

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



City of Austin Employees' Retirement System

Evaluation of Investment Practices

Pursuant to Texas Government Code 802.109

May 2020



May 2020



Table of Contents

	Page
Introduction and Background Information.....	3
Executive Summary	6
Section 1.....	9
Section 2.....	13
Section 3.....	23
Section 4.....	28
Section 5.....	33
Appendix A	40

May 2020



To	Board of Trustees – City of Austin Employees' Retirement System
From	RVK, Inc.
Subject	Evaluation of Investment Practices – Government Code 802.109

INTRODUCTION

RVK was hired to conduct an independent evaluation of the current institutional investment practices and performance, with a focus on the appropriateness, adequacy, and effectiveness of the City of Austin Employees' Retirement System ("COAERS" or "the System") investment practices and performance and to make recommendations for improving the COAERS 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

COAERS provides benefits for full-time employees of the City and was established in 1941. It serves approximately 10,000 active members, plus an additional 8,000+ retiree and inactive members, and is managed by an eleven-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 \$2.9 billion.

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

We Value

Accessibility
Accountability
Cooperation
Ethical Behavior
Fairness
Innovation
Integrity
Open Communication
Respect
Responsiveness

Our Vision

Our vision is to be recognized as the standard of excellence in public pension plans.

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

- Governance Documents
- Board and Committee Charters
- Investment Policy Statement
- Investment Implementation Policy
- Organizational Charts
- Background of Key COAERS Professionals and Investment Team
- Asset Allocation Studies
- Asset/Liability Studies

May 2020



- Performance Reports and Related Analyses
- TCA Reports
- Actuarial Valuation Reports
- Related Investment Documents (asset class reviews, investment manager due diligence, etc.)
- Investment Committee and Board Meeting Minutes

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

The RVK COAERS Team

Ian Bray, CFA
Spencer Hunter
Janelle Booth, CFA
Kevin Wyllie
Jake Theno
Jim Voytko
Marcia Beard
Joe Ledgerwood, CFA
Jonathan Kowolik
Stephen Drgastin

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:

COAERS' investment program is governed by two distinct policies—the Investment Policy Statement (“IPS”) and Investment Implementation Policy (“IIP”)—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”) review both of these documents at least annually, with more frequent approvals conducted as necessary after first passing through the Investment Committee when Investment Staff and/or Investment Consultant introduce proposed language updates. Within the past year these documents have been updated, reviewed in detail, and approved twice to reflect improvements in clarity with respect to oversight responsibility of the System's assets by way of increased transparency into processes relating to such items as strategic long-term goals, rebalancing ranges, etc. It is in our opinion that both documents reflect best in class industry standards related to both policy language and governance related to implementing said policies.

Section 2 Observations:

The efforts from the Board, Investment Committee, and Investment Staff show a thoughtful approach to the selection of the Strategic Target Allocation, with particular emphasis on the 2018 Asset/Liability study. From this analysis, COAERS 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 COAERS target portfolio represents one that is liquid, transparent, and flexible, with a slightly above average risk tolerance compared to public pension peers. The process to reach the current target allocation took place over multiple 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 COAERS is lower than many retirement system peers. Additionally, there is a strong emphasis on transparency which accurately represents the philosophy and overall set of investment beliefs adopted by the Board. 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 a select few 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 COAERS is receiving a differentiated level of active performance in a manner consistent with the Board's adopted investment beliefs. As such, higher fees in these areas may be warranted as overall net of fees performance remains attractive.

