryland SRPS, North Dakota, New Mexico PERA, PA PSERS, CalSTRS, MOSERS, CalPERS, Penn SERS).
- Many funds continue to struggle in their executive search efforts, often due to:
 - Prohibitions about use of search firms.
 - Pay-related limitations/constraints.
 - Perceptions of challenging internal politics.
 - Robust labor market in the private sector (e.g., asset management firms, OCIOS, E&Fs, family offices, etc.).
- Many funds explore remote long-term work opportunities.
- 2021 Salaries continue to rise (i.e., up +2% at median).
- Several funds begin development of long-term incentive plans.

Oh Canada!

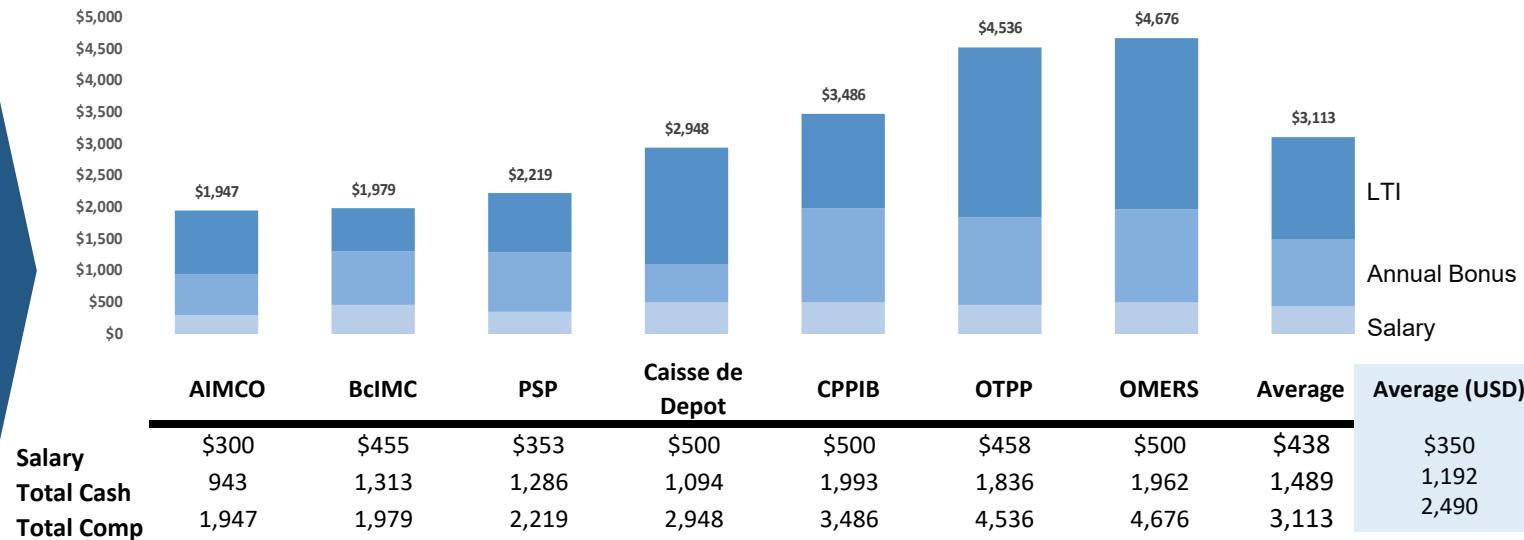


CAD \$000s

CEO / ED



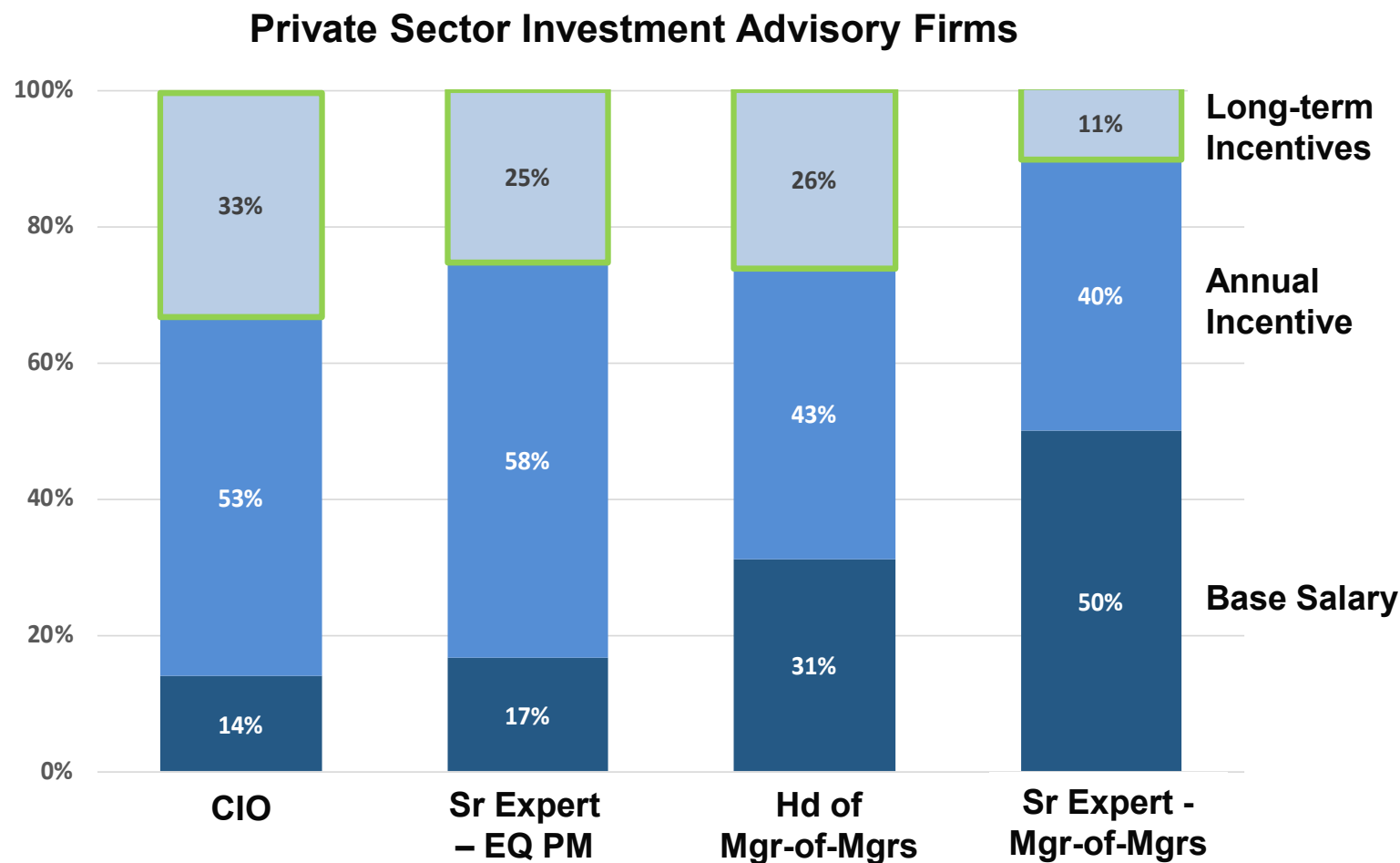
Top Inv. Position



Investment Management Compensation Trends – Private Sector

- YE 2020: Revenues +5% → total compensation up +5% (at median) for employees below \$500K and flat for employees above \$1M
- YE 2021:
 - A totally unprecedented year for pay decision-making given the confluence of:
 - 1. Record high revenues.** Fueled by beta, 2021 will be the best P&L year ever.
 - 2. Frenetic labor market activity** resulting from:
 - A strong economy.
 - COVID-enabled remote work and remote hiring.
 - Intense business innovation (supported by strong P&Ls).
 - **Incentives:** Substantial increases. The best year ever. Within diversified firms, **incentive pools should be up 20% or more** at YE 2021, driving payouts of 25%+ for top-performing senior investment professionals.
 - **Base salaries:** Substantial movement. **Base salaries up 5-10% for most staff.**

Long-term Incentives are Significant for Senior Investment Professionals



As private sector firms dominate the labor market for TRS' talent, it is important to be aware of pay practices outside of public fund peers.

McLagan's Work with TRS

McLagan has had a long-standing relationship with TRS:

- **1998:** First conversations with TRS about investment industry market data and McLagan's consulting services.
- **2006-2007:** McLagan partnered with TRS to present information to the newly formed Board Compensation Committee about competitive market pay practices, incentive plan design approaches, and TRS' relative pay positioning versus public and private investment management organizations (for current and prospective staffing levels). TRS adopted its compensation philosophy to:
 - **Target base salaries at the 75th percentile of leading public funds.**
 - **Target incentive compensation at the 25th percentile of private sector firms.**
- Starting 2014 and because of significant lagging shown on the 2007 study, TRS partnered with McLagan for regular compensation reviews every two years:
 - **2014:** McLagan conducted the first detailed pay-level review since TRS adopted a formal compensation philosophy and new incentive plan. This results showed TRS lagging its targeted philosophy from both a base and incentive opportunity standpoint.
 - **2016:** Pay benchmarking study was updated.
 - **2018:** Pay benchmarking study was updated again.
 - *2020: Study delayed due to COVID.*
 - **2021:** Pay benchmarking study updated again including UK-based data for local strategy hiring at TRICOT.
 - *2023: Next anticipated comprehensive review.*

2021 TRS Compensation Analysis - Process

In 2021 McLagan conducted a pay review of TRS' staff using the following steps:

1. Worked with TRS to benchmark their employees to McLagan's survey positions.
2. Assembled the US market compensation data for TRS' current peer groups. One peer set is other leading US public funds and the other is a broad range of private sector firms (investment advisory firms, banks, insurance companies, corporate pensions, endowments & foundations).
3. Completed and presented a pay analysis which assessed the competitiveness of TRS' base salary and incentive compensation for US-based employees against TRS' peer groups. This consisted of McLagan:
 1. Analyzing TRS' market positioning relative to TRS' stated compensation philosophy.
 2. Providing TRS with a detailed spreadsheet that included the competitive pay level benchmarks (e.g., 25th, 50th, and 75th percentiles for base salary, bonus, total cash compensation, and total compensation) for each covered employee as well as for positions in which TRS does not have a current incumbent.
4. Additionally, McLagan provided guidance on competitive pay levels for TRS' UK-based investment staff by presenting the market compensation data for UK-based incumbents within both the private sector industry and asset owner organizations.

Michael Oak, McLagan



Michael Oak

Associate Partner, McLagan

Michael Oak oversees our institutional investor clients including public funds, corporate plan sponsors, endowments, and foundations. For these clients, Mr. Oak specializes in:

- Board advisory / Executive compensation.
- Incentive plan design / Pay for performance.
- Compensation philosophy & peer group development.
- Compensation benchmarking & salary banding.

Mr. Oak also works with a broad range of investment management firms on compensation related issues including managing our *Performance Intelligence Study*, a general ledger benchmarking for asset management firms. Mr. Oak is a frequent speaker on pay related topics at numerous industry conferences.

Prior to joining McLagan in 2010, Mr. Oak worked as a mathematical statistician for the U.S. Department of Agriculture and in the executive compensation practice at Pearl Meyer & Partners' Houston, TX Office. Mr. Oak holds a B.S. in Biometry & Statistics and a Master's degree in Applied Statistics from Cornell University.

Mr. Oak resides in Virginia with his wife Jen, who is a veterinarian at a non-profit wildlife teaching hospital. Outside of work, Mr. Oak enjoys spending time outdoors and giving back to the community. Mr. Oak is a volunteer Paramedic and serves as president of his local fire department.

