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Texas Emergency Services Retirement System

Evaluation of Investment Practices and Performance

Pursuant to Texas Government Code 802.109

August 2022



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Introduction & Background Information



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To	Board of Trustees – Texas Emergency Services Retirement System
From	RVK, Inc.
Subject	Evaluation of Investment Practices – Government Code 802.109

INTRODUCTION

RVK was engaged to conduct an independent evaluation of the current investment practices and performance, with a focus on the appropriateness, adequacy, and effectiveness of the Texas Emergency Services Retirement System (TESRS or “the System”) and to make recommendations for improving the TESRS investment policies, procedures, and practices. Per Texas Government Code 802.109, each evaluation must include:

- (1) An analysis of any investment policy or strategic investment plan adopted by the retirement fund and the retirement fund's compliance with that policy or plan;*
- (2) A detailed review of the retirement fund's investment asset allocation, including:
 - (A) The process for determining target allocations;*
 - (B) The expected risk and expected rate of return, categorized by asset class;*
 - (C) The appropriateness of selection and valuation methodologies of alternative and illiquid assets; and*
 - (D) Future cash flow and liquidity needs;**
- (3) A review of the appropriateness of investment fees and commissions paid by the retirement fund;*
- (4) A review of the retirement fund's governance processes related to investment activities, including investment decision-making processes, delegation of investment authority, and board investment expertise and education; and*
- (5) A review of the retirement fund's investment manager selection and monitoring process.*

RVK is uniquely qualified to perform this evaluation as we are one of the largest fully independent consulting firms in the world, with over 200 institutional clients and over \$2 trillion of assets under advisement. We are strictly focused on providing our clients with non-discretionary consulting services and do not offer discretionary management of assets, nor do we offer any investment products. Since our founding in 1985, RVK has been an industry leader in adhering to a strict no conflicts of interest policy, with 100% of our revenue generated from client fees; we do not accept fees of any kind from any investment manager or other service provider that our clients may ask us to evaluate.

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BACKGROUND INFORMATION

The Texas Statewide Emergency Services Retirement Act was established November 1, 1977, under Senate Bill No. 411 (SB411). The Act established a dedicated retirement fund for volunteer firefighters and emergency services personnel in Texas.

The Texas Statewide Emergency Services Retirement Act was amended several times, including a recodification by the 79th Legislature Regular Session in 2005, by which it was renamed Texas Emergency Services Retirement System. In the 2013 Regular Session, TESRS was established as a state agency to provide benefits administration with an Executive Director hired by the System's Board of Trustees. The authority for the fund exists under Title 8 of the Texas Government Code, Subtitle H, Texas Emergency Services Retirement System. TESRS responsibilities include the maintenance of an actuarially sound retirement system and the provision of retirement benefit payments to volunteer first responders across Texas.

Per Subtitle H, the System is managed by a nine-member Board of Trustees, who are appointed by the Governor for six-year terms. The required composition of the Board includes five trustees who are active members of the pension system: one trustee who represents emergency medical services personnel, if a participating department provides emergency medical services; one trustee who is a retiree of the pension fund; and three trustees who have experience in the fields of finance, securities investment, or pension administration. TESRS and its Board are supported by eight full-time staff members.

The System's stated **mission** is to provide secure and meaningful benefits for members and their families, prudently manage assets, and recruit/retain additional members by offering a cost-effective solution to the sponsoring entities.

The System's **goal** is to ensure that pension funds for volunteer emergency services personnel are actuarially sound and that their members receive the benefits to which they are entitled.

As of fiscal year end, August 31, 2021, TESRS served approximately 3,600 active members, plus an additional 3,900 retirees and beneficiaries, and 1,700 terminated members entitled to but not receiving benefits. As of March 31, 2022, the market value of System investment assets was approximately \$133.643 million.

In addition to drawing upon RVK and its employees' institutional knowledge of investment programs, the RVK team used several methods to conduct research and gain insight into the TESRS organization, its decision-making process, and overall efficacy. The first method employed was a detailed review of numerous documents provided and produced by TESRS. These documents covered a comprehensive array of topics including, but not limited to:

- Governance Documents
- Investment Policy Statement
- Asset Allocation Studies
- Asset/Liability Studies
- Performance Reports and Related Analyses
- Actuarial Valuation Reports
- Audit Reports
- Strategic Plans
- Related Investment Documents
- Board Meeting Minutes

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A note of appreciation to the staff of the TESRS, as well as the System's investment consultant, AndCo Consulting, and actuary, Rudd and Wisdom, Inc., whose cooperation with our requests for interviews, data, and organizational information were critical in the execution of this project.

The RVK TESRS Team

Engagement Manager | Jim Voytko, President, Senior Consultant, Principal

Co-Lead Consultant | Marcia Beard, Senior Consultant, Principal

Co-Lead Consultant | Spencer Hunter, Senior Consultant, Principal

Primary Project Support | Samia Khan, Consultant

Administrative Support | Jessica Goodall, Senior Executive Assistant

Executive Summary



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EXECUTIVE SUMMARY

Observations and Recommendations for Consideration

What follows is a summary of key observations that are detailed in the five key sections of this report. It is immediately followed by a summary list of recommendations, the background and rationale for which are also contained in the body of the report.

Section 1 Observations:

TESRS' investment program is governed by the Investment Policy Statement (IPS), which details the objectives and guidelines used for the management of the System's assets. RVK believes the TESRS IPS is consistent with industry best practices, representing clearly defined language aimed at providing the Board governance standards when instituting their investment program. It is important to note that the IPS is reviewed on a consistent basis and, in fact, is included in Board materials as part of each quarterly Investment Consultant Report on Investment Performance. The minutes reflect the Board's reviews, edits, and approved changes, when necessary, in a timely manner. We do believe there is room for incremental improvement as listed below and detailed in Section 1 of this report.

Section 2 Observations:

The efforts from the Board, Investment Committee, and Investment Consultant show a thoughtful approach to the selection of the Target Asset Allocation resulting from the 2019 Asset/Liability Study. From this analysis, TESRS was able to narrow the potential range of outcomes and create a set of target allocations applying reasonable judgement throughout the process. The current TESRS target portfolio represents one that is diversified and mostly liquid. We would note that for the next Asset/Liability Study, the System should consider extending the projection period for analyzing the contribution, benefit payments, growth of corpus and the funded ratio for a more realistic picture of the long-term financial health of the System. This will be helpful in setting future strategic asset allocations for the Plan.

Section 3 Observations:

The overall aggregate level of investment fees paid by TESRS is lower than many of its public retirement system peers. This is primarily due to the relatively low allocation to alternative investments, which is attributable to the size of the plan assets and the liquidity needs of the System. However, we also note that the overall fee is comparatively above market for a portfolio with 85% target allocation to public market mandates which is due to the use of actively managed funds. To lower cost of the portfolio, TESRS can review the availability of lower cost fund vehicles on an annual basis that will accommodate the investment size and liquidity terms of the current managers. Additionally, TESRS can consider conducting periodic asset class structure studies to determine the optimal use of active and passive managers across its mandates.

Section 4 Observations:

Our review of the TESRS investment decision-making process broadly reflects implementation of best practices. The TESRS Investment Policy itself, while not specifying all required processes, provides a sound foundation for investment decision-making. RVK's review of the governance structure under which TESRS operates indicates an appropriate degree of clarity regarding the delegation of authority to make and provide advice on investment decisions. We believe additional clarity and improved documentation is warranted and is addressed below and detailed in Sections 1 and 4 of this report.

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The number, breadth, and relevance of the educational sessions were adequate and followed the education guidelines established for trustee and system administrators of Texas public retirement systems; however, not all Board members are in compliance with the Minimum Educational Training (MET) requirements as reported to the Pension Review Board.

Section 5 Observations:

The investment manager selection and monitoring process relies heavily on the experience of the System's Investment Consultant, with input from the Investment Committee prior to any Board-level decision. From a process standpoint, the selection of an investment manager—whether for a new mandate or replacement of a current investment manager—is best described by the use of a “short list.” Based on our review of documents and interviews during the project, it would appear the current practice is working well from a process perspective and has been consistently followed since it was adopted. RVK would note that there is likely room for improvement within the IPS relating to differentiation between public and private markets due diligence, as those two broad categories of investment strategies require unique considerations. Additionally, during RVK's review, we noted that there was little documentation relating to the Investment Committee meetings and/or the recommendations to the Board relating to investment manager hiring, firing, and/or retention.

