RVK Portland Office
1211 SW 5th Avenue
Suite 900
Portland, Oregon 97204
www.RVKInc.com

RVK

Texas Municipal Retirement System

Evaluation of Investment Practices

Pursuant to Texas Government Code 802.109

May 2020

May 2020

Table of Contents

May 2020

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

INTRODUCTION

RVK was tasked with conducting an independent evaluation on the appropriateness, adequacy, and effectiveness of the Texas Municipal Retirement System ("TMRS" or "the System") investment practices and performance and to make recommendations for improving the TMRS 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 system and the retirement system's compliance with that policy or plan;

(2) A detailed review of the retirement system'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 system;

(4) A review of the retirement system'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 system'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 which our clients may ask us to evaluate.

May 2020

BACKGROUND INFORMATION

TMRS was established in 1947 and, as of year-end 2018, administers a retirement program for 887 Texas cities. The program provides retirement, disability, and survivor benefits to active and retired municipal employees. The program is managed by a six-member Board of Trustees, as well as professional full-time Investment Staff. As of December 31, 2019, the market value of System investment assets was approximately $31.4 billion.

The System's stated mission is to provide "secure, reliable retirement benefits," and is strengthened by a set of core values and overall vision:

Core Values

Accountability
Excellence
Integrity
Respect
Teamwork

Vision Statement

To be the model for empowering retirement.

The majority of this evaluation will focus on investment practices and program management, with RVK providing an independent review of policies, procedures, and specific considerations as described in Texas Government Code 802.109. Outlined below is a review of the resources and approach employed by the RVK team in executing this evaluation. Supplementary details on the background and experience of the RVK project team can be found in Appendix A.

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 TMRS organization, its decision making process, and overall efficacy. The first method employed was a detailed review of countless documents provided and produced by TMRS. These documents covered a comprehensive array of topics including, but not limited to:

- Governance Documents
- Board and Committee Charters
- Investment Policy Statement
- Internal Procedures Documents
- Organizational Charts
- Background of Key TMRS Professionals and Investment Team
- Asset Allocation Studies
- Asset/Liability Studies
- Performance Reports and Related Analyses
- TCA Reports
- Actuarial Valuation Reports

- Related Investment Documents (asset class reviews, investment manager due diligence, etc.)
- Board Meeting Minutes

A note of appreciation to the Investment Staff of the TMRS, whose cooperation with our numerous requests for data and organizational information were critical in the execution of this project.

The RVK TMRS Team

Marcia Beard
Spencer Hunter
Kyle Hagmeier
Jim Voytko
Joe Ledgerwood, CFA
Jonathan Kowolik
Colin McKey

Executive Summary

May 2020

EXECUTIVE SUMMARY

Observations and Recommendations for Consideration

What follows is a summary of key observations that are detailed in the five key sections throughout 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:

TMRS' investment program is governed by the Investment Policy Statement ("IPS") including the Investment Committee Charter, supported by the Internal Procedures, which together serve as overarching program documents detailing the objectives and guidelines used for the management of System assets. The Board of Trustees (the "Board") reviews the IPS at least annually, with the other documents maintained and managed by Executive and Senior Investment Staff. RVK finds all three documents to be clear, thoughtful, and comprehensive. The recent changes to the delegation model are also in line with what we consider to be best practices for management of System assets.

Section 2 Observations:

The efforts from the Board and Investment Staff show a thoughtful approach to the selection of the Strategic Target Allocation, with particular emphasis on the 2019 Asset/Liability study. From this analysis, TMRS was able to narrow the potential range of outcomes, and create a set of target allocations applying reasonable judgement and its own investment beliefs throughout the process. The current TMRS target portfolio represents one that is diversified, with ample opportunity for growth without sacrificing material downside protection. The process to reach the current target allocation took place over multiple Board meetings and continues to be refined as appropriate with each new analysis performed.

Section 3 Observations:

The overall aggregate level of investment fees and commissions paid by TMRS is below market for its asset allocation, meaning its implementation has been successful in managing costs. With very few exceptions, fees paid to individual managers are among the lowest in the industry for each mandate and are a testament to the diligence and contracting processes currently in place. While there are several mandates within the portfolio where fees or commissions appear modestly above industry median, it is important to note that these are also areas in which TMRS is receiving a differentiated level of active performance in a manner consistent with the Board and Staff's stance on use of active management. As such, higher fees in these areas may be warranted as overall net of fees performance remains attractive.

Section 4 Observations:

Through a review of past and current policies, charters, and meeting materials, it is clear the TMRS investment decision making process and governance structure have been carefully constructed to reflect industry best practices. Notably, the separation of policy from procedures is an important and attractive characteristic of the TMRS investment program. Additionally, the ongoing education through formal training and meeting materials appear to satisfy certain requirements within Texas, while also providing Trustees with meaningful and important information critical to the management of System assets. Delegation of authority among Board, Executive and Investment Staff, and Investment Consultant are also clearly defined, with sound reasoning and a structure which allows for some degree of flexibility necessary to manage a successful investment program.

Section 5 Observations:

The TMRS investment manager selection and monitoring process is well-defined and thoughtful in its approach. The TMRS Investment Staff diligently follows the policies and procedures as described and has made notable efforts in the improvement of their own due diligence efforts. The unique and differentiated approach to manager selection in both public and private markets, provides tangible and intangible benefits that a more common process followed by many peers may not afford, such as the demonstrated ability to negotiate lower fees and the avoidance of performance chasing behavior. While there are always areas to consider improvement, we believe the current process and documentation thereof is best-in-class within the public pension universe and commend the TMRS Board and Investment Staff on their efforts in the creation of a successful manager selection and monitoring program.

Table of Specific Recommendations:

Section	Recommendation	Suggested Timeframe
Section 1: Investment Policy	Finalize the Investment Beliefs and Fee Policy to assist investment decisions.	As soon as feasible.
Section 2: Asset Allocation	Consider the inclusion of more differentiated portfolios in asset/liability modeling.	Next asset/liability study performed.
Section 5: Manager Selection and Monitoring	Consider the addition of mandatory reporting expectations by consultants and asset class directors to the Board in the IPS.	Next policy update.

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

DOCUMENTS REVIEWED:

- ✓ **Investment Policy Statement**
- ✓ **Investment Committee Charter (Appendix to Investment Policy Statement)**
- ✓ **Investment Department – Internal Procedures Manual**
- ✓ **Presentations to Board**
- ✓ **Memorandums from Investment Consultants**
- ✓ **December 7, 2017 Board Approved Strategic Plan (Goal 1, Objective B. and Goal 3, Objective C.)**

INVESTMENT POLICY STATEMENT

TMRS' investment program is governed by the Board of Trustee's ("Board's") Investment Policy Statement ("IPS") which serves as the overarching investment program document providing guidance for consistent and informed decision-making.

The IPS is reviewed on a consistent basis, at least annually, by staff, investment consultants, legal counsel, the Executive Director and ultimately by the Board. It is important to note that the most recent review of the IPS was a multi-month, collaborative process resulting in substantive revisions that will be summarized in the IPS Summary section. Below is a snapshot of the most recent adoption and effective dates of the Board's IPS.

Investment Policy Statement	
Adopted February 13, 2020	Effective February 15, 2020
Adopted December 7, 2018	Effective January 1, 2019
Adopted December 8, 2017	Effective January 1, 2018

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

1. **Policy Statements** – Sections I through V address purpose, governing authority, the Board's Mission and Vision statements, investment objectives and the Board's investment beliefs. These sections clearly outline, for the current and future Boards, the goals and objectives as well as a tangible number of investment beliefs that articulate fundamental views held by the Board on institutional investing. All of which provide the foundation to guide investment-related decision making that will be met through prudent, consistent and best practice implementation for the purpose of providing retirement benefits to members and their beneficiaries. It is important to add that in connection with the Board's Strategic Plan, which will be reviewed later in the report, the Board has been focused on developing an updated collective set of investment beliefs to align with their objectives, and to ensure organization coherence.

2. **Fiduciary Conduct –** Section VI provides language that defines proper fiduciary conduct for all

parties in the System's investment process. In addition, this section necessitates that all Trustees, the Executive Director and investment staff adhere to TMRS' Ethics Policy, which details many duties with which covered persons must abide including strict adherence to no gifts, personal benefit and/or favors beyond permissible exceptions as detailed within this section.

3. **Delegated Authority –** Section VII was added to the IPS effective February 15, 2020 and was in connection with the Board's Strategic Plan and a part of the process of developing the collective set of investment beliefs. Although the Board maintains the ultimate oversight of the System's assets, the Board delegates day-to-day investment operations and implementation through the Executive Director to the Chief Investment Officer and investment staff. The Executive Director is authorized by the Board, pursuant to a recommendation by the Chief Investment Officer and the Board's applicable investment consultant to retain and terminate investment managers within each asset class within certain limitations based on percent of the market value of the System's assets for actively managed mandates. Passively managed strategies are implemented consistent with the applicable asset limits stated in the Asset Allocation section of the IPS.

4. **Investment Responsibilities –** Sections VIII through X provide detailed responsibilities of the System's fiduciaries such as the Board, Executive Director, Chief Investment Officer, Investment Committee, investment staff, general counsel, finance department, auditor, investment consultants, investment managers, custodian, external counsel, securities lending agent and transition managers. While the specifics of the responsibilities differ, 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 for each member, beneficiary and retiree at the forefront of the decision-making process when considering any and all investment decisions. Additionally, this section ensures proper reporting by each respective group to the Board, allowing them to operate their core duties most effectively.

5. **Asset Allocation –** Section XI details the Board's responsibility with respect to setting the Strategic Asset Allocation ("SAA") for the System. This includes expectations of the SAA from both an expected return and risk viewpoint in addition to notable investment methods, tools, and applicable time horizons to be used in order to assist with the process of proper asset class diversification. Although not stated in the IPS, the Board reviews asset allocation on an annual basis and conducts a full study every three years following an asset liability study. Section XI also details the Board's rebalancing policy by establishing appropriate rebalancing ranges by asset class. Investment staff is responsible for implementing all portfolio rebalancing activities, subject to prior written approval by the Chief Investment Officer and the Executive Director.

6. **Performance Monitoring and Compliance –** Section XII states the Board's return expectations for the System's total fund, establishes the Policy benchmarks and Policy Index, as well as setting specific performance objectives for actively managed strategies. Section XIII addresses the internal compliance program which is under the supervision of the Chief Investment Officer and reported to the Board on a quarterly basis.

7. **Investment Risk Management –** Section XIV addresses the Board's risk management program with its three lines of defense, identifies key risks and internal procedures to address those risks, and how the risk management function is reported to the Board.

8. **Investment Manager Responsibilities, Selection, Monitoring and Termination –** Section XV states the Board's expectations for investment manager compliance, qualification, timely reporting and that an investment manager's authority is defined in an executed contract, or other governing document for commingled or mutual funds. Section XVI details the Board's disciplined process for investment manager selection, monitoring and termination which are also documented in investment staff's internal procedures. Section XVII lays out the ongoing evaluation process for existing investment managers including evaluation criteria and annual comprehensive reviews.

9. **Investment Manager Transitions –** Under Section XVIII, the Board has determined that the Chief Investment Officer, with advice from the appropriate investment consultant, will determine the most efficient and prudent manner to perform a transition. The Chief Investment Officer is authorized to use a transition manager from the Executive Director's pre-approved list under the terms of a master agreement executed by the Executive Director. The Executive Director summarizes the transition for the Board in his or her next Board report.

10. **Investment Risk Management –** Under Section XIX, the Board has delegated proxy voting for separately managed accounts to the investment managers.

