Investment Practices and Performance Evaluation of the Teacher Retirement System of Texas

February 15, 2024

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Background

Background

Texas Government Code §802.109 requires that all Texas public retirement Plans with at least $30 million in assets complete an Investment Practices and Performance Evaluation ("Evaluation"). The scope of the Evaluation is defined in Texas Government Code § 802.109. The Texas Pension Review Board ("PRB"), provides informal guidance to assist Plans in defining the scope and content of the evaluation.

The focus of the Evaluation includes five areas: (1) the investment policy; (2) the asset allocation; (3) the appropriateness of investment fees and commissions; (4) governance processes for investment activities; and (5) the investment manager selection and monitoring processes.

Retirement Plans with at least $100 million in total assets must conduct the Evaluation once every three years. Retirement Plans having at least $30 million but less than $100 million in total assets must complete the Evaluation once every six years.

A report of the Evaluation must be filed with the governing body of the public retirement Plan no later than May 1 of each year following the year in which the Plan is evaluated. The governing body must submit the report of the Evaluation to PRB no later than 31 days after the date the governing body of the retirement Plan receives the report.

The Evaluation must be completed by an independent firm with substantial experience in evaluating institutional investment practices and performance. The independent firm is required to evaluate the appropriateness, adequacy, and effectiveness of the retirement Plan's investment practices and performance and to make recommendations for improving the investment policies, procedures, and practices.

Aon Investments USA Inc. ("Aon") is currently providing investment consulting services to the Teacher Retirement Plan of Texas ("TRS") pursuant to the September 1, 2018, Investment Advisory Services Agreement. A separate group within Aon ("Fiduciary Services Practice") is providing this Evaluation at TRS' request pursuant to the September 1, 2023, Amendment 5 to the September 1, 2018 Investment

Advisory Services Agreement. Aon Fiduciary Services Practice also provided the first statutorily required TRS review in 2020.

Aon meets the experience requirements necessary to complete this review. Aon is a full-service global investment consulting firm that provides a wide array of services to various client types. Aon has a dedicated Fiduciary Services Practice that has extensive experience conducting fiduciary audits and investment governance reviews similar in scope to the Evaluation mandated by Texas Government Code §802.109. Aon's Fiduciary Services Practice has prepared this Evaluation.

Texas Government Code §802.109(c)(1) and (2) provides that the public retirement Plan may select a firm regardless of whether the firm has an existing relationship with the retirement Plan but may not select a firm that directly or indirectly manages investments of the Plan. Aon meets the statutory definition as an independent firm. Aon and any related entities are not involved in directly or indirectly managing the investments of TRS. There are no potential conflicts of interest or any appearance of a conflict of interest that would impact the analysis between Aon and TRS and any current/former member of TRS's governing body. Aon is not receiving any remuneration from sources other than TRS for services provided to TRS.

Methodology and Evaluation Format

This Evaluation is consistent with the Aon methodology used for comparable reviews it has performed. This methodology included an initial project conference call between Aon and TRS staff to establish overall concurrence and set forth expectancies, deliverables, team assignments, designated relationships from TRS and Aon, and communication procedures. Aon provided an extensive document request to TRS covering the 5 statutorily required component task areas. TRS provided numerous items in response to the document request. Those items are listed in Appendix A-Documents Reviewed. Aon also conducted interviews with key TRS staff and Board Members as listed in Appendix B. Aon performed research, analysis, and report drafting. Aon submitted draft versions of the report for TRS staff review and feedback and had follow up discussions with TRS staff. The final Evaluation addressed staff comments and added supplemental clarifications and information in response. The final Evaluation, however, reflects the independent work and professional judgement of Aon staff.

This Evaluation question and answer format is modelled after the updated 2022 guidance issued by the PRB. Aon incorporated effectively all the suggested PRB questions, thus following the guidance, including any repetitious information.

Executive Summary

Executive Summary

General Overview

Aon's report evaluates the major areas outlined in the Texas Government Code §802.109, following the format and questions incorporated in the PRB guidance. Aon's review assesses the five evaluation components, as set forth below. Aon concludes that the Teacher Retirement Plan of Texas ("Plan") is performing in a manner consistent with best-in-class peers. Aon's review includes an appraisal of all the items outlined in the PRB guidance, and the Plan is performing nearly all of the many functions inquired about within the guidance. Aon's review shows:

1. The Investment Policy Statement ("IPS") is complete and follows best practice, it contains appropriate measurable outcomes, and it is being followed.
2. The Plan has a leading-edge practice for developing asset allocation, assets are well diversified, and risk is being measured and managed properly.
3. Fees are appropriately reported to the Board through multiple annual processes.
4. The configuration and latitude of the investment decision-making governance process is in line with best practices, with clearly described roles and responsibilities, monitoring, reporting, transparency, and frequent compliance testing and assurance.
5. The manager selection process is well stated and strong. Returns are calculated by the Plan's custodian, and all performance is reported net of external investment management fees.

Evaluation Component 1: Investment Policy or Strategic Investment Plan and Associated Compliance

The Plan has an IPS document that was last reviewed September 2023 and is reviewed at a minimum of every 3 years per the IPS, but in practice, this review has been done on an annual basis. The document provides a thorough, yet succinct overview of the roles and responsibilities for each applicable group associated with investment decisions and oversight. The IPS for the Plan is a comprehensive document and we believe the level of detail and readability of the document is more than appropriate given the context of TRS – that of a large and sophisticated institutional investor. Lastly, we believe that the IPS follows industry best practices.

After our review of the meeting minutes, board reports, and interviews with IMD, we believe the IPS and other policies are being followed. We also believe the independent compliance team at TRS is more than suitable to provide additional oversight to ensure the IPS is being followed.

The IPS itself contains distinct and measurable outcomes for the Plan, as well as the underlying asset classes. Additionally, the IPS contains measurable risk/return outcomes for investment managers. As detailed throughout this report, the Plan has had mixed results in meeting its stated objectives over the trailing 10-year period, given the difficult market environment in 2022. Additionally, the current policy would have provided desirable returns relative to the stated performance objectives if they were implemented 20 years ago, which is a time period the Board evaluates during Asset Allocation Studies.

Evaluation Component 2: Investment Asset Allocation

The Board has established a process for how they will determine and evaluate the asset allocation of the Plan with in the IPS (occurring every 5 years). We have found during our review of the most recent asset allocation study, the processes established by the Board are being followed. Additionally, the asset allocation development process (which includes the asset liability analysis and stress testing) in practice is robust and we believe the process represents a leading-edge practice.

The Plan's overall risk tolerance is expressed and measured in multiple ways. The Board's primary expression of risk tolerance is the selection of the long-term strategic asset allocation. The Board has determined that the current allocation represents a palatable level of risk positioning to achieve the objectives established by the Board for the Plan. Risk positioning is managed through the Plan's tracking error targets and asset allocation policy ranges, which have both been adopted within the Plan's IPS.

The Board's investment consultant and actuary communicate regarding their respective future capital market return assumptions. The process for deriving the strategic asset allocation of the Plan considers the investment return assumption, and the ability to achieve that assumption through the returns offered in the capital markets. The investment return assumption is a part of the mosaic of information considered by the Board when selecting the strategic allocation that will most efficiently allow the Plan to meet its obligations.

The Plan currently has less equity and traditional fixed income than a median peer universe, with a higher allocation to alternatives (private equity, risk parity, hedge funds, and energy, natural resources, and infrastructure) and real estate. The assets of the Plan are believed to be well diversified with a modest usage of passive management. This report details the asset allocation of the Plan relative to peers, the long-term strategic policy target, and provides the expected risk and return characteristics of the Plan and each asset class utilized.

We have found the process to determine the asset allocation of the Plan to be robust, and there was no evidence in our findings that would position us to state that a different asset allocation would be most suitably positioned to meet the investment return and risk objectives of the Plan. We believe the size of the Plan, the duration of the liabilities, the depth of the Investment Management Division ("IMD"), and the support of the Board gives the Plan a competitive advantage in achieving alpha in the alternative investment space. We believe the Plan's alternative investments are more than appropriate given the size of the Plan and the level of investment expertise by those that managed said assets.

Evaluation Component 3: Investment Fees and Commissions

The Plan dedicates the appropriate amount of review and reporting on investment fees and commissions. The Plan does not have a written policy with regards to rules for fee negotiations. Through our conversations with IMD this is due to the unique nature of each investment and how fees are structured and negotiated. IMD stressed during our interactions that they strive for the lowest fees possible with each investment opportunity. A written policy on rules for fee negotiations is uncommon across peer institutional investors.

IMD maintains procedures for the payment of management and incentive fees. The procedure document outlines the process for receiving, reconciling, paying, and documenting the payment of management and incentive fees. The investment fees and commissions paid by the Plan include management fees, performance-based fees, carried interest, and broker commissions. These fees are outlined within the Plan's Annual Comprehensive Financial Report ("ACFR") in the Investment Section. The IMD operating expenses are included in the ACFR Statement of Changes in

Fiduciary Net Position and also reported annually to the Board as part of the annual budget review and approval process.

Fees are reported to the Board in multiple ways, including its Annual Budget Exercise, monthly Transparency reports, the annual ACFR as part of the annual Texas State Auditor's Office audit. The CEM Benchmarking Report is the industry standard for objective fee benchmarking relative to peer institutions. The December 31, 2022 report found that the investment costs of the Plan were below the CEM benchmarked costs. The benchmark cost developed by CEM represents the median cost of peers of each underlying invested asset class weighted to reflect the Plan's actual asset allocation.

Evaluation Component 4: Investment Governance Processes

Aon found TRS to have extensive and detailed documentation of its governance related to the investment-decision making process. The IPS and Board Bylaws show alignment with best practices by stating what authority has been retained by the Board and what has been delegated, as well as clearly articulating roles and responsibilities of the Board and staff. Aon determined that the level of delegation from the Board is compatible with its peers and best practices, given the size and complexity of the Plan.

It was further determined that TRS is progressive in terms of its transparency, surpassing those of many public retirement Plans. In addition to posting the IPS and Board Bylaws on the TRS website, stakeholders also have access to committed webpages outlining IMD teams, Investment Strategy, Beliefs, Diversification Framework, Risk Management, and Making and Managing Investments. The website also has information for stakeholders concerning Board meetings, with detailed board minutes, web broadcasting of open portions of Board and Committee meetings, Board packets back to 2013, Trustee biographies, listing of Board Committees and Officers, Board of Trustee Ethics Policy, Board of Trustees External Communication Policy, and Board Meeting calendar.

The Board's composition includes a requirement that certain appointed members have demonstrated financial expertise, who have worked in private business or industry, and who have extensive investment experience, preferably in the investment of funds. The new Trustee orientation is based on best practices and covers a wide range of topics. The Trustees have ongoing training and education provided by a variety of sources, including annual fiduciary training and continuing investment education. Aon found that Trustees comprehend and embrace their fiduciary responsibilities and have appropriately retained outside Advisors to assist them in their decision-making process.

Aon believes the governance structure is consistent with best practices for a fund the size and complexity of TRS. The Board establishes policy and ensures appropriate monitoring, reporting, accountability, and compliance with its policies. Staff is able to appropriately implement the Board's directives within the parameters set by the Board. The policies, procedures, practices, and interviewees' commentaries all support a strong, stable governance framework for TRS to fulfill its mission and purpose.

Evaluation Component 5: Investment Manager Selection and Monitoring Processes

The Investment Management Division (IMD) bears the responsibility of selecting and authorizing proposed investments and external managers, operating within the parameters established in the Plan's Investment Policy Statement (IPS) and as delegated by the Board of Trustees. In this capacity, IMD will utilize an array of resources to compile a list of candidate managers that warrant further due diligence. Examples of these resources include discussions with existing managers, outreach from managers not currently part of the investment portfolio, opportunities learned through discussion with industry professionals, participation in industry conferences, and outside resources such as eVestment/Preqin/etc. or investment consultants/advisors.

The process for further screening the list of potential managers is robust and is outlined in detail within the report as well as the process for ongoing monitoring and the process for coming to a termination decision.

The Plan's custodian, State Street, is responsible for measuring and calculating investment performance. A diverse range of performance reports, as outlined in the report, are provided to the Board. These reports are thoughtfully formatted and presented to enable Board members of varying investment acumen to evaluate the success associated with the implementation of the investment policy. Investment results reported to the Board by the investment consultant and IMD are net of external investment management fees and are compared to benchmarks and peers.

Evaluation Component 1

Evaluation Component 1: Investment Policy or Strategic Investment Plan and Associated Compliance

An analysis of any investment policy or strategic investment Plan adopted by the retirement Plan and the retirement Plan's compliance with that policy or Plan;

- ***Does the retirement Plan have a written investment policy statement (IPS)?***

Conclusions

The Teacher Retirement Plan of Texas has an investment policy statement (IPS) document. This document was last reviewed in September of 2023.

- ***Are the roles and responsibilities of those involved in governance, investing, consulting, monitoring and custody clearly outlined?***

Background

The IPS includes section 1.3 (Roles of Board, Staff, Advisors, and Consultants). Within this section of the document is a detailed outline of the roles and responsibilities of the:

1. Board of Trustees ("Board")
2. Board's investment advisors ("Advisor")
3. Investment Management Division ("IMD")
4. Internal Investment Committee ("IIC")
5. Chief Investment Officer ("CIO")
6. Executive Director
7. Legal staff

Conclusions

Section 1.3 of the IPS is concise, while still providing a detailed overview of the roles and responsibilities of the respective parties involved in investment decisions and oversight. We believe the level of detail within this section is appropriate for the IPS and the roles are further defined throughout the document.

- ***Is the policy carefully designed to meet the real needs and objectives of the retirement Plan? Is it integrated with any existing funding or benefit policies? (i.e., does the policy take into account the current funded status of the Plan, the specific liquidity needs associated with the difference between expected short-term inflows and outflows, the underlying nature of the liabilities being supported [e.g., pay-based vs. flat $ benefit, automatic COLAs, DROP, etc.])***

Background

We have found that the creation and ongoing review of the IPS document for the Plan is comprehensive. The IPS is reviewed by the Board on a reoccurring basis. The purpose of the reoccurring reviews is to ensure the document is maintained to meet the actual needs and objectives of the Plan. The IPS illustrates the responsibility of the Board to control essential aspects of the investment portfolio, including: long-term asset allocation, rebalancing ranges, monitoring and reporting practices, risk limits, governance practices, investment delegations, and benchmarks. The IPS also allows the Board to formally memorialize the official processes it undertakes to ensure the Plan is structured to meet its objectives.

The components of the IPS at a high level are intended to assist the Plan in meeting the stated objectives. There are two primary ways in which this is occurring, including;

- Documentation of the long-term strategic asset allocation target resulting from the asset allocation and asset liability review (“Asset Allocation Study”)
- Documentation of the Liquidity Risk Management policy to ensure sufficient liquidity to meet the disbursement of benefits and related obligations to Plan participants, and meet the ongoing liquidity needs required to appropriately manage the portfolio

Funding Policy

TRS maintains a funding policy which was approved by the Board in December of 2019. The purpose outlined in the document is to systematically decrease the unfunded actuarial accrued liability (“UAAL”) over time to achieve a funded ratio of the Plan that is equal to or greater than 100 percent.

The 86th Texas Legislature authorized contribution rate increases (for the State, employers, and members) that will be phased-in through 2024. State contribution rates are requested in the agency’s biennial Legislative Appropriation Request (“LAR”). Legislative appropriation requests are made by the Executive Director, in consultation with the Board. After the phase-in of currently scheduled contribution rate increases, the Executive Director, in consultation with the Board and based on the current annual actuarial valuation, will determine the appropriate contribution rate to request in the LAR. After the phase-in of all scheduled contribution rate increases, the Executive Director, in consultation with the TRS Board of Trustees and based on a current annual actuarial valuation, will determine the appropriate contribution rate to request in the LAR, except that if, after the phase-in of all contribution rates, the annual valuation projects that the UAAL will not begin to decline by the fifth year following the valuation, then TRS will request contribution rate increases sufficient to begin to reduce the UAAL in the even-numbered fiscal year following the legislative session.”

Conclusions

The IPS of the Plan is quite robust. We believe the level of detail and outlined responsibilities of each respective party is appropriate given the context of TRS, which is that of a large and sophisticated institutional investor. We have found that the policy has been diligently designed to meet the actual needs and objectives of the Plan. Additionally, we believe the Funding Policy accurately articulates the goals set forth by Chapter 802 of the Texas Government Code, and outlines the process and scenario required for TRS to prepare a legislative appropriation request to increase contribution rates, based on eliminating the unfunded actuarial accrued liability over time.