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Table of Specific Recommendations:

<i>Section</i>	<i>Recommendation</i>	<i>Suggested Timeframe</i>
1: Investment Policy	In Section III, consider adding a statement to remind the reader that the overall general objective is to provide promised benefits to its members and their beneficiaries in a timely, effective, and efficient manner.	Next Update to IPS
1: Investment Policy and 4: Governance	In Section IV, consider adding a schedule for completing asset/liability studies, at least every 7 years or as needed would be appropriate.	Next Update to IPS
1: Investment Policy	In Section V, consider adding an introductory statement reminding the reader that the Board is ultimately responsible for the administration of the System and its investment program. Also consider clarifying that the Board hires the Executive Director, investment consultants, and custodian.	Next Update to IPS
1: Investment Policy and 4: Governance	In Section VI, add the responsibility of the Investment Committee to provide regular reports to the Board documenting their meetings and the process taken for the recommendations made to the Board.	Next Update to IPS
1: Investment Policy and 4: Governance	In Section VII, consider adding that a responsibility of the Executive Director is to provide concise documentation of the actions taken during the quarter to implement the Board’s investment decisions that add clarity and provide confirmation of the action taken.	Next Update to IPS
1: Investment Policy	Section X indicates that managers are required to submit proxy voting guidelines. Is this creating a compliance issue for TESRS?	Next Update to IPS
1: Investment Policy	In Section XI, add a formalized rebalancing process to the IPS.	Next Update to IPS
1: Investment Policy	In Section XII, consider a Board discussion and IPS clarification regarding measurement period for performance monitoring. Is 3 years long-term? Also consider clarifying whether the performance being monitored is net or gross of fees?	Next Update to IPS
1: Investment Policy	In Section XII.B.1., a minor cleanup is warranted as there are no addenda to the IPS. If appropriate, an edit could be made to reference the benchmarks	Next Update to IPS

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	listed in Section XI.C. for the individual target allocations.	
1: Investment Policy and 5: Manager Selection	Add a section to the IPS stating the Evaluation and Due Diligence Process for Traditional, Publicly Traded Mandates.	Next Update to IPS
2: Asset Allocation	Consider extending the projection period for contribution, benefit payments, and Funded Ratio in Asset/Liability studies.	Next Asset/Liability Study
2: Asset Allocation	Consider including Projected Annual Rate of Return to reach full funding in Asset/Liability studies.	Next Asset/Liability Study
3: Fees	Consider conducting an annual review of availability of fund vehicles.	Annually
3: Fees	Consider conducting Asset Class Structure studies.	Periodic/Ongoing
4: Governance	Document Investment Consultant recommendations to the Investment Committee in the form of a simple memo.	Ongoing
4: Governance	Consider other avenues to encourage all Board members to become compliant with mandated educational requirements.	Ongoing

Section 1: An analysis of any investment policy or strategic investment plan adopted by the retirement fund and the retirement fund's compliance with that policy or plan.



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DOCUMENTS REVIEWED:

- ✓ **Investment Policy Statement**
- ✓ **Presentations to Board and Investment Committee**
- ✓ **Agency Strategic Plan – Fiscal Years 2021 - 2025**
- ✓ **Agency Strategic Plan – Fiscal Years 2023 - 2027**

TESRS’ investment program is governed by the Investment Policy Statement (IPS), which details the objectives and guidelines used for the management of the System’s assets. It is important to note that the IPS has been updated recently and is also reviewed on a consistent basis and, in fact, is included in Board materials as part of each quarterly Investment Consultant Report on Investment Performance. Below is a snapshot of the IPS’s recent adoption dates, most of which contained substantive edits, while others were simple clean-up items. Section XVI of the IPS includes a history of IPS changes, which is impressive and provides great transparency for the Board, staff, and System members and their beneficiaries.

Investment Policy Statement	
<i>Adopted August 2017</i>	<i>Board revised asset allocation to reflect the use of core real estate.</i>
<i>Adopted August 2018</i>	<i>Board revised asset allocation to reflect the use of multi-asset class fund investments.</i>
<i>Adopted March 2020</i>	<p><i>As a result of the Asset/Liability Study presented in Q4 2019, the Board revised asset allocation to include infrastructure and non-core fixed income. The allocation to real estate was increased and US equity was decreased.</i></p> <p><i>Expanded responsibilities of the investment consultant to include manager searches.</i></p> <p><i>Remove real estate as a prohibited investment.</i></p>
<i>Adopted August 2020</i>	<i>Board adoption of 7.5 percent investment return assumption and clarification that the investment consultant serves as a fiduciary.</i>

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SUMMARY OF THE IPS

The IPS serves as the governing document with respect to the System's investment program. The IPS is organized into sixteen distinct sections, each detailing a set of oversight components approved and applicable to the Board of Trustees.

- 1. Introduction** – Section I introduces the System as a pension trust fund constitutionally and statutorily mandated by the State of Texas and governed by a Board of Trustees. This section summarizes the benefits provided to the System's membership and confirms the assets of the System are for the exclusive benefit of its members which include volunteer fire fighters and EMS personnel of the departments in the System. Constitutional and statutory codes for investing the System's assets are referenced as are funding sources for funding the System's benefits.
- 2. Purpose** – Section II reminds the reader that the IPS is the Board's document and provides guidance for the implementation of the Board's objectives. This section also reminds the Board and its staff of the Ethics Policy and to avoid conflicts of interest and prohibited transactions.
- 3. Investment Objective** – Section III simply states that the specific, overall long-term objective is to meet or exceed the actuarial return objective which is currently 7.5%. The IPS is amended to reflect changes to the actuarial return; as stated in the table above, the most recent change was in August 2020 to reflect the Board's decision to reduce the actuarial return objective to 7.5% which became effective September 1, 2020.

While not mandatory, many pension plan investment policy statements will also make a general objective statement similar to the following: the overall objective of the system is to provide promised benefits to its members and their beneficiaries in a timely, effective, and efficient manner.

- 4. Investment Strategy** – Section IV outlines the System's investment strategy with respect to philosophy, funding, risk, and diversification. It is the focus of this section to clearly outline for current and future Boards a tangible number of investment objectives/beliefs and goals to be met through appropriate long-term asset allocation policy and diversification for the purpose of achieving the highest level of investment return that is compatible with the Board's risk tolerance and prudent investment practices.

This section clarifies that Board delegation of authority is given to the Investment Committee (IC) to implement the Board-approved policies in addition to making "appropriate" recommendations to the Board.

The Board's investment strategy mandates formal asset allocation studies at least every 5 years. *We note that a similar schedule for Asset/Liability studies is often included in investment policies of other pension plans.*

- 5. Duties and Responsibilities** – Section V through IX provide detailed investment responsibilities of System fiduciaries including the Board of Trustees, Investment Committee, Executive Director, Investment Consultant, and Investment Managers. While the specifics of the responsibilities differ slightly, the overarching and consistent theme maintains that each party must act in a capacity that places the exclusive benefit of the assets of the System at the forefront of the decision-making process when considering any and all investment decisions.

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A few additions to these sections could provide clarity to the important and necessary duties of the fiduciaries.

Section V. Responsibilities of the Board of Trustees. Although it is stated in Section I that the Board of Trustees governs the System, an addition to the introductory statement in Section V stating that the Board is ultimately responsible for the administration of the System and its investment program would clearly set the stage for the duties and responsibilities of the other fiduciaries. A clarification that the Board is responsible for the selection of the Executive Director and other investment-related service providers such as the System's investment consultant and custodian would also be an appropriate addition.

Section VI. Responsibilities of the Investment Committee. As advisory to the Board, the Investment Committee should provide regular reports to the Board documenting their meetings and the process taken for the recommendations made to the Board. Industry best practice requires that an investment committee demonstrate prudent process is in place and followed for making investment recommendations. This is accomplished through properly and accurately documenting meeting activities and any decisions made for recommendation to their board.

Section VII. Responsibilities of the Executive Director. The minutes reflect the reports given by the Executive Director to the Board. A good addition to this section would be the responsibility of the Executive Director to provide concise documentation of the actions taken during the quarter to implement the Board's investment decisions that would add clarity and provide confirmation of the action taken.

6. **Proxy Voting** – Section X delegates voting of proxies to the respective investment manager. The section also indicates the managers will submit proxy voting guidelines and procedures to the System.
7. **Asset Allocation** – Section XI reiterates the importance of a long-term asset allocation strategy and states the System's asset allocation targets, the lower and upper limits for each target allocation, as well as the benchmark for each allocation target. We note that this section also addresses where unallocated or uncalled portions of the target allocations will be invested until implemented within the target. This clarity is helpful and provides transparency.

This section states that the Board should periodically rebalance the asset allocation to maintain appropriate diversification. Properly executed rebalancing leads to better risk-adjusted results and greater consistency in maintaining the Board's approved risk levels. Adding a rebalancing policy to this section would encourage consistency in process and approach.

8. **Investment Performance Benchmarks** – Section XII details the System's Total Portfolio performance objectives as adopted by the Board. Investment performance relative to the Target Index and peers is measured over the long term which is indicated in the IPS to be a period of 3 to 5 years. Over this period, the System is expected to exceed the Target Index and to rank at or above the median of an appropriate peer universe.