11. **General Investment Manager Guidelines –** Under Section XX, general investment guidelines are described for each asset class. Guidelines more specific to each investment manager mandate are documented in the manager's contract, where appropriate.

12. **Appendix A. Investment Committee Charter –** Effective February 15, 2020, the Investment Committee Charter was added as an Appendix to the Board's Investment Policy Statement. The Investment Committee is an internal oversight committee chaired by the Chief Investment Officer. Committee members include all Investment Directors and the Director of Risk Management. The Investment Committee approves or disapproves investments to be recommended by the Chief Investment Officer to the Executive Director.

EVALUATING THE INVESTMENT POLICY STATEMENT, COMPLIANCE WITH THE IPS AND EDITS FOR CONSIDERATION

RVK believes TMRS' 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 experience and reading of the Board meeting minutes, the Board has reviewed, edited where necessary, and approved changes at least on an annual basis over the last three years.

The most recent IPS review began in October 2019 and ended when the IPS was approved by the Board on February 13, 2020. The draft presented to the Board for approval was the result of a collaborative process involving the Executive Director, Chief Investment Officer, General Counsel, Lead Investment Attorney, Fiduciary Counsel, Governance Consultant and RVK, as the General Investment Consultant.

As mentioned earlier, the Board is undergoing a very involved process to develop an updated set of collective investment beliefs. Once approved, these investment beliefs should replace the current beliefs listed in Section V. The updated investment beliefs will set the direction for the Board's policy, investment practice and organizational culture. As the Board's road map for the System's investment program, RVK believes simplification and concise statements would serve the Board in future IPS revisions.

INVESTMENT DEPARTMENT – INTERNAL PROCEDURES MANUAL

While the IPS is the governing document in which the Board formally sets broad policy, the Investment Department's Internal Procedures Manual details specific processes and oversight requirements as it relates to implementing the Board's policies. The current internal document is 118 pages, contains 50 sections (listed in alphabetical order below), and sample reports and templates in the appendix.

- *Investment Data Warehouse (IDW) Operating Procedures, Alternative Investment Valuations for Interest Credit and CAFR, Asset Allocation Study, Background Checks, Benchmark Selection Procedures, Budget Proposal and Approval Process, Business Continuity Plan, Co-Investment Underwriting Procedures, Consultant Search, Selection and Oversight, Contracting Procedures (Initial Investment), Credit Card Procedures, Currency Repatriation and FX Spot Transaction Procedure, Due Diligence, eCFM Procedures, Emergency Investment Manager Termination, Employee Off-Boarding, Employee On-Boarding, Investment Committee and Board Agenda Item Preparation Procedures, Investment Department Email Usage and Retention, Investment Funding Sources, Investment Manager Transitions, IPS Review and Amendment (Annual and Ad Hoc), Investment Risk Management, Israel Boycott, Manager Off-Boarding, Manager Onboarding, Manager Operations Exception Resolution, Meeting Tracking and Reporting, Monthly Close, My State Street - Complimentary Controls, New Account Procedures, Non-TMRS Technology Access, Personal Trading for Investment Department Employees – Pre-Clearance Procedure, Paying SMA Management Fees, Policy/Guideline Exception Request Form, Powers of Attorney (POAs) for Proxy Voting, Procedures: Ad Hoc Addition of New/Updated Procedures, Procedures: Annual Review, Proxy Voting, Publicly Disclosed Material - Required Disclaimer, Quarterly Staff Report, Rebalancing, Reimbursement for Attendance at Private Investment Fund/Industry Advisory Board Meetings or Due Diligence Travel, Requests for Information (PIA Requests, Requests for Board Materials, Media Participation), Securities Litigation Procedures, Taxation and Regulatory Reporting, Trade Activity Fails, Watch List Addition and Removal, Website Updates*

Each section includes the procedure approval date as well as the dates for any revisions. The procedure manual allows the investment staff to have one set of guidelines to ensure consistency throughout the investment department.

EVALUATING THE INTERNAL PROCEDURES MANUAL, COMPLIANCE AND EDITS FOR CONSIDERATION

RVK believes TMRS' Investment Department Internal Procedures are an example of industry best practice, representing clear and transparent processes for implementation of the System's investment program.

STRATEGIC PLAN – PRIMARY INVESTMENT RELATED GOALS AND OBJECTIVES

In working with their Governance Consultant, the Board approved their Five-Year Strategic Plan on December 7, 2017. While the Strategic Plan was Systemwide, there are two objectives directly focused on the investment program.

Goal 1: Ensure the financial stability and long-term viability of the Plan.

Objective B. Develop a future vision and implementation plan for the investment program.

Studies of best practice in institutional fund governance have highlighted the importance of the development of clearly stated investment beliefs as a core first step of an investment process. RVK, as the General Consultant, has worked closely with the Board's Governance Consultant, Mosaic Governance Advisors, LLC, to address Goal 1, Objective B through a focused educational process to assist the Board in refining and updating a set of investment beliefs. To ensure organization coherence, the Board's investment beliefs for TMRS will be collective, not individual. By agreeing upon and codifying 8 to 12 investment beliefs, the Board will set a foundation for its decision making as well as encourage cultural alignment. The education process began in March 2019 and will be completed upon revising the IPS to include the Board's updated investment belief statements.

Goal 3: Identify and implement the best governance and management structure.
Objective C. Develop a Board-approved investment fee policy.

An Investment Fee Policy has been drafted, approved by the Chief Investment Officer, and is awaiting addition to the Board's agenda for review and approval.

RVK RECOMMENDATIONS

- **Finalize the System's Investment Beliefs and Fee Policy.**
  - Both items are crucial in the ongoing management of System assets and will assist all stakeholders in future decision making processes.

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

DOCUMENTS REVIEWED:

- ✓ **Investment Policy Statement**
- ✓ **Investment Staff and Investment Consultant Presentations to the Board**
- ✓ **Asset/Liability Study (2019)**
- ✓ **Actuarial Valuation**
- ✓ **Asset Allocation Studies and Accompanying Presentations**

(A) The process for determining target allocations.

TMRS' 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. Per the Investment Policy Statement, TMRS performs an A/L Study at least once every six years, with the most recent study performed in August 2019 based on the December 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.

TMRS' Investment Staff, in concert with the Investment Consultant, RVK, review asset allocation on an annual basis. Each year, RVK publishes capital market assumptions for a large array of asset classes. These assumptions drive the asset allocation process and are long-term in nature (20 years), net of fees, and assume passive management for asset classes where passive implementation is possible. Custom assumptions, which are constructed by blending RVK's standard capital market assumptions, are used in some instances to best reflect any unique structural differences of TMRS' investment portfolio, as well as desired future exposures, from standard assumptions. A detailed description of RVK capital market assumptions and their construction can be found in the 2020 RVK Capital Market Assumptions White Paper, which is available upon request.

Using the A/L Study as a guide, Investment Staff and the Investment Consultant perform detailed analyses on current allocations and potential target allocations. Analyses regularly performed includes, 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. Once TMRS' Investment Staff and RVK complete the first round of analysis, a target allocation recommendation is presented to the Board of Trustees for approval. Finally, once the Board has approved a target allocation, TMRS Investment Staff begins to work on implementation of the approved target, with assistance from RVK as necessary.

The target allocation ultimately drives a vast majority of the System's investment performance (and risk), and as such, the Board, Investment Staff, and Investment Consultant spend considerable time and effort throughout this process. While the ultimate recommendation for the Strategic Target Allocation is often presented to the Board in a single meeting, it is important to note that the analysis leading up to the recommendation often takes place over the span of multiple months, sometimes covering the majority of any given calendar year.

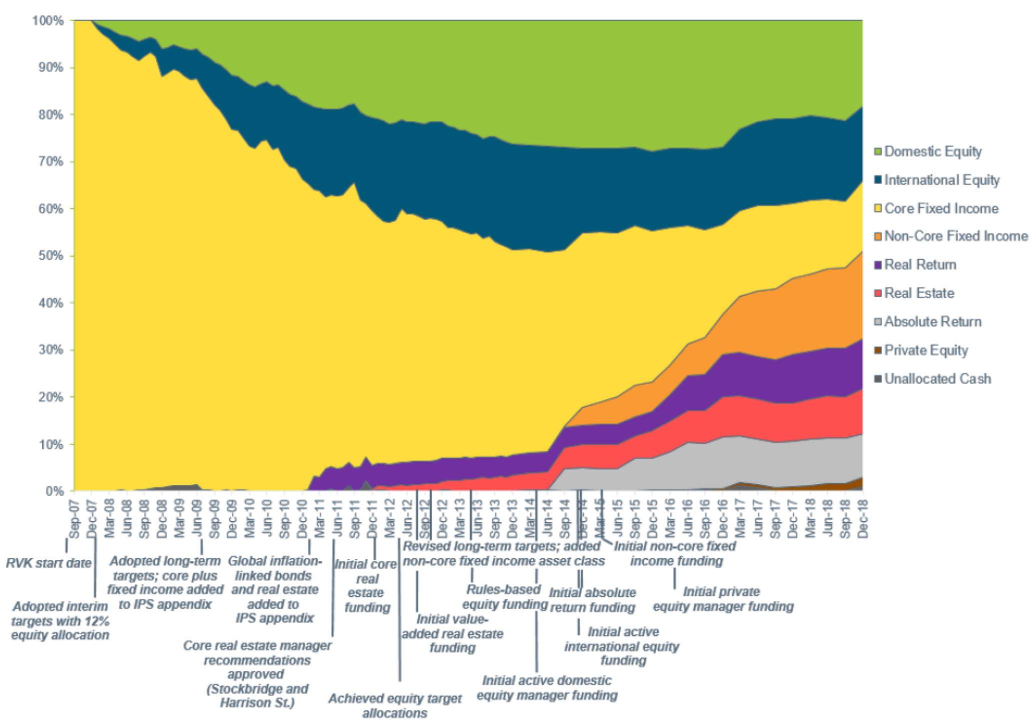
The asset class policy targets are defined in the Investment Policy Statement (see figure 2.3). Within each asset class, the structure is comprised of sub-target ranges for underlying strategy types. TMRS' Investment Staff, in conjunction with Investment Consultant(s), periodically analyzes the target mix of strategies within each asset class, with the goal of formulating an asset mix that maximizes the probability of achieving the respective asset class objectives over the long-term. These “structure studies” include, but are not limited to, a review of risk and return characteristics, holdings-based data, fees, and other characteristics relevant to the specific asset class.

The asset allocation targets as of December 31, 2019 were adopted in September 2019; the targets were changed at that date to decrease Global Equity with an offsetting increase to Private Equity. Sub-asset class targets are reviewed and revised more frequently, as a result of changes in capital market assumptions, market conditions, and Investment Staff’s view on potential enhancements to the portfolio. For further context relating to historic changes to the System’s asset allocation and its efforts to create a diversified portfolio, please see Figure 2.2 below.

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

Date	Description of Changes Made
August 2018	Consolidated separate allocations to US Equity and International Equity under one Global Equity allocation
September 2019	The Global Equity Allocation was reduced by 5% and Private Equity was increased by 5%.

Figure 2.2: Historical Diversification Efforts and Changes to Asset Allocation
Source: RVK Q4 2018 Quarterly Report



(B) The expected risk and expected rate of return, categorized by asset class.

