



Regular Meeting

Item Number 6 – Open Session

Subject: Enterprise Risk Management Report

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Item Type: Information

Date & Time: March 4, 2022 – 15 minutes

Attachment(s): Attachment 1 – ERM Heat Map
Attachment 2 – Risk Score Report

PowerPoint(s): Emerging Risk Map

PURPOSE

The purpose of this item is to provide the Teachers' Retirement Board (board) with the semi-annual Enterprise Risk Management (ERM) report reflecting updates as of December 31, 2021.

DISCUSSION/SUMMARY

As part of the ERM framework, CalSTRS Executive Risk Committee (ERC), Risk Champions Network (RCN) and the ERM Team review and discuss enterprise risks and mitigations on a quarterly basis and provide an ERM Report to the board semi-annually. Staff's quarterly review includes enterprise-level risks and sub-risks, while considering internal and external factors which could be catalysts for emerging and existential risks. Management's activities to mitigate risks include assessment and adjustment of business processes and internal controls as appropriate to avoid risks or ensure effectiveness of ongoing mitigation efforts, identification of risk transfer opportunities and acceptance of risks where the cost of mitigation exceeds the potential benefit.

Staff have accomplished the following risk-related activities during this reporting period:

- ERM team partnered with CalSTRS Training Services to create a customized webinar-based Risk Management Application and Techniques course for staff and management involved with the branch-level or enterprise-level risk assessment processes.
- Work Plans for the RCN, ERC and ERM Team were developed and approved for 2022.
- The 2021 State Leadership Accountability Act Report on the adequacy of the CalSTRS system of internal controls and monitoring practices was submitted to the Department of

Finance by the December 31, 2021, deadline. The report was accepted by DOF on January 24, 2022 and posted on CalSTRS.com on January 28, 2022.

As mentioned at the September 2021 board meeting, staff have removed former risk category 6 – Pension Reform from this report, due to low-risk scores and the current pension reform environment. As a result, the remaining risk categories have been renumbered, to account for a total of 10 risk categories. Staff will continue to monitor for this risk internally and will include it in future reports if the risk environment changes.

Through our ongoing ERM efforts, CalSTRS monitors the 10 risk categories and their respective sub-risks using an enterprise risk matrix which generates the data for the heat map and Risk Score Report. The heat map provides management and the board a graphic display of the inherent and residual risks for each risk category. The visual overview shows the effectiveness of mitigation strategies and activities to manage inherent risks, as revealed by the difference between the inherent and residual risk scores. The Risk Score Report provides a more detailed summary of the overall inherent and residual risk scores for these risk categories as well as risk scores for the individual sub-risks within each of the categories. The detail allows management and the board to recognize how the sub-risk scores and consideration of priority weightings determine the overall risk category’s inherent and residual risk score. The specifics for each report are described below.






ERM Heat Map

The heat map as of December 31, 2021, which is provided in Attachment 1, includes an inherent and residual risk score plotted on the map for each of the risk categories based on the following risk score calculation:

Risk Score Calculation = Impact x (Probability + Velocity)

The risk score calculation includes impact which gauges the potential severity of the risk for the organization, probability which rates how likely the risk is to occur and a velocity metric which considers how fast a risk may impact CalSTRS. The X-axis (Risk Categories) on the heat map displays the titles of the 10 risk categories, above which is a bar for the inherent risk score on the left (the darker gray bar) and a bar for the residual risk score on the right (the lighter gray bar). The black arrows and dotted lines reflect, if any, period-over-period movement of the risk category occurred since the prior reporting period. The Y-axis displays the 50-point risk score scale for the 10 risk categories as follows:

Risk Score Key:

	very high	41-50
	high	31-40
	medium	21-30
	low	11-20
	very low	1-10

For this reporting period, all but four categories have residual risk scores within the low or very low risk range (yellow or blue) band of the heat map. The four categories with higher scores are:

- Category 4 – Pension Administration with an overall residual risk score of 25 (medium).
- Category 6 – Information Security with an overall residual risk score of 38 (high).
- Category 9 – Transformational Change with an overall residual risk score of 31 (high).
- Category 10 – Third Parties with an overall residual risk score of 21 (medium).






There were four risk categories where the risk scores changed from the prior period.

- Category 4 – Pension Administration. The residual risk score increased to reflect the testing delays related to the Pension Solution Project.
- Category 5 – Financial Reporting. The residual risk score decreased to reflect the remediation of the significant internal control deficiency over financial reporting.
- Category 8 – Reputational. The residual risk score increased to reflect the schedule delays related to the Pension Solution Project.
- Category 9 – Transformational Change. The residual risk score increased to reflect the schedule delays related to the Pension Solution Project. The inherent risk score also increased to reflect delays with the project.