These benchmarks are appropriate, but RVK suggests the Board consider the following for discussion: 1. Is 3 years sufficient to be considered long-term? If not, a simple edit would be to remove long-term and simply use 3 to 5 years. 2. Is the Total Portfolio performance being measured net of fees or gross of fees? This should be clarified in Section XII.

Investment manager performance is addressed in Section XII.B. and includes detailed performance

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and other quantitative standards for monitoring compliance and fit. We also note that the Board's investment consultant provides quarterly monitoring of each of the Board-approved standards.

As a minor point for clarification, Section XII.B.1. states, "The specific investment objectives for each investment manager will be outlined in addenda to this overall State of Investment Policy." Since there are currently no addenda to the IPS, if appropriate, an edit could be made to reference the benchmarks listed in Section XI for the individual target allocations.

- 9. Allowable Investments** – Section XII outlines allowable investments. This section states that the Board may choose to invest in various pooled investment vehicles if they are invested substantially in a manner consistent with policy guidelines. These investments are ultimately governed by the investment vehicle's established guidelines and restrictions, as outlined in the prospectus or other offering documents prepared by the investment manager.
- 10. Prohibited Investments** – Section XIV lists prohibited investments and was last amended in March 2020 to remove real estate.
- 11. Evaluation and Due Diligence Process for Closed End Funds** – Section XV provides guidance on the due diligence and selection process that the Investment Committee and the investment consultant will follow when determining, when appropriate, which manager of a closed-end fund will be recommended to the Board.

It is worth noting there is no similar section addressing evaluation and due diligence process for traditional, publicly traded mandates. For consistency, transparency, and clarity, RVK recommends the Board consider adding a similar section explaining the process for evaluation of traditional mandates.

Investment Policy History – Section XVI provides a history of all IPS changes made since August 2007. A great addition to any IPS!

EVALUATING THE IPS, COMPLIANCE WITH THE IPS & EDITS FOR CONSIDERATION

RVK believes the TESRS IPS is consistent with industry best practices, representing clearly defined language aimed at providing the Board governance standards when instituting their investment program. In RVK's review of Board and Investment Committee meeting minutes, we noted the Board is provided the current IPS each quarter as an ongoing agenda item included under the Investment Consultant Report on Investment Performance, Asset Allocation, and Investment Policy. The minutes further reflect the Board has reviewed, edited, and/or approved changes, when necessary, in a timely manner.

AGENCY STRATEGIC PLAN – INVESTMENT RELATED GOALS AND OBJECTIVES

Biennially the Board approves an Agency Strategic Plan. The current Agency Strategic Plan was approved on June 1, 2022. While the Plan was systemwide, there is one objective directly focused on the investment program.

Agency Operational Goal and Action Plan: To ensure that pension funds of emergency services personnel are actuarially sound and that they receive the benefits to which they are entitled.

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The following was listed as one of the five specific action items to achieve the goal stated above:

1. Maintain a disciplined investment process that minimizes risk while achieving long-term money-weighted investment returns of 7.5%, making as well as encouraging cultural alignment. The education process began in March of 2019 and will be completed upon revising the IPS to include the Board's updated investment belief statements.

RVK RECOMMENDATIONS

- **Section III.** Not mandatory but consider adding a statement to remind the reader that the overall general objective is to provide promised benefits to its members and their beneficiaries in a timely, effective, and efficient manner.
- **Section IV.** It is important for the Board to confirm the objectives and risk tolerance for TESRS. Asset/liability studies provide a framework for such discussions as it is the only standard analysis that fully link all three aspects of TESRS' key financial drivers—Investment Policy, Contribution Policy, and Benefit Policy. Similar to asset allocation studies, consider adding a schedule for completing Asset/Liability studies; at least every 7 years or as needed would be appropriate.
- **Section V.** Not mandatory but consider adding an introductory statement reminding the reader that the Board is ultimately responsible for the administration of the System and its investment program. Also consider clarifying that the Board hires the Executive Director, investment consultants, and custodian.
- **Section VI.** Add the responsibility of the Investment Committee to provide regular reports to the Board documenting their meetings and the process taken for the recommendations made to the Board.
- **Section VII.** Consider adding that a responsibility of the Executive Director is to provide concise documentation of the actions taken during the quarter to implement the Board's investment decisions that add clarity and provide confirmation of the action taken.
- **Section X.** Is the requirement that managers submit proxy voting guidelines creating a compliance issue for TESRS?
- **Section XI.** Add a formalized rebalancing process to the IPS.
- **Section XII.** Consider a Board discussion and IPS clarification regarding measurement period for performance monitoring. Is 3 years long-term? Also consider clarifying whether the performance being monitored is net or gross of fees?
- **Section XII.B.1.** A minor cleanup is warranted, as there are no addenda to the IPS. If appropriate, an edit could be made to reference the benchmarks listed in Section XI.C. for the individual target allocations.
- **Add a Section** – Evaluation and Due Diligence Process for Traditional, Publicly Traded Mandates.

Section 2: A detailed review of the retirement fund's investment asset allocation.



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DOCUMENTS REVIEWED:

- ✓ **Investment Policy Statement**
- ✓ **Asset/Liability Study (December 2019)**
- ✓ **Actuarial Valuation (December 2020)**

(A) The process for determining target allocations.

TESRS' target allocation is ultimately driven by the liabilities of the System including expected cash flow and liquidity needs. The primary method for analyzing the projected liabilities in the context of asset allocation is through an Asset/Liability (A/L) Study. The System performs A/L studies periodically, with the most recent study performed in December 2019 based on the August 31, 2018, actuarial valuation. These studies are the primary basis for informing appropriate risk levels and any large shifts in target allocation, though smaller changes can occur in between A/L studies based on changes to market environment, capital markets assumptions, and the needs of the System. Specific cash flow and liquidity information from the most recent A/L Study can be found in Section D.

On an annual basis, TESRS' Investment Consultant, AndCo, reviews and evaluates the validity of the adopted asset allocation based on updated return projections. To drive the asset allocation process, the Investment Consultant uses J.P. Morgan Asset Management's (J.P. Morgan) capital market assumptions, which are long-term in nature (10 to 15 years), net of fees, and assume passive management for asset classes where passive implementation is possible. Custom asset class assumptions, which are constructed by blending J.P. Morgan's standard capital market assumptions, are used in some instances to best reflect any structural differences of the TESRS' investment portfolio, as well as desired future exposures, from standard assumptions. A formal asset allocation study is conducted at least every 5 years.

We observe that AndCo primarily relies on J.P. Morgan's capital market assumptions for the annual asset allocation review. We believe that reliance on third-party capital market assumptions can generally run the risk of the asset allocation modelling being constrained to asset classes covered by the data provider. There is also the possibility of discontinuation of asset class coverage.

The target allocation ultimately drives a vast majority of the System's investment performance (and risk), and as such, the Board, Investment Committee, Investment Consultant, and Investment Staff spend considerable time and effort reviewing and making necessary enhancements to the System's assets. Using the A/L Study as a guide, the Investment Consultant perform analyses on current allocations and potential target allocations. Analyses regularly performed include, but is not limited to, long-term risk and return characteristics, correlation and diversification relationships between asset classes, Monte Carlo simulations over the short- and long-term, stress testing, and liquidity analysis. Any resulting target allocation recommendation is presented to the TESRS Investment Committee for feedback. After incorporating any Investment Committee feedback, the proposed target allocation is presented to the Board for approval. Finally, once the Board has approved a target allocation, TESRS Investment Staff begins to work on the implementation of the approved target, with assistance from AndCo, as necessary.

Figure 2.1 on the next page shows the high-level changes to the Target Allocation over the past 5 years. The Board made notable changes to the target asset allocation in March 2020 based on findings from the December 2019 A/L Study. For further details on historic changes to the System's asset allocation, please see Figure 2.2 on the next page.