Figure 2.3: Summary of Expected Risk and Return by Asset Class

Asset Class	Target Allocation* (%)	Arithmetic Return Assumption (%)	Compound Return Assumption (%)	Standard Deviation Assumption (%)
Global Equities	30.0	7.8	6.3	18.4
Core Fixed Income	10.0	3.8	3.6	6.0
Non-Core Fixed Income	20.0	6.6	6.0	11.3
Real Estate	10.0	6.5	5.6	13.9
Real Return	10.0	6.4	6.0	9.1
Absolute Return	10.0	6.0	5.6	9.0
Private Equity	10.0	10.3	8.3	21.3
Cash Equivalents	0.0	3.0	3.0	3.0

*As of December 31, 2019

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

The inclusion of alternative and illiquid assets for the TMRS 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 private equity 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:

- Ongoing due diligence is performed by both Investment Consultant(s) and Investment Staff to ensure the assets are performing within the range of reasonable expectations.
- The 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.
- The Specialty Consultants play a vital role in this process and provide additional operational due diligence on alternative and illiquid asset classes.

From a reporting standpoint, TMRS' custody bank – State Street – 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 private equity and real estate funds report final values, but some managers may take up to six months or longer to report final figures to State Street; however, the values stated on a monthly basis include new cash contributions or distributions as they occur. This process is standard within the industry and RVK believes it remains a prudent exercise.

(D) Future cash flow and liquidity needs.

Based on the results from the A/L study conducted in 2019, TMRS elected to continue to implement a well-diversified investment portfolio. The study acknowledges the System's need to take on risk to achieve a return that can support the current level of annual pension funding. However, the study also cautions against adopting an overly aggressive asset allocation, as high expected return and high expected risk approaches bring with them increased risk of large declines in the value of the Plan. The information presented in the 2019 study and summarized in this report does not take into account recent changes to assumptions, policies, and funding plans; as such, it should be noted that some information presented may be out of date and understates efforts made by the System to reach 100% funded. Summary comments from the 2019 Asset Liability study provided by GRS are shown below.

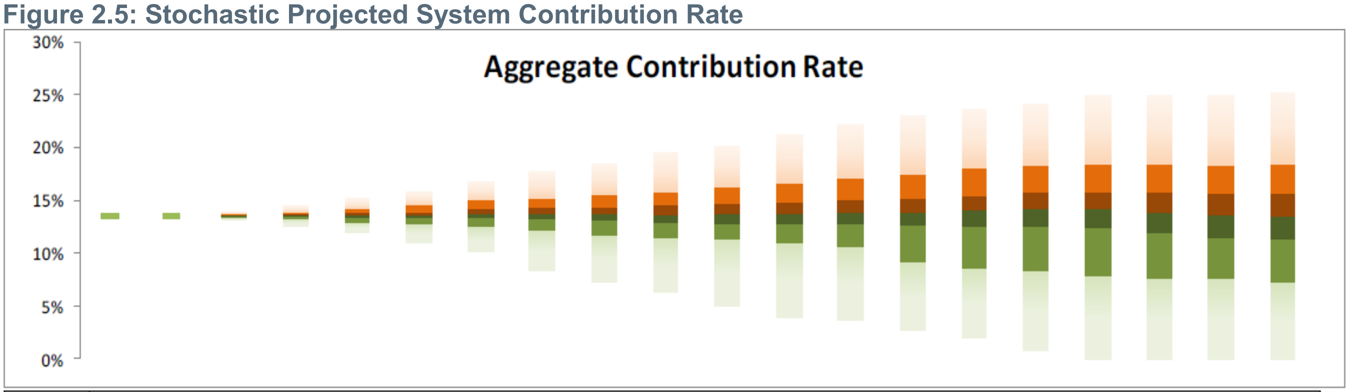
> *Based on the current forward looking capital market assumptions provided by RVK, the current portfolio is expected to produce a median (geometric) expected return of 6.30% over the next 10 years. Since this is less than the 6.75% investment return assumption, the stochastic modeling does not anticipate the UAAL will be fully amortized (reduced to zero) at the median outcome.*
>
> *The System's funded ratio is expected to increase from today's 87.0% funding level. However, under today's investment strategy with the expectations used in this study, the funded ratio is expected to trend towards 100%, but is not expected to achieve 100% funding.*
>
> *To explicitly address this would require tightening the amortization strategy, lowering the return assumption, generating alpha and/or modifying the portfolio in a way to increase the expected return.*
>
> *There are combinations of portfolios and funding policies that can create better metrics across the entire spectrum: higher projected funding ratios, lower projected contributions, and lower contribution volatility. However, there are other non-financial risks which should be considered which may limit the actual portfolios that can be implemented.*

Figure 2.4 below shows the status of the System at the time the A/L study was performed. While the Plan is not expected to achieve 100% funding over the next 30 years (based on the data presented in the 2019 study), significant improvements in financial health are possible under current assumptions. Figures 2.5, 2.6, and 2.7 demonstrate TMRS' projected contribution rate, net cash flows as a percentage of assets, and funded ratio over the 30 year period.

Figure 2.4: TMRS Funding Status at time of A/L Study

System Summary	December 31, 2018 (Valuation Date)
Actuarial Value of Assets	$29.4 billion
Actuarial Accrued Liability	$33.7 billion
Deficit	$4.3 billion
Actuarial Funded Ratio	87%

Figure 2.5: Stochastic Projected System Contribution Rate

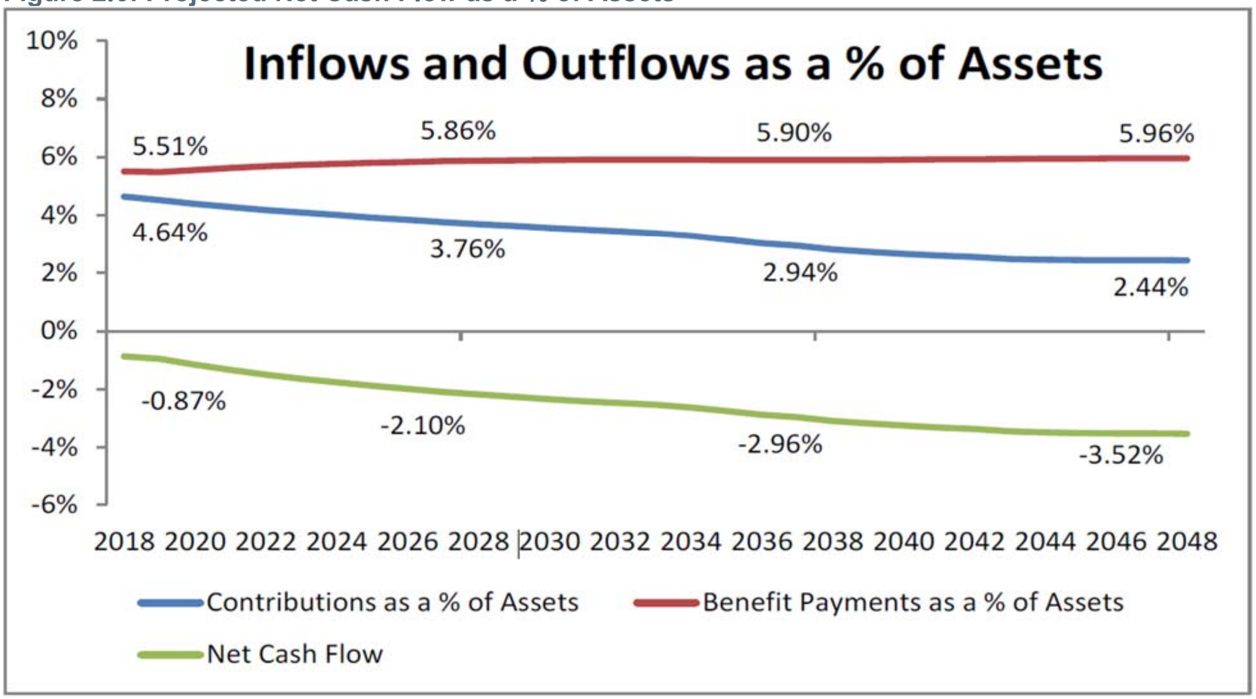


Outcome	Year																			
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Very Good	13.6%	13.6%	13.1%	12.6%	12.0%	11.1%	10.1%	8.3%	7.3%	6.3%	5.1%	4.0%	3.7%	2.7%	2.0%	0.8%	0.0%	0.0%	0.0%	0.0%
Good	13.6%	13.6%	13.4%	13.3%	13.0%	12.8%	12.6%	12.2%	11.8%	11.5%	11.3%	11.0%	10.6%	9.1%	8.6%	8.3%	7.9%	7.7%	7.7%	7.3%
Expected	13.6%	13.6%	13.6%	13.6%	13.7%	13.7%	13.8%	13.8%	13.8%	13.7%	13.8%	13.8%	13.9%	13.9%	14.1%	14.2%	14.2%	13.9%	13.6%	13.5%
Poor	13.6%	13.6%	13.8%	14.0%	14.2%	14.6%	15.0%	15.2%	15.6%	15.9%	16.3%	16.7%	17.1%	17.5%	18.0%	18.3%	18.5%	18.4%	18.3%	18.5%
Very Poor	13.6%	13.6%	14.0%	14.5%	15.2%	15.9%	16.8%	17.8%	18.5%	19.5%	20.1%	21.2%	22.1%	22.9%	23.6%	24.1%	24.8%	24.9%	24.9%	25.1%

Source: 2019 GRS Asset/Liability Study

As a cash balance plan, TMRS' contribution rate is less sensitive to inflation. Still, TMRS' COLA provisions are based on a percentage of actual inflation. As a result of inflation and an increasing number of beneficiaries, the contribution rate at the median outcome is expected to increase over the next several years, peaking at 14.2% in 2034. The contribution rate is then expected to taper as amortization of 2007 PUC base comes to an end.

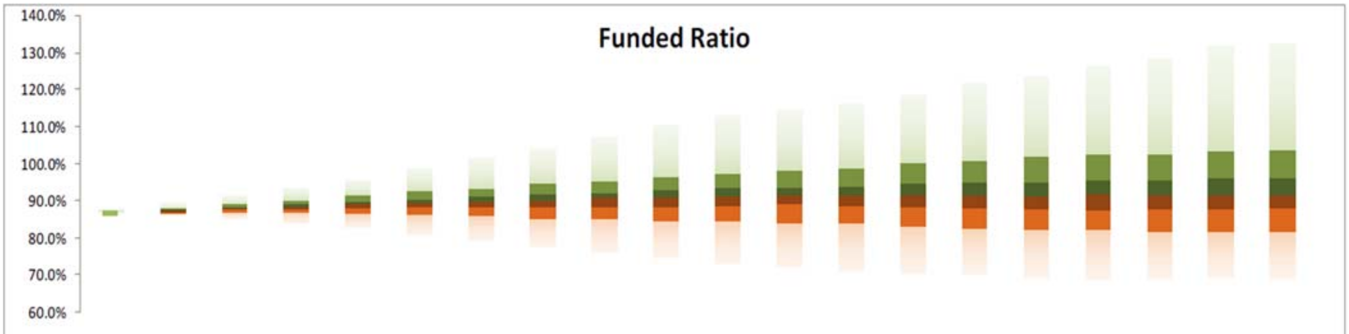
Figure 2.6: Projected Net Cash Flow as a % of Assets



Source: 2019 GRS Asset/Liability Study

As shown in Figure 2.6, the expected net cash outflow increases as a percentage of assets over the next 20 years. However, it is important to note that the overall expected payout ratio (benefit payments/projected market value of assets) is expected to remain at healthy levels during the period. This is an important and positive indication, because sustained increases in payout ratios can potentially impose liquidity constraints on the management of the portfolio, therefore limiting the opportunity to invest in less liquid asset classes regardless of the return or risk reducing diversification benefits they may offer. The payout ratio is expected to rise from 0.9% to 3.5% at the end of the projected period. These levels should not, in our opinion, materially inhibit investment opportunities for the Plan.