McLagan Survey Participants – Asset Owners

Corporate Plan Sponsors

APG Asset Management
AT&T
Church Pension Group
DuPont Capital Management
Eastman Kodak Company
Eli Lilly and Company
Ernst & Young
General Motors Investment Mgmt.
IBM Corporation
ICMA Retirement Corporation
Johnson & Johnson
Lockheed Martin Investment Mgmt. Co.
Lumen Technologies
National Rural Electric Cooperative Assoc.
Nokia Investment Management Co.
Pension Boards United Church of Christ
Portico Benefit Services
Textron
UAW Retiree Medical Benefits Trust
UMWA Health & Retirement Funds
UPS Capital Corporation
USS & Carnegie Pension Fund
Wespath Benefits & Investments
YMCA Retirement Fund

Public Funds

Alaska Permanent Fund Corporation
Alaska Retirement Management Board
Arizona State Retirement System
California Public Employees' Ret. Sys.
California State Teachers' Ret. Sys.
Colorado PERA
Contra Costa County Employees' Ret. Assoc.
Employees Retirement System of Texas
Employees' Ret. Fund of City of Dallas
Fire and Police Pension Association
Hawaii Employees' Retirement System
Indiana Public Retirement System
Iowa Public Employees Retirement System
Kansas Public Employees Ret. System
Kentucky Teachers Retirement System
Maine PERS
Maryland State Retirement & Pension Sys.
Massachusetts PRIM
Minnesota State Board of Investment
Missouri Local Gov't. Employees Ret. Sys.
Missouri State Employees' Ret. System
Montana Board of Investments
Municipal Employees' Ret. Sys. of Michigan
Municipal Fire & Police Ret. Sys. of Iowa
Nebraska Investment Council
New Mexico Retirement Board
New Mexico State Investment Council
NYS Common Retirement Fund
NYS Teachers' Retirement System
Ohio Public Employees Retirement System
Oklahoma Public Employees Retirement Sys
Orange County Employees Ret. System
Oregon Public Employees Retirement Fund
PA State Employees' Retirement System
Public Employee Retirement System of Idaho
Public Employees' Ret. System of Nevada
Public Schools Ret. Systems of Missouri
School Employees Ret. System of Ohio
South Carolina Retirement System
South Dakota Investment Council
State Board of Administration of Florida
State of Idaho Endowment Fund Inv. Board
State of Michigan Retirement System
State of New Jersey Pension Fund
State of Wisconsin Investment Board
State Teachers Retirement System of Ohio
State Universities Retirement System
Teacher Retirement System of Texas
Teachers' Retirement System of Louisiana
Tennessee Consolidated Retirement System
Texas County & District Retirement System
Texas Municipal Retirement System
Utah Retirement Systems
Utah School & Institutional Trust Fund Office
Virginia Retirement System
Washington State Investment Board
West Virginia Investment Management Board
Wyoming Retirement System

McLagan Survey Participants – Asset Owners...

Endowments & Foundations

Amherst College
Andrew W. Mellon Foundation
Baylor College of Medicine
Boston Foundation
Boston University
Bowdoin College
Brandeis University
Brown University
California Institute of Technology
Carnegie Mellon University
Casey Family Programs
Columbia University
Commonfund Group
Cystic Fibrosis Foundation
Duke University
Emory University
Georgetown University
Georgia Tech Foundation, Inc
Grinnell College
Harvard Management Company
Helmsley Charitable Trust
Howard Hughes Medical Institute
Indiana University Health

Institute for Advanced Study
Johns Hopkins University
Lehigh University
Margaret A. Cargill Philanthropies
Metropolitan Museum of Art
MIT Investment Management Company
Mount Holyoke College
Multilateral Endowment Mgmt. Company
New York Presbyterian Hospital
Novant Asset Management
Penn State University
Phillips Academy Andover
Princeton University
Rainwater Charitable Foundation
Rice University
Rockefeller University
San Manuel Band of Mission Indians
Stanford Management Company
Texas A&M Foundation
Texas Christian University
Texas Tech University
TIFF Advisory Services, Inc.
Trinity Wall Street

Tufts University
UJA – Federation of New York
UNC Management Company
University of Florida
University of Illinois Foundation
University of Michigan
University of Nebraska Foundation
University of Richmond
University of Tennessee
University of Virginia Investment Mgmt.
University of Washington
University System of Maryland Found
Van Andel Institute
VCU Investment Management Company
Verger Capital Management
Villanova University
Virginia Tech Foundation
Washington University in St. Louis
William Penn Foundation
Williams College
Yale University Investments

McLagan Methodology

The data below is illustrative and should **only** be used for the purpose of understanding McLagan's methodology for completing the competitive pay analysis.

TRS Texas - Expected Compensation			McLagan Position	Leading Public Funds: Competitive Market (\$000s)						Quartile Positioning	
Salary	T.Comp			25th Percentile Salary	25th Percentile T.Comp	Median Salary	Median T.Comp	75th Percentile Salary	75th Percentile T.Comp	Salary	T.Comp
Employee 1	\$400	\$825	CEO	\$280	\$588	\$350	\$735	\$380	\$815	2	1
Employee 2	325	675	CIO	248	471	310	589	325	650	2	2
Employee 3	285	535	PM - Level 10	220	418	275	523	330	627	3	3
Employee 4	250	450	PM - Level 09	204	388	255	485	306	581	3	2
Employee 5	225	325	PM - Level 08	184	345	230	391	276	469	2	1
Total	\$1,485	\$2,810		\$1,136	\$2,210	\$1,420	\$2,722	\$1,617	\$3,143		
				31%	27%	5%	3%	-8%	-11%		

This employee's total compensation falls in the market third quartile.

TRS Texas - Expected Compensation				McLagan Position	Competitive Market (\$000s)					
Salary	Bonus	T.Comp			Leading Public Funds 75 %ile Salary		Private Sector Firms 25 %ile Cash Bonus		Market Total Cash	
					\$	Variance	\$	Variance	\$	Variance
Employee 1	\$400	\$425	\$825	CEO	\$380	5%	\$500	-15%	\$880	-6%
Employee 2	325	350	675	CIO	325	0%	450	-22%	775	-13%
Employee 3	285	250	535	PM - Level 10	330	-14%	280	-11%	610	-12%
Employee 4	250	200	450	PM - Level 09	306	-18%	205	-2%	511	-12%
Employee 5	225	100	325	PM - Level 08	276	-18%	145	-31%	421	-23%
Total	\$1,485	\$1,325	\$2,810		\$1,617	-8%	\$1,580	-16%	\$3,197	-12%

The total salary spend for TRS is \$1,485 and the stated comp philosophy salary (75th percentile of leading public funds) is \$1,617.

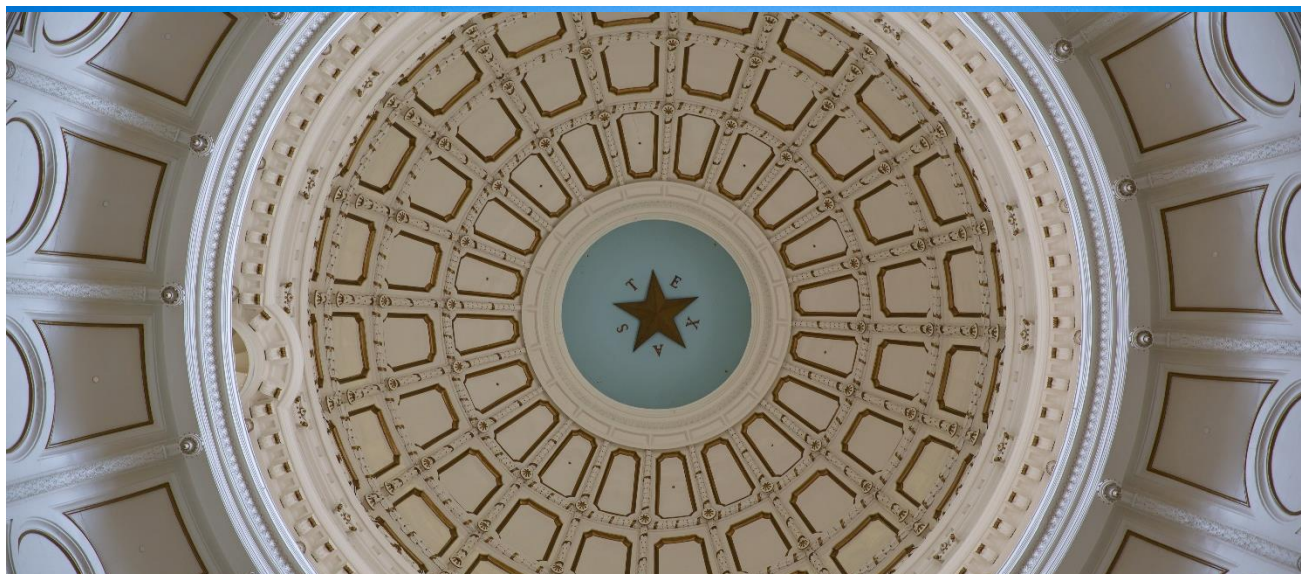
The total bonus spend for TRS is 16% below the stated comp philosophy (25th percentile of private sector firms).

TAB 22



Internal Audit

Governance and Risk Management Training



Amanda Jenami CPA, CIA, CISA, CIDA,
CFSA, CFE, CGAP, CRMA, MBA

April 29, 2022



Section 1. Corporate Governance

- a) Background
- b) Lessons from Recent Governance Failures
- c) Guiding Principles of Corporate Governance
- d) American Corporate Governance Index (ACGI) 2021

Section 2: Top Risks of 2022





CORPORATE GOVERNANCE



Corporate Governance: The Definition

Corporate governance is the **overarching set of policies, procedures, and relationships** that enables an organization to:



Establish objectives



Reward successful achievements



Set ethical boundaries to the acceptable means with which those objectives will be met



Discipline inappropriate attempts to meet objectives



Monitor the achievement of objectives



Aligned with the needs and interests of its primary stakeholders.

Governance Roles

Board	Executive Management	Internal Audit
Establishes tone at the top; Sets risk appetite and ethical boundaries	Sets policies and procedures; enables the organization to identify, articulate and meet objectives	Has a CAE that reports directly to the Board, is independent, is a resource for Board and management
Provides strategic oversight for long-term value creation	Establishes and executes strategies, develops budgets, and delegates responsibilities	Provides risk-based and objective assurance, advice, and insight
Provides effective oversight of management's activities	Monitors the achievement of goals and objectives; rewards or mitigate results	Improves operations through an objective, systematic, and disciplined approach
Ensures Internal Audit is sufficiently resourced and independent from management	Keeps the board fully informed on status of goals and objectives and of risks	Brings a cross-functional, enterprise-wide perspective to evaluate and improve risk management, control and governance



LESSONS FROM SOME RECENT GOVERNANCE FAILURES

What Boards could learn from the Boeing Scandal

Governance Gaps

1. Hire board members for expertise and objectivity
 - a) Safety and engineering
 - b) Sectionalism
2. Ensure the board structure aligns with industry needs
 - a) No Board Safety Committee until April 2019
 - b) Safety Review Board
 - c) Audit Committee focused on financial risk
 - d) AC had no mechanism to receive alerts



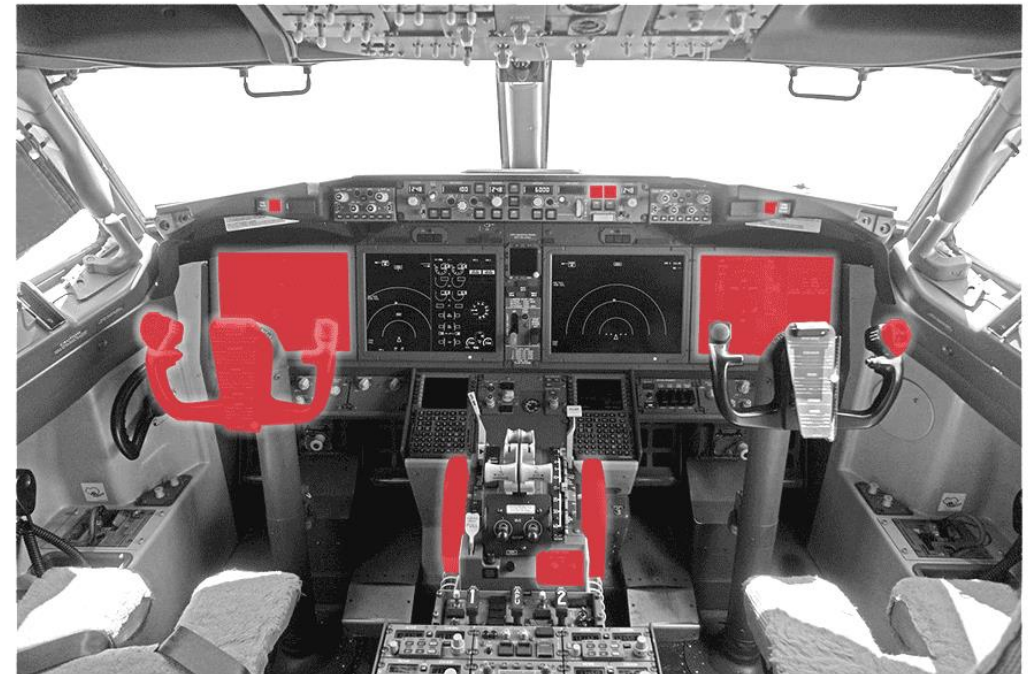
What Boards could learn from the Boeing Scandal

Governance Gaps

3. Implement sustainable strategies focused on long-term performance:

- a) Wholesale cost cutting
- b) Minimized Training costs
- c) Traded hard-earned reputation for short-term profits

The Four Second Catastrophe



What Boards could learn from the Boeing Scandal

Governance Gaps

4. Prepare for the worst case
 - a) Boeing was not prepared for such a disaster
 - b) Response created chaos for airlines and suppliers
 - c) Periodically imagine the largest threats to the company
 - d) Estimate **all** potential costs
5. Manage for truth and realism
 - a) Gather facts from knowledgeable insiders
6. Practice accountability



The mighty fumble of Super Bowl 50, 4th Quarter

What Boards could learn from the Boeing Scandal

Reforms

1. Create Aerospace Safety Committee (ASC)
2. Modify Senior Executive compensation incentives
3. Remove many of the prior board members
4. Appoint of new board members
5. Appoint an independent ombudsman
6. Require separation of CEO and Chair positions
7. Provide an annual public report on safety-related enhancements implemented since the 737 MAX air disasters



Boeing directors (current and former) agreed to pay \$237 million to settle the shareholder lawsuit.