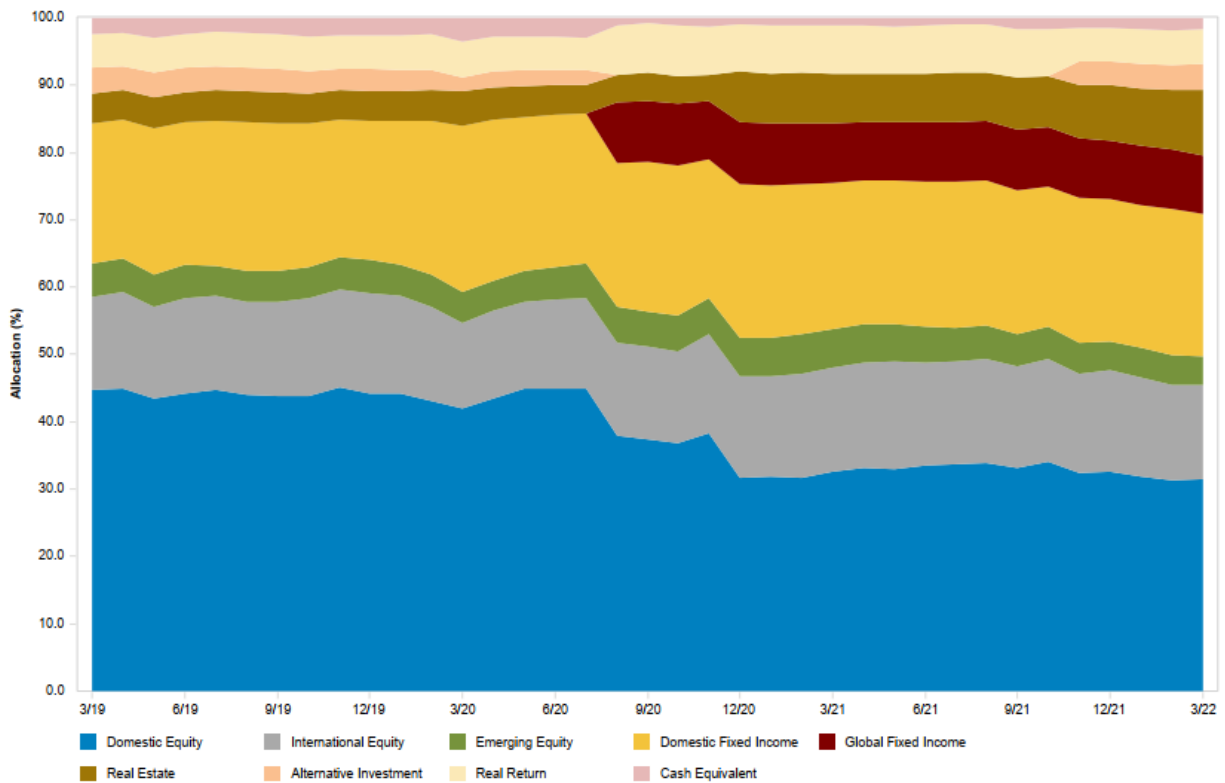
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Figure 2.1: Summary of Recent Changes to Target Allocation as approved by the Board

Date	Description of Changes Made
August 2018	Board revised asset allocation to reflect the use of Multi-Asset Class fund investments.
March 2020	Board revised asset allocation to: <ul style="list-style-type: none"> • Add Infrastructure at 5% target by replacing Master Limited Partnerships (MLP) • Add Non-Core Fixed Income at 10% target • Increase Core Real Estate target to 10% • Reduce US Large Cap Equity target allocation by 10% • Reduce Small/Mid Cap Equity target by 5%

Figure 2.2: Historical Asset Allocation by Segment



Source: Texas Emergency Services Retirement System, Investment Performance Review, March 2022

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**(B) The expected risk and expected rate of return, categorized by asset class.****Figure 2.3: Summary of 2019 Expected Risk and Return by Asset Class**

Asset Class	Target Allocation (%) (March 2020)	J.P. Morgan		RVK, Inc.		Horizon Actuarial Services	
		Arithmetic Return Assumption (%)	Standard Deviation Assumption (%)	Arithmetic Return Assumption (%)	Standard Deviation Assumption (%)	Arithmetic Return Assumption (%)	Standard Deviation Assumption (%)
US Large Cap Equity	20%	6.03%	13.75%	6.75%	17.75%	7.26%	16.17%
US Mid Cap Equity	10%	6.79%	15.75%			8.45%	20.15%
US Small Cap Equity		7.47%	18.25%	7.25%	21.25%		
Developed Markets Equity	15%	7.94%	16.75%	8.25%	19.00%	8.40%	18.23%
Emerging Markets Equity	5%	10.43%	21.25%	10.75%	29.00%	10.62%	24.73%
Core Fixed Income	20%	4.06%	3.50%	3.75%	6.00%	3.09%	2.92%
Non-Core Fixed Income	10%	5.00%	5.16%	4.43%	6.83%	3.84%	4.02%
Cash & Equivalents	0%	2.00%	0.50%	3.00%	3.00%	2.71%	2.31%
Global Infrastructure	5%	6.64%	11.75%	6.25%	15.00%	7.79%	14.39%
US Core Real Estate	10%	6.45%	12.25%	6.00%	12.50%	6.95%	15.03%
Multi-Asset Investments	5%	5.62%	7.80%	5.78%	9.63%	5.63%	8.72%

Composition of Asset Classes:

- Non-Core Fixed Income consists of 70% US Core Fixed Income and 30% High Yield Fixed Income.
- Multi-Asset consists of 50% MSCI ACWI and 50% US Core Fixed Income

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Figure 2.4: Summary of 2022 Expected Risk and Return by Asset Class

Asset Class	Target Allocation (%) (March 2020)	J.P. Morgan		RVK, Inc.	
		Arithmetic Return Assumption (%)	Standard Deviation Assumption (%)	Arithmetic Return Assumption (%)	Standard Deviation Assumption (%)
US Large Cap Equity	20%	5.16%	15.02%	5.75%	16.00%
US Mid Cap Equity	10%	5.65%	17.06%	6.25%	19.00%
US Small Cap Equity		6.17%	19.61%		
Developed Markets Equity		7.82%	17.04%		
Emerging Markets Equity	5%	8.86%	20.92%	10.25%	25.00%
Core Fixed Income	20%	2.66%	3.48%	2.50%	5.00%
Non-Core Fixed Income	10%	3.13%	3.86%	3.40%	5.13%
Cash & Equivalents	0%	1.30%	0.42%	1.50%	2.00%
Global Infrastructure	5%	6.64%	10.74%	7.00%	15.00%
US Core Real Estate	10%	6.32%	10.58%	6.00%	12.50%
Multi-Asset Investments	5%	4.42%	8.14%	4.65%	8.57%

Composition of Asset Classes:

- Non-Core Fixed Income consists of 70% US Core Fixed Income and 30% High Yield Fixed Income.
- Multi-Asset consists of 50% MSCI ACWI and 50% US Core Fixed Income

(C) The appropriateness of selection and valuation methodologies of alternative and illiquid assets.

The inclusion of alternative and illiquid assets for TESRS is based on a variety of inputs, including expected return, risk, correlation, and other pertinent diversification characteristics. In addition, a careful view of current and future liquidity needs is required before additional capital can be committed to illiquid asset classes such as infrastructure and real estate.

Once these alternative and illiquid asset classes are approved in the Target Allocation and implemented in the portfolio, the process for monitoring these investments begins. This process is described in greater detail later in this report, but can generally be summarized by the following:

- Investment Consultant performs ongoing due diligence to ensure the assets are performing within the range of reasonable expectations.
- Managers provide regular updates on the investments, including audited financial statements on an annual basis.
- Managers also utilize independent valuation firms to ensure the stated value of the investments accurately reflect market conditions.

From a reporting standpoint, TESRS' custody bank—BOK Financial—incorporates updated valuations provided by the managers as they are received. Often these valuations may be “lagged” for some period of time given the need to finalize accounting and performance figures within weeks after month end. Most infrastructure and real estate funds report final values, but some managers may take up to 6 months or longer to report final figures to Northern Trust; however, the values stated on a monthly basis include new cash contributions or distributions as those occur. This process is standard within the industry and RVK believes it remains a prudent exercise.

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(D) Future cash flow and liquidity needs.

Based on the results from the A/L Study conducted in December 2019, TESRS elected to finetune its predominantly liquid and diversified investment portfolio. The Study indicated that further diversification of both the public market (adding non-core fixed income) and alternative (eliminating MLP, adding infrastructure) strategies while increasing overall allocation to alternatives (5% addition to core real estate) would lower the downside risk of the System’s portfolio. The results of the Study suggested that although these enhancements would lower the overall liquidity of the System, the funded ratio would be relatively better protected during market downturns due to lower volatility of the resulting portfolio (Alt #2).

Summary results from the December 2019 A/L Study are shown below.

Financial Metric Forecasted Results Through 2023

SS

Asset Class	Current	Alt #1	Alt #2	Alt #3	Alt #4	Alt #5
Highest return per unit of risk	0.57%	0.60%	0.66%	0.61%	0.60%	0.57%
Highest funded ratio in “normal” markets	75.3%	75.4%	75.6%	75.6%	75.8%	75.9%
Highest funded ratio in market downturns	59.1%	60.0%	61.9%	60.3%	59.8%	58.7%
Highest funded ratio in market upturns	93.9%	93.4%	91.7%	93.7%	94.5%	95.8%
Lowest accumulated contributions ¹	\$31.2m - \$32.7m	\$31.2m - \$32.7m	\$31.2m - \$32.7m	\$31.2m - \$32.7m	\$31.2m - \$32.7m	\$30.9m - \$32.7m
Adequate liquidity (percent of assets needed to cover annual benefits not funded by contributions)	2.10%-3.82%	2.10%-3.76%	2.15%-3.6%	2.12%-3.72%	2.1%-3.76%	2.08%-3.86%

Source: Texas Emergency Services Retirement System, Asset Liability Modeling Report, December 2019



Effects of Lowering the Rate of Return Assumption

	7.75%	7.50%	7.25%
Funded Ratio – Market Value of Assets Basis	77.0%	75.1%	72.7%
Funded Ratio – Actuarial Value of Assets Basis	80.8%	78.2%	75.7%

Source: Texas Emergency Services Retirement System, Asset Liability Modeling Report, December 2019

“Lowering the discount rate does not change the conclusion about the asset allocation over the short term.