- ***Is the policy written so clearly and explicitly that anyone could manage a portfolio and conform to the desired intentions?***

Conclusions

We have found that the level of detail within the IPS is appropriate given the nature of TRS, which is that of a large and sophisticated institutional investor. With that said, there is a level of investment and governance knowledge that would be needed for an individual to manage the portfolio; however, we do not believe that an individual would require background knowledge of TRS to serve in this role. We believe the IPS is written clearly and explicitly given the level of sophistication of the investment program.

- ***Does the policy follow industry best practices? If not, what are the differences?***

Background

There is no uniform standard for the content and no absolute model to follow when drafting an IPS. The IPS should ideally be a highly customized document that is uniquely tailored to the preferences, goals, and situation of the Plan. At TRS, the Board reviews the IPS on a recurring basis. The purpose of such reviews is to ensure the document reflects desired long-term asset allocation, the evolving investment portfolio, legal and regulatory developments, current best practices, and that it reflects input from relevant parties. These reviews are led by IMD, and they worked closely with other departments within TRS Legal & Compliance and Internal Audit. Feedback and input are also solicited from external fiduciary counsel, the Board's actuary, and the Board's Advisors.

To facilitate our review of the IPS, we have included a table outlining what we believe to be the key sections of an IPS and how we think about IPS development. The table includes a broad title of each section type, the type of information we expect to be included in each section, and a checkmark representing the inclusion of this type of information within the Policy. As shown in the table, the IPS includes all components that we believe a well-structured IPS should have, and we do not have any recommended additions.

Section	Purpose of Section	Included in TRS IPS
Introduction	- Reference to the purpose and benefit to be provided by the Trust. - Intended beneficiaries of the Trust. - Overview of fiduciary obligation.	√ √ √
Statement of Purpose	- Investments made for the exclusive purpose of providing benefits to participants. - Plan fiduciaries must act in the sole interest of Plan participants and beneficiaries and for the exclusive purpose.	√ √
Investment Goals or Objectives	- To preserve the actuarial soundness of the Trust in order to meet benefit obligations. - To obtain a long-term rate of return, net of fees, equal to or in excess of the policy benchmark. - The policy benchmark and asset allocation targets should be defined.	√ √ √
Asset Allocation	- Purpose is to provide an optimal mix of investments to produce desired returns and meet current and future liabilities, with minimal volatility. - Frequency and methodology of asset liability modeling and resetting allocation. - Describe permissible asset classes as well as minimum, maximum, and target ranges.	√ √ √
Identification of Roles and Responsibility	- Board of Trustees – general and investment related duties. - External investment consultants/advisors – advise on best practices, trends and support staff and Board/Investment Advisory Committee with fiduciary responsibilities. - Other external providers' duties, expectations and fiduciary responsibilities.	√ √ √
Asset Class Guidelines / Benchmarks	- Benchmarks – who sets them and how often they are revisited, and their rationale. - Diversification - Provide an overview on the importance of diversification and how it is achieved in the Trust.	√ √
Rebalancing Policy	- Purpose of rebalancing – to ensure that the investment program adheres to its strategic asset allocation. - Describe how often the portfolio will be reviewed for rebalancing and whether a fixed threshold or proportional threshold will be used.	√ √

Section	Purpose of Section	Included in TRS IPS
Risk Management	- Acknowledgement and definition of risk to be managed in investment portfolio (active risk, credit risk, counterparty risk, market risk, operational risk, etc.). - Define parameters for risk management (what does success look like).	√ √
Monitoring and Reporting	- Describe monthly, quarterly and annual reporting. - Outline monitoring and reporting process.	√ √
Shareholder Activity	- Proxy positions – describe the policy and how votes are cast and recorded, or reference appropriate policy. - Identify core principals of the Board (Board independence, Board management, shareholder rights) and communicate importance of fiduciary duty, integrity, and transparency.	√ √
Governance	- Identify obligations to the Trust are consistent with the fiduciary standards under applicable law. - Require ongoing review of investment policy statement.	√ √

Conclusions

The IPS follows best practice. While there is no uniform standard for the content and no absolute model to follow when drafting an IPS, we do maintain a table for what we believe an IPS should include to be considered best practice. The TRS IPS includes sufficient detail on all items we desire in a well-structured IPS.

- ***Does the IPS contain measurable outcomes for managers? Does the IPS outline over what time periods performance is to be considered?***

Background

The IPS document outlines the process for how active risk (risk/return relative to the benchmark) results for public market asset class managers will be measured and monitored within the Market Risk Management section of the IPS. Additionally, the tracking error relative to the benchmark of each public market asset class manager is monitored on an ongoing basis to ensure that the outcome of each mandate is within expectations.

The benchmarks for each individual investment mandate are not outlined within the IPS, but are defined within the investment management agreements, and benchmarks are included within the investment performance reviews (transparency reports) provided to the Board on a monthly and quarterly basis.

The IPS does outline well defined, measurable outcomes for the Plan, public market portfolio, private equity portfolio ("PE"), real estate portfolio ("RE"), energy, natural resources and infrastructure ("ENRI"), and overlay portfolio. Below provides a summary of the stated objectives found within the IPS;

Total Portfolio Objectives

The IPS states that the Plan and the underlying asset class components will be evaluated (net of investment management fees) against the primary benchmark over the "long-term". The "long-term" is defined within the policy as 3, 5, and 10 years.

Public Markets Objectives

The measurable outcome expressed with regards to the public markets portfolio is to exceed the performance of the relevant benchmarks or to manage the asset allocation and risk of the Plan.

Private Equity Objectives

The measurable outcome expressed with regards to the PE Portfolio is to develop a prudently diversified portfolio of investments that is expected to enhance the overall risk-return profile of the Plan.

Prudently diversified refers to diversification by strategy, geography, industry sectors, size of investment, and vintage year.

Real Estate Objectives

The measurable outcome expressed with regards to the RE portfolio is to contribute favorably to diversification of the Plan and provide returns through capital appreciation.

The portfolio will be evaluated for diversification by evaluating exposures by strategy, geography, property types, size of investment, vintage year, and the number of funds or investment managers represented in the portfolio.

Energy, Natural Resources and Infrastructure Objectives

The measurable outcome expressed with regards to the ENRI portfolio is to contribute favourably to diversification of the Plan by investing in assets with inflation sensitivity and provide returns through capital appreciation.

The portfolio will be evaluated for diversification by evaluating general inflation sensitivity, expected return, strategy, geography, resource exposure, size of investment, vintage year, strategy, and manager diversification.

Overlay Objectives

The measurable outcome expressed with regards to the overlay portfolios are to manage risk, asset allocation, and market exposures through futures, options, swap contracts, or forward agreements.

Conclusions

The IPS outlines distinct and measurable risk/return outcomes for the public markets asset class managers relative to their respective benchmarks (active risk). Furthermore, performance benchmarks are well articulated in the investment management agreement and detailed in the performance reporting provided to the Board (transparency reports) on a monthly and quarterly basis. Additionally, the IPS outlines measurable outcomes for the Plan as well as the underly asset classes utilized by the Plan.

- ***Is there evidence that the Plan is following its IPS? Is there evidence that the Plan is not following its IPS?***

Conclusions

Based on the review of meeting minutes, board reports, and interviews with IMD, we believe the IPS and other related policed are being followed. Additionally, the independent compliance teams perform ongoing oversight to ensure that the IPS is being followed.

- ***What practices are being followed that are not in, or are counter to, written investment policies and procedures?***

Conclusions

The written investment policies of the Plan are robust and sufficiently detailed. While there are not meaningful practices being followed that are not in the investment policies, the complexity of the investment program makes outlining every process difficult. The responsibility of the Internal Investment Committee ("IIC") to initially review new internally managed investment strategies is outlined in section 1.3.C "Roles of Board, Staff, Advisors and Consultants" of the IPS at a high-level. Given the evolution of TRS staff and focus on bringing investment management in-house (when appropriate and cost effective), as well as the potential to develop new investment strategies, we would recommend considering enhancing the language around this process to include more details on the IIC review process at the next IPS review. Additionally, there are processes and practices that are occurring more rigorously than outlined in the IPS. Two noteworthy practices include the ongoing review of investment related policies and the concerted effort to drive the investment industry towards increased transparency and reduced investment management fees.

The IPS document notes that it shall be reviewed at least once every three years. However, over the last few years the IPS was reviewed in 2023, 2021, 2019, 2018, and 2016. Additionally, the ancillary policies (Commission Credits Policy, Proxy Voting Policy, and Securities Lending Policy) have each been reviewed multiple times over the same time period.

- ***Are stated investment objectives being met?***

Background

The two primary objectives in the "Total Fund Objectives" section within the IPS include;

1. **Control Risk** – Properly diversify assets to control investment risk
2. **Achieve Return Targets** – Produce investment results that exceed;
    - The Investment Return Assumption – Exceed the investment return assumption adopted by the Board

- Real Return Target – Exceeds the long-term rate of inflation by an annualized 5%
- Plan benchmark – Exceeds the return of the Plan benchmark

Each of these objectives can be evaluated independently. The following paragraphs evaluate each objective, and if it has been met.

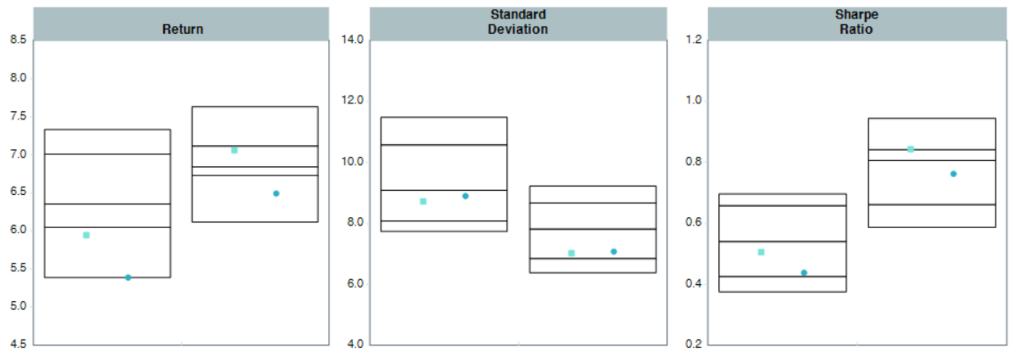
Control Risk

Of the criteria outlined in the IPS, this is the most difficult to evaluate. The term risk, and how it should be evaluated, can be interpreted differently by different people. We believe the standard deviation or volatility of a portfolio is a good representation of risk and have used it below to evaluate the success of risk control. References to risk in the remaining components of this response are referring to standard deviation.

One of the most important decisions made by the Board is to establish the long-term asset allocation and risk profile of the investment program. An effective way of monitoring risk control is evaluating the rolling risk of the Plan relative to the benchmark. The chart below shows the rolling 5-year standard deviation of the Plan (light blue line) relative to the benchmark (dark blue line) for the last 10-years ending 9/30/2023. As shown, the Plan has approximated the risk profile of the Board approved benchmark over time.

The charts below outline the return, standard deviation, and Sharpe ratio (common measure of return achieved for each unit of risk taken) of the Plan relative to a peer universe (52 peer U.S. public pension Plans with assets greater than $10 billion dollars) over the trailing 5- and 10-year periods ending 9/30/2023. The rankings relative to peers are shown within the parenthesis (ranging from 1st-100th percentile). For return and Sharpe ratio a low percentile ranking represents superior outcomes, where a high percentile ranking is desirable for risk (lower level of risk).

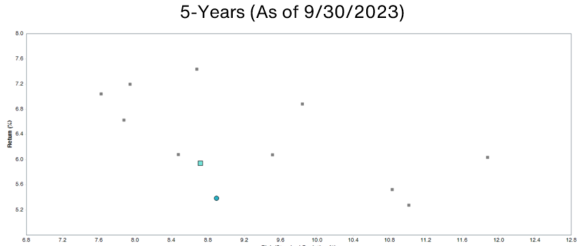
As shown, the Plan has produced a return lower than the median peer public fund with a risk level (volatility) around the third quartile. This has produced a Sharpe ratio over those trailing time periods that represent the 62nd and 25th percentile over the trailing 5- and 10-years, respectively.



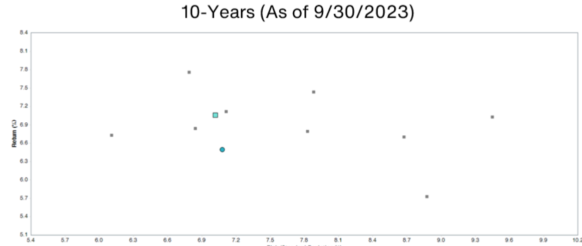
	Return 5 Years	Return 10 Years	Standard Deviation 5 Years	Standard Deviation 10 Years	Sharpe Ratio 5 Years	Sharpe Ratio 10 Years
Total Fund	5.9 (80)	7.1 (34)	8.7 (56)	7.0 (67)	0.5 (62)	0.8 (25)
Total Fund Benchmark	5.4 (95)	6.5 (91)	8.9 (53)	7.1 (65)	0.4 (74)	0.8 (58)
5th Percentile	7.3	7.6	11.5	9.2	0.7	0.9
1st Quartile	7.0	7.1	10.6	8.7	0.7	0.8
Median	6.4	6.8	9.1	7.8	0.5	0.8
3rd Quartile	6.0	6.7	8.1	6.8	0.4	0.7
95th Percentile	5.4	6.1	7.7	6.4	0.4	0.6

The next two charts represent the risk return profile of the Plan (blue square) relative to its benchmark (green circle) and peer public pension funds (small grey dots) over 5- and 10-years ending 9/30/2023. The bottom left corner represents low risk and low return. The top right corner represents high risk and high return. Therefore, the top left corner is preferred (higher return with lower risk). As shown, the results of the Plan appear to be in-line with peers over a 10-year period as they are generally commensurate with the trendline represented by peers.

5-Years (As of 9/30/2023)



10-Years (As of 9/30/2023)



<u>Achieve Return Targets – Investment Return Assumption</u>

The current investment return assumption of the Plan is 7.0% (as of 9/30/2023). However, the TRS Board of Trustees can vote to change the investment return assumption based on results from the experience study that is required by Section 825.206 of the Texas Government Cod at least every five years. In 1975 the investment return assumption was as low as 5%. That rate increased over time and reached 8% in 1986. The 8% investment return assumption was maintained through 2017, it was reduced to 7.25% in 2018, and reduced to 7% in 2022. The table below shows the return of the Plan relative to the investment return assumption over time, the current investment return assumption (7%), and the highest investment return assumption during the period (8%). As shown, the Plan has underperformed the investment return assumption over the trailing periods. This underperformance began following the difficult investment results in 2022 (we highlight this impact later in the response).

	Annualized Investment Returns (net of fee)					
As of September 30, 2023	**3 Years**	**5 Years**	**7 Years**	**10 Year**	**15 Years**	**20 Years**
TRS	6.1%	5.9%	7.1%	7.1%	7.3%	7.2%
Investment Return Assumption over Time	7.3%	7.3%	7.3%	7.5%	7.7%	7.8%
Current Investment Return Assumption	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%
Highest Investment Return Assumption	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%

<u>Achieve Return Targets – Real Return Target (CPI + 5%)</u>

The table below outlines the trailing investment results of the Plan relative to the real return benchmark, the Consumer Price Index + 5%. The Plan has underperformed the real return objective over all trailing time periods. Heightened levels of inflation over recent periods have driven longer term underperformance relative to this metric.

	Annualized Investment Returns (net of fee)					
As of September 30, 2023	**3 Years**	**5 Years**	**7 Years**	**10 Year**	**15 Years**	**20 Years**
TRS	6.1%	5.9%	7.1%	7.1%	7.3%	7.2%
CPI +5%	11.0%	9.2%	8.7%	7.9%	7.4%	7.7%
Difference	**-4.9%**	**-3.3%**	**-1.6%**	**-0.8%**	**-0.1%**	**-0.5%**

Achieve Return Targets – Plan Benchmark

The table below outlines the trailing investment results of the Plan relative to the custom benchmark outlined in the IPS. The Plan has significantly outperformed the relative return objective over all trailing time periods.

As of September 30, 2023	Annualized Investment Returns (net of fee)					
	3 Years	**5 Years**	**7 Years**	**10 Year**	**15 Years**	**20 Years**
TRS	6.1%	5.9%	7.1%	7.1%	7.3%	7.2%
Custom Benchmark	4.6%	5.4%	6.4%	6.5%	6.8%	6.8%
Difference	**+1.5%**	**+0.5%**	**+0.7%**	**+0.6%**	**+0.5%**	**+0.4%**

Impact of Recent Market Performance

Trailing investment results fluctuate over time, and adding a difficult investment period can drag down longer-term investment results. 2022 was a difficult year for capital markets, driven by high inflation levels. These impacts dragged down TRS' results relative to the investment return assumption as well as the real return objective. The TRS Board monitors the performance of the Plan relative to the three IPS stated return targets during its quarterly performance reviews presented by its Advisor.