Lessons from Recent Scandals : “Culture eats strategy for breakfast”

Wells Fargo Admits to Yet Another Fraud

September 27, 2021

- Bank overcharged **771** commercial customers for foreign exchange services
- **Systematically** charged higher markups on transactions than they represented the Bank would charge
- **Concealed** these overcharges through various misrepresentations and deceptive practices
- Wells Fargo agreed to pay **\$72.6 million** in restitution and civil penalties
- FX sales specialists' bonuses **exclusively** tied to sales
- Took adverse employment actions against **20 employees**

Trading hard-earned reputation for short-term profits



**WELLS
FARGO**

A stylized magnifying glass graphic in a light blue color, positioned on the left side of the slide. The handle of the magnifying glass extends downwards and to the right, framing the text.

GUIDING PRINCIPLES OF CORPORATE GOVERNANCE

The Guiding Principles of Corporate Governance



A stylized magnifying glass graphic in a light blue color, positioned on the left side of the slide. The handle of the magnifying glass extends downwards and to the right, pointing towards the text.

AMERICAN CORPORATE GOVERNANCE INDEX (ACGI)

American Corporate Governance Index (ACGI) Survey : Background

Questions & Scoring:

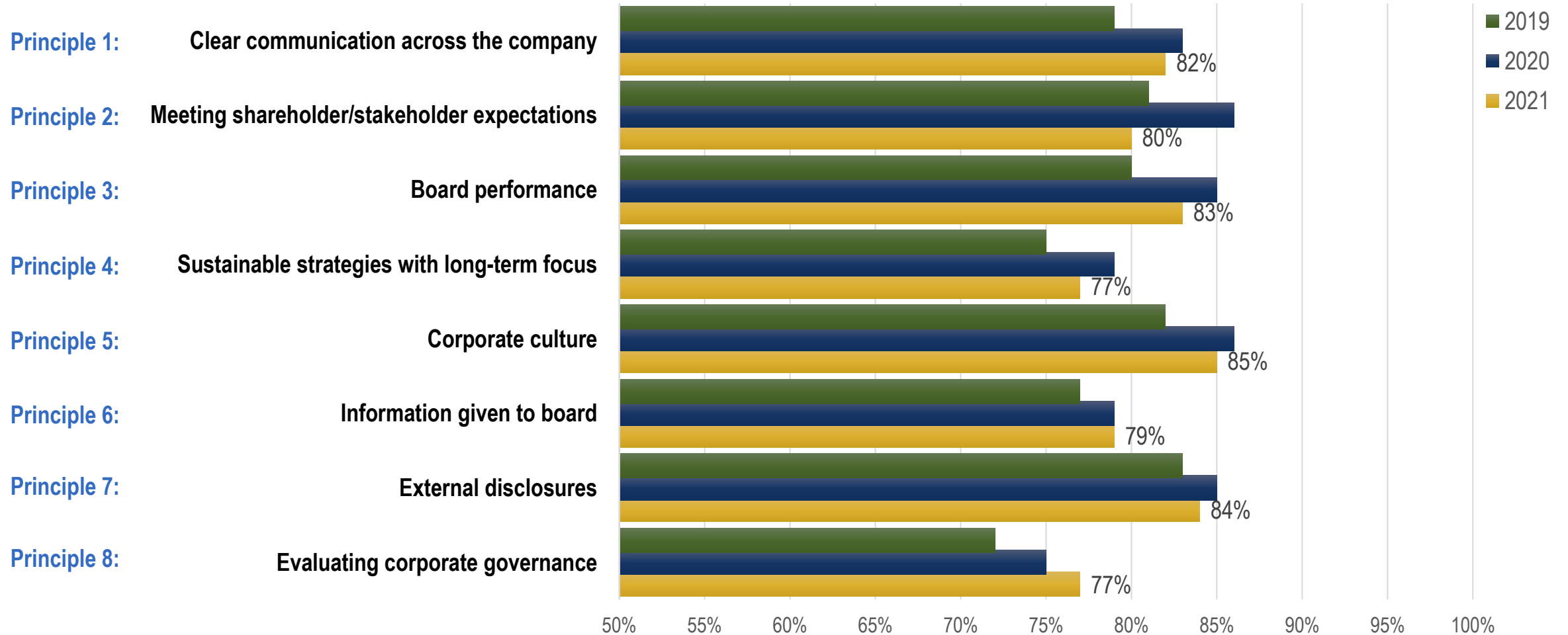
- Based on the Guiding Principles
- Capture effectiveness of corporate governance enterprise wide
- Impact of increased focus on ESG
- Governance oversight of ESG issues
- Responses aggregated using a scale of 0-100
- Score translated into a letter grade A - F

Survey of Companies listed on US Stock Exchanges:

- Number of responses:
 - 2019: 128
 - 2020: 131
 - 2021: 86
- Companies of various sizes, complexities, and industries



ACGI Scores by Principle



Source: The IIA's American Corporate Governance survey, 2021. Scores were assigned by the research team based on analysis of multiple factors. *n* = 86 for 2021. *n* = 131 for 202. *n* - 128 for 2019.

Quick observations on how ESG Governance has changed

KEY TAKEAWAYS

- Majority in early stages of ESG
- Increased monitoring of ESG issues and performance
- Increased emphasis on DE&I hiring (at all levels)
- Enhanced awareness/ visibility
- Improved transparency within the company
- Strengthening relationships with key stakeholders in local communities

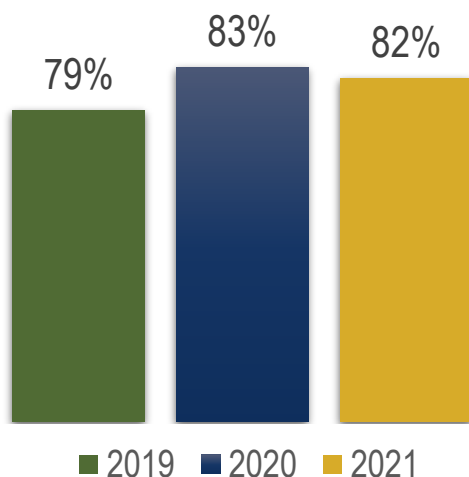


OPPORTUNITIES FOR IMPROVEMENT

- Need higher quality ESG information for both decision makers and stakeholders
- Need better handle on identifying, collecting, and verifying data pertaining to ESG
- Internal Audit should provide assurance on ESG performance and reporting

Principle 1: Clear communication across the company

B-



Regular and constructive interaction occurs among key stakeholders groups.

Source: 2021 IIA American Corporate Governance
n = 128 for 2019, n = 131 for 2020 & n = 86 for 2021

Key Contributing Principles

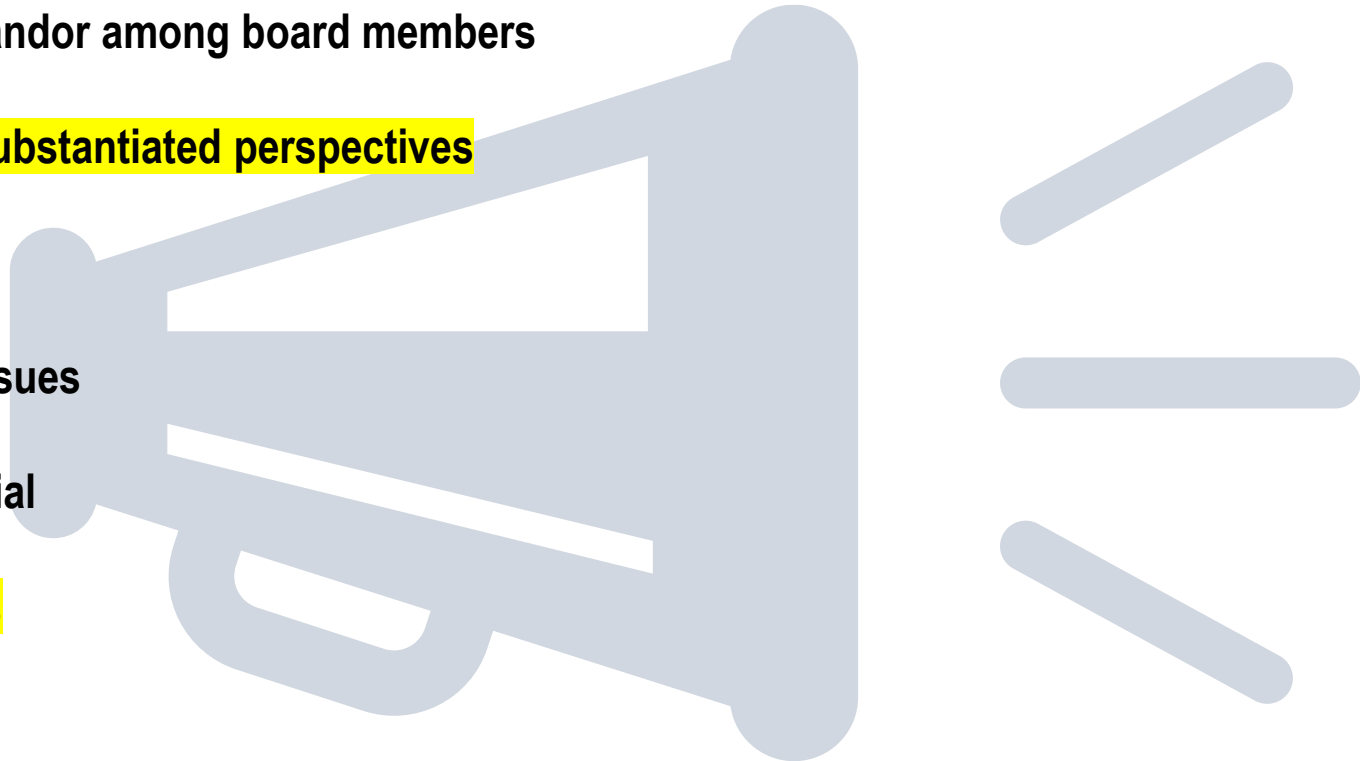
Key Contributing Principles	2019	2020	2021
Leadership/ Board communications are clear, actionable, and collaborative.	82%	86%	85%
Right information gets to the right decision-makers timely.	75%	79%	77%

OPPORTUNITY FOR IMPROVEMENT

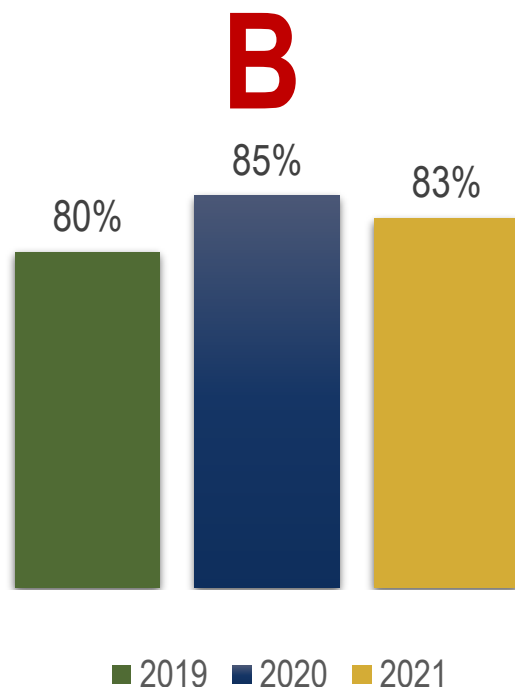
- Communications between members of senior leadership may be weakening, perhaps due to the ongoing pandemic-induced strain.