Part Two contributions will also increase when the discount rate is lowered. For the change to 7.50%, the first year Part Two contribution increases from 0% of the Part One contribution to approximately 10%, or about \$300,000. For the change to 7.25%, the first year Part Two contribution increases from 0% of the Part One contribution to the maximum of 15%, or about \$450,000.”

Funding Policy Observations

“Due to the relatively fixed dollar nature of the current funding, contributions from all sources can become insufficient to meet the goals of sound actuarial funding, which is defined as a contribution that is sufficient to fund the normal cost and amortize the unfunded actuarial accrued liability over a maximum of 30 years. If the current contribution levels are maintained indefinitely, the fund could be fully depleted by the mid 2030’s if there are persistent weak markets. Even in more expected markets the fund could be depleted by mid 2040s.”

Figure 2.5 on the next page shows the status of the System at the time the A/L Study was performed. The gap between System assets and liabilities cannot be closed without significant changes to contribution policy as is shown in Figures 2.6, 2.7, and 2.8.

While not shown in this report, it is imperative to note that these figures have changed since the time of the last A/L Study. A comprehensive A/L study using new figures will show substantive differences with the data presented herein.

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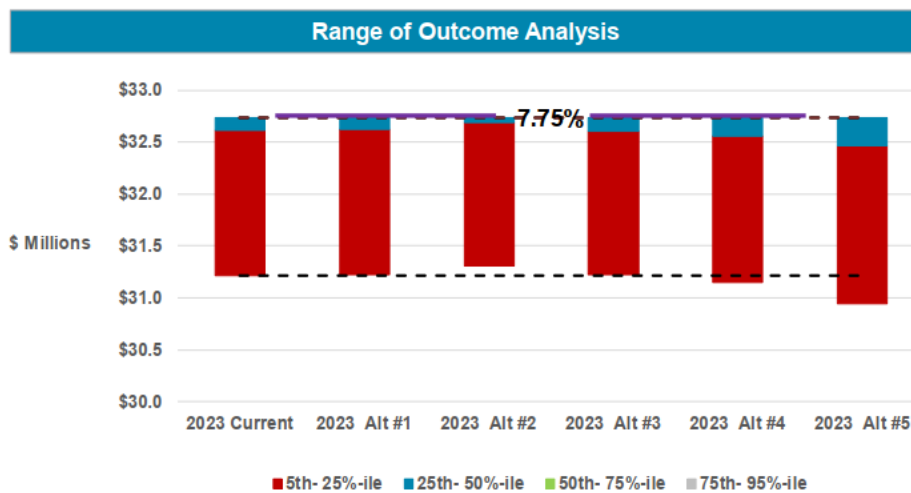


Figure 2.5: TESRS Funding Status at time of A/L Study

Fund Summary	August 31, 2019 (Valuation Date)
Market Value of Assets	\$112.4 Million
Actuarial Accrued Liability (Discount Rate - 7.75%)	\$144.9 million
Deficit	\$32.5 million
Market Value Funded Ratio	77%

Source: Texas Emergency Services Retirement System, Asset Liability Modeling Report, December 2019

Figure 2.6: Projected Accumulated Total Contributions – 2023
(Discount Rate of 7.75% at time of A/L Study)



	Mix	Current	Alt #1	Alt #2	Alt #3	Alt #4	Alt #5
High Value to Low Value	95th %-ile	\$32.7	\$32.7	\$32.7	\$32.7	\$32.7	\$32.7
	75th %-ile	\$32.7	\$32.7	\$32.7	\$32.7	\$32.7	\$32.7
	50th %-ile	\$32.7	\$32.7	\$32.7	\$32.7	\$32.7	\$32.7
	25th %-ile	\$32.6	\$32.6	\$32.7	\$32.6	\$32.6	\$32.5
	5th %-ile	\$31.2	\$31.2	\$31.3	\$31.2	\$31.2	\$30.9
	7.75% return	\$32.7	\$32.7	\$32.7	\$32.7	\$32.7	\$32.7

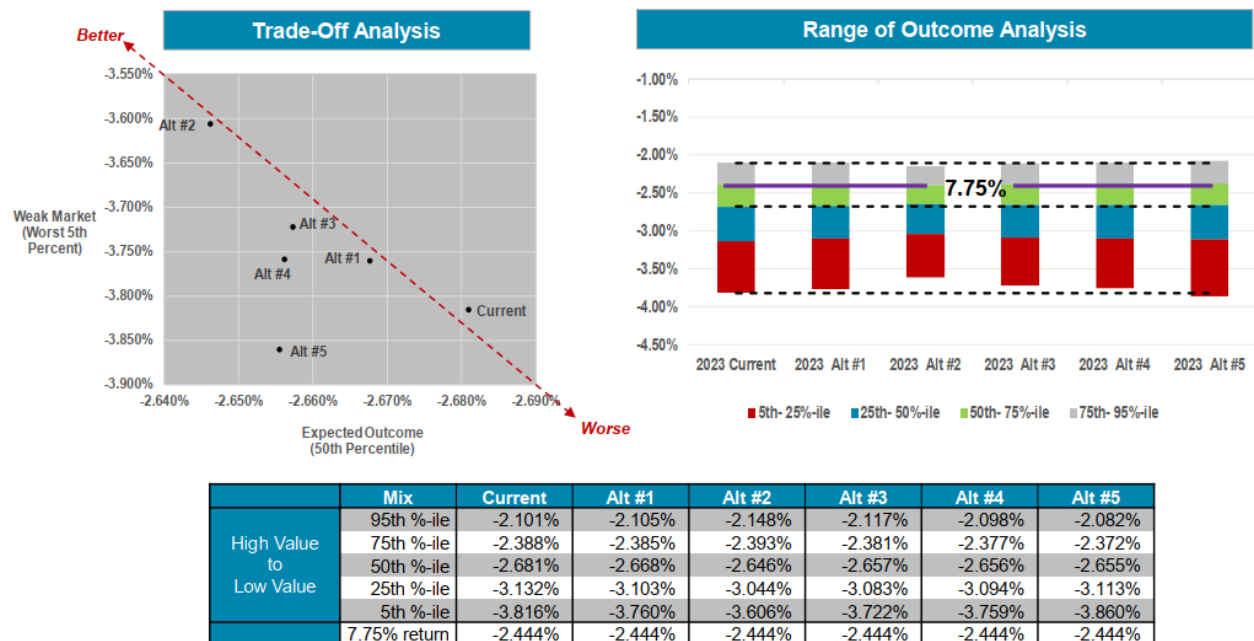
Source: Texas Emergency Services Retirement System, Asset Liability Modeling Report, December 2019

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As shown in Figure 2.6 on the previous page, the relatively fixed nature of the current funding policy is expected to keep the accumulated total contribution of the Plan relatively static. The period shown is through 2023 but this pattern is likely to continue in the foreseeable future unless changes are made to the contribution policy.

Figures 2.7: Liquidity Analysis: Contributions Less Benefits as a Percentage of Assets – 2023
(Discount Rate of 7.75% at time of A/L Study)

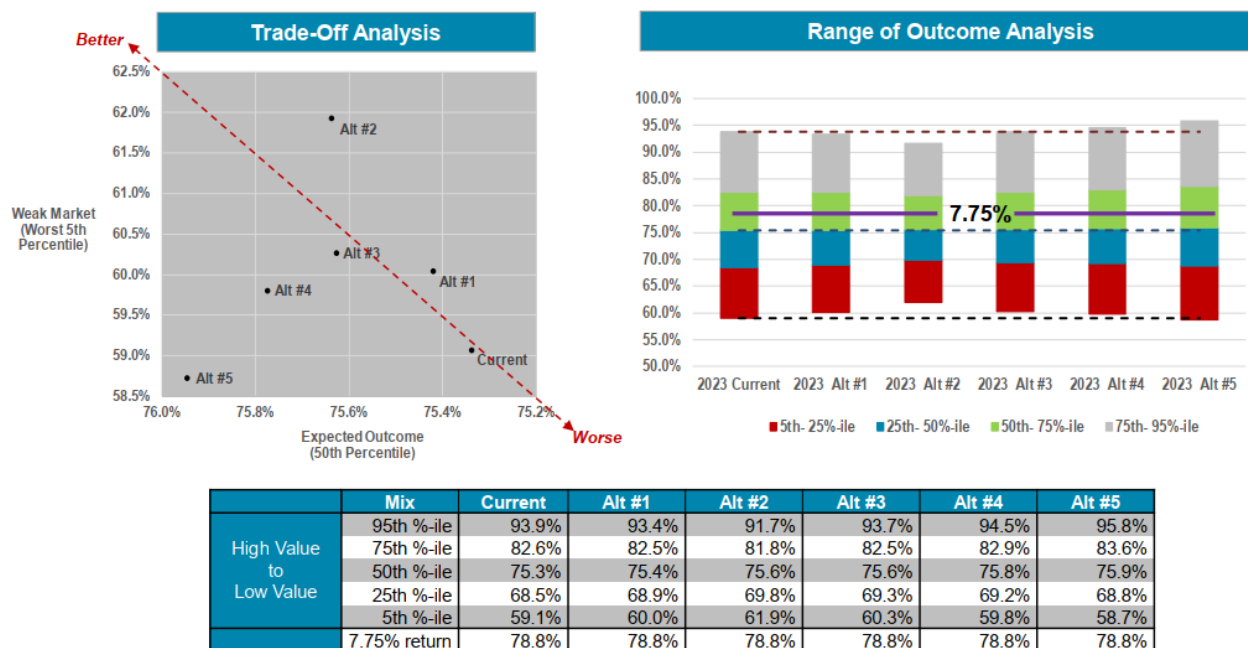


Source: Texas Emergency Services Retirement System, Asset Liability Modeling Report, December 2019