These changes reflect management’s commitment to recognizing and managing enterprise-level risks. Overall, based on management’s review of identified risks and the associated mitigation efforts, the risks for all 10 risk categories are adequately managed and reflected appropriately on the heat map.

Risk Score Report

Below is a summary of the current status for each of the 10 risk categories as of December 31, 2021. The report, which includes the associated sub-risks, is provided in Attachment 2.

Risk Score Report - As of December 31, 2021		Risk Status	
<p>Organizations thrive by taking risks, but falter when risks are not managed effectively. Risks are inherently present in the work we do at CalSTRS, which is why we implement internal controls, to mitigate these inherent risks. However, the possibility of residual risk, after all actions are taken to mitigate risk, does exist.</p>	<p>Inherent Risk Risk without any actions or controls in place to reduce likelihood or impact.</p>	<p> very high 41-50</p>	<p>31-40</p>
<p>This Risk Score Report identifies the inherent risks and residual risks in each of the risk categories at CalSTRS and any corresponding changes since the last reporting period, June 30, 2021.</p>	<p>Residual Risk Risk remaining after implementing actions and controls to remove or manage risk.</p>	<p> high 31-40</p>	<p>21-30</p>
		<p> medium 21-30</p>	<p>11-20</p>
		<p> low 11-20</p>	<p>1-10</p>
		<p> very low 1-10</p>	

1	Pension Fund - Investments	Inherent Risk Score	Inherent Period Change	Residual Risk Score	Residual Period Change
	Fund performance objectives not achieved as set in the Investment Policy and Management Plan.	22	No Change	18	No Change

Category 1 – Pension Fund – Investments. The overall residual risk score for this category remains at 18 and in alignment with the low-risk range (yellow band) of the heat map, which reflects staff’s

confidence in the ongoing mitigation efforts to control this long-term risk, including the continued evaluation of liquidity and cash flow needs of the investment portfolio. Staff continue to monitor market conditions and evaluate the enduring impacts of the COVID-19 pandemic on the economic outlook to make tactical decisions. Staff continue to implement the new Collaborative Model investment strategies across all asset classes and have achieved an estimated average annual savings of \$195 million over the past 4 years. CalSTRS is currently in the early part of the second of three organizational phases of the Collaborative Model Continuum. While implementing the Collaborative Model 2.0, staff will continue to execute and capitalize on the cost savings of internal management in the public and private markets, while increasing the number and types of strategies in the Collaborative Model 2.0. The Pillars Project continues to provide necessary support to the Collaborative Model which contributed to the 27.19% net return on investments for the 2020-21 fiscal year, a record high that far exceeded the investment assumption of 7.0%.

2	Pension Funding - Actuarial	Inherent Risk Score	Inherent Period Change	Residual Risk Score	Residual Period Change
	Actuarial methodologies and assumptions vary from experience.	22	No Change	20	No Change

Category 2 – Pension Fund – Actuarial. The overall residual risk score for this category remains at 20 and in alignment with the low-risk range (yellow band) of the heat map. At the November 2021 board meeting, staff presented the 2021 [Review of Funding Levels and Risks report](#) where the ability of the plan to reach full funding by 2046 was analyzed and tested against different sets of more conservative economic actuarial assumptions. The analysis showed CalSTRS is in a stronger position today to react to changes in actuarial assumptions than it was two years ago when actuarial assumptions were last reviewed. In fact, under all but one set of actuarial assumptions analyzed for the report, CalSTRS would still be projected to reach full funding by 2046. This is a significant improvement that places CalSTRS in a favorable position if there was a desire on the part of the board to adopt more conservative actuarial assumptions in the future. Staff will continue to monitor actuarial assumptions as part of its ongoing monitoring of the CalSTRS funding plan.