The Board

1. Openness, transparency, and candor among board members
2. Discuss a wide variety of well-substantiated perspectives
3. Focus on the most critical risks
4. Take a far-sighted view of the issues
5. Full board discussions are crucial
6. Hear from independent advisors
7. Avoid conflicts of interest



Principle 3: Board performance



Board members should act in the best interest of the company.

Source: 2021 IIA American Corporate Governance
n = 128 for 2019, n = 131 for 2020 & n = 86 for 2021

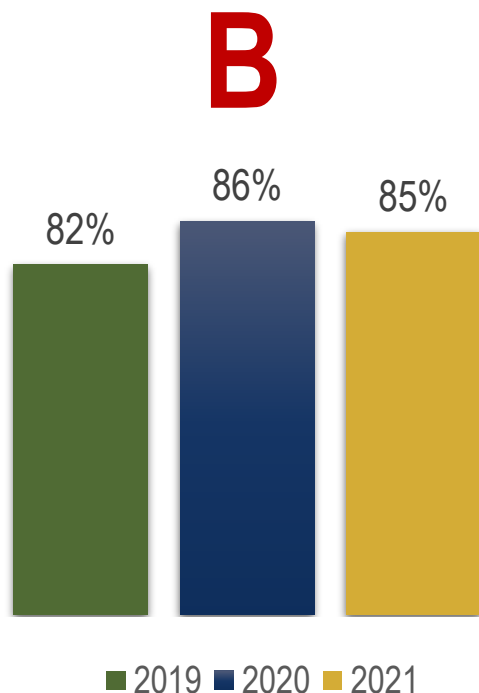
Key Contributing Principles

Key Contributing Principles	2019	2020	2021
Board members should act in the best interest of the company.	80%	85%	83%
Board members are not afraid to offer opinions that are contradictory to or conflict with those of the CEO.	75%	76%	76%

GOOD PRACTICE

1. Exhibit independence and objectivity
2. Provide diverse perspectives (industry and technical expertise, culture, thought)
3. Exhibit a commitment of time and active involvement
4. Receive ongoing education and training (including on areas of emerging risk)
5. Undergo regular, robust evaluations (for improved governance)

Principle 5: Corporate culture



The Board should ensure that the culture of the company is healthy and regularly monitored.

Source: 2021 IIA American Corporate Governance
n = 128 for 2019, n = 131 for 2020 & n = 86 for 2021

Key Contributing Principles

'Tone at the top' is communicated to and consciously embodied across all levels of the company.

Board consciously thinks and talks about the company's culture.

2019

2020

2021

78%

82%

80%

74%

78%

75%

KEY TAKEAWAYS

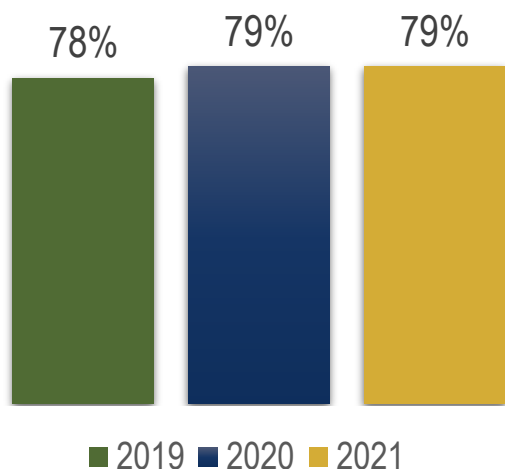
- Tone at the Top embodied by:
 - Executive management: 88%
 - Middle management: 80%
 - Rank and file employees: 72%
 - Across geographical regions: 75%
- Maintaining corporate culture virtually is difficult
- Evaluating culture throughout the organization is difficult

OPPORTUNITIES FOR IMPROVEMENT

- More frequent culture Board/management conversations

Principle 6: Information given to the Board

C+



Structures exist to ensure the Board receives timely, complete, relevant, accurate, and reliable information to perform its oversight effectively.

Source: 2021 IIA American Corporate Governance
n = 128 for 2019, n = 131 for 2020 & n = 86 for 2021

Key Contributing Principles

Key Contributing Principles	2019	2020	2021
Board members ask whether the information presented to the Board is accurate and complete.	67%	68%	69%
Board protects proprietary information given to the Board.	69%	69%	64%
CEO does not heavily filter or water down “bad” news before it goes to the Board.	81%	82%	81%

KEY TAKEAWAYS

- 14% of respondents - cybersecurity breach related to information given to the Board
- Only 35% of respondent’s companies require Board members to use either corporate emails or board portals to protect proprietary company information

OPPORTUNITIES FOR IMPROVEMENT

- Each board member should have unrestricted access to management, as needed
- Board has responsibility to protect information



QUESTIONS

Top Risks of 2022: Background

Qualitative Interviews

- 30 Board members
- 30 C-suite executives
- 30 Chief Audit Executives (CAEs)
- 90 Different Organizations (North America)

Risk

- Knowledge of the risk
- Organizational capability to address the risk
- Relevance of risk to organization



Top Risks for 2022

1. Cybersecurity ✓
2. Talent Management ✓
3. Organizational Governance
4. Data Privacy ✓
5. Culture ✓
6. Economic and Political Volatility
7. Change in Regulatory Environment ✓
8. Supplier and Vendor Management
9. Disruptive Innovation
10. Social Sustainability
11. Supply Chain Disruption
12. Environmental Sustainability



Risks presented in the order of relevance

Top Risks of 2021 & 2022

2021

1. **Business Continuity/ Crisis Response** ✖
2. Cybersecurity
3. Talent Management
4. Culture
5. Organizational Governance
6. Disruptive Innovation
7. Data Governance
8. **Board Information** ✖
9. Third Party Risks
10. Economic and Political Volatility
11. Sustainability ★

2022

1. Cybersecurity ↗
2. Talent Management ↗
3. Organizational Governance ↗ ★
4. Data Privacy ↗
5. Culture
6. Economic and Political Volatility ↗
7. **Change in Regulatory Environment**
8. Supplier and Vendor Management
9. Disruptive Innovation
10. **Social Sustainability** ★
11. Supply Chain Disruption
12. **Environmental Sustainability** ★

A Major Cybersecurity Breach is Reported Every Month

Date	Company	Impact	Comments
3/2021	Microsoft Exchange	250,000 servers	Zero-day exploits
4/2021	Colonial Pipeline	100 gigabytes of data; shutdown of 5,500 miles pipeline; higher fuel prices; lines at the pump	Compromised former employee's VPN account; Password leaked to dark web; Ransome of \$4.4 million paid
6/2021	JBS, USA	Shut down plants/ food supply	\$11 million ransom
6/2021	LinkedIn	700 million users	Data posted for sale on dark web
7/2021	Kaseya	Supply chain attack (800-1,500 clients)	Demanded \$70 million ransom
7/2021	US Dept of Labor	Phony unemployment insurance claims fraud \$87B	Organized crime used bots to file claims from nearly 170 countries using stolen identities
8/2021	Accenture	6 terabytes of data	Demanded \$50 million in ransom
8/2021	T-Mobile	40 million customers	Attempted to sell data on the dark web

Growing sophistication and variety of attacks means that cybersecurity is an ever-evolving risk. Unpredictable and not easily controllable; external factors augment risk velocity.



NEW RISKS OF 2022

- **Environmental Sustainability**
- **Social Sustainability**
- **Supply Chain Disruption**
- **Data Privacy**
- **Change in Regulatory Environment**

#1. Texas Freeze (February 2021)



- An estimated **69%** of the state lost power
- Cost approx. **\$195 billion** and **246** deaths

2. Hurricane Ida (August 2021)



- Caused **\$75B** worth of damage in Louisiana and the Northeast
- **115** fatalities

#3. Western Wildfires (Summer – December)



- Nearly 1,000 homes and several businesses were destroyed (December in Colorado)
- Devastating fires in California over the summer
- Altogether, damage estimated at \$10.6 billion

#4. Tornadoes



Tornadoes ripped a 250-mile path of destruction across Kentucky and neighboring states in December 2021

Supply Chain Disruption

Shipping delays have impacted:

- Housing market
- Delays in large kitchen appliances
- Shortage of chips (auto)

Containers wait to be loaded at the Long Beach port as cargo ships sit idle in the distance in October 2021



There are more than **40** privacy laws worldwide, including:



Health Insurance Portability &
Accounting Act (HIPAA)



California Privacy Rights Act
(CCPA)



Fair Credit Reporting Act (FCRA)



Gramm Leach Bliley Act
(GLBA)



Children's Online Privacy
Protection Act (COPPA)



Family Education Rights & Privacy
Act (FERPA)

Data Privacy (continued)

A magnifying glass with a blue handle and frame is positioned over a list of personal data fields. The list is centered within the lens of the magnifying glass. The background of the slide features a stylized fingerprint pattern on the left side.

FULL NAME
AGE GENDER
TELEPHONE NUMBER
TAX INFO ADDRESS
CITIZENSHIP
BIRTH DATE EDUCATION
TRAVEL DOCUMENT
NATIONAL IDENTITY NUMBERS
CRIMINAL RECORD
NATIONALITY
MARITAL STATUS
INCOME INFO
IDENTITY DOCUMENT
BANK ACCOUNT NUMBER
OCCUPATION VISA INFO
MEDICAL RECORD

Notable GDPR Data Privacy Violation Fines:

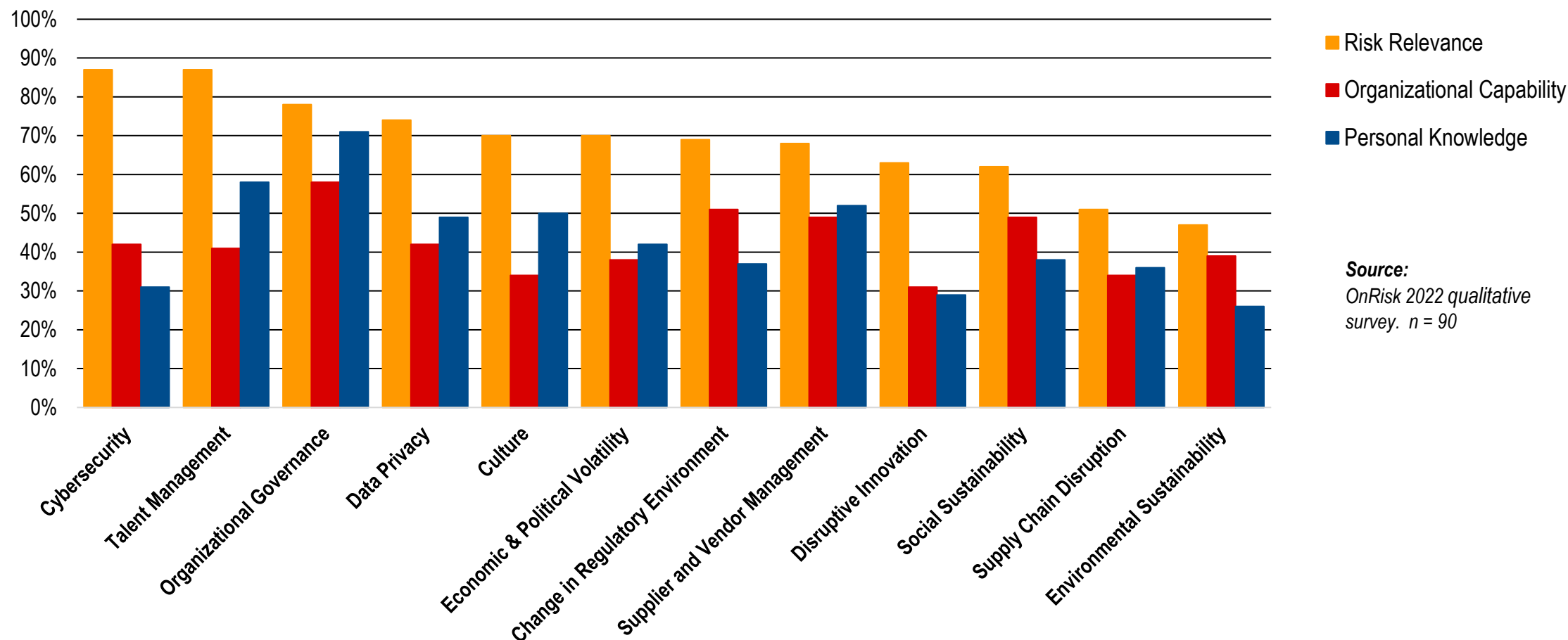
- Amazon (\$877 million)
- WhatsApp (\$255 million)
- Google Ireland (\$102 million)
- Zoom (\$85 million)
- Google LLC (\$68 million)
- British Airways (\$26 million)
- Marriott (\$23.8 million)
- Facebook (\$68 million)

EU's General Data Protection Regulation went into effect in May 2018.