Figure 2.7: Stochastic Projected Funded Ratio



Outcome	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Very Good	87.0%	89.1%	91.1%	93.2%	95.6%	98.6%	101.3%	104.0%	107.1%	110.3%	112.9%	114.2%	116.0%	118.5%	121.7%	123.6%	126.4%	128.3%	131.9%	132.5%
Good	87.0%	88.1%	89.3%	90.3%	91.5%	92.6%	93.5%	94.7%	95.6%	96.5%	97.6%	98.3%	99.1%	100.2%	101.2%	102.0%	102.7%	102.7%	103.6%	103.9%
Expected	87.0%	87.4%	88.1%	88.6%	89.0%	89.4%	89.8%	90.3%	90.8%	91.0%	91.3%	91.5%	91.5%	91.5%	91.5%	91.4%	91.8%	91.5%	91.5%	91.5%
Poor	87.0%	86.8%	86.9%	86.9%	86.6%	86.3%	85.9%	85.3%	85.2%	84.7%	84.5%	83.9%	83.8%	83.2%	82.6%	82.3%	82.1%	81.8%	81.9%	81.7%
Very Poor	87.0%	86.0%	85.4%	84.0%	82.9%	80.9%	79.2%	77.7%	76.2%	74.8%	73.1%	71.9%	70.9%	70.1%	69.8%	69.2%	68.5%	68.8%	69.1%	68.9%

Source: 2019 GRS Asset/Liability Study

The median outcome at the end of the 20 year period shows an improvement in funded ratio from 87.0% to 91.9%. By 2047, the study projects the funded ratio to improve to 93.4%. This analysis assumed all other actuarial assumptions (such as contributions) are left unchanged over the same period.

As a result of the 2019 GRS Asset Liability study, the Board made notable changes which impact the future health and estimated funded status of the System. Specifically related to the asset allocation of the System, the Board approved Policy Targets which equates to an increased expected return of 6.4% vs. the previous 6.3%, both expressed in geometric terms. In addition, the Board decreased the amortization period for financing any new unfunded liabilities from 25 to 20 years. These two changes bring the expected funded ratio to 100% over the amortization period.

RVK RECOMMENDATIONS

- **Consider the inclusion of a broader set of potential portfolios in each asset/liability study.**
    - The recent asset/liability study has numerous portfolios modeled, but the overall dispersion of outcomes was relatively small; the Board may benefit from seeing more varied risk and return characteristics in the future.

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

DOCUMENTS REVIEWED:

- ✓ **Investment Management Agreements**
- ✓ **Consolidated Staff Fee Report**
- ✓ **Confirmation Emails of Current Fee Agreements**
- ✓ **Most Recent TCA Report**

Figure 3.1: Current Public Managers and Investment Management Fees as of December 31, 2019

Mandate	Peer Universe Median Fee (bps)*	TMRS Manager Percentile Rank (1= least costly)**
Champlain Mid-Cap Core (SA)	53	73
Acadian Emerging Markets (SA)	75	25
Wasatch International Small Cap Growth (SA)	86	41
Lazard International Equity Plus (SA)	56	36
William Blair Emerging Markets (SA)	99	2
State Street Russell RAFI Gl Ex US Index NL (CF)	41	1
State Street Russell RAFI U.S. Idx NL (CF)	28	1
UBS US Equity Min Vol Index (CF)	24	7
UBS World Ex US Min Volatility NL (CF)	25	14
NT Collective Russell 3000 Index NL (CF)	3	19
NT Daily Collective ACW Ex US IMI NL (CF)	7	3
Wellington International Horizons (SA)	61	15
Wellington International Small Cap Opp (SA)	77	48
Wellington US Small Cap Opp (SA)	68	54
Nuveen Real Asset Income	59	49
Cohen & Steers Real Asset Multi-Strat	65	18
Chickasaw Capital Management, LLC	62	79
Colchester Global Inflation Linked Bond (SA)	21	50
BlackRock, Inc. Core (SA)	19	1
PIMCO Core Plus Fixed Income (SA)	22	60
Alliance Bernstein Emerging Mkt Debt (SA)	25	63
BlueBay Emerging Mkt Debt (SA)	32	77
Columbia Management Investment Advisers, LLC	43	18
Neuberger Berman High Income Trust	48	25
Ellington RMBS/CMBS (SA)	22	94
Voya RMBS/CMBS (SA)	22	89
Cash Account	18	11
State Street GSTIF	14	1

**Represents the median fee for similar mandates, based on eVestment Alliance data and the TMRS mandate size.*

***Represents the percentile rank for the specific TMRS investment manager versus the applicable peer universe.*

As part of this review, RVK spent considerable time analyzing the fees paid to individual investment managers currently in the TMRS portfolio. This analysis included confirmation of fee schedules through interactions with each investment manager, careful review of relevant terms found in investment management agreements ("IMA"), comparison to similar mandates, as well as a comprehensive peer group fee analysis. Each investment manager was ranked against an appropriate eVestment peer group based on mandate type and overall asset size. As shown in Figure 3.1, the overwhelming majority of effective fees paid by TMRS to investment managers fall well below the industry median for each respective mandate. Figure 3.2 below summarizes the overall distribution of relative fees:

Figure 3.2:

Fee Percentile Range	Number of Investment Managers in Range
1st to 24th	**14**
25th to 49th	**6**
50th to 74th	**4**
75th to 100th	**4**

As clearly detailed above, TMRS has been successful in negotiating attractive fees with its public investment managers. The process for investment manager selection, more thoroughly explained in Section 5 of this report, has likely created significant efficiencies in this area.

PRIVATE EQUITY

Management Fee Range	Incentive/Performance Fee Range	Number of Mandates in Range
0 – 1.00%	0% - 20%	**7**
1.01% - 1.50%	0% - 20%	**7**
1.51% - 2.00%	0% - 20%	**25**
2.01% - 2.50%	0% - 20%	**3**

PRIVATE CREDIT

Management Fee Range	Incentive/Performance Fee Range	Number of Mandates in Range
0 – 1.00%	0% - 20%	**14**
1.01% - 1.50%	0% - 20%	**4**

REAL ESTATE

Management Fee Range	Incentive/Performance Fee Range	Number of Mandates in Range
0 – 1.00%	0% - 20%	**19**
1.01% - 1.50%	0% - 20%	**21**

HEDGE FUNDS/ABSOLUTE RETURN

Management Fee Range	Incentive/Performance Fee Range	Number of Mandates in Range
0 – 1.00%	0% - 20%	**3**
0 – 1.00%	20% - 30%	**1**
1.01% - 1.50%	0% - 20%	**16**
1.01% - 1.50%	20% - 30%	**1**
1.01% - 1.50%	30% - 40%	**1**
1.51% - 2.00%	0% - 20%	**7**
3.00% - 4.00%	30% - 40%	**1**

REAL RETURN

Management Fee Range	Incentive/Performance Fee Range	Number of Mandates in Range
0 – 1.00%	0% - 20%	**5**
1.01% - 1.50%	0% - 20%	**12**
1.51% - 2.00%	0% - 20%	**7**

The System's use of alternatives and its ability to negotiate attractive fees is also evident by the data presented. While the absolute level of fees still remains much higher than their public investment manager counterparts, many of the fees arrangements for alternatives managers have been amended to reflect current market pricing and more performance-based compensation for the managers. In addition, the TMRS's use of specialty consultants has likely led to better pricing power in limited circumstances.

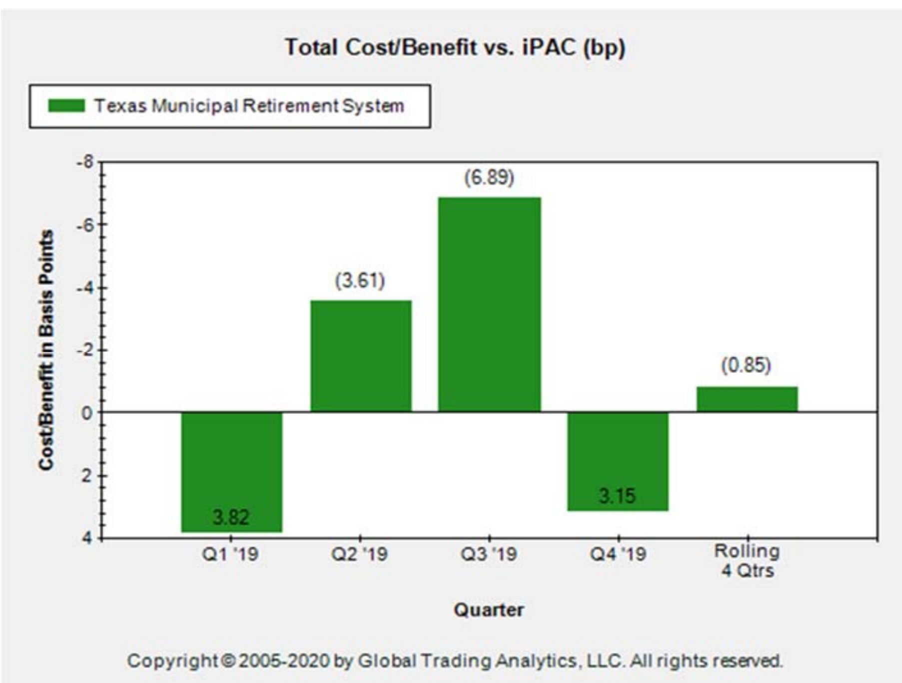
During RVK's review of fees paid to investment managers, the TMRS Investment Staff provided extensive supporting documentation for review. This documentation is part of a larger annual process in place, collecting, aggregating, and reviewing manager fees. This process is somewhat unique and we believe a positive differentiator compared to many peers.

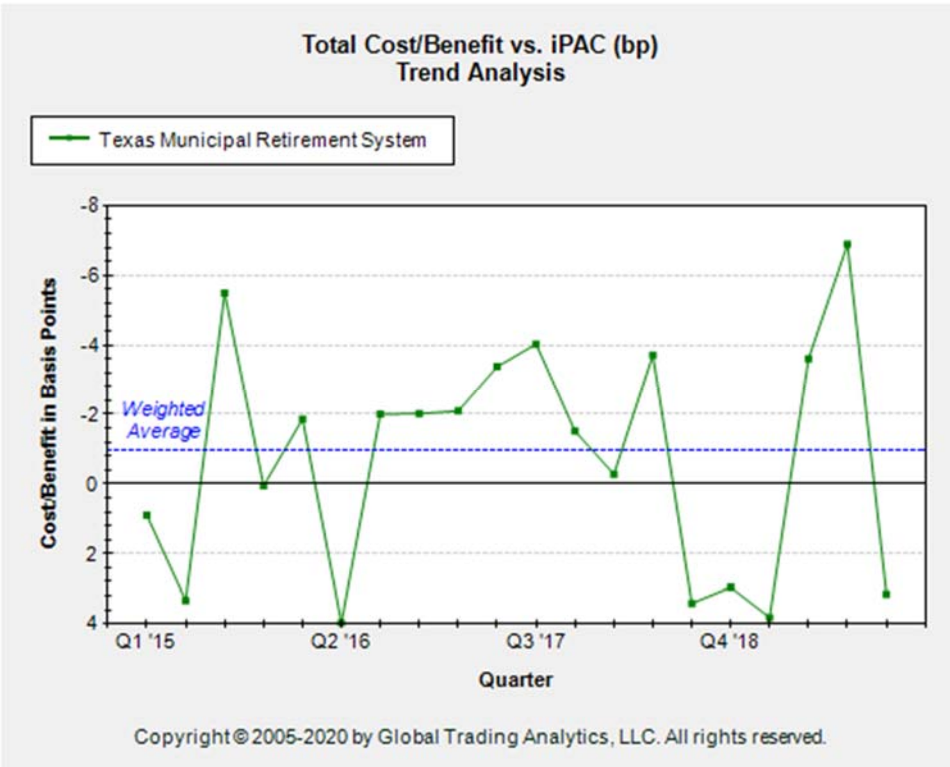
Review of Commissions – Transaction Cost Analysis

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. Discussion of findings with the TCA provider and managers, can be an important value add to this monitoring exercise. RVK has reviewed the most recent TCA report provided by Global Trading Analytics. In summary, it appears the commissions and trading costs paid by TMRS over the past year are lower than most peers and at the lower end of the overall range.