The table below represents the applicable results as of 12/31/2021. This information is being provided to highlight the impact recent negative results can have on longer term performance. As shown below, TRS performance relative to all three targets was strong as recently as the end of 2021. This does not mitigate recent underperformance but does provide further context.

	Five Year	Seven Year	Ten Year	Twenty Year
Total Fund Total Fund Benchmark	**11.9** 11.6	**9.6** 9.2	**10.2** 9.6	**7.8** 7.5
Difference	*+0.3*	*+0.4*	*+0.6*	*+0.3*
Total Fund Investment Return Assumption	**11.9** 7.3	**9.6** 7.5	**10.2** 7.7	**7.8** 7.8
Difference	*+4.6*	*+2.1*	*+2.5*	*0.0*
Total Fund CPI + 5%	**11.9** 8.1	**9.6** 7.6	**10.2** 7.2	**7.8** 7.4
Difference	*+3.8*	*+2.0*	*+3.0*	*+0.4*

Conclusions

We believe the stated objectives of the Plan are being reasonably met. The IPS includes two primary performance objectives in the "Total Fund Objectives" section. These include;

1. **Control Risk** – Properly diversify assets to control investment risk
2. **Achieve Return Targets** – Produce investment results that exceed;
   - The Investment Return Assumption – Exceed the investment return assumption adopted by the Board
   - Real Return Target – Exceeds the long-term rate of inflation by an annualized 5%
   - Plan benchmark – Exceeds the return of the Plan benchmark

Based on the analysis we performed, the Plan has been successful in its ability to "Control Risk" over time. This is best reflected in the Plan's ability to;

- Produce a level of volatility commensurate with the benchmark over time
- Produce risk adjusted investment results superior to most peers over the trailing 10-year period

While the Plan has been successful in producing returns in excess of the policy benchmark, it has underperformed the real return target and the investment return assumption. Performance relative to these metrics has moved negative following the difficult performance period in 2022 and recent elevated levels of inflation.

- ***Will the retirement fund be able to sustain a commitment to the policies under stress test scenarios, including those based on the capital markets that have actually been experienced over the past ten, twenty, or thirty years?***

Background

As of September 30, 2023, the Plan maintained the asset allocation and policy targets outlined in the table below. The long-term policy target is the result of the Asset Allocation Study performed in 2019. The next Asset Allocation Study is already in progress and will be completed in 2024.

	Asset Allocation 9/30/2023 (%)	Interim Policy Target	Long Term Policy Target	Long Term Policy Ranges
Investment Exposure	**105.9%**	**104.0%**	**104.0%**	**93-115%**
Total U.S.A.	15.9%	16.8%	18.0%	13-23%
Non-U.S. Developed	11.6%	12.1%	13.0%	8-18%
Emerging Markets	8.2%	8.3%	9.0%	4-14%
Private Equity	18.0%	17.2%	14.0%	9-19%
Global Equity	**53.7%**	**54.3%**	**54.0%**	**47-61%**
Government Bonds	12.8%	14.9%	16.0%	0-21%
Stable Value Hedge Funds	5.4%	4.6%	5.0%	0-10%
Absolute Return	3.2%	0.0%	0.0%	0-20%
Stable Value	**21.4%**	**19.5%**	**21.0%**	**14-28%**
Real Estate	16.5%	16.2%	15.0%	10-20%
Energy, Natural Resources and Inf.	7.1%	6.6%	6.0%	1-11%
Commodities	0.4%	0.0%	0.0%	0-5%
Real Return	**24.0%**	**22.8%**	**21.0%**	**14-28%**

	Asset Allocation 9/30/2023 (%)	Interim Policy Target	Long Term Policy Target	Long Term Policy Ranges
Risk Parity	6.8%	7.4%	8.0%	0-13%
Risk Parity	**6.8%**	**7.4%**	**8.0%**	**0-13%**
Cash	2.5%	2.0%	2.0%	0-7%
Asset Allocation Leverage	-8.4%	-6.0%	-6.0%	--
Net Asset Allocation	**-5.9%**	**-4.0%**	**-4.0%**	**--**
Total Fund	**100.0%**		**100.0%**	**--**

The Asset Allocation Study included forward and backward-looking analysis to ensure that the Plan would be able to sustain the commitment into the future. In addition to evaluating 30-years of stochastic investment projections, the Board evaluated 20-year historical investment outcomes of the asset allocation. This data included the experienced return over 20-years, the risk (volatility) over the period, the largest investment drawdown the portfolio experienced, and the liquidity ratio of the portfolio under these historic circumstances. This analysis was performed for the previous investment policy as well as three investment alternatives which were being considered for implementation.

The table below shows the trailing investment results achieved across various asset classes which the Plan invests in over those longer time periods. As shown, investment results were quite strong across the investable asset classes over those longer periods of time, and we believe the Plan would have been able to sustain a commitment to the policy during the capital markets that have actually been experienced over the past ten, twenty, or thirty years.

	Ten Years	Twenty Years	Thirty Years
Global Equity:			
Dow Jones U.S. Total Stock Market Index	11.2%	9.7%	9.7%
MSCI EAFE Index	3.8%	5.9%	4.9%

	Ten Years	Twenty Years	Thirty Years
MSCI Emerging Markets Index	2.1%	7.3%	5.3%
HFRI Fund of Funds Composite Index	3.3%	3.3%	4.8%
State Street Private Equity Index (Quarter Lagged)	13.3%	--	--
Global Equity Policy Benchmark	8.4%	--	--
Stable Value:			
Bloomberg Long Treasury Index	0.8%	3.4%	4.9%
HFRI Fund of Funds Conservative Index	3.5%	3.1%	4.7%
90 Day U.S. Treasury Bill	1.1%	1.4%	2.4%
Stable Value Policy Benchmark	1.4%	--	--
Real Return:			
Bloomberg U.S. TIPS Index	1.7%	3.5%	--
NCREIF ODCE (quarter lagged)	7.8%	--	--
Goldman Sachs Commodities Index	-2.5%	--	--
Real Return Policy Benchmark	6.6%	--	--

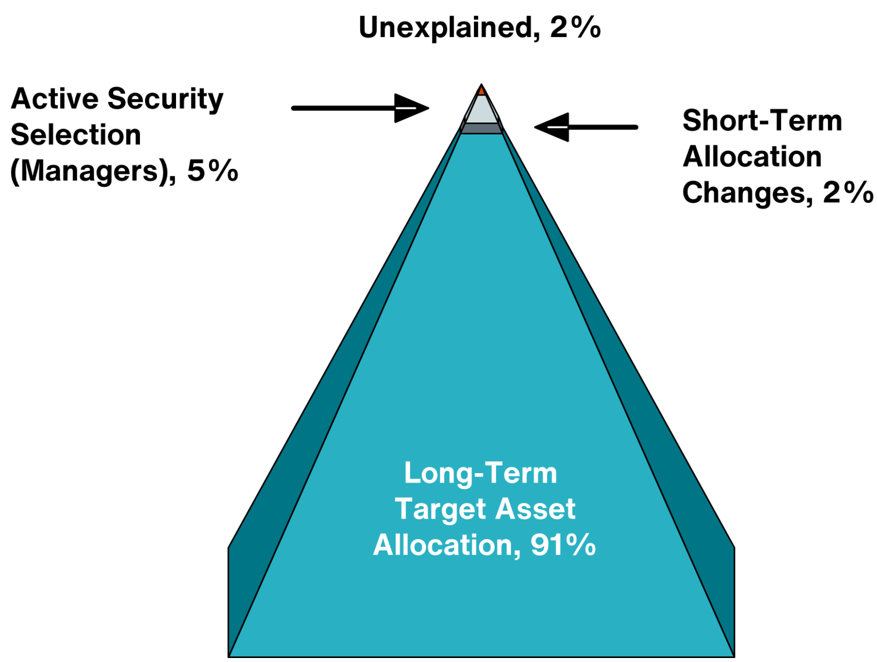
Conclusions

Given the robust forward and backward-looking analysis performed as part of the Asset Allocation Study, as well as the strong historical investment results of the asset classes in which the Plan invests, we believe the current policy is sustainable. We believe the Plan would have been able to sustain a commitment to the policy during the capital markets that have been experienced over the past ten, twenty, or thirty years.

- ***Will the investment managers be able to maintain fidelity to the policy under the same scenarios?***

Conclusions

Asset allocation is the most important determinant on an investment program's ability to maintain fidelity to the policy under various market conditions. Widely cited research consistently finds that more than 90% of return variation could be explained by the initial strategic asset allocation decision, and that ~5% of performance variation will be explained by manager selection. This analysis is noteworthy as it speaks to the importance of strategic asset allocation, and its potential to drive outcomes. We expect individual asset managers to have a more marginal impact on overall investment results and performance variation. Particularly due to the Plans significant diversification across investment managers.



[1]

[1] The chart outlines research done by Brinson, Singer and Beebower in their 1991 research paper "Determinants of Portfolio Performance II: An Update" outlines that 91% of the difference in returns among investors is driven by differences in the long-term target asset allocation.

As noted in previous response, the Asset Allocation Study included forward and backward-looking analysis to ensure that the Plan would be able to sustain the market impacts into the future. In addition to evaluating 30-years of stochastic investment projections, the analysis evaluated 20-year historical investment outcomes of the asset allocation. This data included the experienced return over 20-years, the risk (volatility) over the period, the largest investment drawdown the portfolio experienced, and the liquidity ratio of the portfolio under these historic circumstances. This analysis was performed for the previous investment policy as well as three investment alternatives which were being considered for implementation.

Section 5 of this report outlines the robust process in place to select and provide ongoing oversight of the underlying investment managers utilized within the investment program. We believe the oversight process in place will assist in assuring that the investment managers utilized are able to deliver the desired market exposures and maintain fidelity to the policy under the same scenarios.

- ***Will the policy achieve the stated investment objectives under the same scenarios?***

Background

The table below shows the trailing investment results of the current investment policy over various long-term trailing periods, the current investment return assumption of 7.0% (previously as high as 8%), and the return of the Consumer Price Index + 5%. As shown, the current policy has produced returns over longer periods which are greater than the current investment return assumption and below the Consumer Price Index + 5% Negative market returns in 2022 has put downward pressure on the trailing period returns shown.

As of September 30, 2023	**Annualized Investment Returns (net of fee)**					
	3 Years	**5 Years**	**7 Years**	**10 Year**	**15 Years**	**20 Years**
TRS	6.1%	5.9%	7.1%	7.1%	7.3%	7.2%
Current Investment Return Assumption	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%
CPI +5%	11.0%	9.2%	8.7%	7.9%	7.4%	7.7%

Conclusions

Yes, we believe the current policy would have achieved the desired performance objectives if previously implemented.

- ***How often is the policy reviewed and/or updated? When was the most recent substantial change to the policy and why was this change made?***

Conclusions

The IPS states that document will be reviewed at least once every three years. Over recent periods the IPS was reviewed in 2023 and 2021. The primary catalyst for the changes was to align the IPS with the evolution of roles and scope of IMD, and to ensure the IPS reflects up-to-date policies established by the organization. A summary of the primary changes has been provided below;

- Language additions to reflect roles and policy changes within IMD
- Expand language around governance
- Modified rating requirement for Security Lending Agent

Evaluation Component 2

Evaluation Component 2: Investment Asset Allocation

A detailed review of the retirement Plan 's investment asset allocation, including: (A) the process for determining target allocations;

- ***Does the Plan have a formal and/or written policy for determining and evaluating its asset allocation? Is the Plan following this policy?***

Background

The IPS states that IMD will assist the Board in engaging in an asset-liability study for the Plan at least once every five years. It states that this process will review asset classes, return-risk assumptions, and correlation of returns with applicable benchmarks and across asset classes. The IPS defines a "key objective" of the asset-liability study to be the development of a diversified portfolio utilizing statistical modelling techniques. Result of the analysis will identify a long-term strategic policy and specify ranges of prudent portfolio exposures. The resulting strategic policy target is expected to meet the investment return assumption of the Plan and meet the risk parameters outlined within the IPS. Based on our review of the most recent Asset Allocation Study, we believe the Plan is following the policy.

The following provides a more detailed description of the Asset Allocation Study in practice. The Plan's asset-liability study generally followed the process outlined below during the 2019 Asset Allocation Study (the upcoming 2024 asset liability study is expected to follow a similar process):

Planning Discussions

During the Planning segment of the evaluation, IMD established a Risk Framework for evaluating the current allocation, peer portfolios, and proposed alternative allocations. The Risk Framework evaluated each allocation from three perspectives;

- **Expected Volatility** – Ability of the portfolio to compound returns effectively through time

- **Probability of Earning the investment return assumption** – Ability of the portfolio to deliver on the Plan's return objective
- **Maximum Drawdown (loss)** – Ability of the portfolio to provide pension benefits at all times

Peer portfolios evaluated included the average U.S. pension, average endowment, average Canadian pension, 60/40 portfolio, and various stock bond mixes ("Peers"). The analysis compared the Expected Volatility, Probability of Earning the investment return assumption, and Maximum Drawdown across Peers. The analysis also provided efficient frontier projections of the various portfolios.

IMD then evaluated ways in which the current asset allocation target could be adjusted to enhance the investment return assumption, as well as the output resulting from the established Risk Framework.

At the end of the Planning discussions the Board agreed to the portfolios to be modeled, the assumptions to model it, and the key metrics to evaluate portfolio efficiency and risk control.

Asset Modeling

IMD evaluated the portfolios and assumptions previously provided to the Board and further modeled how the strategic asset allocation could be improved. Key components of the modeling included further consideration of the portfolios';

- Probability of Earning the Investment Return Assumption
- Volatility
- Percentage of time in a Drawdown
- Max Drawdown
- Liquidity ratio

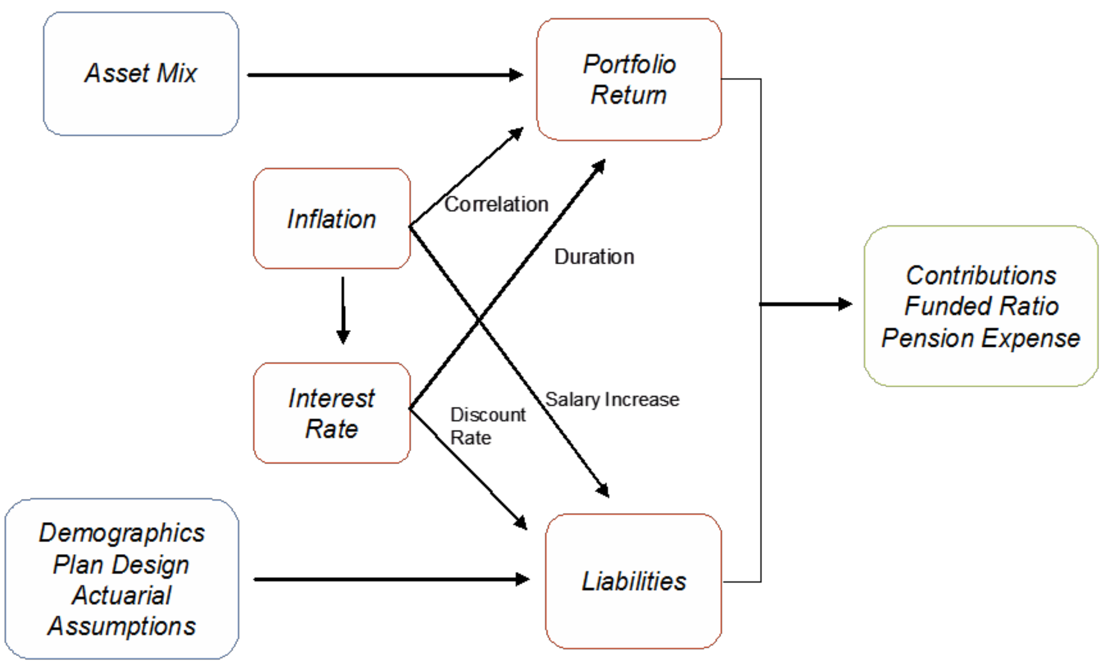
The modeling was intended to identify an efficient portfolio(s) which would then be further evaluated through stochastic analysis.

Liability Analysis

The Board's Advisor used their proprietary asset-liability model to generate 5,000 economic scenarios over the next thirty years using a Monte Carlo simulation process. Key variables simulated included:

- Inflation
- Interest rates
- Pay increases
- Asset class returns

The graphic below shows how pension assets and liabilities are impacted by common factors such as inflation and interest rates. It also depicts the flow chart for asset-liability modeling used during the Asset Allocation Study.