Potential new regulation on facial recognition, biometrics, genetic information, connected devices, location tracking, algorithms.

2022 Risk Ratings – All Respondents

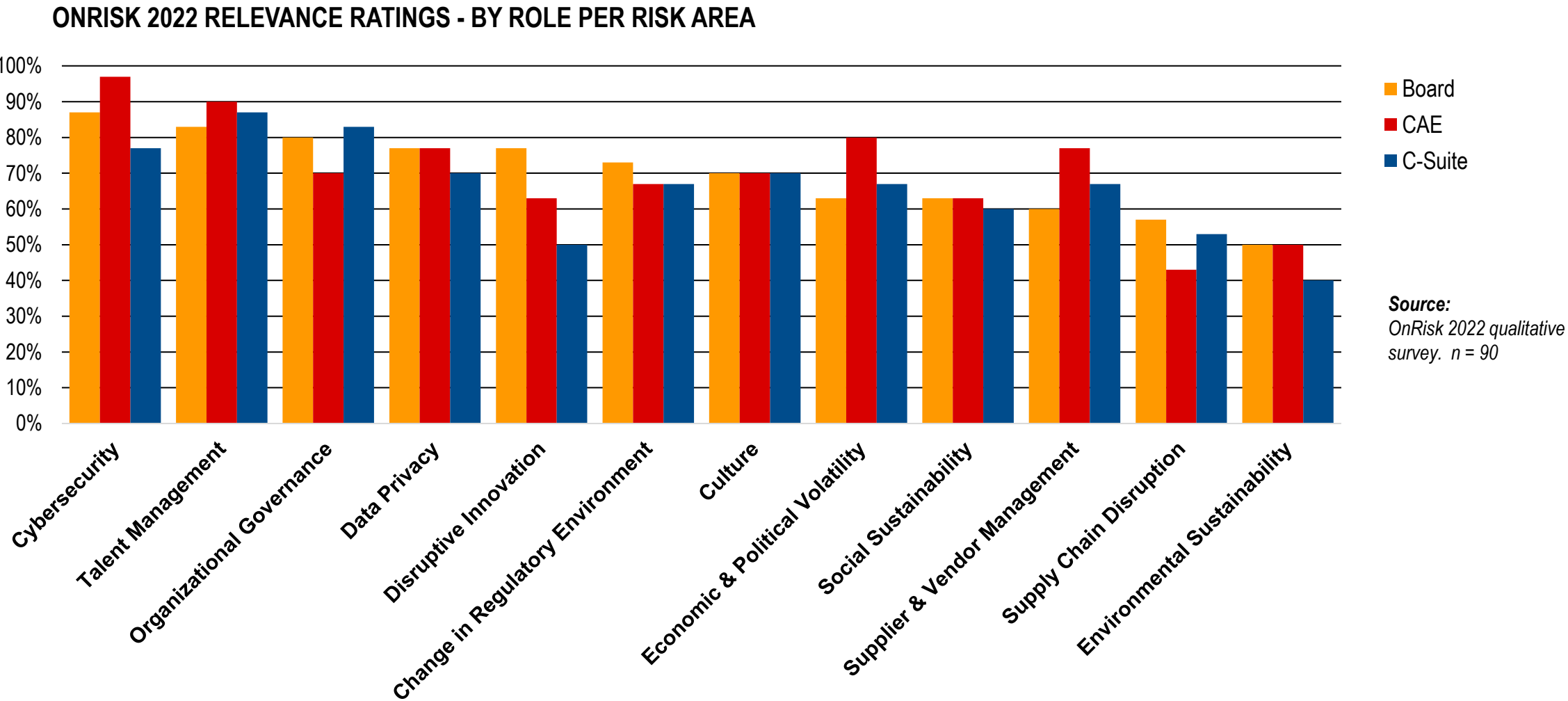
ONRISK 2022 RISK RATINGS - ALL RESPONDENTS



Source:
OnRisk 2022 qualitative
survey. n = 90

- (i) Significant gaps exist between risk relevance and organizational capability for Talent Management, Cybersecurity, Disruptive Innovation, Data Privacy.
- (ii) Other areas to pay attention to: Culture and Economic and Political Volatility.
- (iii) The Relevance-Capability gap reflects potentially significant risk management vulnerabilities.

2022 Relevance Ratings – By Role per Risk Area



- (i) Board members rated disruptive innovation more relevant than senior executives by 27 points.
- (ii) Nearly every CAE (97%) rated cybersecurity as highly relevant; Boards lagged by 10 points and executives lagged by 20 points.
- (iii) Perceptions of risk relevance vary greatly across ESG components. Organizational Governance holds far greater relevance.



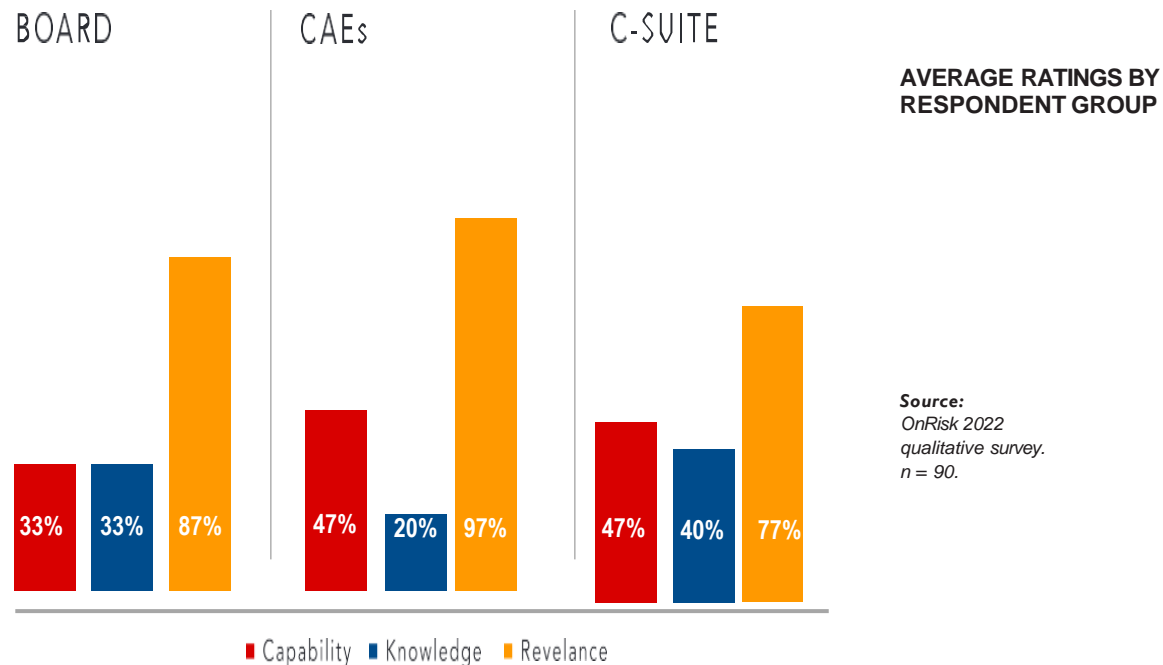
Individual Risks – Survey Results & Proposed Actions

Cybersecurity Risk: Survey Results & Proposed Actions

BOARD

PROPOSED ACTIONS:

- Understand legal implications of cyber risks.
- Ensure appropriate time is allocated for management, IA, and outside SMEs to brief Board members on **emerging cyber threats, organizational efforts, and existing vulnerabilities.**



C-SUITE

PROPOSED ACTIONS:

- Consistently evaluate emerging cyber threats.
- Get different perspectives on current status.
- Incorporate cyber risks and responses into crisis management program.
- Have board/management discussions of which risks to avoid, accept, mitigate or transfer.
- Implement a data governance program beyond basic classification.
- Develop specific risk management plans.

CAE

PROPOSED ACTIONS:

- Perform **routine evaluations** of RM functions related to cybersecurity.
- Identify opportunities to educate management and the Board on **emerging cyber risks.**

Talent Management: WFH – Profound Changes to the Employment Social Contract

- Five-fold increase in remote job postings (on LinkedIn)
- More than 46% of workers plan to move (& work remotely)
- WFH has eliminated the limitation of geographic considerations
- Profound impact on attitudes about work/life balance
- Many workers are reconsidering career paths



The Great Resignation: A Growing Number of Workers are Leaving Jobs Voluntarily

I QUIT!



memegenerator.net

Month	# of Quits
April 2021	4.0 million
May 2021	3.6 million
June 2021	3.9 million
July 2021	4.0 million
August 2021	4.3 million
September 2021	4.4 million
October 2021	4.2 million

Bureau of Labor Statistics

High profile labor strikes at Hollywood sets, Kellogg and John Deere (for better pay and benefits)

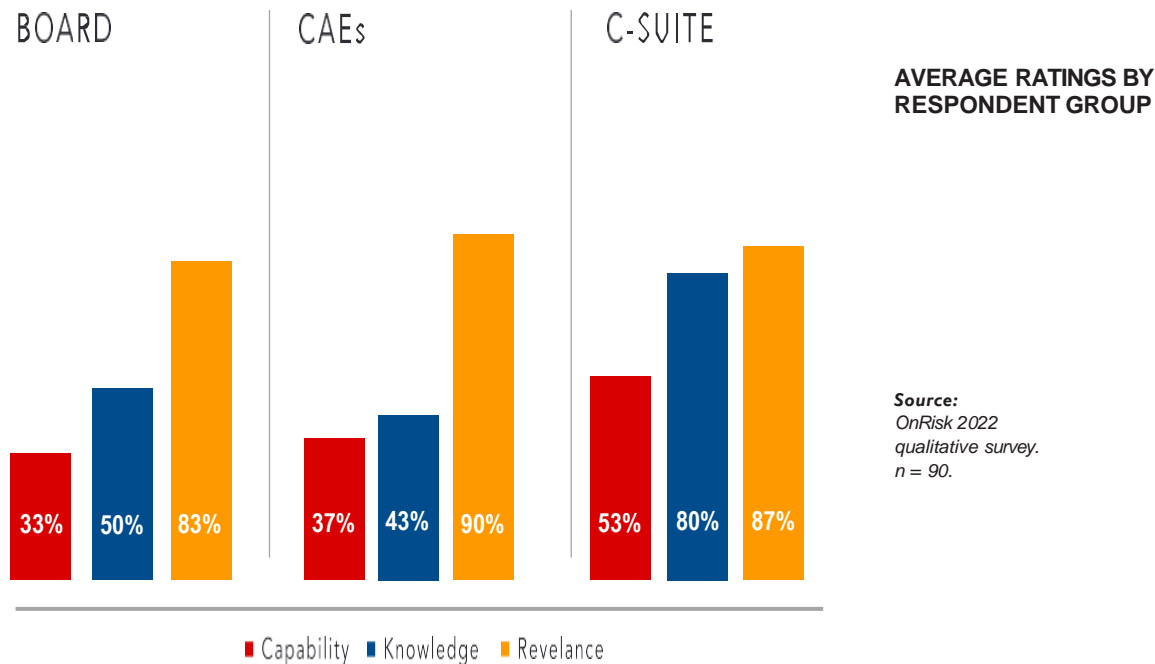
Number of open jobs in the US in October 2021: **11 million**

Talent Management: Survey Results & Proposed Actions

BOARD

PROPOSED ACTIONS:

- Require executives to keep the board apprised of relevant talent management decisions



C-SUITE

PROPOSED ACTIONS:

- Carefully weigh tightening labor market and how it relates to worker expectations in salaries, benefits & work/life balance.
- Implement and measure work arrangement preferences and their effect on employee morale, productivity, and retention efforts.
- Screen job applicants for turnover risk
- Obtain internal audit's input on RTO plans and related range of risks, including impact to culture.