3	Pension Fund - Contribution Rate	Inherent Risk Score	Inherent Period Change	Residual Risk Score	Residual Period Change
	Insufficient contribution rates to amortize unfunded actuarial liability.	20	No Change	15	No Change

Category 3 – Pension Fund – Contribution Rate. The overall residual risk score for this category remains at 15. Based on current assumptions, the funding plan is still expected to allow the board to adopt the contribution rates needed for the employers and the state to eliminate their share of CalSTRS’ unfunded actuarial obligation by 2046. Formal assessments of contribution rates, funding levels and risks are provided to the board twice a year. These formal assessments are presented in the spring through the annual actuarial valuation report and in the fall through the Review of Funding Levels and Risks report. At the November 2021 board meeting, staff presented the 2021 [Review of Funding Levels and Risks report](#). The report reflected the \$584 million in supplemental payments from the State of California as part of the 2021-22 state’s budget, the

27.19% investment return earned by CalSTRS in fiscal year 2020-21 and reflected the reduction in the number of active teachers experienced over the last fiscal year. This reduction has resulted in a payroll that has remained flat, below the assumed 3.5% annual growth. Even if the recent decline in the number of active teachers had a negative impact, last year’s performance has strengthened CalSTRS’ long-term sustainability and its goal of achieving full funding. Projected funding levels are now higher than those presented as part of the June 30, 2020, actuarial valuation. In addition, every funding risk measure included in the report has improved over the last year.

4	Pension Administration	Inherent Risk Score	Inherent Period Change	Residual Risk Score	Residual Period Change
	Untimely and/or inaccurate delivery of benefits and services due to failure of or inadequate: processes, technology systems, staff actions or data.	35	No Change	25	↑ 1

Category 4 – Pension Administration. The overall residual risk score for this category increased by one point to reflect the Pension Solution Project delays in testing activities that are currently running behind the original end dates as described in the Transformational Change risk category below. The delay in the project requires the legacy system, START, to be maintained for a longer period. The residual risk score increase reflects the possible challenges Technology Services may face in retaining or recruiting resources with the necessary technical skills to extend the lifespan of the legacy system.

5	Financial Reporting	Inherent Risk Score	Inherent Period Change	Residual Risk Score	Residual Period Change
	Incomplete or inaccurate financial information; weaknesses in internal control jeopardize an unqualified/unmodified audit opinion or result in significant non-compliance with standards.	20	No Change	8	↓ 2

Category 5 – Financial Reporting. The overall residual risk score for this category decreased by two points because there were no additional accounting standards requiring implementation in the last year and staff remediated the significant internal control deficiency identified in the June 30, 2020, audit. As a result of those remediated efforts, that internal control deficiency did not repeat in the June 30, 2021 audit. The overall residual risk score for this category is in alignment with the very low risk range (blue band) of the heat map, which reflects staff’s confidence in the ongoing effectiveness of CalSTRS internal controls over financial reporting.

6	Information Security	Inherent Risk Score	Inherent Period Change	Residual Risk Score	Residual Period Change
	Loss of information security or compliance violations as a result of unauthorized or unintentional breaches.	49	No Change	38	No Change

Category 6 – Information Security. The overall residual risk score for this category remains at 38 and in alignment with the high-risk range (red band) of the heat map. Staff does not anticipate a future decrease in residual scoring due to the current climate of data breaches and highly persistent cyber criminals. However, Information Security remains a constant focus for the organization and staff remain confident in the mitigation efforts to control this risk, including ongoing monitoring

of CalSTRS systems and staff education in the remote work environment. The Annual Independent Cybersecurity Assessment was completed as of December 2021. Staff will present the results at the March 2022 closed session board meeting.

7	Operational	Inherent Risk Score	Inherent Period Change	Residual Risk Score	Residual Period Change
	Inability to achieve business objectives due to lack of compliance with internal controls, lack of accessibility to technology systems, and/or loss of critical staff knowledge.	31	No Change	20	No Change

Category 7 – Operational. The overall residual risk score for the category remains at 20 and in alignment with the low-risk range (yellow band) of the heat map. The sub-risk addressing the completion of the Headquarters Expansion Project within the established scope, schedule and budget experienced an increase in the inherent probability score from four to five and in the residual probability score from three to four to reflect the likelihood that the project will extend beyond the established schedule and budget. However, given the large number of sub-risks within the Operational risk category, the increase was not significant enough to change the overall category risk scores. The organization continues to focus its efforts on the mitigation strategies and activities on the sub-risks associated with the transition to the blended working model and maintaining proper health and safety strategies. Staff continue to monitor current path forward policies, protocol updates, as well as monitoring the California Division of Occupational Safety and Health Emergency Temporary Standards and California Department of Human Resources guidelines for the latest health and safety requirements.