The simulations lead to a projection of assets and liabilities under all economic scenarios for the portfolios evaluated, and allowed the Board to evaluate the expected risk-return tradeoff in terms of:

- Investment return

- Funded ratio
- Annual net outflows
- Long term "Economic Cost"
- Liquidity

Beyond focusing on the key individual variables included within the analysis, the Board evaluated a metric called "Economic Cost." This metric combines cash contributions and funded status changes in a single variable, and it can be the most informative variable for making asset allocation decisions. The liability component of the analysis reviewed by the Board attempts to review the portfolios ability to:

- Meets the stated goals
- Evaluate consistency with its risk tolerance
- Meet liabilities effectively in the long run
- Manage pension costs to the best extent possible

Conclusions

The Board has formulized a process for determining and evaluating the asset allocation within the IPS and based on the review of the most recent Asset Allocation Study, the process is being followed. The process in practice is comprehensive, and we believe the process represents a leading-edge practice in developing a strategic asset allocation. While the process is articulated at a high level within the IPS, we believed further detail of the process in practice was appropriate. The Background above outlines the process that occurred in 2019 to develop the current strategic asset allocation, and the same process will be used in the 2024 Asset Allocation Study.

- ***If no formal policy exists, what is occurring in practice?***

Conclusions

A formal policy does exist and is outlined in detail in the previous bullet point.

- ***Who is responsible for making the decisions regarding strategic asset allocation?***

Conclusions

It is ultimately the responsibility of the Board to make the decision regarding the strategic asset allocation of the Plan.

- ***How is the Plan's overall risk tolerance expressed and measured? What methodology is used to determine and evaluate the strategic asset allocation?***

Background

The concept of risk and risk management exists throughout the IPS. Nearly every concept within the IPS has consideration on how it may contribute to the risk of the Plan. The Executive Summary section of the IPS includes a Risk Management component, The Risk Management component of the Executive Summary states that IMD will monitor and manage risk of the Plan and report to the Board on a periodic basis. The IPS defines key risks as including, but are not limited to market risk, foreign exchange risk, credit and counterparty risk, leverage, liquidity, and tracking error.

Article 10 of the IPS is the Risk Management and Oversight section. This section defines the risk management processes associated with;

- Market Risk Management
- Foreign-Exchange Risk Management
- Credit Risk Management
- Liquidity Risk Management
- Operations Risk Management
- Settlement Risk Management
- Legal Risk Management
- Risk Management Compliance Cure Periods and Remedies
- Permitted Uses of Leverage

Baseline risk positioning or tolerance is represented by the long-term strategic asset allocation. It has been determined through the Asset Allocation Study and this allocation represents the required market exposures to allow the Plan to most efficiently fund future benefit payments.

Risk tolerance relative to the baseline positioning is monitored in various ways;

- Asset allocation limits
  - The asset allocation of the Plan must be maintained within the asset allocation ranges set by the Board
- Risk limit
  - The active risk positioning (tracking error) of the public assets within the Plan will be maintained within the ranges set forth in the IPS
  - The Plan and its benchmark's total estimated risk relative to the upper and lower bounds corresponding to the maximum and minimum downside risk measures that could be achieved through the asset allocation limits within the IPS
  - Private market assets holdings
    - Proxies for private market assets may be used within risk projections delivered to the Board, unless they are believed to distort the true risk characteristics of the portfolio
- Active risk limits
  - Similar to the Plan active risk analysis, active risk targets and ranges are to be applied to each public asset class mandate

Conclusions

The Plan's overall risk tolerance is expressed and measured in multiple ways. The primary manner of measuring risk tolerance is the selection of the long-term asset allocation in the Asset Allocation Study. The Board has determined that this allocation represents the appropriate risk position to achieve the stated objectives of the Plan over time. That risk position is managed through the Plan's tracking error targets and asset allocation policy ranges, both of which have been adopted within the Plan's IPS.

- ***How often is the strategic asset allocation reviewed? Do the Plan's investment consultants and actuaries communicate regarding their respective future expectations?***

Conclusions

The IPS states that IMD will assist the Board in engaging in an asset-liability study for the Plan at least once every five years. This has generally been the timeframe for performing a full strategic asset allocation review. The Board's investment consultant, advisor, and actuaries communicate their respective future expectations to the Board during the asset allocation review process. The consultant provides their capital market assumptions to the actuary, and the actuary includes the consultant's assumptions in its presentation to the Board regarding the investment return assumption selection process. Additionally, the consultant and the actuary share research on the drivers of long-term capital market assumptions and the range of assumptions found within the industry.

- ***How does the current assumed rate of return used for discounting Plan liabilities factor into the discussion and decision-making associated with setting the asset allocation? Is the actuarial expected return on assets a function of the asset allocation or has the asset allocation been chosen to meet the desired actuarial expected return on assets?***

Conclusions

The process for deriving the strategic asset allocation of the Plan considers the investment return assumption, and the ability to achieve that assumption through the returns offered in the capital markets. The investment return assumption is a part of the mosaic of information considered by the Board when selecting the strategic allocation that will most efficiently allow the Plan to meet its obligations. Ultimately, the investment return assumption is a function of the asset allocation selected by the Board.

- ***Is the asset allocation approach used by the Plan based on a specific methodology? Is this methodology prudent, recognized as best practice, and consistently applied?***

Conclusions

Yes, the processes outlined previously with regards to establishing and evaluating the long-term strategic asset allocation is consistent with industry best practices and is consistently applied.

- ***Does the Plan implement a tactical asset allocation? If so, what methodology is used to determine the tactical asset allocation? Who is responsible for making decisions regarding the tactical asset allocation?***

Conclusions

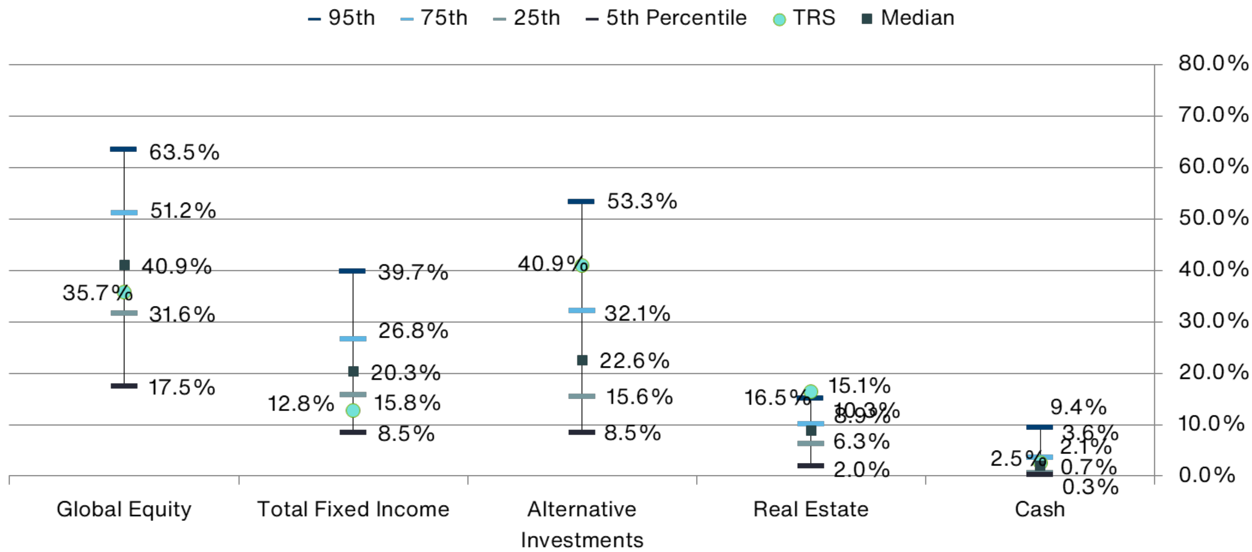
The long-term strategic asset allocation and ranges of the Plan are outlined in the table below (as of September 30, 2023). The asset allocation of the Plan is not tactically allocated outside the ranges. The Total Public Fund tracking error maximum of 300bps prevents material asset allocation biases. IMD does, however, tactically tilt the portfolio within the policy ranges. It is generally expected that TAA will be risk reducing. Over recent periods the Plan has maintained a modest overweight to the Absolute Return Portfolio.

TAA decisions are communicated to the performance group for tracking and performance is included in monthly Management Committee materials. The positioning of the portfolios is reviewed on a weekly basis during the meetings of the Asset Allocation Committee. The Asset Allocation Committee is also tasked with determining funding sources for the TAA. The ultimate decision maker for the positioning of the portfolio within the allowable ranges is the CIO.

- ***How does the asset allocation compare to peer Plans?***

Conclusions

The table below shows the asset allocation of the Plan relative to peer public funds with assets greater than $10 billion as of September 30, 2023. The ends of each line represent the 95th and 5th percentile of exposures, the middle light blue and grey lines represent the 25th and 75th percentile of exposures, the purple square represents the median, and the green dot represents TRS exposure. The information is sourced from Investment Metrics peer universe dataset. As shown, the Plan has less equity and fixed income than the median peer, with a higher allocation to alternatives (PE, risk parity, hedge funds, and ENRI) and real estate.



(B) the expected risk and expected rate of return, categorized by asset class;

- ***What are the strategic and tactical allocations?***

Conclusions

The long-term strategic asset allocation and ranges of the Plan are outlined in the table below (as of September 30, 2023). The asset allocation of the Plan is not tactically allocated outside the ranges. The Total Public Fund tracking error maximum of 300bps prevents material asset allocation biases. IMD does, however, tactically tilt the portfolio within the policy ranges. Over recent periods the Plan has maintained a modest overweight to the Absolute Return Portfolio.

	Interim Policy Target	Long Term Policy Target	Long Term Policy Ranges
Investment Exposure	**104.0%**	**104.0%**	**93-115%**
Total U.S.A.	16.8%	18.0%	13-23%
Non-U.S. Developed	12.1%	13.0%	8-18%
Emerging Markets	8.3%	9.0%	4-14%
Private Equity	17.2%	14.0%	9-19%
Global Equity	**54.3%**	**54.0%**	**47-61%**
Government Bonds	14.9%	16.0%	0-21%
Stable Value Hedge Funds	4.6%	5.0%	0-10%
Absolute Return	0.0%	0.0%	0-20%
Stable Value	**19.5%**	**21.0%**	**14-28%**
Real Estate	16.2%	15.0%	10-20%
Energy, Natural Resource and Inf.	6.6%	6.0%	1-11%
Commodities	0.0%	0.0%	0-5%
Real Return	**22.8%**	**21.0%**	**14-28%**
Risk Parity	7.4%	8.0%	0-13%
Risk Parity	**7.4%**	**8.0%**	**0-13%**
Cash	2.0%	2.0%	0-7%
Asset Allocation Leverage	-6.0%	-6.0%	--
Net Asset Allocation	**-4.0%**	**-4.0%**	**--**
Total Fund		**100.0%**	**--**

- ***What is the expected risk and expected rate of return of each asset class?***

Conclusions

The table below outlines the expected return and risk of each asset class the Plan invests in, as well as the Plan in aggregate. The table utilizes the 10-year capital market assumptions of the Board's Advisor. During the Asset Allocation Study capital market assumptions are also derived by IMD. IMD collects the capital market assumptions from its partners (advisors, consultants, investment managers, etc.) and uses this information to formulate the assumptions used for their asset allocation modeling.

Asset Class	Long Term Targets	Expected Nominal Return	Expected Risk
U.S. Equity	18%	6.8%	19.0%
Non-US Developed	13%	6.7%	19.2%
Emerging Markets	9%	6.9%	22.0%
Private Equity	14%	9.3%	18.3%
Government Bonds	16%	5.5%	10.2%
Stable Value Hedge Funds	5%	6.1%	4.5%
Real Estate	15%	6.9%	20.8%
Energy, Natural Resources and Infrastructure	6%	7.2%	14.5%
Risk Parity	8%	7.1%	12.0%
Net Asset Allocation Leverage	-4%	--	--
Total Fund	100.0%	--	--
Estimated Return (Nominal)	**7.7%**		
Estimated Risk	**12.5%**		
Sharpe Ratio	**0.246**		

- ***How is this risk measured and how are the expected rates of return determined? What is the time horizon?***

Background

The Board's Advisor develops proprietary capital market assumptions. They incorporate assumptions on returns, volatilities (standard deviations), and correlations that are updated on a quarterly basis. The capital market projections are developed by the Advisor's Global Asset Allocation team and represent the team's long-term capital market outlook (10 and 30 years). The output provided in the previous response represents their 10-year assumptions.

The Advisor employs various methodologies for determining the expected return of equities, bonds, and alternatives. These methods incorporate both quantitative and qualitative inputs. The assumptions reflect current market valuations and future prospects rather than relying solely on historic averages, a particularly important feature when markets move to extremes as they have done over the past few calendar years.

The following sections provide an overview of how the volatility (risk) assumptions are derived and provide examples of how the return assumptions are derived (equity and fixed income).

Risk (volatility)

The Advisor uses volatility as a measure of risk (when discussing capital market assumptions). Assumed volatilities are formulated with reference to implied volatilities priced into option contracts of various terms and with regard to historical volatility levels. Correlation assumptions are generally similar to actual historical results; however, the Advisor makes adjustments to reflect forward-looking views as well as current market fundamentals.

Equity Assumptions

The chart and table below provide a general overview of how equity assumptions are determined.

Income (Earnings Yield x Sustainable Payout Ratio)	+	**Growth** (Real EPS Growth)	+	**Inflation**	=	**Total** Global Equity Return (MSCI ACWI)
Earnings yield moves directly with market; Sustainable payout ratio is a constant and based on Aon's assumptions		Based on Aon's in-house trend analysis, I/B/E/S estimates and Consensus Economics		Based on consensus forecasts; Primary source is Consensus Economics		**Forward Looking Assumption**

Step 1: Discounted Cash Flow Method[1]	Global (ACWI)
Earnings Yield * Sustainable Payout Ratio	3.0%
Long Term Real Earnings Growth	1.3
Near Term Earnings Adjustment	-0.2
Inflation	2.2
Methodological Differences[(1)]	0.1
Diversification Bonus	0.3
Valuation Adjustment	0.0
Current Nominal Return Assumption (Local Currency)	**6.8%**

Step 2: CAPM Method	U.S.[2]	Europe ex-U.K.	U.K.	Canada	Japan	Switzerland	Emerging Markets[3]	Australia	China
Beta to Global Equities	**1.03**	**0.96**	**0.84**	**0.76**	**0.78**	**0.78**	**1.14**	**0.65**	**1.05**
Equity Risk Premium 2.2% (Global Equity)	2.3%	2.1%	1.9%	1.7%	1.7%	1.7%	2.5%	1.4%	2.3%
Inflation Assumption	2.3	2.0	2.2	2.1	1.2	1.2	2.3	2.5	2.3
Real Cash Return	2.2	2.1	2.2	2.1	1.2	1.2	2.3	2.5	2.1
Diversification Adjustment	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3
Current Nominal Return Assumption (Local Currency)	**6.7%**	**6.2%**	**6.2%**	**5.8%**	**5.0%**	**5.0%**	**6.9%**	**6.0%**	**6.7%**

(1) Aon model is a Discounted Cash Flow (DCF) model, not an additive building block model
(2) Represents Large Cap
(3) EM in USD

Fixed Income Assumptions

The chart and table below provide a general overview of how government bond return assumptions are determined. The fixed income returns outlined in the previous response represent longer duration bonds than the example below.

Current Yield	+/-	Capital Gain/Loss	+/-	Increase/Decrease in Yield (Income)	+	Roll Return	=	Government Bond Return

Return Component[1]	09/30/2023	
Initial Yield	4.7%	Prevailing market yield
Capital Gain/Loss	-0.1%	Projected yield increase results in projected capital losses. Long Duration bonds suffer larger losses than short.
Increase/Decrease in Yield (Income)	0.0%	Projected yield increases leads to ability to reinvest at higher yields in future.
Roll Return	0.0%	Roll return on rebalancing has a positive impact on the return assumption.
Total 10-Year Return Assumption	**4.6%**	

Conclusions

The Board's Advisor uses volatility as a measure of risk (when discussing capital market assumptions). The Asset Allocation Study and other work on risk factor in other forms of risk (liquidity, funded ratio, factor risk, tracking error, etc.).

The Advisor employs various methodologies for determining the expected return of equities, bonds, and alternatives. These methods incorporate both quantitative and qualitative inputs. The Advisor's assumptions reflect current market valuations and future prospects rather than relying solely on historic averages, a particularly important feature when markets move to extremes as they have done over the past few calendar years.