CAE

PROPOSED ACTIONS:

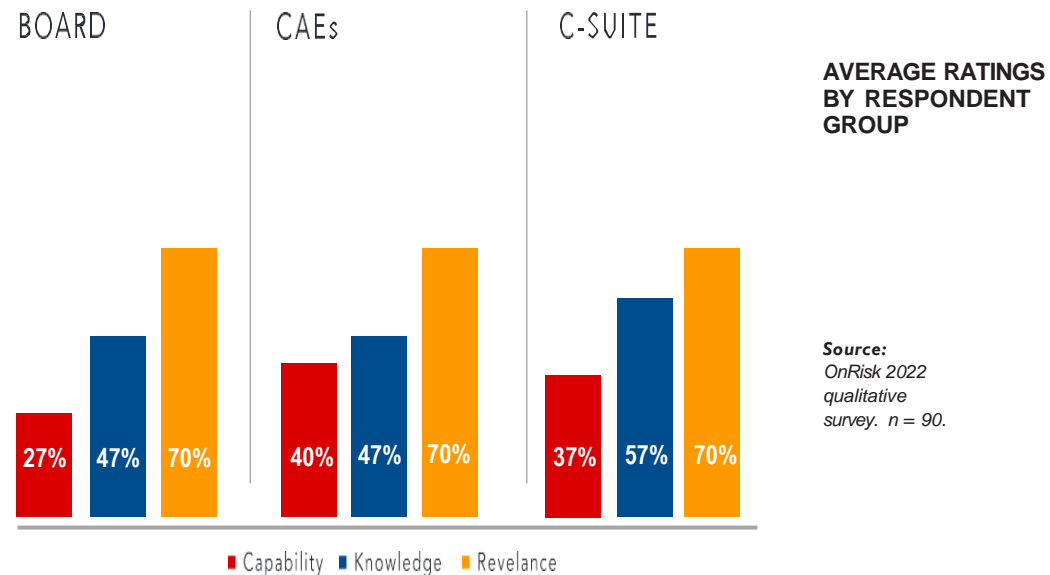
- Provide assurance around talent management
- Support board and executive management in the analysis of data resulting from employee surveys, exit interviews, or diversity and inclusion initiatives.

Culture: Survey Results & Proposed Actions

BOARD

PROPOSED ACTIONS:

- Consider asking for an independent assessment of the organizational culture.
- Ensure executive goals and incentives are aligned with an effective organizational culture.



C-SUITE

PROPOSED ACTIONS:

- Establish consistent processes to gauge the culture and communicate those perceptions to the board timely.
- Obtain internal audit's input on RTO plans and related range of risks, including impact to culture.
- Find ways to teach organization's culture to workers hired during the pandemic.

CAE

PROPOSED ACTIONS:

- Be cognizant of potential misalignment as the organization transitions to a post-pandemic world.
- Provide assurance or advisory services related to culture.

Key Takeaways



Create a culture of openness, transparency, and candor among board members and between the board and management.



Build the board agenda around the most critical risks of the organization.



Have frequent culture conversations with management.



Receive regular risk management plan updates on cybersecurity, talent management, culture, and data governance.



Understand legal implications of cyber risks.

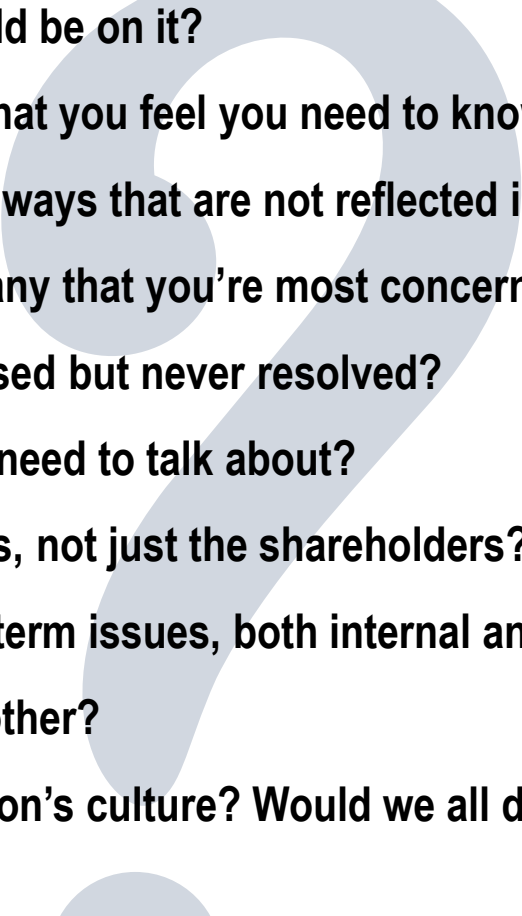


Questions?

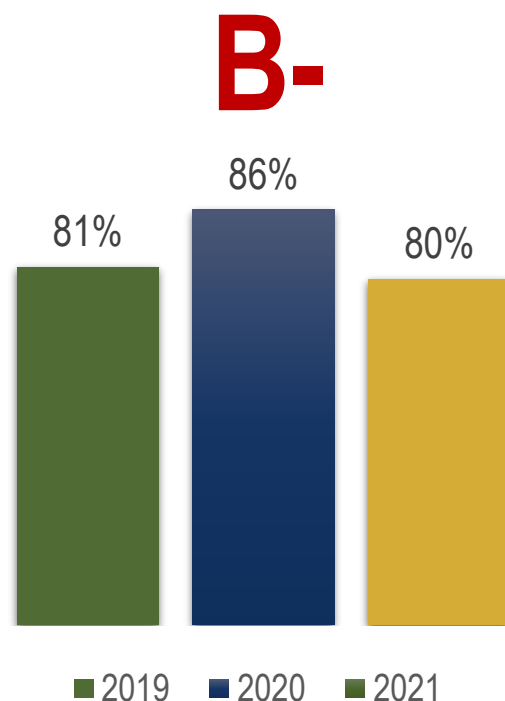


Appendices

APPENDIX 1A: 10 Proactive Questions Every Board Member Should Be Asking

- 
1. If you designed the agenda, what would be on it?
 2. What is the executive not telling you that you feel you need to know?
 3. How is the external world changing in ways that are not reflected in your board conversations?
 4. What don't you know about the company that you're most concerned about?
 5. What do you see always being discussed but never resolved?
 6. What are you not discussing that you need to talk about?
 7. Are we addressing all the stakeholders, not just the shareholders? If so, how, and what's the order of priority?
 8. Are we adequately discussing longer-term issues, both internal and external?
 9. How well do we know and trust each other?
 10. How would we describe the organization's culture? Would we all describe it the same way, and is the culture consistent across the company?

APPENDIX 1B - Principle 2: Meeting stakeholder expectations



The Board should ensure that key stakeholders' feedback is regularly solicited to ensure stakeholder needs are met.

Source: 2021 IIA American Corporate Governance
n = 128 for 2019, n = 131 for 2020 & n = 86 for 2021

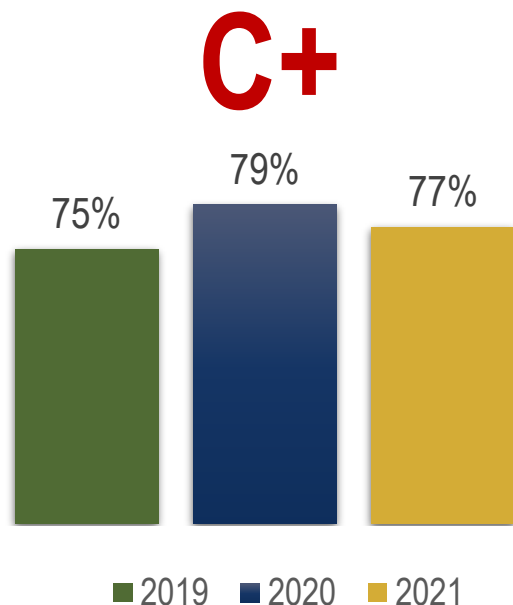
Key Contributing Principles

Key Contributing Principles	2019	2020	2021
Identify key stakeholders. Obtain regular feedback on whether policies meet stakeholder needs and expectations.	81%	86%	80%
Leadership is cognizant of how corporate operations impact ESG issues.	73%	76%	76%
Company has not been subject to shareholder litigation, proxy fights, or 'vote no' campaigns.	80%	89%	72%

KEY TAKEAWAYS

- Largest decrease related to increased shareholder activism, proposals, voting, and litigation.
- A small decline in the extent to which the company is considering a wide range of stakeholder interests when making business decisions.

APPENDIX 1C - Principle 4: Sustainable strategies with long term focus



The Board should ensure that the company maintains a sustainable strategy focused on long-term performance and value.

Source: 2021 IIA American Corporate Governance
n = 128 for 2019, n = 131 for 2020 & n = 86 for 2021

Key Contributing Principles

The company's strategic goals are clearly communicated to and well-known across the company.

2019

2020

2021

77%

80%

76%

The company is not willing to sacrifice long-term strategy for the benefit of short-term interests.

67%

70%

73%

Employees receive adequate training to complete expected job duties.

70%

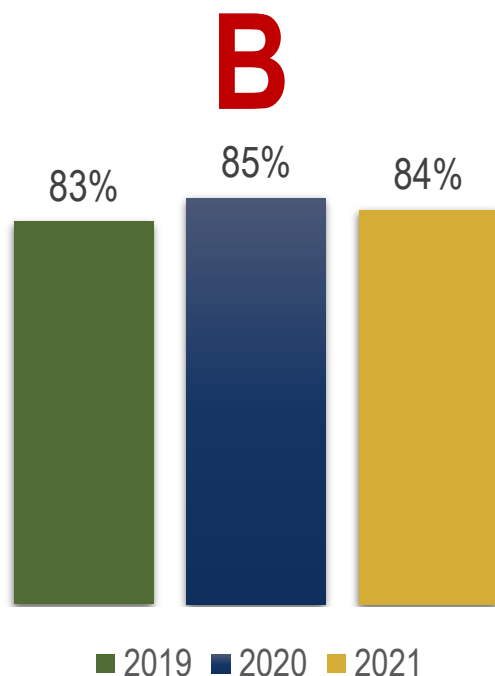
76%

70%

OPPORTUNITIES FOR IMPROVEMENT

- Communicate the long-term strategy across the company
- Incentive systems for employees should ensure long-term corporate objectives are accomplished in an ethical manner
- Improve quality of training given to employees
- Provide resources to effectively respond to crises and disruptions as they arise

APPENDIX 1D - Principle 7: External disclosures



The Board ensures that corporate disclosures are transparent and accurate, and in compliance with legal requirements and ethical norms.

Source: 2021 IIA American Corporate Governance
n = 128 for 2019, n = 131 for 2020 & n = 86 for 2021

Key Contributing Principles

Key Contributing Principles	2019	2020	2021
Employers are familiar with how to report violations of law or policy.	78%	82%	82%
The internal audit function is adequately staffed, in terms of both the number of staff and expertise of the staff.	77%	76%	74%

KEY TAKEAWAYS

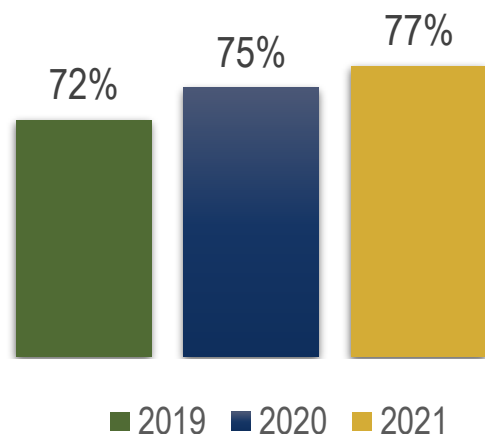
- Senior executives and boards desire a broader scope for internal audit services
- Increased incidences of restatement, cybersecurity, or internal control issues

OPPORTUNITIES FOR IMPROVEMENT

- Internal Audit should have unfiltered access to Audit Committee
- IA should be adequately resourced
- Board should oversee the assessment of risk of fraud
- Board should have processes for employees and other stakeholders to report suspected fraud or misconduct

APPENDIX 1E - Principle 8: Evaluating corporate governance

C+



Companies should be purposeful and transparent in choosing their key policies and procedures related to corporate governance to allow key stakeholders an opportunity to evaluate whether they are optimal for the company.

Source: 2021 IIA American Corporate Governance
n = 128 for 2019, n = 131 for 2020 & n = 86 for 2021

Key Contributing Principles

The Board seeks out feedback on whether corporate governance is operating effectively.

The company formally evaluates the full system of corporate governance on a regular basis.