8	Reputational	Inherent Risk Score	Inherent Period Change	Residual Risk Score	Residual Period Change
	Loss of confidence in CalSTRS as a respected fiduciary of public funds.	29	No Change	20	

Category 8 – Reputational. The overall residual risk score for this category increased by one point to 20 which is in alignment with the low-risk range (yellow band) of the heat map. The category score reflects staff’s continued confidence that ongoing mitigation efforts effectively control this risk. Human Resources has begun its review of the 2022 annual policy recertification acknowledgment process to ensure employees are aware and reminded of the organization’s policies, standards and guidelines. The sub-risk addressing the inability to implement transformational efforts, such as the Pension Solution and the Headquarters Expansion projects, saw an increase in the residual probability and velocity scores from three to four to reflect these two projects schedule delays. Customer service levels have remained stable, the Investments branch continues to move forward with the work necessary to achieve the board’s 2050 net zero pledge, and the Collaborative Model 2.0 will continue the effort to reduce the costs associated with managing the investment portfolio.

9	Transformational Change	Inherent Risk Score	Inherent Period Change	Residual Risk Score	Residual Period Change
	CalSTRS is unable to accomplish major transformational change initiatives.	34	↑3	31	↑5

Category 9 – Transformational Change. The overall inherent risk score increased from 31 to 34 and the overall residual risk score increased from 26 to 31 due to increases in the scores of sub-risks A and B which reflect the delay to the Pension Solution Project schedule. CGI continues to experience significant delays in completing its testing and resolving issues regarding quality of deliverables. CGI has missed the Functional Rollout-2 and Functional Rollout-3 go-live dates. CGI has also not yet submitted a formal final proposed schedule and supporting information.

Progress will continue to be closely monitored. The risk scores in this category will be reconsidered once the final schedule has been agreed upon.

10	Third Parties	Inherent Risk Score	Inherent Period Change	Residual Risk Score	Residual Period Change
	There is a risk that CalSTRS fails to appropriately manage risks associated with third parties which could result in operational disruption, financial loss, reputational damage, compliance violations or failure to reach strategic goals.	32	No Change	21	No Change

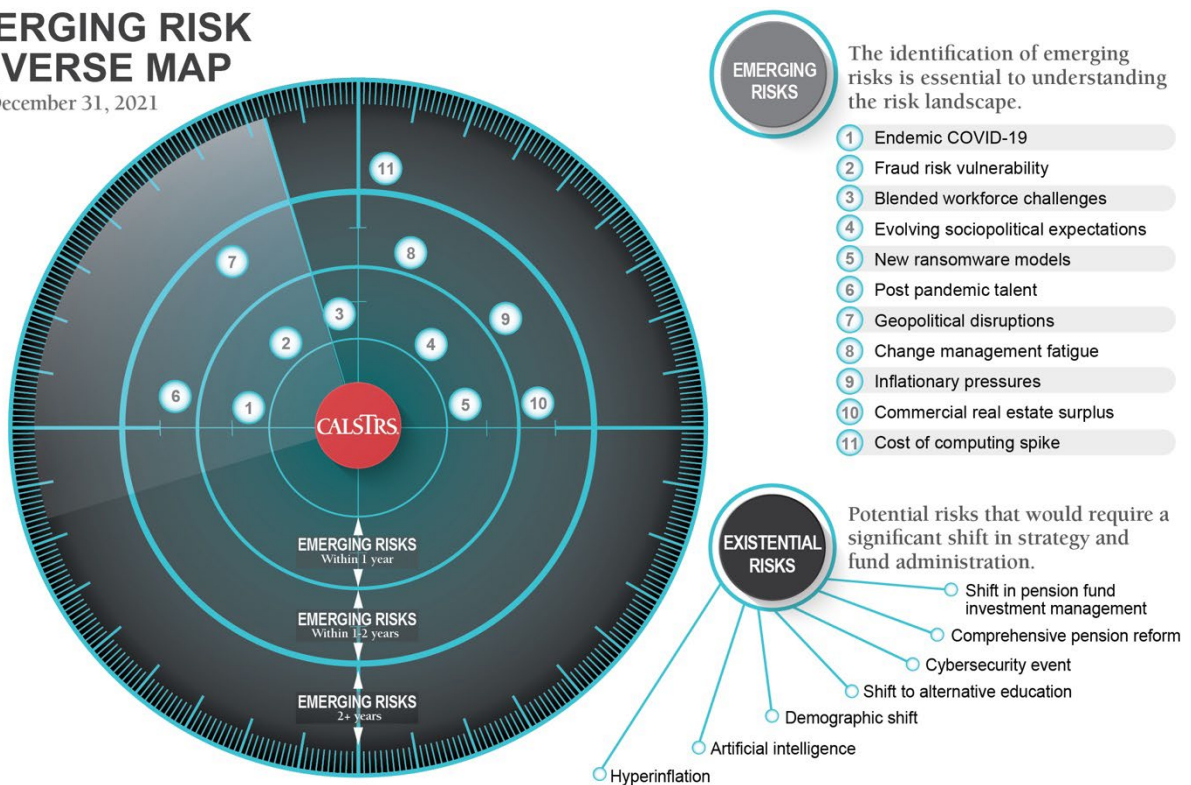
Category 10 – Third Parties. The overall residual risk score remains at 21 and in alignment with the medium risk range (orange band) of the heat map. Staff does not expect a decrease in residual risk until establishment of the Third-Party Risk Management Program. The Office of General Counsel is the global owner of this new risk category and is leading the development of this program to ensure a consistent, systematic method of governing and controlling third-party risk. The Office of General Counsel is collaborating with Enterprise Compliance Services to develop a governance process and standards to help strengthen controls for third party risk identification for contract managers. Staff will begin work to establish third party risk classification tiers which will categorize vendors and ultimately determine the level of monitoring and review required. Additional sub-risks will be phased into the category as the Third-Party Risk Management Program matures.