Examples of the calculation of the Advisor's capital market assumptions are provided in the overview above (equity and fixed income). A more detailed presentation of the capital market assumptions is available if desired.

The Advisor's capital market projections are developed by the Advisor's Global Asset Allocation team and represent the team's long–term capital market outlook (10 and 30 calendar years). The output provided above represents 10-year assumptions.

- ***What mix of assets is necessary to achieve the Plan's investment return and risk objectives?***

Conclusions

The Plan's current asset allocation produces a return greater than the investment return assumption. Recent increases in interest rates have driven our forward-looking returns higher, while also contributing to recently lower backward-looking investment results. The process performed to determine the appropriate long-term strategic asset allocation was robust. The Advisor's capital market assumptions are updated on a quarterly basis, and they fluctuate based on changes in the market environment. Over recent periods forward-looking market projections over 10- and 30-calendar years have been increasing relative to the investment return assumption. This follows a period of underperformance relative to the investment return assumption. There is nothing in our analysis that would position us to say that a different asset allocation would be better positioned to meet the investment return and risk objectives of the Plan.

- ***What consideration is given to active vs. passive management?***

Conclusions

IMD believes that active investment risk, when implemented by skilled managers, will be compensated over time. Due to this belief, the Plan's investments are primarily actively managed. In 2017 IMD performed a global equity best practices review where the structure of the equity portfolio was evaluated, and three presentations were made to the Board updating them on the review. At the conclusion of the evaluation IMD determined that internally managed factor-based strategies were superior to passive indexation, and that the Plan could maintain an expectation of alpha generation through a factor implementation, with a similar cost profile to passive equity management. IMD believes that tilting to long-term rewarded factors will produce higher returns than passive indices over time. The Plan maintains minimal exposure to passive equity strategies, and these exposures are principally for rebalancing and transition purposes.

Over recent periods IMD has been modestly yet consistently increasing exposure to passive investment mandates as they work to identify their highest conviction investment strategies with an expectation of producing excess returns into the future.

- ***Is the approach used by the Plan to formulate asset allocation strategies sound, consistent with best practices, and does it result in a well-diversified portfolio?***

Conclusions

Yes, the process established by the Board to formulate asset allocation strategies is sound and consistent with industry best practice. The investments of the Plan are well diversified across and within various asset classes. The table below outlines the long-term strategic target of the Plan. As shown, the portfolio is diversified across global stock markets (public and private), real return assets (real estate, energy, natural resources and infrastructure), long treasuries, and cash. Additionally, the Plan is further diversified through its use of risk reducing hedge funds and risk parity.

	Interim Policy Target	Long Term Policy Target	Long Term Policy Ranges
Investment Exposure	**104.0%**	**104.0%**	**93-115%**
Total U.S.A.	16.8%	18.0%	13-23%
Non-U.S. Developed	12.1%	13.0%	8-18%
Emerging Markets	8.3%	9.0%	4-14%
Private Equity	17.2%	14.0%	9-19%
Global Equity	**54.3%**	**54.0%**	**47-61%**
Government Bonds	14.9%	16.0%	0-21%
Stable Value Hedge Funds	4.6%	5.0%	0-10%
Absolute Return	0.0%	0.0%	0-20%

	Interim Policy Target	Long Term Policy Target	Long Term Policy Ranges
Stable Value	**19.5%**	**21.0%**	**14-28%**
Real Estate	16.2%	15.0%	10-20%
Energy, Natural Resource and Inf.	6.6%	6.0%	1-11%
Commodities	0.0%	0.0%	0-5%
Real Return	**22.8%**	**21.0%**	**14-28%**
Risk Parity	7.4%	8.0%	0-13%
Risk Parity	**7.4%**	**8.0%**	**0-13%**
Cash	2.0%	2.0%	0-7%
Asset Allocation Leverage	-6.0%	-6.0%	--
Net Asset Allocation	**-4.0%**	**-4.0%**	**--**
Total Fund		**100.0%**	**--**

- ***How often are the strategic and tactical allocations reviewed?***

Conclusions

The IPS states that IMD will assist the Board in engaging in an asset-liability study for the Plan at least once every five calendar years. In practice strategic asset allocation reviews have occurred in line with the policy. Asset allocation relative to the long-term strategic target is monitored on a daily basis. The asset allocation of the Plan is not tactically allocated outside the policy ranges. The Total Public Fund tracking error maximum of 300bps prevents material asset allocation biases. IMD does, however, tactically tilt the portfolio within the policy ranges. Over recent periods the Plan has maintained a modest overweight to the Absolute Return Portfolio.

The portfolios positioning relative to the Long-Term Strategic asset allocation is provided to the Board on a monthly basis within the Transparency report, and it is reviewed with the Board formally on a quarterly basis, with the Board's advisors.

(C) the appropriateness of selection and valuation methodologies of alternative and illiquid assets; and

- ***How are alternative and illiquid assets selected, measured and evaluated?***

Conclusions

The following overview provides a high-level description on how illiquid assets are selected, measured, and evaluated. Similar and more detailed analysis is provided in section 5 of this report.

Strategy Selection

For private market candidates, teams will utilize all their available resources to come up with a list of potential managers that warrant further due diligence. Examples of these resources include discussions with existing managers, outreach from managers not currently invested with, opportunities learned through discussion with industry professionals or at industry conferences, and outside resources such as eVestment/PitchBook/etc. or investment consultants/advisors.

The due-diligence and underwriting process for the private markets includes a formal evaluation of the prospective manager, risk analysis performed by the risk team, and fit analysis. The team also heavily negotiates legal terms, governance, and fees. For Private market exposures, the team will typically require participation or a seat on the Fund's advisory board.

Ongoing Measurement

The Plan's custodian (State Street) is responsible for measuring and calculating investment performance of all investments.

Ongoing Evaluation

The process for ongoing evaluation is consistent with the thought process for retaining an investment manager. Additional, and more detailed review of this process is provided in section 5 of this report.

- ***Are the Plan's alternative investments appropriate given its size and level of investment expertise? Does the IPS outline the specific types of alternative and illiquid investments allowed, as well as the maximum allocation allowable?***

Background

We believe alternative investments can play an important role in enhancing return and reducing risk in a diversified portfolio. We also believe alternative investments allow institutional investors to further diversify into additional components of the investable opportunity set. We support the use of alternative investments in client portfolios. We believe allocating to alternative investments (private equity, real assets, infrastructure, or hedge funds) can provide enhanced returns (alpha) at a volatility level that is lower or similar to public markets.

The appropriateness of an alternatives allocation is dependent on a number of factors. Clients who choose to allocate to alternatives require;

- Sufficient assets to invest in a direct and diversified manner
- An appropriate level of internal resources
- A robust governance structure
- The ability to tolerate illiquidity
- The ability to tolerate increased cost and complexity

IMD exhibits many of the traits required to be successful in investing in alternative assets;

- Long-Time Horizon
  - Through the Asset Allocation Study process the Board is able to ensure sufficient short-term and long-term liquidity to maintain ongoing and growing exposure to alternative investments
- Resources
  - IMD maintains significant access to resources through its internal staff, strategic partners, external investment managers, consultants, and advisors
  - The "Building the Fleet / Reducing Investment Fees" initiative – meaningfully increased internal investment staff and shifted ~40% of the private market portfolio in house
- Board Perspective

- Historical Board support for the use of alternative investments, and a view that the Plan can use its size as a strategic advantage to increase alpha in the alternatives space
  - Support the growth of staffing resources to enhance returns and manage investment expenses, e.g. “Building the Fleet / Reducing Investment Fees”
- Robust Governance Structure
  - Clear delegation of responsibility and strong oversight functions
- Asset Scale
  - The scale of TRS allows IMD to allocate significantly to direct deals and co-investments; this has allowed for return enhancement and investment management fee reductions

Conclusions

The size of TRS, the duration of its liabilities, the depth of IMD, and the support of the Board give TRS a competitive advantage in achieving alpha in the alternative investment space. The goal of the “Building the Fleet / Reducing Investment Fees” initiative is intended to assist IMD in further establishing this competitive advantage and allowing them to generate alpha for the Plan. We believe the Plan’s alternative investments are appropriate given its size and level of investment expertise. We believe IMD is well positioned relative to other similarly sized institutional investors to capture the benefits of alternative investing.

- ***What valuation methodologies are used to measure alternative and illiquid assets? What alternative valuation methodologies exist and what makes the chosen method most appropriate?***

Conclusions

The Plan maintains a statement which documents the appropriate processes for valuing assets (Fair Valuation Pricing Guidelines (“Guidelines”)). The Guidelines were last updated in July of 2023. The policy states that as a governmental entity, TRS financial reporting is governed by the Governmental Accounting Standards Board (“GASB”). GASB Statement No. 72: Fair Value Measurement and Application addresses accounting and financial reporting issues related to fair value measurements. The GASB 72 defines fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the government's measurement date.

The Guidelines are intended to provide guidance for determining a fair value measurement for financial reporting purposes. It also provides guidance for applying fair value to certain investments and disclosures related to all fair value measurements.

As outlined in the Guidelines, GASB 72 requires TRS use valuation techniques that are appropriate under the circumstances and for which sufficient data are available to measure fair value and the techniques should be consistent with;

- Market approach
  - Value based on market transactions involving identical or comparable assets
- Cost approach
  - The cost to replace the present service capacity of an asset
- Income approach
  - Discounted cash flow model

NAV per Share or Ownership Interest Valuation

The Guidelines include a section titled "NAV per Share or Ownership Interest Valuation". This section outlines valuation for limited partnership investments in private equity, real asset, hedge funds and other general partner ("GP") investments that are reported at NAV per share. The Guidelines state that GASB Statement No. 72 allows TRS to use the NAV per share as fair value, provided a transaction is not expected at a different value, and that the NAV is calculated in a manner consistent with the Financial Accounting Standards Board ("FASB"). If the NAV is not calculated in a manner consistent with FASB TRS has a documented process to be followed prior to using the provided NAV.

Direct Investments in Private Equity Securities

The Guidelines include a section titled "Direct Investments in Private Equity Securities". This section outlines the process for valuing direct investments. The Guidelines state when a GP price is not available, a valuation expert will be employed by TRS to assist in the pricing of the security. Prices struck by a valuation expert will be reviewed for reasonableness by TRS Investment Accounting before they are used to value an unlisted private equity security.

(D) future cash flow and liquidity needs;

- ***What are the Plan's anticipated future cash flow and liquidity needs? Is this based on an open or closed group projection?***

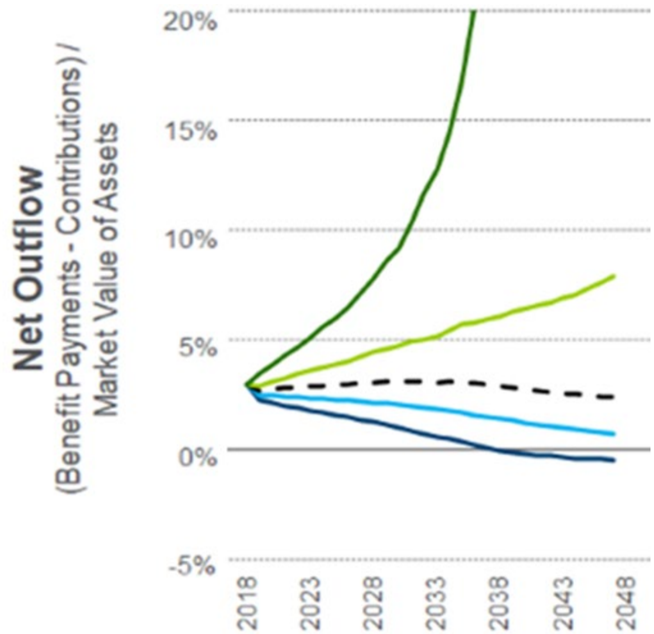
Background

As part of the Asset Allocation Study performed to determine the long-term strategic asset allocation IMD and the Advisor provided the Board analysis on the liquidity needs of the Plan over short and long time periods.

<u>Long Term Liquidity</u>

The chart below represents the stochastic liquidity projections resulting from the 2019 asset liability study utilizing open group projections (to be updated in 2024). The top and bottom line represent the 95th and 5th percentile projections, respectively. The green and light blue represent the 75th and 25th percentile, and the black line represents the projected median outcome. As shown, annual net outflows from the Plan are expected to be ~3% and slowly fall to 2.4% over a 30-calendar year period.

By 2027 outflows are expected to be between 1.5% and 5.9% in the central 50% of scenarios. As a firm, we believe net annual cash outflows approaching 10% is problematic. The projections show that liquidity needs only approach 10% after 2027 and in the 95th percentile scenario (an extreme scenario).



Year	2027	2037	2047
5th Percentile	1.4%	0.1%	-0.5%
25th Percentile	2.2%	1.5%	0.7%
50th Percentile	3.0%	3.0%	2.4%
75th Percentile	4.2%	5.9%	7.9%
95th Percentile	7.1%	24.1%	100.0%
Probability > 10%	1%	21%	25%

5th Percentile 25th Percentile 50th Percentile 75th Percentile 95th Percentile

Short Term Liquidity

To evaluate liquidity needs over a shorter-term basis IMD calculates a "Liquidity Ratio". The Liquidity Ratio is the Plan's sources of liquidity (Cash, U.S. Treasuries, TIPs, Equity, commodities, and securities lending collateral) divided by the uses of liquidity (normal uses of liquidity, stressed securities lending, stressed derivatives, stressed private markets). This ratio is monitored on an ongoing basis to ensure reasonable liquidity is maintained. IMD provides the Board updates on the liquidity of the Plan on an ongoing basis. This ratio is also provided when discussing potential asset allocation changes to ensure the new strategic policy is capable on maintaining short term required liquidity.

Conclusions

Annual net outflows from the Plan are expected to be ~3% and slowly fall to 2.4% over a 30- calendar year period, in the median market scenario. These projections are outlined in more detail above and are based on an open group projection.

- ***When was the last time an asset-liability study was performed?***

Conclusions

An asset liability study was performed in 2019. The next scheduled asset liability study is 2024.

- ***How are Plan-specific issues incorporated in the asset allocation process? What is the current funded status of the Plan and what impact does it have? What changes should be considered when the Plan is severely underfunded, approaching full funding, or in a surplus? How does the difference between expected short-term inflows (contributions, dividends, interest, etc.) and outflows (distributions and expenses) impact the allocation? How does the underlying nature of the liabilities impact the allocation (e.g., pay-based vs. flat $ benefit, automatic COLAs, DROP, etc.)?***

Conclusions

The current funded status of the pension Plan is 77.5% as of August 31, 2023 (as calculated by the Plan actuary).

Funded status, along with many other Plan-specific circumstances, are incorporated into the Plan's Asset Allocation Study as a component of the asset-liability study. During the asset- liability study data is gathered from the actuary that factors in all nuances of the Plan, including the factors outlined in the question. Because the asset-liability study starts with information from the actuary, all Plan-specific details from the liability side are included and their relationship with the assets are evaluated dynamically.

Funded status is one of many components to be considered in making investment decisions. Ultimately, the future funding of a pension Plan is comprised of a combination of asset returns and cash contributions. The more underfunded a Plan is, the more strain there could be to meet the promise of future benefit payments. This dynamic could point to investment strategies that have less asset lockups associated with alternative / illiquid assets. Conversely, the better funded a Plan is, the more appetite there may be to consider such alternative / illiquid assets.

Net inflow/outflow is another component to be considered during the investment strategy process and many times serves as a precursor for what is to come with the funded status. For example, projected net outflows could gradually reduce the funded status over time, potentially lessening the appeal for alternative / illiquid assets or necessitating increases in Plan contributions to boost the funded position.

The value of an asset-liability analysis is that it simultaneously considers the assets, liabilities, future funding, and their interaction with one another within a holistic framework. This is why we believe such analysis is so crucial for the long-term viability of a benefit program, so that the Plan sponsors are aware of potential future risks and have considered them as part of the strategic asset allocation process.