<u>Overall Results (Q1 '19 through Q4 '19)</u>

• *Principal traded during the four quarters analyzed:*	*$1.6 billion*
• *Trades executed during the four quarters analyzed:*	*9,913*
• *Net market impact cost (vs. iPAC) in basis points:*	*(2.75)*
• *Net commission benefit (vs. Commission Universe) in basis points:*	*1.89*
• *Total cost, net market impact plus net commission, in basis points:*	*(0.85)*
• *Total cost, net market impact plus net commission, in dollars:*	*($134,999)*





Source: 2019 Q4 GTA Report

Overall Fees

TMRS, like many of its public peers, periodically engages a third-party to evaluate the System's total fee structure which is presented and discussed with the Board. The peer rankings and results of this benchmarking report are largely a function of asset allocation, use of alternatives and active management, and manager fee negotiations. Based on the 2019 version of this report, TMRS has successfully managed overall investment costs when considering the System's asset allocation mix:

	You	Peer Median	Excess Cost/ (Savings) $000s	bps
1. Lower cost implementation style				
• Use of active management (vs. lower cost passive)			(5,063)	(1.8)
• More external management (vs. lower cost internal)			3,100	1.1
• More partnerships for private assets (vs. funds)			6,491	2.3
• Less fund of funds			(7,806)	(2.8)
• Less co-investment as a percentage of LP/Co			182	0.1
• Less overlays			(803)	(0.3)
			(3,899)	(1.4)
2. Paying less than peers for similar services				
• External investment management costs				
Private Credit - Lp - Base fees	75.8 bp	111.0 bp	(11,101)	(4.0)
Hedge Funds - Direct - Base fees	184.5 bp	143.6 bp	9,279	3.3
Hedge Funds - Direct - Performance fees	21.1 bp	41.7 bp	(4,660)	(1.7)
U.S. Stock - Active	52.0 bp	36.5 bp	3,163	1.1
All other differences			(2,622)	(0.9)
• Oversight, custodial and other costs			365	0.1
			(5,575)	(2.0)
Total savings			(9,474)	(3.4)

Source: 2019 CEM Benchmark Report

RVK believes TMRS has taken a thoughtful approach within its implementation, leading to lower than market cost for the total portfolio and a majority of the underlying asset classes. In addition, TMRS continues to further its efforts with fee transparency and management, through a Fee Policy section in its pending Strategic Plan.

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

May 2020

DOCUMENTS REVIEWED:

- ✓ **Investment Policy Statement**
- ✓ **Investment Committee Charter**
- ✓ **Investment Staff and Investment Consultant Presentations to the IC and Board**
- ✓ **Internal Investment Procedures Manual**

Summary Comments

Our review revealed an unusually comprehensive and detailed documentation of the TMRS' governance structure, delineation of roles, responsibilities and duties, policy level investment guidance, policy level risk, due diligence and investment monitoring obligations. In addition, the governance framework in place explicitly addresses compliance, code of conduct, and proxy monitoring. The TMRS governance and decision-making framework laid out in these three foundational documents (IPS, Investment Committee Charter, and Investment Procedures Manual) cover, in a level of detail that in our experience is beyond the norm encountered in public funds nationally, not merely the policies adopted by the Board, but also the established protocols by which these policies must be implemented. In both their comprehensiveness and depth, we believe they are a strong illustration of best practices.

As the Investment Policy runs to 50 pages and the Investment Procedures Manual to nearly 120 pages, our detailed comprehensive discussion of the governance and investment decision-making framework they establish could easily exceed the length of these documents themselves. In light of this, we have chosen to highlight here some key aspects that illustrate the summary findings noted above and support our view that – when considered in total – they represent best practices.

I. Both Policy and Procedure are Addressed

The framework in place at TMRS is unusual among public pension plans in that it sets forth not only all the critical elements of investment policy, but also ensures adequate controls to safeguard the System assets by providing clear and detailed implementation guidance in the Investment Procedures Manual. There are other public pension plans nationally that have adopted this approach – which RVK strongly supports – but in our experience it is a minority.

II. Core Investment Beliefs Provide Overarching Guidance To All Parties

The TMRS policy and investment decision-making framework also goes beyond the norm in that it sets forth in appropriately general terms some core beliefs that should underlie investment decisions. These core beliefs are both consistent with the Prudent Investor Rule, even though the Board and Staff are only held to the Prudent Person Rule. They are also in agreement with our research on risk and reward trade-offs in the capital markets throughout history. It is important to note that TMRS is currently working to further strengthen these beliefs, which will likely provide additional guidance for the management of

System assets. The new set of investment beliefs will likely be more comprehensive in nature, based on a rigorous process set forth in 2019 involving multiple presentations to the Board, comprehensive interviews with Board members and senior Investment Staff, and creation of numerous draft documents for review. As documented in Board materials, the goal is for the Board to agree upon a collective set of investment beliefs that will set the foundation for the Board's investment program. We note there is currently no mention of ESG-related considerations or internal management and believe both items could be included in the future.

III. Roles and Responsibilities and Delegated Authority are Clearly Defined

With respect to key staff executives, the Board's investment policy is quite clear as to what authority is delegated and the chain of delegation. There is no clear best policy with respect to the roles of the Executive Director and the Chief Investment Officer with regard to investment decisions, but it is unquestionably best practice to make that chain of delegation clear, which the TMRS Board's Investment Policy establishes.

The Board's delegation of authority and responsibility goes well beyond the Executive Director and Chief Investment Officer and specifically deals with all parties from investment staff to the General Consultant, to specialty advisors, the custody bank and so on. The only exception is that the role and responsibility of the System's actuary is not called out specifically in this section as it often is in other delegation policies we have reviewed.

Notably, the IPS also allows for additional action by the Executive Director during times of crisis or uncertainty relating to the safety of System assets. While this may only be a portion of the delegation model, it is a key differentiator between many delegation models we have reviewed. The ability for the Staff to act quickly and prudently in times of stress to maintain liquidity and protect assets is a wise decision.

IV. Asset Allocation is Addressed and Granted Primacy

The TMRS documents we reviewed clearly indicated the primacy of long-term asset allocation in determining both long-term returns and the risk associated with achieving them. This is entirely consistent with RVK research as well as a large body of academic research on this issue. Subordination of asset allocation to manager selection or short-term tactical investment strategies would be in sharp conflict with best practice in our opinion.

V. Risk, Code of Conduct and Compliance and Proxy Policies are Specifically Addressed

The TMRS governance documents specifically address all of these critical areas. In our experience and long observation of public pension fund history, many critical problems that have emerged at public pension plans over the past several decades have found their source in conduct by Board members, internal staff and external parties that would be in clear conflict with the principles set forth in these sections of the TMRS policies.

VI. TMRS Policy Addresses Portfolio and Performance Monitoring as well as Investment Manager Oversight in Detailed Fashion

A critical element of a Board's fiduciary duty in our opinion as an investment consultant is a deep and persistent program for monitoring the behavior of the fund and its investment strategy at all levels. So we look for Board policy and direction to the investment staff, the General Consultant and all specialty advisors that accomplishes this goal. In all respects, the TMRS Board's documented investment policies and procedures fulfill this objective. The obligations placed particularly on the General Consultant for independent performance reporting and analysis represent best practice in institutional investing.

The Board of Trustees, as of February 2020, shown below in Figure 4.1, is appointed for six-year terms by the Governor with the consent of the Senate. The composition of the Board is similar to many other public pensions in the state and throughout the US. The Board is also supported by a strong internal Investment Staff, whose biographies are also included below.

Figure 4.1: Current List of Trustees and Terms

Member	Position	Term Expires	Title
Anali Alanis	**Assistant City Manager**	**February 1, 2021**	
Jesus A. Garza	**City Manager**	**February 1, 2023**	
Juan Diego Huizar	**City Manager**	**February 1, 2023**	
David Landis	**City Manager**	**February 1, 2021**	**Vice Chair**
Julie Oakley	**City Manager**	**February 1, 2019**	
Bill Philibert	**Director of Human Resources and Risk Management**	**February 1, 2019**	**Chair**

Investment Staff Biographies

T.J. Carlson, CAIA, CTP

TJ joined TMRS in 2013 and since that time has built the investment team from 6 members to 26. During this time he also started the funds first dedicated Compliance and Operations Departments for TMRS. He built a 4 person Risk and Analytics team and oversaw the construction of an internal data warehouse system that helped lead to a 2018 Institutional Investor award for Technology User of the Year.

2018 also marked the maturation of the pension fund's portfolio as TJ and his team transitioned TMRS from a primarily indexed 60/40 portfolio, into a fully diversified modern institutional portfolio which, along with other team accomplishments, led to being named Institutional Investors 2018 CIO of the Year.

TJ also previously served as the Chief Investment Officer for the West Virginia Investment Management Board, Marshfield Clinic and the Kentucky Retirement System. He was a primary consultant and managed consulting assignments for a select number of key retainer and project clients at EnnisKnupp.

Prior to starting his business career, TJ was an Infantry Sergeant/Squad Leader in the United States Marine Corps and Reserves. He received his M.B.A. from Drake University and his B.A. in Mass Communications from Grand View College. He is also a Chartered Alternative Investment Analyst and Certified Treasury Professional.

Dimitry Shishkoff

Dimitry Shishkoff is the Director of Risk Management at Texas Municipal Retirement System. Prior to joining TMRS, Mr. Shishkoff held risk management and strategy development positions with investment management firms, and senior management positions in insurance. Mr. Shishkoff began his career as an actuarial analyst with what is now Towers Watson, after which he joined Capital Markets Research at JP Morgan Investment Management. At JP Morgan he established and ran the Strategic Investment Advisory Group. He also served as Head of Risk Management with GIA Partners, a global high yield asset manager. Mr. Shishkoff has a Bachelor degree in mathematics from Boston University and did graduate work in mathematics at Tufts University.

Jason Weiner, CFA

Mr. Weiner joined Texas Municipal Retirement System in 2016 as Director of Fixed Income from the 440 Investment Group/Mariner Holdings where he was a Managing Partner and Senior Portfolio Manager. Prior to this, Jason was a Managing Director and Co-Head of Taxable Fixed Income at BMO Global Asset Management. He led an eleven person team that successfully managed numerous fixed income mandates for institutional and retail clients across core and non-core short, intermediate and long duration portfolios. His team was awarded the Lipper Award for Best Fixed Income Manager-Small Fund Group in 2012. Jason began his career in 1993 at M&I Investment Management Corp., now part of BMO Financial Group. He holds a BS degree in Finance and International Business from Marquette University. He is a CFA charter holder and is a member both the CFA Institute and the CFA Society of Austin, TX.