As shown in Figure 2.7 above, the System is expected to have net cash outflow through 2023 with its fixed nature of contributions and its projected benefit stream across various portfolio mixes. This is likely to be the case with unchanged contribution policy going forward. It is important to note that sustained outflows can potentially impose liquidity constraints on the management of the portfolio, therefore further limiting the opportunity to invest in alternative strategies regardless of the return or risk reducing diversification benefits they may offer.



Figure 2.8: Funded Ratio: Actuarial Value of Assets Basis – 2023
(Discount Rate of 7.75% at time of A/L Study)



Source: Texas Emergency Services Retirement System, Asset Liability Modeling Report, December 2019

The median outcome at the end of the projected period, 2023 shows the funded ratio ranging from 75.3% to 75.9% across various portfolio mixes. The potential range of funded ratio outcome spanned from 59.1% to 95.8% at 5th and 95th percentiles, respectively, across the various portfolio mixes.

As a result of the 2019 A/L study, the Board approved Alt #2 as the target asset allocation for the System with expected nominal return of 6.35% with standard deviation of 9.6%.

RVK RECOMMENDATIONS

- **Consider Extending the Projection Period for Contribution, Benefit Payments, and Funded Ratio in A/L Studies**
 - 20- to 30-year projections of inflows, outflows, growth of corpus, and resulting funded ratio should be provided for the Board to have a more realistic picture of the financial health of the System. This will help with understanding the associated risks and making more informed decisions regarding the System.
- **Consider Including Projected Annual Rate of Return to Reach Full Funding in A/L Studies**
 - Although the required return needed to reach full funding might be unrealistic given market conditions, it can provide another metric for consideration during policy formulation.

Section 3: A review of the appropriateness of investment fees and commissions paid by the retirement fund.



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**DOCUMENTS REVIEWED:**

- ✓ Fee Analysis, Investment Performance Report, March 31, 2022

Figure 3.1: Public Market Managers and Investment Management Fees as of March 31, 2022

Fund	Peer Group	Effective Annual Fee (bps)	Median Peer Fee (bps)	Percentile Rank (1=least costly)	Population
Boston Partners LCV (SMA)	US Large Cap Value	63	60	60	333
ClearBridge LCG (SMA)	US Large Cap Growth	50	63	13	253
Clarkston Partners (CISMx)	US SMID Cap Value Equity	100	88	73	21
Jackson Square Partners (DCGTX)	US SMID Cap Growth Equity	87	87	49	32
Oakmark (Harris) Int'l (OANIX)	EAFE Large Cap Value Equity	78	86	19	60
Invesco Int'l Growth (SMA)	ACWI ex-US Large Cap Growth Equity	65	75	14	32
Allspring Emerging Markets (EMGDx)	Global Emerging Markets	102	87	72	228
Garcia Hamilton (SMA)	Core Fixed Income	25	30	21	212
Richmond Capital (SMA)	Core Fixed Income	25	30	21	212
PIMCO Diversified (PDIX)	Global Multi-Sector Fixed Income	79	60	97	28
BlackRock Multi-Asset Income (BKMIX)	Global Tactical Asset Allocation	52	80	8	82
R&D Invesco Money Market (IUGXX)	US Cash Management	17	18	44	42

Median peer fee and population size is sourced from eVestment, based on TESRS mandate and asset size. Percentile rank represents the fee ranking of TESRS investment manager versus the applicable peer universe.

As part of this review, RVK analyzed the fees paid to individual investment managers in the TESRS portfolio as of March 31, 2022. This analysis included reviewing fee schedules of the investment managers, comparison to similar mandates, as well as a comprehensive peer group fee analysis. These peer groups are routinely used by RVK to benchmark fees and are comprised of both active and passive managers specific to the mandate's vehicle type. Each investment manager was ranked against an appropriate eVestment peer group based on mandate type and overall asset size. Lower fees are represented by lower percentile rank (i.e., 1st percentile is lowest fee).

As shown above in Figure 3.1 above, two-thirds of the Fund's managers have effective annual fees that fall below or are equal to the industry median for the respective mandates. Even though all of System's investments are in actively managed funds, which have higher expense ratios than their passive counterparts, TESRS manager fees fare well against their peer universes consisting of both active and passive managers. Figure 3.2 on the next page summarizes the overall distribution of relative fees of the public market managers.

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Figure 3.2: Fee Percentile Distribution

Fee Percentile Range	Number of Investment Managers in Range
1st to 24th	6
25th to 49th	2
50th to 74th	3
75th to 100th	1

In terms of the usage of public market fund vehicles, TESRS invests in a mix of mutual funds and separately managed accounts (SMAs). The choice of vehicle is mainly driven by mandate size, fees, ease of execution, and lower administrative burden. While most of the mutual fund investments are in the lowest fee share classes, fees of the majority of the SMAs are below the peer median for their respective strategies.

Figure 3.3: Private Market Managers and Range of Fees as of March 31, 2022

Real Estate

Fund	Management & Incentive Fees	Population
Morgan Stanley Prime Property	0.90% for TESRS	N/A
Peer Universe	Management Fee varies but ranges between 0.50% - 1.25%. Incentive fee structure varies.	23

Peer universe population and fees include ODCE fund managers that share fee data with RVK.

Infrastructure

Fund	Management & Incentive Fees	Population
IFM Global Infrastructure, LP	0.77% for TESRS	N/A
Peer Universe	Management Fee varies but ranges between 0.54% - 1.25%. Incentive fee structure varies.	13

Peer universe population and fees include open-end infrastructure funds that share fee data with RVK.

TESRS' allocation to private market alternatives is relatively low, primarily due to the size of the overall System assets and its liquidity constraints. The size of the mandate determines the fee arrangements for alternatives managers. The fees of both private mandates fall in the middle of the peer universe fee range.

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Review of Commissions

RVK notes that the use of transaction cost analysis (TCA) covering trade activity within public market portfolios is a common and effective means of providing additional context to performance results, and thus can play an important part of ongoing fiduciary monitoring activities. The ongoing consideration and review of such reporting over multiple periods can form the basis for additional insights into comparative trading effectiveness and trade execution cost containment. While TCAs were once common practice, with the adoption of “best execution” standards and de-emphasized focus on directed trades, many public pensions discontinued the practice.

TESRS’ investment managers are all institutional quality asset managers that are expected to have adopted “best execution” standards in trading. As such, RVK expects trade costs and commissions of TESRS’ investment managers to be within a reasonable range and in line with industry average.

Overall Fees

TESRS’ overall investment manager fees are lower than many of its public peers primarily due to its relatively low allocation to alternatives, which is attributable to the size of the System and its liquidity needs. However, it is worth noting that for a portfolio with an 85% target allocation to public market mandates, the overall fees are comparatively high due to the use of actively managed funds across all the asset classes.

RVK Recommendations

- **Consider Conducting Annual Review of Availability of Fund Vehicles**
 - TESRS currently invests in a mix of mutual funds and separately managed accounts in the public market space. Commingled Investment Trusts (CIT), which are lower fee vehicles compared to mutual funds can be an option for TESRS to consider. An increasing number of CIT managers are providing size and price flexibility along with daily liquidity, as the market for CITs continue to grow in number and size.

- **Consider Conducting Asset Class Structure Studies**
 - TESRS might consider conducting asset class structure studies for an optimal use of active and passive managers across the various asset classes. Adding passive funds, where appropriate, is expected to lower overall fee and improve its fee efficiency.

Section 4: A review of the retirement fund's governance processes related to investment activities, including investment decision-making processes, delegation of investment authority, and board investment expertise and education.