- ***What types of stress testing are incorporated in the process?***

Conclusions

During the Asset Allocation Study performed in 2019 (with similar analysis expected in 2024), the Board was provided with many types of analysis that were meant to be representative of stress testing or stressed market representation. This included asset only stress tests that look at the impact to the Plan's investments, as well as stressed scenarios from an asset/liability perspective. Stress testing that was performed included;

<u>Asset Only</u>

- Max Drawdown
- Value at risk
- Worst quarter
- Various scenario analysis (financial crisis, dot-com crash, sovereign debt crisis, bond crash, etcetera)
- Distribution of forward looking and backward-looking returns

Asset / Liability (30-year forward looking analysis)

- Projected funded ratio including worst-case scenario (95th percentile)
- Annual liquidity needs including worst-case scenario
- Economic cost in a worst-case scenario
- Liquidity in a worst-case scenario (short- and long-term liquidity)

Evaluation Component 3

Evaluation Component 3: Investment Fees and Commissions

A review of the appropriateness of investment fees and commissions paid by the retirement Plan;

- ***Do the Plan's policies describe the management and monitoring of direct and indirect compensation paid to investment managers and other service providers? What direct and indirect investment fees and commissions are paid by the Plan?***

Conclusions

The Plan does not have a written policy regarding a policy for fee negotiations. It is our understanding through discussion with IMD that this is due to the unique nature of each investment within the Plan and how fees are structured and negotiated on an individual deal basis. While discussing this question with IMD, it was clear that they attempt for the lowest fees possible with each individual investment opportunity. All investment-related fees are approved by the respective investment committee. We reviewed the policy documents of other large public fund clients and evaluated the policy document of TRS peers. From this review, we did not identify any Plans documenting a written policy with regards to procedures for investment fee negotiations. A few peers did include broad language within their IPS with regards to reviewing fees to ensure they are maintained at acceptable levels.

IMD maintains procedures for the payment of management and incentive fees. The procedure document outlines the process for receiving, reconciling, paying and documenting the payment of management and incentive fees.

The fees and commissions paid by the Plan include investment management fees, performance-based fees, carried interest, and broker commissions. The fees are outlined in detail within the Plan's Annual Comprehensive Financial Reports ("ACFR") in the Investment Section. Through discussion with IMD, we believe that fees outlined within the ACFR represent all direct (fees paid directly by the Plan), as well as indirect (expenses netted against Plan assets) investment fees and commission paid by the Plan. The annual budget review and approval process encompasses the internal IMD operating expenses, which is primarily the IMD Operating Budget.

- ***Who is responsible for monitoring and reporting fees to the board? Is this responsibility clearly defined in the Plan's investment policies?***

Conclusions

The TRS Investment Accounting Group is responsible for reporting fees to the Board on an annual basis through the ACFR. While this annual process is not specifically articulated within the IPS, it is the known practice for communicating investment expenses to stakeholders.

- ***Are all forms of manager compensation included in reported fees?***

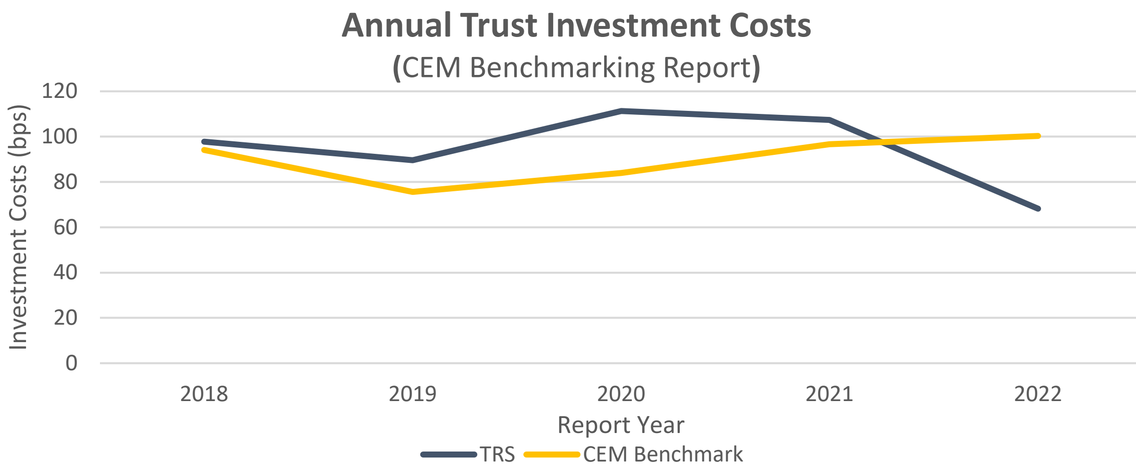
Conclusions

All forms of manager compensation are included in the reported fees. As illustrated in a subsequent bullet in this section, reported fees to the Board and various stakeholders come in a variety of reports. The intent of some of the reporting is to illustrate the internal costs associated with the management of the portfolio while others are intended to represent the external costs. The Board and other stakeholders receive aggregate investment management compensation within the annual ACFR.

- ***How do these fees compare to peer group and industry averages for similar services? How are the fee benchmarks determined?***

Conclusions

The Plan participates in the CEM Benchmarking Report. The CEM Benchmarking Report is the industry standard for objective fee benchmarking relative to peer institutions. CEM maintains a database of pertinent fee data on relevant peers of TRS to perform its analysis. The December 31, 2022 report found that investment costs of the Trust were lower (-0.32%) than the CEM benchmark costs. The below benchmark fee is primarily the result of the Trust having private equity performance-based fees below peers. Performance based fees can be volatile from year to year, so the chart below shows the Trust's investment costs relative to the CEM benchmark over the last 5 reports (2018-2022).



The benchmark cost developed by CEM (and referenced above) represents the median cost of peers for each invested asset class weighted to reflect the Trust's actual asset allocation. The report provides a detailed breakdown on the drivers of the actual fees relative to the benchmarked cost.

The CEM report also outlines total investment costs relative to peers without adjusting for differences in asset allocation. Under this metric, the investment costs of the Trust are higher. This is due to the Trust's relatively higher use of alternative investments (which typically have higher implementation costs) and lower use of passive investment management.

Given the verbiage in the PRB guidance to evaluate industry averages for similar services, we believe the CEM Benchmark is the more appropriate comparison. We also believe evaluating the fee relative to the benchmark over the last 5-years will provide more context and insight, as the year-to-year fee level can be materially impacted by performance fees.

- ***Does the Plan have appropriate policies and procedures in place to account for and control investment expenses and other asset management fees?***

Conclusions

The Plan does not have a written policy with regards to the level of investment expense or fee negotiations. Based on our conversations with IMD this is due to the unique nature of each investment and how fees are structured and negotiated. IMD stressed during our interactions that they strive for the lowest fees possible with each investment opportunity. All investment fees are approved by the appropriate investment committee. In responding to this question, we evaluated the policy documents of our other public fund clients and evaluated the policy documents of TRS peers. Through our review we did not identify any Plans with a written policy with regards to rules for fee negotiations or aggregate fee levels. We did identify a couple clients with broad language in their IPS with regards to ongoing reviews of fees and maintaining fees at acceptable levels.

- ***What other fees are incurred by the Plan that are not directly related to the management of the portfolio?***

Conclusions

Based on our conversations with IMD and understanding of the Trust, there was no evidence of fees incurred by the Plan that are not related to the management of the portfolio.

- ***How often are the fees reviewed for reasonableness?***

Conclusions

As IMD makes investment decisions on behalf of the Trust, fees are reviewed and evaluated on an ongoing basis. There are additional measures conducted by IMD to evaluate fees at least annually, this includes;

Annual Budget Exercise

- Review of internal investment costs, including legal costs

CEM Benchmarking Report

- Review of internal and external cost relative to peers

Transparency report

- Monthly update on investment results and the IIC, including reviews of managers being considered for the Plan, including investment management fee agreements

ACFR (Annual Audit)

- Annual report which reports internal and external management fees, performance-based fees, carried interest, and broker commissions

Performance Reviews

- IMD formally reviews investment results semi-annually for all investments

Fee calculations:

- All management and performance fees billed by invoice to TRS from public investment management funds are recalculated by IMD operations prior to payment
- External recalculation of management and performance fees for hedge fund and other public market limited partnerships are performed quarterly
- External recalculation of management and performance fees for private markets are performed annually by third-party service provider Albourne.

IMD does maintain procedures for the payment of management and incentive fees. The procedure document outlines the process for receiving, reconciling, paying, and documenting the payment of management and incentive fees.

- ***Is an attorney reviewing any investment fee arrangements for alternative investments?***

Conclusions

The TRS General Counsel directs the internal legal counsel to manage external legal counsel and review all pertinent documents and terms related to all investment transaction deals. The IMD is advised by both internal and external legal counsel on terms in accordance with fiduciary principals. According to Texas Government Code §825.203 and §402.0212, the Texas Attorney General approves contracts with external legal counsel. TRS General Counsel works diligently with the Attorney General's Office to ensure the Plan retains firms with the required expertise with respect to investment-related transactional reviews.

Evaluation Component 4

AON

Evaluation Component 4: Investment Governance Processes

A review of the retirement Plan 's governance processes related to investment activities, including investment decision-making processes, delegation of investment authority, and board investment expertise and education;

Transparency

- ***Does the Plan have a written governance policy statement outlining the governance structure? Is it a stand-alone document or part of the IPS?***

Conclusions

Yes, the IPS, as well as the Bylaws of the Board of Trustees of TRS, most recently amended September 2022 ("Bylaws"), are the primary written policy statements outlining the investment governance structure of TRS.

The respective roles of the Board, staff, advisors, and consultants are described in the IPS. As indicated in the IPS, the Board is the ultimate fiduciary for investing TRS trust assets and establishes investment objectives and policy. Additionally, the Board monitors the actions of TRS staff, including the IMD, to ensure compliance with its established policies. The Board selects investment advisors to provide education, advice, and assistance with development and review of policies and procedures, asset allocation, and portfolio performance review.

Implementing and reporting on the Board established policies is the job of the IMD. The IIC reviews and authorizes proposed investments and external manager engagements within the parameters set forth in the IPS. The IIC is comprised of a minimum of five members, including the CIO, Chief Risk Officer, and two IMD Senior Managing Directors. The CIO is responsible for establishing IIC procedures and guidelines, including authorization of investment or external manager recommendations and engagements. The CIO bears the power to veto any proposed investment or delegation of investment discretion. The Executive Director or his designee may attend any meeting of the IIC and receives all IIC materials. The

Executive Director, after consultation with the CIO, has the power to veto any proposed investment or delegation of investment discretion when he deems such veto to be in TRS' best interest. The IMD is authorized to engage consultants for assistance with respect to investment opportunities and for due diligence, analysis, and advice. The IPS provides that any Board member may request any external investment opportunity scheduled for consideration by the IIC be submitted to the Board for consideration.

The responsibilities of the Board are outlined in the Bylaws, including the adoption and periodic review of rules, regulations, bylaws, and policies; selection and oversight of the Executive Director to ensure effective management practices are followed in the organization; approval of the annual budget; receiving reports from staff, investment counsel and others regarding the investment portfolio; reviewing investment performance, asset mix, portfolio characteristics, cash flow, transactions, and monitoring compliance with investment policies and guidelines; establishing committees; delegating authority to the staff through the Executive Director; selection of one of more custodial banks to provide custodial services; selecting and evaluating investment counsel or other consultants to provide expert advice and assistance to the Board as the Board deems necessary to exercise its investment and trust responsibilities; select and evaluate fiduciary counsel; select and establish the compensation of the CIO, in consultation with the Executive Director, and to select, replace, dismiss, evaluate and set the compensation of the Chief Audit Executive in consultation with the Audit, Compliance & Ethics Committee and Executive Director.

Seven standing committees, with roles and responsibilities of each committee outlined, are established in the Bylaws. These are: Audit, Compliance and Ethics Committee; Benefits Committee, Budget Committee, Investment Management Committee, Policy Committee, Strategic Planning Committee, and Compensation Committee.

The Investment Management Committee serves as an advisory committee to the Board, and its responsibilities are outlined by the Bylaws. The Investment Management Committee's duties include recommending individual investment and investment-related actions when required by the IPS or Board resolutions, recommending strategies for all TRS investments, setting investment objectives, performance and risk measurement, monitoring investment processes, monitoring overall fund investment performance, recommending appropriate reporting and communication protocols to keep the Board appropriately informed on investment matters, reviewing proposed new or amended investment policies and making appropriate recommendations to the Board Policy Committee.

- ***Are all investment-related policy statements easily accessible by the Plan members and the public (e.g., posted to Plan website)?***

Conclusions

Yes, the IPS and Bylaws are posted on the TRS website. Additionally, there are TRS webpages outlining and summarizing Investment Strategy, Beliefs, Diversification Framework, Risk Management, Making and Managing Investments. The TRS website also has dedicated webpages for the following Investment Teams: Executive Leadership, Risk and Portfolio Management, Multi-Asset Strategies Group, Internal Fundamental Management, External Private Markets, External Public Markets, Strategic Partners and Research, Trading, Emerging Manager Program, Investment Operations and Legal & Compliance.

- ***How often are board meetings? What are the primary topics of discussion? How much time, detail, and discussion are devoted to investment issues?***

Conclusions

The Bylaws establish that the Board meets approximately five, but at least four, times per fiscal year. The Board annually approves the dates for regular meetings at the first regular meeting of each fiscal year or soon thereafter.

The agenda for each meeting is set by the Chairman of the Board and when appropriate other members in consultation with the Executive Director. Any Board member may submit items for inclusion on the agenda by submitting to the Executive Director by 5:00 pm no later than the tenth business day before the meeting. Agenda items may be added to a posted agenda by the Chairman, the Executive Director, or by written request of any Board member provided the proposed addition is submitted in time to post an amended agenda in compliance with the Open Meetings Act.

The Board met six times in 2023. The Investment Management Committee met four times in 2023. The Board and Investment Committee agendas, board books, and minutes evidence there is a substantial, and appropriate, amount of time devoted to Investment matters given the size and sophistication of the Plan.

- ***Are meeting agendas and minutes available to the public? How detailed are the minutes?***

Conclusions

The Bylaws provide that the minutes shall contain each subject of discussion and deliberation, all motions, seconds, and the vote of motions. Each Board member can record in the minutes his or her vote on a motion and the reasons stated in the meeting for his or her vote.

Our review showed that necessary information and detail was provided in the minutes. TRS broadcasts open portions of its Board and committee meetings online and maintains past broadcasts of the meetings on TRS site. In addition to posting board agendas, minutes and books, TRS posts Board meeting minutes (going back to 2013) and Board meeting books with all supporting materials (going back to 2016). TRS also posts Trustee biographies, a listing of Board Committees and Officers, Board of Trustees Ethics Policy, Board of Trustees External Communication Policy, and the Board Meeting Calendar.

<u>Investment Knowledge/Expertise</u>

- ***What are the backgrounds of the board members? Are there any investment-related educational requirements for board members?***

Conclusions

The Board is composed of nine members, with investment-related requirements for certain appointed members. Chapter 825 of the Texas Government Code provides that the Governor, with the advice and consent of the Senate, appoints nine members:

Three of the appointees must have demonstrated financial expertise, who have worked in private business or industry, and who have broad investment experience, preferably in the investment of pension funds.

- Two of the appointees are selected by the Governor from a slate of three public school or education service center candidates who have been nominated by employees of the public school or education service centers

- One of the appointees is selected by the Governor from a slate of TRS retirees who have been nominated by TRS retirees of the Plan

- One of the appointees is selected by the Governor from three “at-large” candidates who have been nominated for the position
    - TRS Retirees of the Plan, members in public school districts and members in higher education institutions may run for nomination for the “at-large” position

Pursuant to Texas Government Code §825.003, the Governor also appoints two members, subject to confirmation by two-thirds of the Senate, from a list of nominees submitted by the State Board of Education. The members must be persons who have demonstrated financial expertise, have worked in private business or industry, and have broad investment experience, preferably in investment of pension funds.

Biographies of the current Board members are posted online on the TRS website.

- ***What training is provided and/or required of new board members? How frequently are board members provided investment-related education?***

Conclusions

Texas Government Code §825.0041 states that a person who is appointed to the Board is required to complete a training program before taking office. The training must include information on TRS' enabling legislation and laws relating to open meetings, public information, administrative procedure, conflict of interest, ethics policies, TRS programs, function, rules, budget, and most recent formal audit.

TRS staff provide thorough orientation for new Board members, which is typically a two-day orientation with tours of TRS divisions and follow up by TRS staff.

The Board orientation booklet follows best practices, with clear, explicit language and guidance. The main topics cover:

1. Organizational overview

   TRS Overview

   Trustees' Qualifications and Requirement for Holding Office

   Consultants and Advisors
2. Roles and Responsibilities

   TRS Board of Trustees Qualifications, Roles, and Fiduciary Duties

TRS Board of Trustees External Communications Policy

3. Ethics
4. Health Insurance Portability and Accountability Act (HIPPA), Data Privacy and Trustee Email Addresses

   HIPPA Highlights

   Data Privacy and Trustee Email Addresses
5. Legal Governance and Administration

   Open Meetings Act

   Public Information Act

   Rulemaking

   Contested Case Appeal Process
6. Internal Audit
7. Overview of TRS' Direct Lines of Business

   Investment Management Division

   Health Insurance Benefit Division

   Benefit Services Division

The booklet also provides Board members with the following documents:

- Bylaws of the Board of Trustees
- Trustee Position Description
- Board of Trustees External Communications Policy
- Board of Trustees Ethics Policy
- Notice of Privacy Practices (HIPAA)
- Policy Review Schedule
- Commission Credit Policy
- Investment Policy Statement
- Litigation Policy
- Pension Funding Policy
- Procurement Policy

- Proxy Voting Policy
- Trustee Email and Equipment Policies and Guidelines
    - TRS Personal Mobile Device Policy
    - TRS Information Security Policy
- TRS Information Security Manual
- Summary Guidance on Trustee Travel
- Most recent Annual Comprehensive Financial Report (separate)
- Administrative Operating Budget Report (separate)
- Popular Annual Financial Report (separate)
- TRICOT Annual Financial Report (separate)

Board members stated that their initial trustee orientation was informative, detailed, and valuable to the role of a trustee.