Marc L. Leavitt, CAIA
Marc has been a member of the Texas Municipal Retirement System since December 2014. He is responsible for all aspects of the absolute return portfolio, including the design, execution, and management of the TMRS Direct Absolute Return Portfolio and Strategies. Prior to TMRS, he was Co-Director and Portfolio Manager at Texas Permanent School Fund ($30 B Endowment) in the Global Risk Control Strategies Group. Prior to TPSF he was an Investment Manager at Blueprint Capital, a family office located in Austin, TX. Marc was also a member of the Investment Team at Austin Capital Management, a multi-billion dollar hedge fund of fund, and a Senior Analyst (Alternative Investments) at NEPC in Cambridge, MA. He graduated from Brigham Young University (B.S.), received his MBA (Finance) at the University of Rochester's Simon School and is a CAIA charter holder.

Tom Masthay, CFA, CAIA, FRM

Tom Masthay is the Director of Private Equity for Texas Municipal Retirement System, serving in this role since March 2020 having spent the previous 5 years as TMRS' Director of Real Assets. Tom's career in private markets asset allocation dates back to 2009 with stints at NextEra Energy and Kentucky Retirement Systems having been involved in all of private equity, real estate, infrastructure, natural resources, hedge funds, other esoteric private markets opportunities, diversified public markets strategies and internal management of inflation linked bonds. Prior to his time in retirement funds management, Tom worked as a bank auditor during the Global Financial Crisis. Tom is a Chartered Financial Analyst, Chartered Alternative Investment Analyst, and a Financial Risk Manager ("FRM"). Tom earned an MBA and BBA from the University of Kentucky.

Eddie Schultz, CFA

Eddie Schultz is the Director of Real Assets (Real Estate & Real Return) for Texas Municipal Retirement System. This entails coverage of real estate, infrastructure, natural resources and any hard asset backed strategy. Eddie works to build an uncorrelated, defensive portfolio capable of generating income to the total plan through efficient partnerships. He has been with TMRS since the early years of diversification from what was previously an entirely fixed income portfolio. Prior to his time at TMRS, Eddie worked in distressed real assets in the aftermath of the GFC.

He has a BS in Economics and Engineering from Vanderbilt University and JD from the University of Miami School of Law. He is a member of the NY Bar and a CFA charter holder.

Kristin Qualls

Kristin Qualls's professional experience includes both the private and public sectors within the investment industry for the past 28+ years. Ms. Qualls started at Texas Municipal Retirement System in July 2003 as the Operations Specialist and was promoted several times throughout her career before being named Director of Public Equity in March 2012. Her main focus is overseeing TMRS's global equity portfolio which includes both passive and active management and has a combined market value of $11.5 billion as of December 31, 2019. As Director of Public Equity, Ms. Qualls is responsible for portfolio implementation and construction decisions while adhering to the overall strategic allocation, in addition to, all aspects of due diligence for the total equity portfolio. This includes continual oversight of all investment managers and strategies, which involves review of the investment firm, portfolio management teams, investment strategy philosophy and process, compliance, operations, risk management, and performance measurement.

Ms. Qualls's experience prior to TMRS specifically includes private trust management/operations and financial consulting as a licensed Registered Investment Advisor while working in the securities/brokerage industry in the private sector. Ms. Qualls's professional development includes two management development programs at the Governor's Center for Management Development at the LBJ School of Public Affairs at the University of Texas at Austin. Furthermore, Ms. Qualls also earned several certificates at the International Foundation of Employee Benefit Plans in Public Plan Policy as well as an Advanced Investments Management Program and International Investing and Emerging Markets Program at the Wharton School at the University of Pennsylvania. While working in the private sector as a Registered Investment Advisor, Ms. Qualls obtained her NASD/FINRA Series 7, 63, 65 licenses and the Group I Life Insurance license. Ms. Qualls earned her Bachelor's degree at the University of Texas at Austin, in addition to, a Business Foundations Certificate Program.

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

DOCUMENTS REVIEWED:

- ✓ **Investment Policy Statement**
- ✓ **Investment Implementation Policy**
- ✓ **Due Diligence Questionnaires**
- ✓ **Due Diligence Reports from Investment Staff and Investment Consultant**
- ✓ **Site Visit Meeting Notes**
- ✓ **Investment Staff and Investment Consultant Presentations to the IC and Board**
- ✓ **Investment Consultant Monthly Performance Summary and Quarterly Performance Report**
- ✓ **Investment Manager Watch List 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 staff, the investment consultant, or both. Decision makers need to evaluate the credibility of every firm, team, process, and performance track record in order 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 an asset owner may 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, time-line, 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.

“Premier List” or “Bench” Process

This approach is largely dependent on the asset owner and is typically used with Staff-driven investment models. 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 asset owner circumstances (vehicle preference, minimum investment size, plan type, etc.) the investment consultant presents a sub-set of this “buy” list for the asset owner 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 asset owner. The asset owner 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 in order 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.

RFP search process 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.

TMRS - INVESTMENT MANAGER SELECTION AND MONITORING

The TMRS investment manager selection and monitoring process is well documented in both the IPS and Procedures Manual, both of which have been discussed in prior sections of this report. Further, the selection and monitoring process has been consistently applied across asset classes, although it is important to note that the processes are slightly different for public and private markets, as subsequently detailed. The Investment Staff is primarily responsible for the process, with both general and specialized Investment Consultants providing ongoing support.

RVK has found that the investment manager selection and monitoring process is well constructed and more thorough than many of those currently in place with other asset owners of similar size. The combination of a formal review and internal approval process via the Investment Committee with the comprehensive quantitative and qualitative due diligence allows TMRS to be a leader in this field. The recent changes to governance also support a successful process, with many investment decisions delegated to the Staff with Executive Director approval. Certain investments depending on size and style must still be approved by the Board, which we find to be a reasonable approach:

> ***A.*** *At the time of approval by the Investment Committee, an investment made in Public Markets may not exceed 3.0% of the market value of the System's assets as reported in the most recent TMRS Comprehensive Annual Financial Report (CAFR) for Actively Managed Strategies.*
>
> *Capitalization Weighted Passively Managed Strategies will be implemented consistent with the applicable asset class limits in Section XI, Asset Allocation & Rebalancing Policy and Section XX, General Investment Management Guidelines.*
>
> *The ED will provide the Board with appropriate due diligence information, as provided by the CIO and the Board's applicable investment Consultants, necessary for the Board to be fully informed of the nature of the investments. Notification of all Public Market investments*

> *approved by the ED under this Section since the last Board meeting will be provided to the Board at its next regularly scheduled Board meeting.*
>
> ***B.*** *At the time of approval by the Investment Committee, an investment made in Private Markets may not exceed 0.75% of the market value of the System's assets as reported in the most recent TMRS CAFR. Co-investments will be subject to additional limitations specified in Section XX, General Investment Management Guidelines.*
>
> *The ED will provide the Board with appropriate due diligence information, as provided by the CIO and the Board's applicable Investment Consultants, necessary for the Board to be fully informed of the nature of the investment. The ED will prepare a report of investments approved by the ED since the last Board meeting which will be included in the agenda for the Board to receive and file at the next regularly scheduled Board meeting.*

The TMRS Investment Staff is well equipped to handle the manager selection and monitoring process, with dedicated experience to each asset class, as well as back and middle office operational support. The use of technology during the due diligence process is unique from many other asset owners and likely provides TMRS with insights that would otherwise be overlooked, allowing for a more complete picture of the managers and strategies being reviewed.

The TMRS IPS and Procedures Manual clearly define the System's expectations for performance monitoring, relative return measures, manager retention, and watch list criteria. In each section, there is a healthy balance between objective measures and those which require judgement; manager selection and termination decisions are typically not clear and require various inputs and professional experience. The current policy language allows for each, while not forcing a decision purely based on quantitative data. Notably, the IPS also is clear in its expectations for managers during a selection process, information that is not always found in peer policies:

> *To better ensure that Managers will successfully manage to the TMRS objectives for their specific mandates, the Board supports disciplined processes for Manager selection, monitoring, watchlist and termination, which are documented in internal investment staff procedures. In addition, the process for selecting Managers is intended to protect against unethical behavior including bribery and corruption and contact between TMRS and Managers during the search process, related to the pending selection, and intended to influence the search outcome. Contact will be limited to that specified in the search process documentation. Direct inquiries by Managers to individual Board members regarding the TMRS investment program will be referred to the TMRS investment staff.*

As part of RVK's independent review, we were also in close contact with TMRS' specialty private markets consultants, Albourne America, LLC., and StepStone Group. As of December 31, 2019, Albourne advised TMRS on its absolute return and real return portfolios, with market values of $2.7B and $3.5B, respectively. During the same period, StepStone advised to the private equity and real estate portfolio, with market values of $900M and $2.7B, respectively. While not directly part of the scope of this review, RVK has found both parties to be extremely diligent and thoughtful in their approach to manager monitoring and selection and view both as top-tier providers in alternative investment consulting. In addition, each party – Investment Staff, Albourne, and StepStone – provided RVK with a detailed response of the selection and monitoring process for public and private markets where applicable, most of which has been included below for further context.

TMRS Investment Staff:

Background

The following memorandum summarizes TMRS' Investment Manager Selection & Monitoring Processes. The processes are guided by frameworks established in the TMRS Investment Policy Statement ("IPS") and the Investment Department Internal Procedures Manual ("Procedures Manual"). The remainder of this memorandum addresses Investment Manager Selection & Portfolio Monitoring in separate sections below.

Investment Manager Selection

The Investment Manager Selection process is formalized in the TMRS IPS which outlines what types of investments may be pursued and the methodologies for gaining approval for those investment mandates. Different approval processes may apply depending on the asset class, style, and size of a given investment recommendation. However, common to all selection processes is that the TMRS Investment Committee, made up of a membership of the Chief Investment Officer and other senior investment staff from each Asset Class and Risk Management departments, formally vets and votes on all recommendations. An Investment Committee approval requires a CIO specific affirmative vote along with an overall team majority affirmative vote to pass. In many instances, the investment manager approval process is delegated to the Investment Committee, however, in other instances, typically because a mandate is a relatively large percentage of plan assets, the approval process will require formal Board approval. Board approval processes typically entail Investment Staff preparing specific materials to present to the Board. Board approvals require a majority vote of Board Members as defined in TMRS Bylaws in order to pass. Standard Investment Committee recommendations will include both a recommendation memorandum from Staff supported by a full due diligence package maintained internally and a recommendation memo from one of TMRS's investment consultants, supported by full due diligence memorandum(s) from that same consultant. With all necessary approvals and documentation in place from the Investment Committee and Board of Trustees (if necessary), along with independent legal work on a given investment being completed and satisfactory to TMRS, the Executive Director serves as the final signatory on any investment.

While the formal processes surrounding investment manager selection are governed by the IPS, the analytical content that goes into making investment manager recommendations is guided by the Procedures Manual section on Due Diligence. The following excerpt from the introduction to the Due Diligence procedure captures the intentions and foundation of TMRS' Investment Manager Selection approach:

TMRS has established a principles based framework for investment due diligence, a process designed to be flexible in form but rigid in accountability. This process is designed to continually adapt and get more robust over time, to continuously improve TMRS investment outcomes.

The due diligence process acknowledges that while different asset classes, investment vehicle structures, managers, etc., require emphasis on different elements of information discovery and analysis, there are commonalities upon which standardized analysis and documentation may be built around and communicated in a consistent format to decision makers. Process, rather than outcomes, must be the focus of due diligence.