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DOCUMENTS REVIEWED:

- ✓ **Investment Policy Statement**
- ✓ **Board Meeting Minutes**
- ✓ **Investment Consultant Materials for the Investment Committee and Board**
- ✓ **PRB Training Requirements**

Our review of the TESRS investment decision-making process indicates it broadly reflects implementation of best practices.

The TESRS Investment Policy itself, while appropriately not specifying required processes in detail, nonetheless provides an indispensable sound foundation for investment decision-making. At the policy level, it clearly calls out adherence to key principles that are the touchstones of best institutional investment management, including but not limited to:

- a. The absolute primacy of the interests of the System's member and their beneficiaries
- b. Asset allocation is the most important determinant of investment return
- c. The investment strategy is long-term
- d. The critical role of diversification in minimizing investment risk
- e. The importance of portfolio rebalancing to maintain the Board-approved asset allocation
- f. Investment managers monitoring will emphasize performance over a market cycle
- g. Cost control is valued
- h. Maintaining reasonable liquidity to meet benefit payments is an investment consideration
- i. Delegation of implementation of Board policies regarding investments to the Investment Committee and Executive Director

We mentioned in Section 1 that we believe the Board should include a stated schedule for A/L studies in the IPS (at least every 7 years). A/L studies assist the Board in determining the appropriate risk and illiquidity levels that the System should target by combining the System's financial drivers—IPS, Contribution Policy, and Benefit Policy.

DELEGATION OF INVESTMENT AUTHORITY:

Our review of the governance structure under which TESRS operates indicates a substantial degree of clarity regarding the delegation of authority to make and provide advice on investment decisions. More specifically, our review finds:

- **Authority held by Board:** Clarity that while the Board may delegate duties, it cannot delegate away overall responsibility for the operation of the System, including the management of the System assets held in trust solely for the benefit of the plans participants and their beneficiaries.

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- **Authority held by the Investment Committee of Board:** Clarity regarding the delegation of investment decision-making to the Investment Committee of the Board. As pointed out in Section 1 of this document, clarity of process and documentation of the Investment Committee meetings would provide transparency for the Board and the System's members. The Investment Committee should demonstrate that a prudent process is in place and followed through meeting minutes documenting their activities and decisions.
- **Authority held by Investment-Related Staff:** Clarity on the authority granted to the Executive Director regarding investment decisions. We find that that the TESRS governance documents set forth the direct authority delegated to him/her. However, there should be more feedback in the associated obligations to keep the Board informed on the timely basis when it is exercised. We also conclude that while there is clarity provided for the responsibilities of an Investment Consultant, there is no mention of the role and obligations of the Chief Investment Officer with respect to investment decisions.
- **Authority held by outside consultants:** There is substantial clarity regarding the role of the Investment Consultant with respect to its obligations to the Board, the requirement to collaborate with investment staff yet retain the independence necessary to be an effective direct advisor to the IC and Board, and the importance TESRS places on all involved parties avoiding conflicts of interest. Similar to the comment above, documentation of recommendations made to the Investment Committee in the form of a simple memo from the Investment Consultant and then memorializing the process and discussion in Investment Committee minutes would provide a record and transparency for the Board and the System's membership.

BOARD INVESTMENT EXPERTISE AND EDUCATION

Upon appointment and prior to actively participating in TESRS Board meetings, each Board member must comply with the training requirements established Government Code Section 865.0035 and provided by the System. As part of this analysis, we reviewed logs of educational sessions attended by Board members and the Executive Director as required by the Minimum Educational Training (MET) requirements established by Texas Administrative Code 607. Not all Board members are in compliance with the MET requirements as reported to the Pension Review Board (PRB). The providers for the majority of sessions were the PRB (online) and TEXPERS. Most all sessions attended by Board members focused on topics relevant to the System's mission and its execution and are considered "core content." Topics covered ranged from ethics, governance fiduciary matters benefit administration, actuarial matters, risk management, investments, basic trustee training and advanced trustee training. We concluded that the number, breadth, and relevance of the educational sessions were adequate and followed the education guidelines established for trustee and system administrators of Texas public retirement systems.

Finally, we would note that education opportunities for the Board are not limited to formal educational sessions. As in our broad experience with institutional investors of all types, including public funds, the presentations and discussion of key analyses required by the TESRS IPS offer critically important educational opportunities and can be pre-approved by the PRB by application for an individual course or as a sponsor-accreditation.

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BOARD MEMBERSHIP

The Board members are appointed by the Governor and are appointed for staggered terms of 6 years. The terms of three Trustees expire on September 1 of odd-numbered years. Government Code also requires the following Board composition:

- At least five trustees must be active members of the System and one must represent emergency medical services, if there are participating departments in the System that provide emergency medical services
- One trustee must be a retiree of the System
- Three trustees must have experience in the fields of finance, securities investments, or pension administration

We note that statutory requirement for having a third of the Board members with financial background is a plus for any board and their investment committee. In our experience, we have found that it can be helpful to have an active member on an investment committee as a representative for the System’s membership.

Figure 4.1: Current List of Trustees and Terms

Place	Type	Member	Date Appointed	Title
1	Active Firefighter Member	Jenny Moore	May 2010	Board Chairman
2	Active Firefighter Member	Pilar Rodriguez		Vice Chairman
3	Investment Professional Member	Vacant		
4	Active Firefighter Member	Edward J. Keenan	May 2019	
5	Active Firefighter Member	Rodney Alan Ryalls	May 2019	
6	Finance Member	Stephanie Lynn Wagner	May 2019	
7	Finance Member	Jerry Romero	July 2020	
8	Retired Member	Matthew “Matt” Glaves	July 2020	
9	Active Firefighter Member	Nathan Douglas	July 2020	

The Board is supported by a staff of nine, currently none of which are dedicated investment staff.

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RVK RECOMMENDATIONS

- **Consider Adding a Stated Schedule for A/L Studies in the IPS**
 - Previously recommended in Section 1 of this report
- **The Investment Committee Should Keep Meeting Minutes Documenting Meeting Activities and Any Decisions Made.**
 - Previously recommended in Section 1 of this report
- **Investment Implementation Report from Executive Director to Board**
 - Quarterly review of investment activities accomplished to implement Board decisions
- **Document Investment Consultant Recommendations to the Investment Committee in the Form of a Simple Memo**
- **Consider Other Avenues to Encourage All Board Members to Become Compliant with Mandated Educational Requirements**

Section 5: A review of the retirement fund's investment manager selection and monitoring process.



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DOCUMENTS REVIEWED:

- ✓ **Investment Policy Statement**
- ✓ **Investment Staff and Investment Consultant Presentations to the IC and Board**
- ✓ **Investment Consultant Quarterly Performance Report**

PRIMER ON INVESTMENT MANAGER SELECTION

Generally, the process for selecting an investment manager can take the following forms:

- Single Manager Selection/Recommendation
- “Premier List” or “Bench” Process
- Short-List Candidate Search
- Long-List Candidate Search/Request for Information
- Formal Request for Proposal

Each of these processes can be appropriate depending on the asset class, size of investment staff, and/or decision-making timeline. In every case, the depth of due diligence completed on the manager or managers under consideration should be the same, whether performed by Investment Staff, the Investment Consultant, or both. Decision-makers need to evaluate the credibility of every firm, team, process, and performance track record to gain the appropriate level of conviction to support a “buy” recommendation. This conviction is gained through document reviews, interviews, and onsite due diligence. Documentation describing the rationale and extent of due diligence should be easily produced to provide a paper trail and justification for any recommendation. Each investment manager selection process is addressed in greater detail below. For simplicity’s sake, it is assumed that all manager hiring decisions are consistent with asset allocation guidelines and broad portfolio construction considerations.

Single Manager Selection/Recommendation

Single manager recommendations are most appropriate when time plays a critical role in the decision-making process. There are two scenarios where this is most likely to be true. The first, and more common scenario, is during the selection of managers with finite fund-raising windows. The second, less common scenario, is when a plan is looking to implement an opportunistic investment made possible by a short-term market dislocation.

The first scenario is most likely to occur with investment managers in private markets. Examples include private equity, direct real estate, private credit, and some hedge funds. In general, the firms that manage these strategies announce the launch of a strategy, a target level of funds they hope to raise, and a date which the fund will no longer accept fund commitments. Because of the limited window of time clients have to commit to a new fund, pacing studies and general education are done prior to identifying a specific fund. When the right opportunity appears to present itself (asset class, sponsor, timeline, etc.), deep due diligence is conducted on that opportunity. If that due diligence confirms the attractiveness of the opportunity, the single manager is presented to decision-makers.

For more opportunistic/tactical investments (exploiting relative valuation differences or regional opportunities, for instance), an existing manager taking on a new mandate or a pre-approved manager may be recommended to invest assets for the limited duration of the opportunity.