2019

2020

2021

72%

75%

77%

70%

71%

72%

KEY TAKEAWAYS

Continue to improve to ensure that:

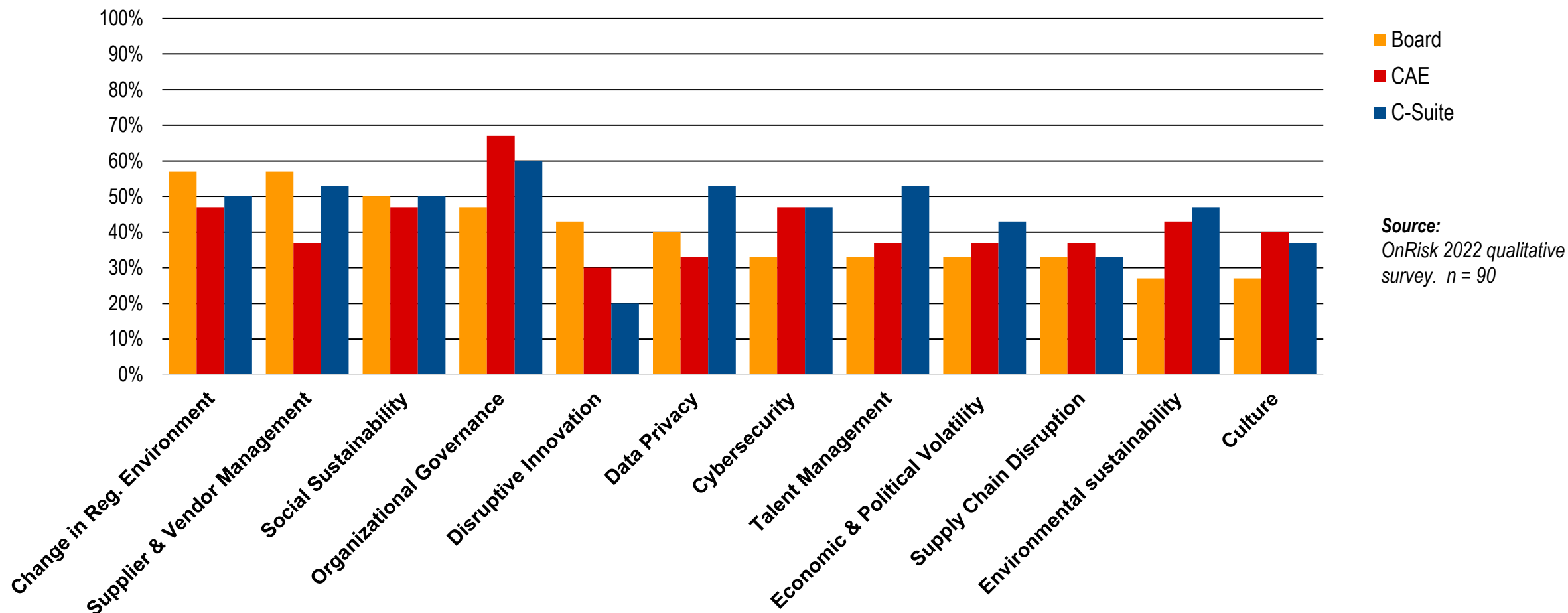
- Governance systems beyond the boardroom
- Issues are identified in a timely manner
- Correct information is provided to the right people at the right time

OPPORTUNITIES FOR IMPROVEMENT

- Board should regularly evaluate the full system of corporate governance
- The evaluations should encourage the reporting of potential deficiencies at all levels, including within the Board

APPENDIX 2A: 2022 Capability Ratings – By Role per Risk Area

ONRISK 2022 CAPABILITY RATINGS - BY ROLE PER RISK AREA



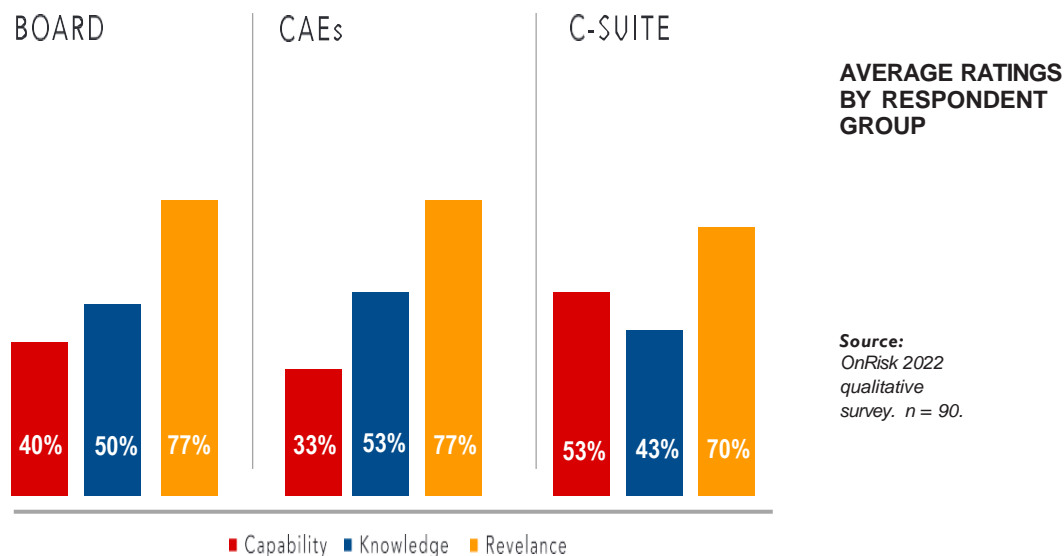
- (i) Senior executives tended to be more confident about organizational capability for most risks.
- (ii) Board organizational capability scores 20 points lower for Talent Management and Environmental Sustainability.
- (iii) CAEs less confident about supplier and vendor management

APPENDIX 2B: Data Privacy: Survey Results & Proposed Actions

BOARD

PROPOSED ACTIONS:

- Expect education on key aspects of data governance and request briefings from management and internal audit on how the organization strategically manages data.



C-SUITE

PROPOSED ACTIONS:

- Drive leading practices in data governance that ensure compliance with laws and regulations as well as progress toward meeting strategic objectives.

CAE

PROPOSED ACTIONS:

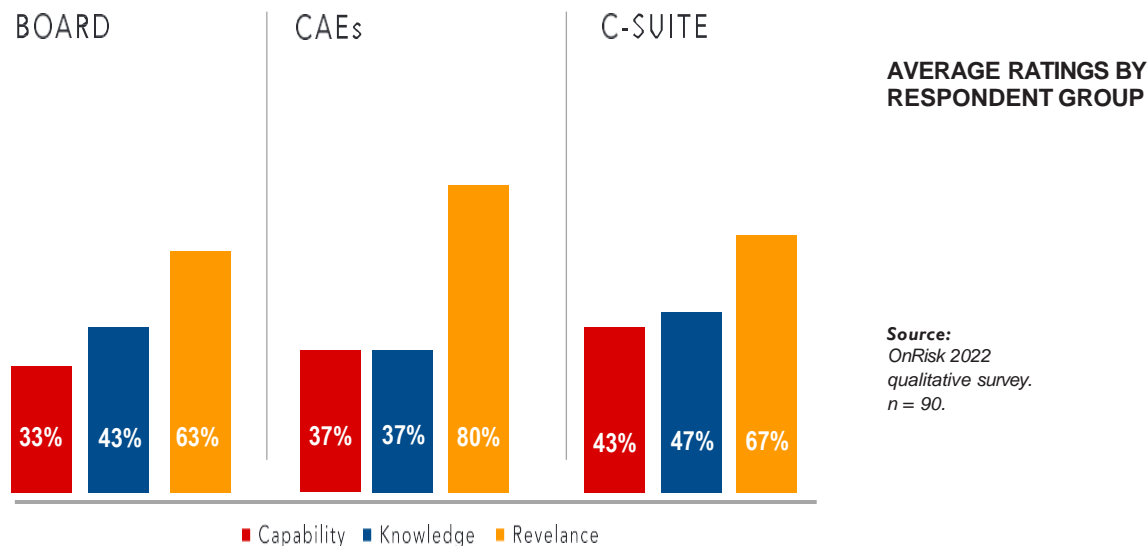
- Provide training to board members on the key aspects of data governance and provide assurance that management practices are leading edge.

APPENDIX 2C: Economic & Political Volatility – Survey Results & Proposed Actions

BOARD

PROPOSED ACTIONS:

- Engage management and internal auditors in discussions regarding potential economic and political outcomes and inquire about the readiness of organizations to be flexible.



C-SUITE

PROPOSED ACTIONS:

- Build contingencies and scenario plans for dealing with potential outcomes.
- Communicate with the board about the potential upsides and downsides of political changes and economic swings.

CAE

PROPOSED ACTIONS:

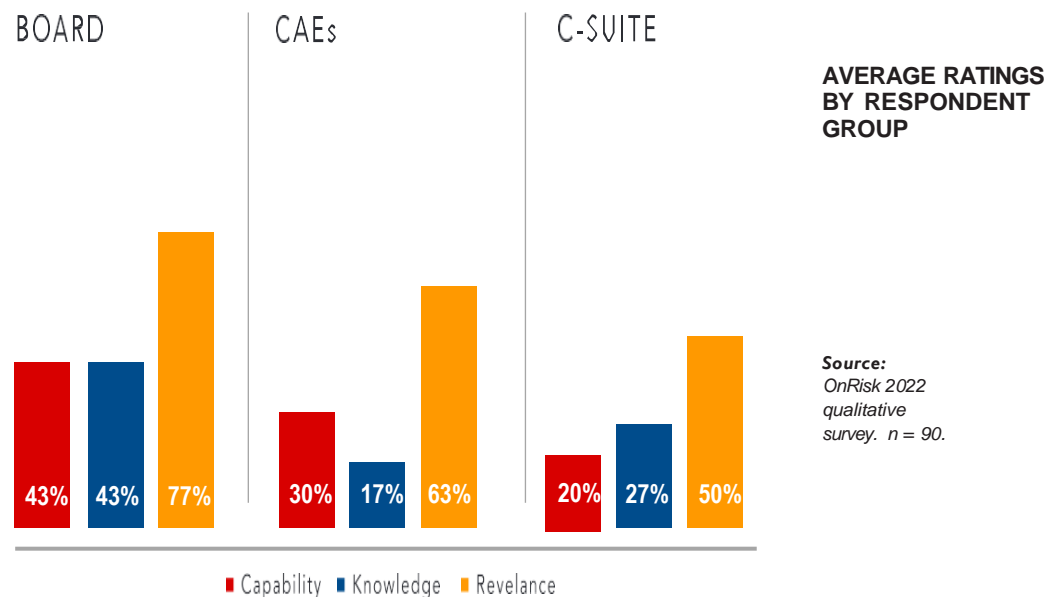
- Better educate internal auditors on how economic and political uncertainties may affect the likelihood of achieving organizational objectives.

APPENDIX 2D: Disruptive Innovation – Survey Results & Proposed Actions

BOARD

PROPOSED ACTIONS:

- Share with the organization any guidance and wisdom accumulated through outside and diverse experiences.
- Set expectations for management to provide proactive strategies that leverage innovation for competitive advantage and to be prepared to react timely to disruption.



C-SUITE

PROPOSED ACTIONS:

- Leverage the knowledge of board members to identify ways to innovate and identify competitors' attempts to disrupt business as usual.

CAE

PROPOSED ACTIONS:

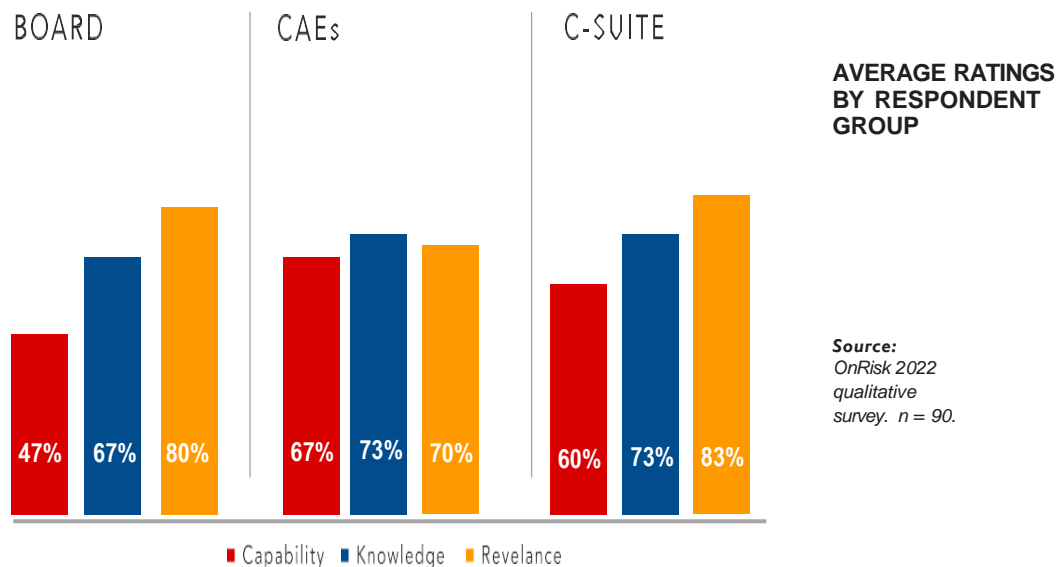
- Ensure a thorough understanding of strategic risks and opportunities to leverage innovation to be disruptive.
- Identify potential risks that could inhibit organizations' strategies to innovate and disrupt.