The full Due Diligence Procedure is provided as Appendix B to this document. However, as noted in the above passage, different investment strategies will require differences in both emphasis and approaches, within the specific information discovery phase for a particular investment underwriting exercise. The most common line of demarcation upon which differences in specific processes arise are in the due diligence processes of public market assets versus those employed for private market assets. Each is separately addressed below:

Public Markets

Public markets, for purposes of this discussion, refer to long only mandates in tradable securities either maintained at TMRS' custodian bank or in commingled or closely related vehicles with limited restrictions on liquidity. Public market strategies typically have a relatively transparent universe of closely comparable managers with which capital may be allocated to on a regular basis. In these processes, TMRS typically uses either a Request for Proposal ("RFP") or a Request for Information ("RFI") process, both of which are commonly used by large public pension plans because RFP/RFIs can be effective mechanisms for assessing relatively homogenous proposals for known mandates.

The principles and key diligence inputs outlined in the Due Diligence Procedures are utilized to winnow an initial broad universe of managers to an increasingly narrow one until a recommendation can be made. Both quantitative and qualitative inputs are considered in analysis, the balance of which will be unique to the investment strategy being assessed depending on the depth of the relevant investment manager universe, length of performance data series associated with the strategy, amount of dependence on automated systems vs. human personnel, among other considerations. Processes typically average from 2-9 months to complete and culminate in a recommendation to the TMRS Investment Committee inclusive of a scoring matrix assessing closely comparable managers and strategies. Public markets search processes have been employed in Public Equity, Fixed Income, and to a lesser extent, Real Return asset classes historically.

Private Markets

Private Markets, for purposes of this discussion, refer to strategies that are typically structured as partnerships, LLCs or closely related structures set up to pursue non-tradable/private investments or employ strategies in the public markets that expand beyond the traditional long-only universe. Private markets are generally far less homogeneous in strategy than public markets and also discontinuous in terms of scale and timing of capital deployment. Accordingly, TMRS' private market processes emphasize exposing TMRS staff to as many investment opportunities as possible by continually meeting with managers and building relationships within the industry. These efforts serve as first screens in analysis and enable an understanding of capital placement opportunity—the investment managers and their vehicles which TMRS is seeking to understand through its diligence process may raise capital only periodically or otherwise restrict who may, and when they may, invest in a given product.

Diligence processes progress with increasing interactions with selectively fewer managers of interest—greater quantitative and qualitative work on managers is performed through these later phases seeking to identify attractive teams, strategies, track records, and product offerings with which to place TMRS capital. Due diligence processes for private markets vehicles, similar to public markets, average from 2-9 months to complete, but, given the sourcing mechanism and commonly discontinuous fundraise cycles, it frequently takes much longer for a process to be completed if measured as the length of time between a first meeting and investment recommendation rather than the length of formal diligence discovery phases. Relationships can be in place for years prior to an investment being made. Private Markets due diligence also culminate in a recommendation to the TMRS Investment Committee inclusive of a scoring matrix which assesses closely comparable managers and strategies. Private markets search processes have been employed in Non-Core Fixed Income, Private Equity, Absolute Return, Real Return, and Real Estate asset classes historically.

Manager Monitoring

The foundational underpinning of TMRS' approach to manager monitoring is guided by IPS Section XVII: Investment Manager Retention ("IMR") Policy—this IPS excerpt is provided as Appendix A. Within this subsection of the IPS, the Comprehensive Annual Review ("CAR") process is referenced. The CAR is the common framework for performing manager monitoring across all TMRS asset classes; the format of the CAR is established in the Procedures Manual. Included in the CAR are the following components:

- *Procedural Review by Asset Class Director – a review of the procedures manual to ensure compliance and recommend updates as necessary.*

- *Manager Compliance Summary – A review of manager certifications of compliance with contracts.*
- *Year-end Fees Paid Summary – A summary of fees paid to managers.*
- *Annual Board Presentation – Presentation prepared for and provided to the Board of Trustees to keep them up to date on the asset class being reviewed.*
- *Manager Scorecards – An overall summary assessment of each manager. Components of scorecards include separate assessments of organization, people, philosophy/strategy/process, portfolio, performance, compliance, guideline changes, risk management, operations, client service, and other, in addition to an overall grade.*
- *Annual Compliance Certificates – Compilation of all compliance certificates summarized in the "Manager Compliance Summary".*
- *Regulatory Review ("ADV Reviews") – Review of regulatory registration for conflicts of interest and other regulatory matters. The Securities and Exchange Commission is the regulatory body for the majority of TMRS Investment Managers and annually complete Form ADVs which are publicly disclosed and reviewed by TMRS Investment Staff.*
- *Public Market Mandate Operational Reviews ("SSAE 16 Reviews") – Review of operations for TMRS managers managing public markets. SSAE 16 Audits are optional audits certain asset managers have employed to review their own operations in the past. Because the audits are not a standardized practice across the industry, in instances where these audits are not available TMRS Investment Staff seeks out other approaches to review operational capacities on an annual basis for its public market investment managers.*
- *Audited Financial Statement Reviews – Compilation and review of financial statement audit opinions.*
- *Quarterly Monitoring Review Forms – Quarterly monitoring packages or summary of quarterly monitoring efforts of TMRS investment managers. Quarterly monitoring entails review of quarterly reporting packages among other key documents and review processes employed by asset class teams. Each of TMRS' asset classes employ a customized quarterly monitoring process relevant to the specific managers and vehicles that asset class invests in.*
- *Existing Manager Meetings Summary – A schedule of meetings held with TMRS' existing investment managers over the trailing twelve months.*

- *Review of Consultant(s) – An assessment of TMRS' investment consultants inclusive of regulatory review.*

Albourne:

Albourne's due diligence is based on our independent rating scheme. Factors are evaluated by the relevant IDD or ODD Analyst, including manager's personnel and organization, investment philosophy, investment style(s) and products, research capabilities, financial condition, assets under management, type of clients, client service, back office capabilities, management fees and carried interest. The manager due diligence process can be summarized as follows:

- *Scan universe for new opportunities daily via news, announcements, and word of mouth*
- *Ascertain trends and best practices*
- *Enter opportunities into Albourne database*
- *Assign responsibilities*
- *Screen strategy*
- *Review Albourne legacy information*
- *Initiate contact with managers*
- *Review materials*
- *Screen against peers*
- *Have initial call or meeting & log notes*
- *Begin report draft*
- *Examine key issues & strengths*
- *Conduct onsite meeting*
- *Hold additional calls to answer questions*
- *Complete report*
- *Present to Committee(s)*
- *Refine report as needed*
- *Publish in database*
- *Update database for:*
    - *Monthly/ quarterly data*
    - *News, periodicals*
    - *Newsletters & memos*
    - *Quarterly summary*
- *Update report as needed*

Albourne's overall approach is to perform ODD on a broad range of funds, and make ODD reports available to clients online at any time. We do not keep a narrow "positive list" of funds; rather our philosophy is to have an open door policy whereby we will review any fund on request subject to our resources and availability.

Between scheduled onsite visits, Albourne's Analysts continue to monitor funds through dialogue, regular meetings and news monitoring to determine whether Albourne's opinion and rating should *be changed. Mid-cycle meetings or calls may be appropriate in response to certain events/requests. Broader information is constantly being updated by Albourne's Analysts.*

For those funds Albourne covers on an ongoing basis, the process is repeated periodically, with a view to understanding any evolution in process, discipline and risk taking. The analyst updates and varies the rating as necessary.

Typically, a rating change stems from one of many factors changing our view of the fund's future prospects. Or the emergence of better alternatives. Investment and Operational Due Diligence decisions to downgrade a fund can occur for numerous reasons, including regulatory actions, litigation, staff turnover/departures, underperformance, style drift (which would include changes in volatility, market exposures and positioning vs. peers), asset class dislocation, operational changes, changes in terms and conditions, gates, redemption suspensions, restructuring, or lack of transparency - late reporting, poor communication, or failure to make appropriate disclosures (if discovered). Clients can agree with their Portfolio Analyst to place the fund on a watch list, or to redeem from the fund.

We monitor the managers and funds in a client's portfolio on an ongoing basis, which typically includes monitoring for news directly distributed from the managers (such as updates on portfolios and/or performance) or from clients, news headlines specific to the manager or fund as well as the region and strategy. Clients are informed of this new information through emails and can also find it in one place on the Funds News pages on the Castle.

StepStone:

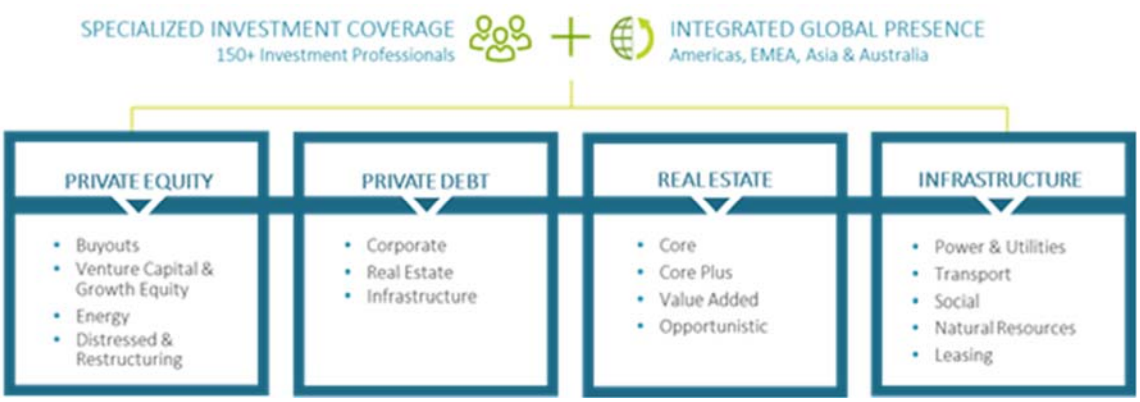
StepStone utilizes a structured manager evaluation and due diligence process that emphasizes client involvement, responsiveness, and a customized portfolio development process. We believe that each institution has unique qualities that should be understood by its investment manager in order to develop the optimal portfolio for the limited partner. Each due diligence process is led by at least one StepStone Partner, who is supported by the sector team that covers the respective general partner. StepStone's Investment Committees will also be highly involved throughout the manager evaluation and selection process. The Investment Committees will conduct a detailed review of each manager that has passed into the due diligence stage, convening to meet, at minimum, two times. StepStone's due diligence report serves as a framework for these discussions. Below sets forth further details on our approach to manager selection and evaluation.

StepStone's research and investment function is centered on the Firm's specialized sector teams that cover the complete spectrum of the private markets asset class. The Firm's investment team of over 150 professionals is organized by sector and geography, providing targeted coverage of *the entire private markets universe, which results in valuable specialized expertise and market coverage.*

In addition to StepStone's sector-specific and commercial diligence, the Firm has established an ESG Committee, comprising leadership from all asset classes across the firm. This committee provides oversight and direction for our ESG process, including reviewing ESG-focused due diligence within our investment memoranda before they are submitted to the relevant investment committee.

Ms. Suzanne Tavill, Partner, is Head of Responsible Investment at StepStone. She chairs the ESG Committee that is composed of senior investment professionals located in varied regions and representing a cross-section of asset classes and functional areas. The ESG Committee's mandate is to develop StepStone's ESG policy, approach to ESG analysis, advocacy and provide training across the firm. Importantly, the ESG effort is supported by the entire Partner group, across 19 offices in 13 countries, who all have responsibility for policy implementation. Research is carried out by the 150 investment professionals, who are organized by sector and geography to ensure broad and deep coverage of the private markets. StepStone aims to continually improve and evolve, reviewing our policy annually, holding regular training and ESG education sessions for our investment team, and looking at ways to enhance our system and processes.