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“Premier List” or “Bench” Process

This approach is largely dependent on the asset owner and can take a variety of forms. Typically, the asset owner will have a preapproved list of candidates, each of which has undergone the full due diligence process by the Investment Staff and/or Investment Consultant(s).

Short-List Candidate Search

Short-list searches are most appropriate in less complicated asset classes (core/core plus fixed income or large cap equity for example), where a single manager will be hired, the opportunity set is relatively static, or when staff lacks the time, expertise, or both to conduct due diligence and relies heavily on the investment consultant to carry out the investment due diligence function. Not all of these characteristics are necessarily present in each instance.

Typical of these searches, the investment consultant maintains a list of managers in each sub-asset class it rates as “buy” or “positive.” Based on specific client circumstances (vehicle preference, minimum investment size, plan type, etc.) the investment consultant presents a sub-set of this “buy” list for the client to consider. Any manager on this buy list should have gone through rigorous and ongoing vetting by the investment consultant prior to being presented to the client. The client selects an option from the list sometimes with, sometimes without, input from the investment consultant.

Long-list Candidate Search/Request for Information (RFI)

Long-list searches are most appropriate in relatively more complicated asset classes (emerging market debt or international small cap equity for example), where more than one manager will be hired, the opportunity set is dynamic, and staff is dedicated to investment due diligence and monitoring as their primary function. Not all of these characteristics are necessarily present in each instance.

Long-list searches generally start with a set of pre-identified characteristics that candidate managers should possess in order to be considered. Some of these characteristics are required, while others may be preferred. Third-party and internal data-basis are screened on these characteristics to generate the first draft of the “long-list.” Normally, the list is refined based on the industry knowledge of staff and the consultant. During this process managers are added and removed from the list based on this qualitative review of the initial screen. The final long-list of candidates is then sent an RFI. Completed RFIs are reviewed, and sometimes scored, by staff and/or the investment consultant to determine a short-list for additional interviews and eventually onsite due diligence. The top candidate(s) from this process are recommended to the board for hire.

Formal Request for Proposal (RFP)

A formal RFP process is similar in many ways to the long-list candidate search/RFI. Whereas the long-list search begins with screening a broad, unconstrained, universe of potential candidates, the RFPs starting universe is constrained to those managers that respond to the RFP. Like the long-list search, the list managers that respond to an RFP is narrowed using both required minimum qualifications (MQs) and some set of pre-determined preferred qualifications (PQs). Those managers that meet all MQs and most or all PQs move forward in the due diligence process. This can, but does not always, include a formal scoring of RFP responses by staff and/or the investment consultant. The top responses undergo additional due diligence, including interviews and onsite due diligence. Like the long-list search, the top candidate(s) are recommended to the board for hire.

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RFP search processes are typically utilized when they are mandated by law or by a plan's governing documents. Because of this, RFPs are utilized across various asset classes, staff sizes, mandate sizes, and decision-making timelines. In most cases, asset owners that utilize the full RFP process have full investment staffs dedicated to investment manager sourcing and monitoring.

TESRS – INVESTMENT MANAGER SELECTION

TESRS follows what could be considered a “short list” process when evaluating new investment managers or comparing current mandates to potential replacements. This is particularly true in public markets, whereas private markets are more depending on the asset class itself. The IPS also notes that the Investment Consultant has the responsibility to “perform manager search and evaluation and perform ongoing manager due diligence,” and to “recommend replacement managers and perform fund evaluations as necessary....”

The IPS is clear about the due diligence expectations for private markets strategies but has indirectly delegated public markets due diligence to the Investment Consultant. While the Board still retains the ultimate authority to hire or fire investment managers, it is an important distinction found in the policy.

In our review of the work performed by AndCo, we would note that in recent years it would appear the Board typically only sees two candidates for potential investment, either with a new mandate or to replace an existing manager. This is somewhat common in the industry, particularly when an Investment Committee provides additional vetting of potential managers on a short list. However, what is lacking in the current process is documentation from the Investment Committee on what was reviewed with the Investment Consultant, and what is being recommended to the Board. While the Investment Committee does not have authority to hire or fire managers, it does have the responsibility to “...advise the Board and make recommendations with respect to the following service providers:

1. investment managers;
2. transition managers;
3. investment consultants; and
4. custodian banks.”

RVK RECOMMENDATIONS

- **Consider Adding More Specific Due Diligence Language for Public Markets Managers**
 - RVK would suggest that TESRS consider adding more specific language in the IPS relating to the due diligence expectations/requirements for public markets managers, similar to those found in the private markets section. Even though diligence performed on public markets managers is more standardized, we feel having a documented process will ensure consistency and outlive personalities and/or service providers that may have preferences that differ from the Board's vision.

Appendix



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RVK TEAM BIOGRAPHIES



Jim Voytko – President, Director of Research, Senior Consultant, Principal

Located in our Portland office, Jim serves as President, Director of Research, and as a Senior Consultant with RVK. He joined the firm in 2004 and has over 40 years of industry experience. As a Senior Consultant, Jim has worked with both public and corporate pension plans, foundations and endowments, and insurance funds.

A sought-after public speaker, Jim has delivered original presentations on various topics at numerous institutional investment conferences. He is involved in multiple aspects of RVK's specialty consulting practices, most notably Asset/Liability studies and Board governance/investment program structural reviews. Jim's research responsibilities are focused primarily on capital markets issues and investment decision-making. He has also provided testimony on pension, investment, and financial issues to multiple state legislatures and the US Senate as well as participated in drafting legislation at both the state and federal level.

Prior to joining RVK, Jim served as the CEO/Executive Director of Oregon's statewide pension system for all employees of state and local governments, police and fire, teachers and higher education, statewide retiree health care insurance program, and statewide 457 deferred compensation program. He also served on the five-member Oregon Investment Committee, which directed the investment of all statewide funds totaling approximately \$45 billion.

Jim's experience also includes serving as Director of Research for PaineWebber, CIO and Managing Director of PNC Asset Management Group/PNC Advisors, and the Deputy Director and Chief Operating Officer of PaineWebber's Investment Banking Division. Jim earned his BA degree from Carnegie Mellon University, a Master of Public Administration degree from the University of Washington, and Master of Public Policy degree from Harvard University. Jim is a shareholder of the firm and serves on the firm's Board of Directors.



Marcia Beard – Senior Consultant, Principal

Marcia is a Senior Consultant with RVK and is located in our Portland office. She joined the firm in 1996 and has over 40 years of experience in the investment consulting and asset management industry.

As a Consultant, Marcia has extensive experience working with government entities, and endowments and foundations. Her experience includes developing investment policy statements, formulating asset allocations, developing, and implementing asset class manager structure, conducting manager searches, performance attribution and monitoring, and ongoing investment manager due diligence. In addition, Marcia is co-lead of RVK's Investment Program Review Practice.

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Prior to joining RVK, Marcia worked at US Bank, Oregon Bank and US National Bank in Illinois. Marcia graduated cum laude from the University of Illinois, earning a BS degree in Agriculture Economics. She is a shareholder of the firm.



Spencer Hunter – Senior Consultant, Principal

Spencer joined RVK in 2008 and is located in our Portland office. In 2014, he was promoted to Consultant, in 2017, he was named Department Manager of our Associate Consultant/Investment Associate group, and in 2019, he was promoted to Senior Consultant.

Spencer's career at RVK has been focused on providing investment consulting advice to many of the firm's endowment and foundation, public fund, Taft Hartley, high-net-worth families, and corporate clients. His responsibilities include asset allocation and policy setting, investment manager research and due diligence, forward-looking capital market assumptions, asset class portfolio structuring, and many of the firm's internal research projects.

Spencer graduated cum laude from Linfield College with a BS degree in Finance. He is a shareholder and serves on the firm's Board of Directors.



Samia Khan, CFA – Consultant

Samia is a Consultant located in our New York office. She has 15 years of institutional investment experience and serves a diverse client base, including defined benefit and defined contribution plan sponsors, as well as endowments & foundations. Her responsibilities include asset allocation, investment manager research, portfolio structuring, risk analyses, and client education presentations.

Prior to joining RVK, Samia worked as Senior Manager of Investment Management at PricewaterhouseCoopers (PwC), LLP. Her role involved overseeing \$16B of retirement assets of the staff and partners of PwC and managing relationships with all associated external and internal parties including the custodian bank, DC recordkeeper, legal counsel, actuary, investment consultants, and asset managers.

Samia received her BA degree in Economics and Mathematics from Bryn Mawr College. Additionally, she is a CFA Charterholder and a member of the CFA Society of New York.

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Jessica Goodall – Senior Executive Assistant

Jessica joined RVK in 2018 as a Senior Executive Assistant. She has over a decade of administrative experience, her most recent roles including Administrative Assistant for Figgins Family Wine Estates as well as a Special Project Assistant to the executives of Carondelet Health Network, and Executive Assistant to the VP of Human Resources at Harvard University.

Jessica holds a Master of Arts in Professional Writing from New England College as well as a BA in English from Central Washington University.