APPENDIX 2E: Organizational Governance – Survey Results & Proposed Actions

BOARD

PROPOSED ACTIONS:

- Continually emphasize the importance of risk alignment among key management players.
- Reject siloed or decentralized approaches to risk management.
- Promote internal audit's role in providing independent assurance over this risk area.



C-SUITE

PROPOSED ACTIONS:

- Align with the Board on the relevance of organizational governance.
- Maintain healthy dialogue around risk management and all key governance roles.

CAE

PROPOSED ACTIONS:

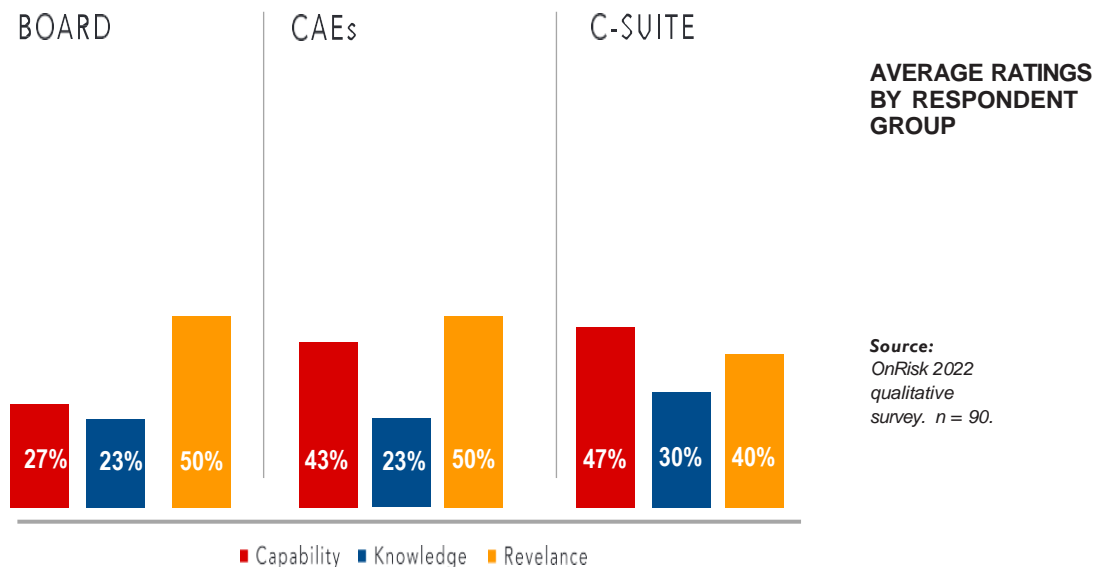
- Maintain a consistent line of communication with board members to ensure their needs are being met.

APPENDIX 2F: Environmental Stability – Survey Results & Proposed Actions

BOARD

PROPOSED ACTIONS:

- Require management to build sustainability into strategic plans.
- Set expectations of internal auditors to provide assurance related to sustainability reporting.



C-SUITE

PROPOSED ACTIONS:

- Recognize sustainability's growing importance to organizational stakeholders, including customers, employees, and investors.
- Identify opportunities to enhance long-term stakeholder value by embracing sustainability leadership as a strategic opportunity.

CAE

PROPOSED ACTIONS:

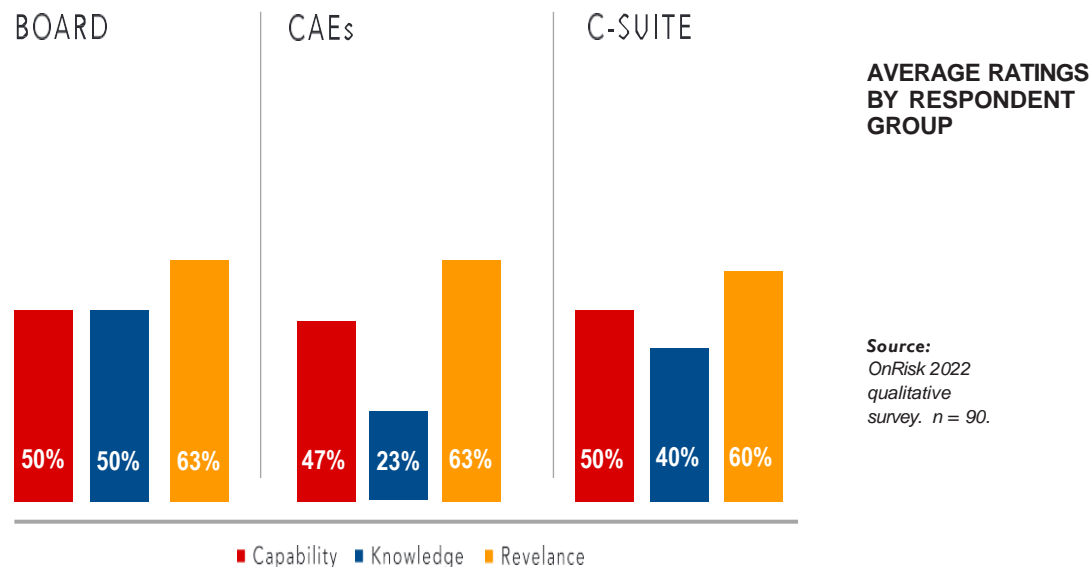
- Educate internal audit teams about emerging risks related to sustainability and how sustainability fits into organizations' operational and strategic priorities.

APPENDIX 2G: Social Sustainability – Survey Results & Proposed Actions

BOARD

PROPOSED ACTIONS:

- Require management to build sustainability into strategic plans.
- Set expectations of internal auditors to provide assurance related to voluntary sustainability reporting.



C-SUITE

PROPOSED ACTIONS:

- Recognize sustainability's growing importance to organizational stakeholders, including customers, employees, and investors.
- Identify opportunities to enhance long-term stakeholder value by embracing sustainability leadership as a strategic opportunity.

CAE

PROPOSED ACTIONS:

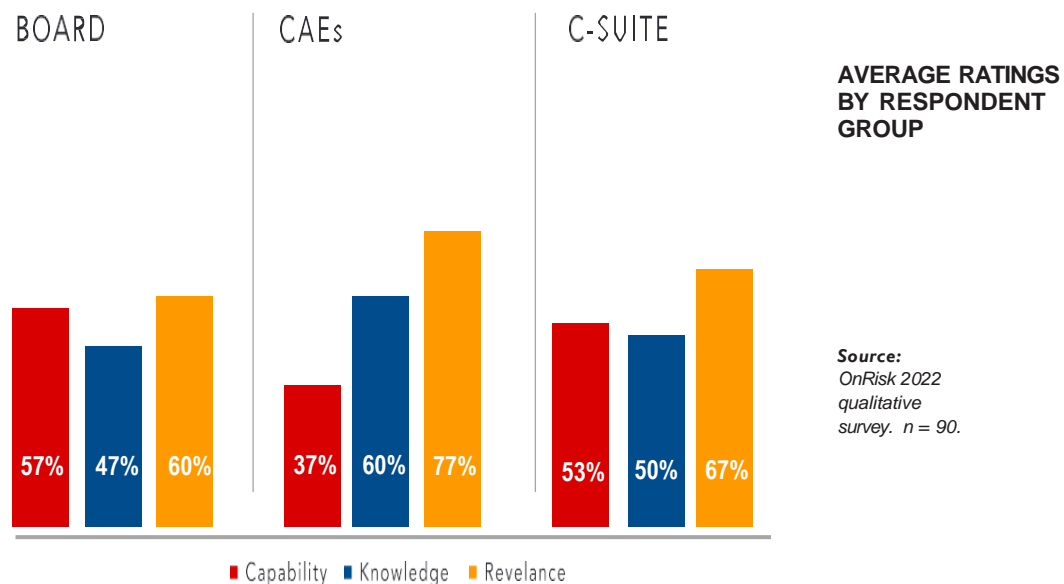
- Educate internal audit teams about emerging risks related to sustainability and how sustainability fits into organizations' operational and strategic priorities.

APPENDIX 2H: Supplier & Vendor Management – Survey Results & Proposed Actions

BOARD

PROPOSED ACTIONS:

- Evaluate internal audit plans to ensure that adequate resources are allocated to third-party risks.
- Request periodic status updates on key third-party relationships.



C-SUITE

PROPOSED ACTIONS:

- Maintain a comprehensive list of third-party arrangements.
- Develop risk-based approach for procuring and monitoring relationships.

CAE

PROPOSED ACTIONS:

- Regularly monitor procurement and monitoring processes.
- Include engagements to review third-party relationships that are operationally or strategically important.

APPENDIX 3A: Top Risks 2022 – Definitions

- **CYBERSECURITY:** The growing sophistication and variety of cyberattacks continue to wreak havoc on organizations' brands and reputations, often resulting in disastrous financial impacts. This risk examines whether organizations are sufficiently prepared to manage cyber threats that could cause disruption and reputational harm.
- **TALENT MANAGEMENT:** The increased need for and acceptance of remote operations, including working from home, as well as continued dynamic labor conditions, are redefining how work gets done. This risk examines the challenges organizations face in identifying, acquiring, upskilling, and retaining the right talent to achieve their objectives.
- **ORGANIZATIONAL GOVERNANCE:** Governance encompasses all aspects of how an organization is directed and managed — the system of rules, practices, processes, and controls by which it operates. This risk examines whether organizations' governance assists or hinders achievement of objectives.
- **DATA PRIVACY:** The growing list of regulations from jurisdictions around the world is making data privacy increasingly complex and dynamic. This risk examines how organizations protect sensitive data in their care and ensure compliance to all applicable laws and regulations.
- **CULTURE:** With an increasing percentage of professional employees working remotely full or part time, organizations are challenged to maintain, enhance, or control their organizational culture. This risk examines whether organizations understand, monitor, and manage the tone, incentives, and actions that drive the desired behavior.
- **ECONOMIC AND POLITICAL VOLATILITY:** The ongoing impacts of the pandemic combined with the normal dynamics of macroeconomic cycles have the potential to create volatility in the markets in which organizations operate. This risk examines the challenges and uncertainties organizations face in a dynamic and potentially volatile economic and political environment.

APPENDIX 3B: Top Risks 2022 – Definitions (continued)

- **CHANGE IN REGULATORY ENVIRONMENT:** Fundamental changes in government appetite for regulation can have a significant impact on organizations, including those not considered heavily regulated. This risk examines the challenges organizations face in a dynamic and ambiguous regulatory environment.
- **SUPPLIER AND VENDOR MANAGEMENT:** For an organization to be successful, it has to maintain healthy and fruitful relationships with its external business partners and vendors. This risk examines organizations' abilities to select and monitor third-party relationships.
- **DISRUPTIVE INNOVATION:** We are in an era of innovative business models, fueled by disruptive technologies. This risk examines whether organizations are prepared to adapt to and/or capitalize on disruption.
- **SOCIAL SUSTAINABILITY:** Increasingly, there is a recognition that organizations have significant influence on individuals who they employ, who work in their value chain, who consume their products and services, and who live in their communities. This risk examines the ability of organizations to understand and manage the direct and indirect impacts their actions have on individuals and communities.
- **SUPPLY CHAIN DISRUPTION:** The disruption to business-as-usual operations globally, rooted in the global pandemic, has highlighted the need for resilience in supply chains in support of organizations' achievement of strategic objectives. This risk examines whether organizations have built in the flexibility to adapt to current and future supply chain disruptions.
- **ENVIRONMENTAL SUSTAINABILITY:** Organizations are facing increased pressure from stakeholders, including shareholders, regulators, customers, and employees, to evaluate and disclose how they are impacting the environment in which they operate. This risk examines the ability of organizations to reliably measure, evaluate, and accurately report on their environmental impacts.