Below is a diagram that illustrates the organizational structure of StepStone's research team:



StepStone's Investment Committees are responsible for making final client recommendations and ensuring that there is consistency across investment decisions and client portfolios. StepStone's private equity decisions are made by our 11-person Private Equity Investment Committee, StepStone's private debt decisions are made by our 4-person Private Debt Investment Committee, infrastructure & real assets decisions are made by our 11-person Infrastructure &

Real Assets Investment Committee, and real estate decisions are made by our 6-person Real Estate Investment Committee. Portfolio managers are responsible for discussing the outcome of these meetings with the client and overseeing implementation, leveraging additional resources from the StepStone platform as needed.

Additionally, the Finance and Accounting team, in coordination with the IT and Legal and Compliance teams, assist the investment team during the due diligence process by completing an Operational Due Diligence ("ODD") review. Any follow-up questions required are requested through StepStone's investment team, emailed directly to the GP, or coordinated through phone calls.

Investment analysis

The Firm's investment process is set forth below:

***Initial Screen** – Once a deal lead has been identified as a potential transaction, the deal team summarizes the opportunity in a report. Each report is reviewed and the team prioritizes the opportunity accordingly. Through this process, we can identify the most attractive opportunities and focus Firm resources on the most promising leads.*

***Due Diligence** – For each priority deal, the assigned investment team gathers and reviews available information on the underlying assets. To facilitate this process, StepStone utilizes SPI™, its proprietary database that tracks information on over 51,000 companies, 33,000 funds and 13,500 general partners. This database is populated with information the Firm has gathered from general partner meetings, due diligence materials, quarterly reports, annual meetings, marketing materials and other sources. The database is critical during the preliminary due diligence phase. During this stage, the Firm also leverages information from the independent valuation assessments produced by the SPAR team. This exercise encompasses thousands of companies and provides valuable insights on the quality of the prior funds' underlying assets and the general partners' valuation practices.*

***Initial Investment Committee Review** – After preliminary due diligence is completed, the sector team works closely with the Investment Committee to validate that the opportunity fits the clients' strategy and meets their investment objectives. The Investment Committee also provides valuable feedback on the manager, the merits and the risks/opportunities of each opportunity. Provided that the opportunity meets the client's criteria, the Firm issues an indicative approval to proceed with final due diligence. This approval is subject to successful final due diligence and Investment Committee approval.*

***Final Due Diligence and Investment Committee Review** – The investment team finalizes its* *diligence process by interviewing the general partner, placing third-party reference calls, reviewing fund-level legal documents and performing sensitivity and scenario analyses. Once the final diligence items have been performed, the Investment Committee reconvenes for final review and to bring the transaction up for final vote.*

Legal/Compliance review

The Firm's Legal and Compliance team performs a structural analysis, which involves an extensive review of legal documents, including fund agreements, and any agreements between the principals. StepStone follows the flow of economics with particular emphasis on investment and divestment decisions. The Firm also conducts a legal analysis of any past and outstanding litigation as part of the due diligence process. The key considerations of the legal review are included below:

Operational Due Diligence overview

StepStone has designed and built our platform to provide customized solutions and best-in-class service to all clients. As StepStone and its client base have grown, the industry and client focus areas have evolved. Since inception, StepStone has consciously worked to be on the leading edge of these changes. Accordingly, StepStone has made a focused effort to expand the Operational Due Diligence ("ODD") team to ensure that the proper quality and service levels are maintained, and we have continued to increase our ODD capabilities and processes to appropriately evaluate the potential risks surrounding the operational aspects associated with investments evaluated on behalf of our clients.

StepStone's ODD team currently comprises nine dedicated ODD professionals and eight internal experts across finance, legal, compliance and technology. StepStone's ODD team produces an assessment as part of our evaluation of investment opportunities, and will collaborate with the investment team to the extent there are any conflicts with regard to an investment recommendation. Results of the ODD are included in the investment memos submitted for approval to the Investment Committee. StepStone has completed a form of ODD on every primary fund investment made or approved by our clients since inception. Over the past three years, we have completed approximately 600 ODDs, with approximately 250 completed on managers this year. While our process remains separate from the investment analysis, we have the benefit of being able to discuss any findings or issues with our investment team to be able to measure any potential risk within the broader context of an investment decision.

StepStone's ODD team reviews the SOC 1 reports in the diligence of third party administrators and the registration status and standing with the PCAOB in the case of independent auditors. Further, as part of our business, StepStone engages custodians, third-party fund administrators *and other service providers. StepStone conducts thorough due diligence prior to selecting a key provider or vendors which will include: a review of the service offerings against the needed requirements; an on-site review to meet with management and the team assigned to support StepStone; a request for references and discussion of the service provider performance with existing clients.*

StepStone's operational due diligence process requires the general partner to verify a number of structural, compliance, accounting and operating questions in order to quantitatively and qualitatively gauge the stability, breadth and capabilities of their team. The prospective firm supplies this information through data room access (documents requested include: PPM, LPA, marketing materials, cash movement policy, valuation policy, compliance manual, code of ethics, business continuity plan and information security policy), due diligence questionnaire, direct correspondence with the manager via email, phone and video conference, as well as formal on-site reviews for clients who engage us to perform such a service.

- *Examples of steps in this process include:*
- *Review of regulatory registration status*
- *Review of any regulatory inquires and investigations, both current and past, as well as any past or pending litigation*
- *Assessment of the compliance environment to document execution of policies and procedures and ensure adequate oversight.*
- *Review of the back-office team and qualifications as well as systems utilized*
- *Evaluation of the firm’s cash management process, including the bank reconciliation process and cash movement policies*
- *Evaluation and analysis of the firm's valuation policy and process*
- *Review of third-party service providers*
- *Assessment of capital account statements, capital call and distribution notices for proper detail and information for recording*
- *Review of the firm's Business Continuity Plan and written Information Security Policy*
- *In-person meetings with key finance, compliance and IT officials*

After the ODD team has performed the above procedures, the ODD team concludes on the *findings and specifies any areas of concern which are included in the investment memo.*

Resource management is a key responsibility of the ODD team. StepStone's ODD team continuously monitors the ODD workflow through SPI™ with updates made based on daily discussions and formal weekly pipeline meetings. New diligences are assigned based on analyst availability and knowledge of the pipeline across asset classes.

The Firm's Research team, which comprises over 150 individuals, will be responsible for monitoring investments on an ongoing basis, based on the sector coverage described earlier. Internal and external manager visits typically take place four to six times per year through a combination of GP visits, annual meetings, monitoring calls or on-site visits.

Additionally, the Firm has a large portfolio analytics and reporting team consisting of over 70 professionals, of which senior members average 15 years of industry experience. This practice, led by Mr. Wes Ogburn, Managing Director, who reports to Mr. Jose Fernandez, the Firm's Co-COO and a founding Partner of the Firm, is responsible for all of our clients monitoring and reporting requirements. When StepStone is selected for a mandate, a senior professional (Vice President or above) will manage each client's monitoring and reporting relationship, supported by at least one dedicated junior professional. The two individuals leverage SPAR team members across the entire group as necessary to fulfill any special reporting requirements.

StepStone believes that active, ongoing analytical review can lead to better portfolio risk management and ultimately, higher returns. As part of our ongoing manager and portfolio performance analyses, StepStone's portfolio analytics and reporting practice completes several analytical reviews for our clients including: portfolio benchmarking for relative performance; diversification analysis to identify concentration risks or portfolio allocation opportunities; general partner/manager performance to understand where additional capital should be directed; and valuation analysis to determine which general partners are appropriately reflecting risk in their reporting. We complete this detailed review for all of the above categories (i.e., from (a) managers/advisors through (d) individual assets), and tailor our reporting to the specifics of each investment, taking into consideration the analytical needs of our clients.

ODD of the many investment managers StepStone works with is maintained by sending an ongoing ODD questionnaire focusing on changes to the areas reviewed in the initial diligence topics identified in the above response regarding Initial ODD. Significant changes to any of the areas reviewed in the initial due diligence would be considered high priority.

Results will be summarized, and any notable findings will be communicated to StepStone client teams and StepStone clients as appropriate.

RVK Recommendations

- **Consider the addition of mandatory reporting expectations by consultants and asset class directors to the Board in the IPS.**
    - While TMRS is currently receiving detailed and adequate reporting from each consultant, it is important to document expectations for continuity and governance purposes.

Appendix A: Background of RVK Project Team Members

Appendix A: Background of RVK Project Team Members

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 40 years of experience in the investment consulting and asset management industry.

As a Consultant, Marcia has extensive experience working with corporations, 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.

Prior to joining RVK, Marcia was a Vice President and Team Leader for U.S. Bank of Oregon's Corporate Asset Management Team. Earlier in her career, Marcia was an Assistant Vice President at Oregon Bank and worked for U.S. National Bank of Danville, Illinois.

Marcia graduated cum laude from the University of Illinois, earning a Bachelor of Science 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, and sovereign wealth fund TMRSs. 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 degree in Finance. He is a shareholder and serves on the firm's Board of Directors.

Kyle Hagmeier – Associate Consultant

Kyle joined RVK in 2015 as an Investment Analyst in our Portland office. He has held various roles at RVK, including Senior Investment Analyst, Investment Associate, and currently, Associate Consultant.

Kyle serves a diverse client base, including public and corporate pensions, endowments, foundations, Taft-Hartley and defined contribution plans. As a member of our consulting team, Kyle works on a variety of projects including asset allocation studies, manager structure analyses, investment manager evaluation, client education presentations, and portfolio rebalancing.

He graduated magna cum laude from Gonzaga University with a BBA, concentrating in Finance & Economics. Kyle also earned a minor in Entrepreneurial Leadership through the Hogan Entrepreneurial Leadership Program, a four-year honors program at Gonzaga University. He has passed the CFA Level I Exam.

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 nearly 40 years of industry experience. As a Senior Consultant, Jim has worked with both public and corporate DB plans, foundations and endowments, and insurance funds. A sought after public speaker, Jim has delivered original presentations on multiple 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.

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 Bachelor of Arts 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.

Joe Ledgerwood, CFA – Director of Investment Manager Research, Principal

Joe joined RVK in 2010 and is located in our Portland office. As RVK's Director of Investment Manager Research, he leads our team of Research Consultants who serve as practice experts for their assigned asset class. Each Consultant determines the most appropriate managers for each TMRS assignment as well as the efficacy of firms currently managing assets for TMRSs. He previously served as Director of Equity Research with coverage across regions, both active and passive.

Prior to joining RVK, Joe worked for a Portland-based registered investment advisor as a portfolio manager, research analyst, and trader.

Joe is a graduate of the University of Portland and has a Bachelor of Business Administration degree (maxima cum laude) with a concentration in Finance. He also holds the Chartered Financial Analyst designation and is a member of the CFA Society of Portland. He is a shareholder of the firm.

Jonathan Kowolik – Senior Consultant, Head of IOSG, Principal

Jonathan is a Senior Consultant with RVK and is located in our New York office. He joined RVK in 2001 and is currently the practice leader for the RVK Investment Operations Solutions Group. This group has primary responsibility for providing project consulting and research including search and evaluation projects for trust/custody providers, recordkeepers, securities lending programs, transition management, and other operational consulting projects.

Jonathan serves as a dedicated resource to many of the firm's largest TMRS relationships while also holding a consulting and advisory role within the general RVK consulting organization.

Jonathan earned his Bachelor of Science degree in Economics with dual concentrations in Management and Finance from the Wharton School at the University of Pennsylvania. He is a shareholder of the firm.

Colin McKey – Senior Investment Analyst

Stephen joined RVK in 2018 and is located in our Portland office. He currently serves as both a Senior Investment Analyst and has worked with TMRS for approximately two years.

As a member of our Performance Measurement and Analytics department, Colin works on a variety client types and focuses on preparing customized performance reports, assisting with portfolio rebalancing, and leading the internal Capital Markets Taskforce.