Emerging and Existential Risks

As staff continue to mature the ERM Program, one area of focus is to evolve the identification and assessment of emerging and existential risks. Over the last reporting period, staff identified a variety of these potential risks and possible timeframes these risks could potentially impact the organization. See Figure 1 below. While creating this list, staff utilized an enterprise-wide approach in the identification of emerging and existential risks using information gathered from organizational partners, leadership interviews, board meetings and other credible information sources.

Figure 1
**EMERGING RISK
 UNIVERSE MAP**

As of December 31, 2021



Below are the CalSTRS definitions used in identifying these types of risks. Staff will be regularly evaluating this information to determine whether any of these risks require active mitigations, revision to existing mitigations, active monitoring for future consideration or no action needed until the next identification cycle.

Emerging Risks Definition:

Emerging Risks are potential risks to the organization which have not been previously identified, were not yet significant enough to impact the organization or were dormant for an extended period. Their onset may be years in the future or immediate due to unforeseen changes. CalSTRS recognizes that emerging risks’ probability might vary and may have a high impact that threatens meeting our business objectives. The identification of emerging risks is essential to fully understanding the risk landscape and determining which of these risks should be further assessed and actively managed when necessary.

Existential Risks Definition:

Existential risks are potential risks that would require a significant and immediate shift in strategy and how CalSTRS’ administers the fund for members. CalSTRS recognizes that existential risks have a very low probability but would result in an extremely high impact on how we currently do business. Existential risks can be a subset of emerging risks. Like emerging risks, the identification of existential risks are essential to fully understanding the

risk landscape and determining which of these risks should be further assessed and actively managed when necessary.

Risk Oversight

The board has a fiduciary responsibility for CalSTRS' enterprise-wide risk oversight. Staff provides the board with many different channels of risk related reporting, in addition to this report, to ensure there is a comprehensive approach and framework to anticipate, identify, analyze, prioritize and manage key risks. The reports include, but are not limited to:

- Review of CalSTRS Funding Levels and Risks report
- Independent Auditors Report on Internal Control over Financial Reporting and on Compliance and Other Matters
- Chief Executive Officer and Chief Investment Officer board reports
- Project reporting for Pension Solution, Headquarters Expansion and the Collaborative Model projects
- Information Security reports

Ongoing Monitoring

Staff is continuously monitoring all risk categories as our remote work environment persists, including the effect to the strategic plan and project deliverables. We are also keeping up to date on national and world events, including the pandemic, economic trends, and social and political unrest. Any additional risks will continue to be managed to ensure the continuity of CalSTRS' operations, while maintaining the ERM framework at the program level, and cultivating a positive risk culture.

Over the next reporting period, staff will continue to identify and consider emerging and existential risks that need further assessment, revise and launch the annual all-staff Risk and Internal Controls Awareness online training, validate branch and enterprise-level risk mitigations and continue coordination efforts with other organizational assurance functions.

Summary

Since the June 30, 2021, ERM Report was presented to the board in September 2021, staff continue their efforts to recognize, assess and mitigate enterprise-level risks, including emerging and existential risks, that may impact CalSTRS' ability to accomplish its strategic goals and project deliverables and are taking the necessary actions to manage those risks.

The movement of several risk categories on the heat map displays the dynamic nature of the current risk environment. However, staff remain confident that with the ongoing risk mitigations in place, including those associated with the COVID-19 pandemic, CalSTRS will be able to continue to deliver on its mission. Staff will continue to mature the ERM Program to ensure the organization remains prepared for current and future risks.