All Board members sign an annual acknowledgment form that they have received and reviewed the training manual.

TRS staff and outside advisors also provide education to the Board. The Board receives annual fiduciary education, and investment related education from outside advisors at Board meetings. The Board Bylaws also encourage Board members to attend workshops and training sessions on matters such as fiduciary duties, actuarial valuations, investment issues, and benefits delivery that will assist them in fulfilling their responsibilities. The Board also has a Board Training Policy. The purpose of the policy is to ensure that TRS Trustees receive training required by rule, statute, and law and have opportunities to obtain education and training on current and evolving issues, related to the general administration and operations of TRS, on an ongoing basis.

- ***What are the minimum ethics, governance, and investment education requirements? Have all board members satisfied these minimum requirements?***

Conclusions

New Board members must complete approved, one-hour courses on Open Meetings and Open Records respectively within 90 days of taking the oath of office. Board members must also comply with the Texas Pension Review Board's Minimum

Education Training requirements. New Board members must complete seven hours of training on assigned core topics within the first year of service. The core topic areas are fiduciary matters, governance, ethics, investments, actuarial matters, benefits administration, and risk management. After the first year, Board members are required to complete at least four credit hours of continuing education every two years. These four hours can be in either the core topics, or in non-core topics of compliance, legal and regulatory matters, pension accounting, custodial issues, Plan administration, Texas Open Meetings Act, and Texas Public Information Act.

Staff ensures that Board members complete and report their compliance with these requirements on the Minimum Education Training Program Form (PRB-2000). All Board members have met these obligations.

- ***Does the Plan apply adequate policies and/or procedures to help ensure that all board members understand their fiduciary responsibilities? What is the investment management model (i.e., internal vs. external investment managers)?***

Conclusions

The Trustee Training Manual contains in-depth descriptions of fiduciary duties and ethics, applicable fiduciary provisions as set forth in the Texas Constitution and law, and guidance related to fiduciary and ethical issues. In addition to TRS General Counsel/Chief Compliance Officer, the Board has a fiduciary legal advisor on retainer, and receives annual fiduciary and ethics training. Furthermore, all interviewed members of the IMC have a full understanding of their fiduciary duties and the importance of adherence to those duties.

The Board has chosen to delegate investment management authority to the Investment Management Division, which is outlined in section 1.3(b) of the IPS. IMD executes the investment strategy as outlined by the policy. There are two primary methods in which IMD has executed this decision, first through the use of internally managed investment strategies in which IMD believes there is sufficient evidence that internally managed strategies will achieve cost savings while still achieving stated investment objectives. Secondly, IMD has authority to hire external investment managers to manager assets on behalf of the Plan. These external managers are hired when there is a high degree of confidence that the manager will meet the investment objectives outlined within its respective asset class policy objective. Further detail on the selection process of external managers is illustrated in a subsequent evaluation component.

- ***Does the board receive impartial investment advice and guidance? How frequently is an RFP issued for investment consultant services?***

Conclusions

Based upon our review and Board interviews, we believe that the Board receives impartial investment advice and guidance from its investment advisors, fiduciary counsel, and from TRS staff.

According to the Board Procurement Policy, Board approved contracts, including those for investment consultant services, are subject to an initial term not to exceed five (5) years in duration, with one or more options for extensions not to exceed a total of two (2) years. If the Board determines that a renewal or extension provides the best overall value, the board can authorize the renewal or extension of agreements that are close to the expiration term, without requiring a new acquisition process. Otherwise, the Board will issue either a Request for Proposal (RFP) or Request for Qualifications (RFQ). The Board will determine the most appropriate method (RFP or RFQ) based upon the current situation and what is in TRS' best interests. The Board may also seek recommendations from TRS staff and legal advice from legal and fiduciary counsel when making this determination.

The Board Procurement Policy also mandates that a record of the process and rationale for selection of each Board contracting opportunity be maintained. Finally, the Board Procurement policy also requires that TRS management, staff and fiduciary counsel provide new Board members with training regarding contracting, and on an on-going basis as needed or with routine fiduciary training.

Accountability

- ***How is the leadership of the board and committee(s), if any, selected?***

Conclusions

As reflected in the Bylaws, Texas Government Code Section 825.201 provides that the Texas State Governor designates a member of the Board as the presiding officer of the Board and serves at the pleasure of the Governor. The Chairman presides over meetings and performs other duties as assigned by law, the Bylaws, and other action of the Board. These duties include designating chairmen of each committee. The committee chairmen serve at the pleasure of the Board Chairman

The Board elects a vice Chairman from Board membership and serves at the pleasure of the Board. The Vice Chairman performs the duties of the Chairman in case of the Chairman's absence, death, resignation, disability, removal or disqualification, until the Chairman resumes duties, or a successor Chairman is appointed.

If both the Chair and Vice Chairman are unable to perform their duties, the Board member with the longest service on the Board will take over, until Chairman and/or Vice Chairman returns, or a successor(s) has been appointed or elected, respectively.

- ***Who is responsible for making decisions regarding investments, including manager selection and asset allocation? How is authority allocated between the full board, a portion of the board (e.g., an investment committee), and internal staff members and/or outside consultants? Does the IPS clearly outline this information? Is the board consistent in its use of this structure/delegation of authority?***

Conclusions

The ultimate authority for the decision-making behalf of the Plan rests with the Board. The Board has made the decision to delegate the investment manager selection (internal and external) to IMD, which is formalized within the IPS. The Board has retained the authority for making decision regarding the long-term asset allocation, as well as setting the investment objectives of the Plan.

The authority for the applicable parties is well outlined within IPS section 1.3 (Roles of Board, Staff, Advisors, and Consultants). Within this section of the document is a detailed outline of the roles and responsibilities of the;

1. Board of Trustees ("Board")
2. Board's investment advisors ("Advisor")
3. Investment Management Division ("IMD")
4. Internal Investment Committee ("IIC")
5. Chief Investment Officer ("CIO")
6. Executive Director

7. Legal staff

Through our ongoing involvement with IMD and the Board we have observed that the Board is extremely consistent in its delegation of authority to IMD.

- ***Does the Plan have policies in place to review the effectiveness of its investment program, including the roles of the board, internal staff and outside consultants?***

Conclusions

The IPS outlines the primary objectives of the investment program within the "Total Fund Objectives" section, including;

1. **Control Risk** – Properly diversify assets to control investment risk
2. **Achieve Return Targets** – Produce investment results that exceed;
    - The Investment Return Assumption – Exceed the assumed investment return assumption adopted by the Board
    - Real Return Target – Exceeds the long-term rate of inflation by an annualized 5%
    - Plan benchmark – Exceeds the return of the Plan benchmark

Each of these objectives can be evaluated independently and we believe that the Board has received sufficient reporting by IMD, as well as the Advisor, to properly review if the investment program has been effective in matting the stated objectives.

The IPS includes section 1.3 (Roles of Board, Staff, Advisors, and Consultants). Within this section of the document is a detailed outline of the roles and responsibilities of the;

1. Board of Trustees ("Board")
2. Board's investment advisors ("Advisor")
3. Investment Management Division ("IMD")
4. Internal Investment Committee ("IIC")
5. Chief Investment Officer ("CIO")
6. Executive Director

7. Legal staff

- ***Is the current governance structure striking a good balance between risk and efficiency?***

Conclusions

We believe the TRS governance structure strikes the right balance between risk and efficiency. The degree of delegation established by the TRS Board is appropriate and in line with comparable peers and best practices for a fund with the size and complexity of TRS. The TRS Board sets policy with appropriate monitoring, reporting and accountability. Staff can successfully implement the Board's directives within the set parameters. TRS policies, procedures, practices, and commentaries from interviews verify there is a solid framework for TRS to fulfill its mission and purpose.

What controls are in place to ensure policies are being followed? How often are the investment governance processes reviewed for continued appropriateness?

Conclusions

The Board's Policy Committee assists the Board in fulfilling its policy-making responsibilities. The Policy Committee is responsible for making and reviewing policy proposals, including staff policies as directed by the Executive Director, recommending new Board policies and modifications to existing policies as needed; recommending new rules and amendments; establishing and adhering to a policy review schedule for each fiscal year to ensure the periodic review of adopted policies; and ensuring all proposed Board policies or changes have been appropriately reviewed by necessary parties. The Investment Policy Statement is currently reviewed every two years and can be revised as necessary when needed.

The Board's Audit, Compliance, and Ethics Committee has responsibility to assist the Board in fulfilling its fiduciary oversight responsibilities for, among other things, the process for monitoring compliance with laws, regulations, and policies, as well as risk management and internal controls.

The Committee assesses the compliance monitoring Plan's effectiveness and receives and reviews results of management's follow-up actions related to any reports of non-compliance. The Committee also receives and reviews reports from internal and external auditors and compliance staff on the effectiveness of the Plan's governance, risk management, and control activities. The Committee also receives regular reporting and updates from the chief compliance officer regarding compliance matters.

Internally, Investment Compliance, through the General Counsel/Chief Compliance Officer, Compliance Counsels and Investment Compliance Officers (with assistance from State Street's Compliance Services and Investment Management Division (IMD) Operations), performs daily monitoring of relevant IMD functions to determine if staff complies with the IPS, Securities Lending Policy, Proxy Voting Policy, Commission Credits Policy, and the TRS Personal Trading Policy. There is a thorough and inclusive compliance process, including the utilization of information Plan and data processes to ensure compliance.

- ***How is overall portfolio performance monitored by the board?***

Conclusions

The Board receives performance evaluation reports in multiple ways. These documents vary in detail and require varying degrees of investment acumen to digest the provided information. There are three prominent ways in which the Board is receiving performance evaluation reports;

1. Monthly performance updates from IMD via Transparency Reports
2. Quarterly performance update from the Board's Advisor
3. Presentations made by IMD at quarterly meetings providing updates on the Plan

Further detail on each evaluation report is further outlined within Evaluation Component 5

Evaluation Component 5

Evaluation Component 5: Investment Manager Selection and Monitoring Processes

A review of the retirement Plan's investment manager selection and monitoring

- ***Who is responsible for selecting investment managers? How are the managers identified as potential candidates?***

Conclusions

The Internal Investment Committee (IIC) bears the ultimate responsibility for selecting and authorizing proposed investments and external managers within the guidelines set forth in the Plan's investment policies as delegated by the Board of Trustees. The IIC also evaluates new internal investment strategies. The IIC is composed of senior leaders across the IMD. The IIC is comprised of a minimum of five members, including the CIO, Chief Risk Officer, and two IMD Senior Managing Directors. There must be a minimum of five members on the IIC and, in addition to the CIO, at least two members must be Investment Division Senior Managing Directors. Each member has one vote. An affirmative vote of a majority of IIC members in attendance is required to approve any action. The CIO and Executive Director, with consultation from the CIO, have veto power over any investment or delegation of investment discretion authorized or recommended by the IIC. The CIO, Executive Director, or a Board member may request a prudence letter for any external investment opportunity presented to the IIC. A Board member may have any external investment opportunity scheduled for consideration by the IIC be submitted for Board consideration. When the Board considers an investment, as required by the IPS, the IIC shall vote on whether to recommend such investment or engagement to the Board.

- ***How are the managers identified as potential candidates?***

Conclusions

Teams will leverage all their available resources to compile a list of potential managers that warrant further due diligence for public market, private market, and risk parity candidates. These resources encompass a spectrum of activities and materials including, discussions with existing managers, outreach from managers not currently part of the investment portfolio, opportunities learned through discussion with industry professionals, participation in industry conferences, and outside resources such as eVestment/Preqin/etc. or investment consultants/advisors.

Candidates managing less than $3 billion in assets or with a performance track record of fewer than five years, or meeting both criteria, qualify for inclusion in the Emerging Manager Program (“EMP”). This program invests in multiple investment strategies, including private equity, real estate, and public market strategies. Investment opportunities are identified through a variety of channels that include existing advisor relationships, TRS staff, and through the TRS emerging manager website.

- ***What are the selection criteria for including potential candidates?***

Background

External Public Markets (“EPU”)

Beginning the selection process, EPU and IMD management continually monitor the Plan and each investment area to determine the most suitable allocation to asset classes, strategies, and sub-strategies. If it has been determined that a new strategy should be included in the Plan, the EPU team will begin developing a list of target managers and schedule initial due diligence with the manager/strategy including introductory visits and phone calls. If the team has identified a manager that they feel strongly towards, they will begin the “Premier List” development process.

Once the Premier List (“PL”) process has begun, EPU sends the manager the “Texas Way” presentation. This presentation offers an overview of TRS, the EPU selection process, and provides an outline of fee alignment considerations. Subsequently, an EPU team member will gather initial marketing/intro documents and returns from the investment manager. Once the manager has reviewed the documentation and performed a portfolio fit analysis, EPU will determine whether to proceed with the manager or decline further engagement. If the decision is to move forward, a series of conference calls and in-person meetings will be scheduled for additional information gathering. Once all relevant material is gathered and meetings have been conducted with the manager, the EPU team will discuss whether the manager should be added to the PL. A Tear Sheet is produced for the manager’s strategy which includes the rationale for adding it to the PL. A PL candidate is brought in front of the CIO during semi-annual portfolio review meetings for evaluation and approval.

When starting the legal and financial term negotiations, the manager will confirm that the terms of the strategy are consistent with TRS goals, considering such matters as fund structure (limited liability or separate account), liquidity terms, transparency levels, and willingness to accept TRS non-negotiable terms (sovereign immunity, jurisdiction). Within this process, the EPU team will negotiate fee structure and push for fee alignment through performance fees rather than management fees. Once the EPU team is comfortable with the terms, they will proceed to the certification process.

To begin the external manager certificate process, the EPU team will send out a certification questionnaire to the manager, conduct on-site visits and often in-person meetings at TRS, and perform reference checks on the manager. The EPU team uses this information to understand and analyze the details of a prospective manager to formalize a write up including the below information;

1. Organization
2. Investment process
3. Portfolio exposure
4. Risk management
5. Diversification impact
6. Investment terms
7. Operations
8. Transparency
9. Performance

The write-up is used to communicate the potential investment to the IIC.

Along with the certification process, EPU conducts a risk analysis to determine a potential manager's risk exposures, environment tilts, and correlations. These metrics are then evaluated against the entire portfolio as well as the strategy specific level. If the manager is not a good fit for the existing portfolio, they will be certified on "the bench" for future investment. If EPU decides to move forward with a manager, they will request a risk certification from the Risk and Portfolio Management group. The Risk and Portfolio Management group conducts additional due diligence on the manager and provides a risk certification write-up which includes the below areas of focus;

1. Market factors
2. Leverage
3. Drawdown history
4. Liquidity
5. Risk management Plans
6. Audit history

If the manager is determined to be a good fit in the portfolio, EPU will proceed to a final fit analysis.

The final fit analysis includes an evaluation of the proposed manager's ability to improve the risk/reward profile of the Plan and determine the optimal/initial sizing of the new manager. If the manager continues to be determined as a good fit, the EPU team will proceed with pre-IIC negotiations with the manager.

Prior to bringing a manager to the IIC, IMD will ensure the manager's ability to come to an agreement on the below issues;

1. Fees
2. Benchmarks
3. Hurdles
4. Liquidity terms
5. Transparency

Next EPU will proceed to recommending the manager to the IIC via a formal write-up. The IIC write-up includes the same nine elements of the certification process. Documentation of due diligence in those nine areas are outlined in a certification checklist, which is included in the body of the IIC write-up. In addition, consultant reports and the risk certification are included. Once the documents are finalized, all necessary attestations are obtained, including those from the lead Portfolio Manager, Portfolio Director, and Director of EPU. The documents are then delivered to the IIC members at least five business days in advance of scheduled IIC meetings for two business days in advance of special IIC meetings to generate questions, comments, and concerns. At the IIC meeting, the investment manager is presented and proposed for inclusion in the portfolio subject to the final vote of the committee.

External Private Markets

The due-diligence and underwriting process for the private markets group is similar to that of the external public markets group. It includes many of the same analysis in a different format. Private markets also heavily negotiates legal terms, governance, and fees. Private markets typically will seek participation or a seat on the Fund's advisory board. All additions to the Premier List are reviewed and approved by the team Investment Committees. On occasion IIC has delegated the authority for asset class investment committees to approve investments within the procedures and guidelines of the IPS.

Emerging Manager Program

TRS has delegated to Rock Creek (public markets) and Grosvenor Capital Markets (private markets) to invest on behalf of the Plan for their Emerging Manager Program (EMP) as they see fit. TRS does not make investment decisions within the program but reserves the right to opt-out of any investment. TRS regularly meets with the two advisors to discuss and review pipeline and upcoming proposed investments. Any proposed investment is communicated with a formal Investment Memo that is reviewed by the EMP team along with a designee from the either the public markets, private equity, ENRI, or real estate group. Formal documentation is signed in the event that IMD wishes to opt-out of any investment.

- ***What are the selection criteria when deciding between multiple candidates?***

Conclusions

The process for selecting an investment manager is outlined in the previous question. Selecting between multiple candidates is often the result of deciding which mandate most efficiently provides the exposure desired, the strengths of the manager and represents the best fit within the Plan.

- ***How does the selection process address ethical considerations and potential conflicts of interest for both investment managers and board members?***

Conclusions

The IMD performs a review which evaluates ethical considerations and potential conflicts of interest for both investment managers and board members as part of the manager diligence process. The IMD also commissions background checks through legal counsel or a third party as part of the operational due diligence process for new investment managers.

Furthermore, external investment managers and General Partners are obligated to adhere to the TRS Code of Ethics for Contractors. Compliance with this policy requires a signed written acknowledgement of responsibilities and obligations upon commencement of the contract and annually thereafter, an annual Disclosure Statement for Financial Services Providers, and a new or amended Disclosure when required.

To help ensure all investment decisions and recommendations are free of potential conflicts of interest, external investment managers and General Partners must comply with the Investment Integrity Policy. This policy requires the completion of an Investment Integrity Questionnaire, which can be found included in the IPS. This disclosure reports the involvement of a Placement Agent and any political contribution or Placement Fee. The disclosure also reports the relationship of the recipients to the Placement Agent, Texas Elected Official, or Candidate.

- ***Who is responsible for developing and/or reviewing investment consultant and/or manager contracts?***

Conclusions

According to the IPS guidelines, legal documentation for all accounts, investment subscriptions, external managers, investments in private investment funds, and derivatives will be reviewed, negotiated, and approved for TRS execution by internal or external legal counsel, or both. Under the direction of TRS General Counsel, internal legal counsel manages external legal counsel and reviews the material terms of all investment transactions. The IMD, in consultation with Legal and Compliance, will exercise diligence to ensure that all contracts are legally binding and enforceable in a suitable venue. The IMD will seek the assistance, review, and advice of legal counsel whenever it is prudent to do so. Legal and Compliance has primary responsibility for the engagement of outside legal counsel for investment matters, subject to applicable statutes and rules adopted by the Office of the Attorney General.

During the manager due diligence process, non-negotiable preliminary legal terms are presented to managers and reviewed early in the process. Later in the process, a final legal review is conducted by TRS legal resources to cover outstanding issues such as fees, key provisions, transparency, reporting requirements and investment guidelines.

- ***What is the process for monitoring individual and overall fund performance?***

Conclusions

Individual public asset managers are evaluated on a continuous basis. On a monthly cycle, quantitative analysis is produced and distributed by the Analytics Group and is reviewed by the respective investment manager and analyst. Each investment manager is assigned both primary and backup coverage. Examples of monthly monitoring materials include the following:

1. Portfolio Performance Reports
2. STAR Reports
3. PARMA Reports (holdings-based risk analysis)
4. Portfolio Characteristics (Pubdoc)

In addition to the above, the Risk and Portfolio Management (RPM) group produces monthly risk alarms which are delivered to the respective external manager teams. If the RPM group identifies a risk anomaly, it is the responsibility of the external manager staff to investigate the risk and formulate a written response to deliver back to the RPM group. In the event of a CUSUM (cumulative sum) alarm, which is an alarm to track how well a manager achieves desired returns, the external manager team will re-underwrite the investment and decide to either add funds or terminate the investment. As a result of the re-underwriting process, a formal CUSUM response is required back to the RPM group within 60 days. All CUSUM alarms are also reported to the management committee.

Across public and private external asset managers, IMD conducts conference calls on a regular basis as part of its ongoing diligence. These calls include a discussion of portfolio performance and risk, as well as any organizational changes that may have occurred or will incur in the future. Among the private markets managers, the calls could be in conjunction with Advisory Board meetings. Staff targets to meet with active managers at least once a calendar year.

In addition to the manager diligence outlined above for the private market portfolio, the team also performs a semi-annual portfolio review. This includes a structural review of the portfolio relative to desired positioning and the opportunity set, as well as quantitative evaluation of the private asset managers.

Additionally, the Board receives investment performance updates on a regular basis from the IMD and receives an investment performance report from its independent investment consultant at each quarterly board meeting.

- ***Who is responsible for measuring the performance?***

Conclusions

The Plan's custodian (State Street) is responsible for measuring and calculating investment performance. IMD is responsible for validating, finalizing and comparing to peers and passive benchmarks.

- ***What benchmarks are used to evaluate performance?***

Conclusions

The table below outlines the Plan benchmark components as of 10/1/2023 as outlined in the IPS.

Total Fund Benchmark Components

Benchmark	Target Weight effective 10/1/2023
MSCI USA Investible Market*	18%
MSCI EAFE and Canada*	13%
50% MSCI EM/50% MSCI EM ex China*	9%
Customized State Street Private Equity Index (1Q Lag)	14%

Benchmark	Target Weight effective 10/1/2023
Bloomberg Barclays Long Treasury Index	16%
SOFR + 4%	0%
HFRI Fund of Funds Conservative	5%
NCREIF ODCE (1Q Lag)	15%
40% Cambridge Associates Natural Resources/40% Cambridge Associates Infrastructure/20% quarterly Consumer Price Index (1Q Lag)	6%
Goldman Sachs Commodity Index	0%
HFR Risk Parity Vol 12 Institutional Index	8%
FTSE 3 Month Treasury Bill	2%
SOFR + 26.161 bp	-6%

*Benchmarks will be adjusted for securities TRS is not authorized to own or buy because of this Policy or statutory provisions for which no fiduciary exemption has been exercised.

The table below outlines benchmarks used to evaluate performance at the manager level.

Manager Benchmarks	
3-month LIBOR + 200 basis points	MSCI EAFE + Canada (Net)
Bloomberg Barclays Global Inflation Linked Bond Index	MSCI Emerging Markets Index
Bloomberg Barclays High Yield Index	MSCI Europe (Net)
Bloomberg Barclays Intermediate Gov/Credit Bond Index	MSCI Japan (net)
Bloomberg Barclays Long Term Treasury Index	MSCI US Growth Index
Bloomberg Barclays U.S. TIPS Index	MSCI US Small Cap Index

Manager Benchmarks	
Cambridge Associates Natural Resources	MSCI US Value Index
Citigroup 3-Month T-Bill Index	MSCI USA IMI
Dow Jones U.S. Total Stock Market Index	MSCI World Index (net)
Goldman Sachs Commodities Index	NAREIT Index
HFRI FoF Conservative Index	NCREIF ODCE Index
HFRI Fund of Fund Composite Index	NCREIF Property Index
MSCI AC World Index (Net)	Consumer Price Index (1 quarter lagged)
MSCI All Country World Index	Russell 2000 Index
MSCI Asia ex-Japan (net)	Russell 2000 Value Index
MSCI China A	State Street Private Equity (1 quarter lagged)

- ***What types of performance evaluation reports are provided to the board? Are they provided in a digestible format accessible to trustees with differing levels of investment knowledge/expertise?***

Background

The Board receives performance evaluation reports in multiple ways. These documents vary in detail and require varying degrees of investment acumen to digest the provided information. There are three prominent ways in which the Board is receiving performance evaluation reports;

1. Monthly performance updates from IMD via Transparency Reports
2. Quarterly performance update from the Board's Advisor
3. Presentations made by IMD at quarterly meetings providing updates on the Plan

Transparency Reports

Documents received by the Board which highlight;

- Investment results of the Plan, asset classes, and underlying investment managers
- Update on the capital markets
- Plan asset allocation relative to the strategic target
- IIC approvals during the period
- IIC meeting agenda and minutes for upcoming meetings
- Diligence documents for managers discussed by the IIC
- Additions, Withdrawals, Terminations, or Transfer detail
- Vintage summary of private investments
- Other types of governance reporting

Quarterly Performance Reports

The investment report provided to the Board as of September 30, 2023 was 17 pages of content (excluding appendices). Within these pages, the Advisor report reviews;

- Historical capital markets performance and commentary, including asset class benchmark performance
- Financial reconciliation of the Plan over trailing periods including beginning market value, additions/withdrawals, investment earnings, and ending market value
- The asset allocation of the Plan relative to the interim policy target, long term policy target, and policy ranges
- Trailing investment results of the Plan (net of investment management fees) relative to the primary benchmark
- Performance attribution for the trailing quarter and 1-calendar year period
- Risk-adjusted investment results of the Plan relative to the benchmark and peers over a trailing 3-year and 5-year period
- Performance comparison to IPS stated trust return objectives
    - Investment performance relative to the policy benchmark, investment return assumption, and real return target

- Trailing investment results of the underlying asset classes (net of investment management fees) relative to their respective benchmarks

The report provided to the Board is detailed yet digestible for Board members of various levels of investment knowledge and expertise. Given the opportunity for further discussion and dialogue at the quarterly meetings, we find these reports to be appropriate in terms of meeting the Board's needs.

IMD Presentations

IMD frequently presents to the Board to provide updates on the positioning and performance of the Plan as well as underlying asset classes. IMD stated their objective is to provide the IMC an overview of each team and asset class annually. While these presentations tend to vary based on topic, they typically include;

- An overview of the team
- Overview of the portfolio
- Performance and asset allocation of the area being discussed
- Thesis for alpha generation
- Team updates
- Overview of investment processes
- Forward looking ideas and future priorities

These presentations are typically intended to be understandable to stakeholders watching the presentation as well as the full Board. Based on our opportunity to observe these presentations, we believe they are presented in a manner which focuses on transparency without becoming overly complex.

Conclusions

Various types of performance reports, as detailed above, are presented to the Board. Our belief is that these reports are appropriately formatted and presented to ensure accessibility for Board members across a spectrum of investment acumen and expertise. This approach allows for a thorough evaluation of the investment success associated with the implementation of the investment policy.

Given the intricate nature of the subject matter and the expansive TRS investment program, the additional opportunity to discuss performance with IMD and the Board's Advisor further alleviates any concern that the reports are overly complex. This additional opportunity for in-depth discussion promotes a shared understanding of the Plan's performance.

- ***How frequently is net-of-fee and gross-of-fee investment manager performance reviewed? Is net- of-fee and gross-of-fee manager performance compared against benchmarks and/or peers?***

Conclusions

As outlined in the response related to the process for monitoring individual and overall fund performance, investment manager performance is reviewed by IMD in a continuous manner and reviewed by the Board on a regular basis including against benchmarks and peers.

All investment results reported to the Board by the Advisor and IMD are net of external investment management fees. By reviewing net-of-fee investment results the Board is ensuring that they are fully considering investment management fees when evaluating the success of implementing the investment policy.

- ***What is the process for determining when an investment manager should be replaced?***

Conclusions

Through our discussions with IMD it was communicated to us that the process for deciding to terminate a manager is ultimately the inverse of the thought process articulated for retaining an investment manager. The decision to terminate a manager can be driven by portfolio level attributes or by manager level attributes. If the decision is manager driven, the initial review is typically triggered by the CUSUM (cumulative sum) alarm. When a CUSUM is triggered, a complete underwriting of the strategy takes place to determine if the strategy is still suitable for inclusion in the portfolio.

Catalysts for deciding to terminate an investment manager include, but are not limited to;

- The strategy has been managed in a way that deviates from the articulated process
- The original case for alpha generation has diminished over time, or has eroded given some catalyst
- A failure to manage investment risk as expected
- The strategy is no longer appropriate portfolio inclusion
- A negative organizational change
- IMD has determined that the strategy can be implemented internally
- The investment strategy has proven to be less diversifying to the portfolio than originally believed
- Tail risks within the strategy have been identified

The decision to terminate an investment manager may come from the CIO, Head of Public Markets, Head of External Public Markets, Head of Special Opportunities, or the Chief Risk Officer. Within Private Markets the heads of Private Markets, Private Equity, Real Estate, or Energy, Natural Resources and Infrastructure (as applicable) may terminate an investment manager.

- ***How is individual performance evaluation integrated with other investment decisions such as asset allocation and investment risk decisions?***

Conclusions

As outlined in the IPS, the Board has established tracking error targets and maximums. In implementing the strategic asset allocation decision, IMD monitors forward looking and historical tracking error of the underlying investment managers and compliance with the Plan's risk targets. To the extent that an investment mandate contributes to active risk levels that are inconsistent with its historic trend or expectation, the strategy is flagged for further review and consideration. The RPM team works to manage and monitor forward looking risk positions based on trend history and the interaction between the different investment mandates and asset classes.

Appendix A

Appendix A — Documents Reviewed

Aon submitted a detailed document request. Listed below are descriptions of the documents that were provided by staff in response to the document request. The documents listed below were reviewed by Aon.

Pension Funding Policy

External Public Markets Process Map

Investment Accounting Policies and Procedures

CUSUM Memo

CEM 2018 TRS Study

CEM 2019 TRS Study

CEM 2020 TRS Study

CEM 2021 TRS Study

CEM 2022 TRS Study

Quarterly TCA Report (March 30, 2023)

Quarterly TCA Report (June 29, 2023)

Payment of Management and Incentive Fees Procedures

Private Markets Fee Monitoring Services Agreement

Albourne Advisory Services Agreement

Fee Aggregation and Validation files

Fee Validation Results Report (February 2022)

Bylaws of the Board of Trustees of the Teacher Retirement Plan of Texas

Investment Policy Statement (effective October 1, 2023)

Investment Policy Statement (effective July 18, 2022)

Performance Pay Plan (effective October 1, 2022)

Securities Lending Policy (effective December 9, 2022)

Proxy Voting Policy (effective December 9, 2022)

Internal Investment Committee Procedures and Guidelines

Commission Credits Policy (effective December 9, 2022)

Energy, Natural Resources and Infrastructure Investment Committee Procedures and Guidelines (effective July 2023)

Private Equity Investment Committee Procedures and Guidelines (effective January 2023)

Real Estate Investment Committee Procedures and Guidelines (effective November 2022)

Special Opportunities Investment Committee Procedures and Guidelines

Internal Portfolio Management Agreement (IPMA) Repository

Investment Compliance Narrative

Audit, Compliance & Ethics Committee Meeting Book (July 2023)

Audit, Compliance & Ethics Committee Meeting Book (September 2023)

Audit, Compliance & Ethics Committee Meeting Book (December 2022)

Audit, Compliance & Ethics Committee Meeting Book (April 2023)

New Trustee Orientation Schedule (January 2023)

Trustee Training Materials (January 2023)

Minimum Education Training Program Forms

TRS Trustee Training Manual – Annual Acknowledgement Forms

Teacher Retirement Plan of Texas Board Procurement Policy

TRS Private Markets Due Diligence and Monitoring Guidelines

External Manager Program Investment Recommendation Template

Investment Performance Monitoring Operational Process

Risk Group Process Map

External Investment Manager Commentary and Materials

Transparency Reports (September 2022 – August 2023)

Alternative Investments Narrative

Fair Valuation Pricing Guidelines (July 2023)

Appendix B

Appendix B — Interviewees

For this review, Aon interviewed the following individuals:

TRS Investment Management Committee Board Members:

David Corpus, Chair

Jarvis V. Hollingsworth

John Elliott

Nanette Sissney

Robert H. Walls

TRS Staff:

Jase Auby, Chief Investment Officer

Katy Hoffman, Chief of Staff

Steve Machicek, Team Lead, Budget & Accounting

Kate Rhoden, Investment Operations Data Senior Associate

Eddie Chan, Director of Investment Accounting

James Nield, Chief Risk Officer

Mike Simmons, Director of Trust Strategy

Dale West, Senior Managing Director of Public Markets

Brad Gilbert, Senior Director of Public Markets

McKenna Philllips, Senior Associate of Public Markets

Eric Lang, Senior Managing Director of External Private Markets

Luke Luttrell, Associate of Private Markets

Heather Traeger, General Counsel and Chief Compliance Officer