May 2020



Section 4 Observations:

Through a review of past and current policies, charters, and meeting materials, it is clear the COAERS investment decision making process and governance structure have been carefully constructed to reflect stated investment beliefs and are in line with industry best practices. Notably, the separation of policy from implementation is an important and attractive characteristic of the COAERS 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, Committees, 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 COAERS investment manager selection and monitoring process is well-defined and thoughtful in its approach. The COAERS Investment Staff diligently follows the policies and procedures as described and has made notable efforts in the improvement of their own due diligence efforts. Their unique and differentiated approach to manager selection, termed the "Premier List", 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 we do note areas for potential improvement, we believe the current process and documentation thereof is best-in-class within the public pension universe and commend the COAERS Board, Investment Committee, 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
2: Investment Asset Allocation	Consider policy language defining a reporting process for less liquid and illiquid investments.	Next Update to Policies
5: Manager Selection and Monitoring	Consider the addition of a formal manager review policy with a more specific timeframe.	Next Update to Policies
5: Manager Selection and Monitoring	Consider verbiage edits to the Watch List section.	Next Update to Policies
5: Manager Selection and Monitoring	Consider clarifying language regarding reporting for managers with "live" mandates vs. those currently on the Premier List.	Next Update to Policies
5: Manager Selection and Monitoring	Consider the addition of performance metrics for non-public securities and/or vehicles.	Next Update to Policies

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.



May 2020



DOCUMENTS REVIEWED:

- ✓ **Investment Policy Statement**
- ✓ **Investment Implementation Policy**
- ✓ **Presentations to Board and IC**
- ✓ **Review Memorandums from Investment Consultant**

COAERS' investment program is governed by two distinct, but connected policies. The Investment Policy Statement ("IPS") serves as the overarching program document, detailing the objectives and guidelines used for the management of System assets. The Investment Implementation Policy ("IIP"), which is referenced within and meant to expand on the IPS, provides more details on specifics relating to operational components, contracting terms, and individual mandates, all of which are crucial to the success of the overall program.

It is important to note that both policies have been updated recently and are also reviewed on a consistent basis, at least annually, by both the Investment Committee and the Board of Trustees. Below is a snapshot of the policies' most recent adoption dates, some of which contained substantive edits, while others were simple clean-up items.

Investment Policy Statement	Investment Implementation Policy
<i>Adopted December 10, 2019</i>	<i>Adopted December 10, 2019</i>
<i>Adopted June 25, 2019</i>	<i>Adopted June 25, 2019</i>

SUMMARY OF THE IPS

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

- 1. Statement of Policy** – Section 1 outlines the purpose and scope of the policy in addition to defining investment goals, investment beliefs, and the interpretation, review and revision requirements. It is the focus of this section to clearly outline for current and future Boards, a tangible number of investment objectives and goals to be met through prudent, consistent and best practice implementation for the purpose of providing retirement benefits to members and their beneficiaries.
- 2. Investment Responsibilities** – Section 2 provides detailed investment responsibilities of System fiduciaries such as the Board, Professional Staff, Investment Consultant(s), Investment Managers, and Custodian(s). While the specifics of the responsibilities differ slightly, the overarching and consistent theme maintains that each party must act in a capacity that places the exclusive benefit of the assets of the System 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.

May 2020



3. **Fiduciary Conduct** – Section 3 provides language that defines proper fiduciary conduct for all parties mentioned in section 2. Finally, this section necessitates that all Trustees and Professional Staff adhere to COAERS' Ethics Policy, detailing strict adherence to no gifts and/or favors language unless permissible exceptions detailed within said policy are the case.
4. **Asset Allocation** – Section 4 details the Board's responsibility with respect to setting the Strategic Asset Allocation ("SAA") of the Fund at the guidance of the Investment Consultant. 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. It also discusses the frequency of review to be warranted. This section also details the establishment of appropriate rebalancing ranges, including procedures within the policy outlining responsibility for adherence. The System has two set of rebalancing ranges, a tactical range and a strategic range, to which each have separate governing procedures implemented by the Board and Investment Staff depending on market drift, risk management and cash management needs.
5. **Investment Risk Management** – Section 5 identifies different types of investment risks that the Fund encounters in its pursuit of meeting its long-term return objectives, and how to properly navigate, manage and monitor these risks.
6. **Reporting, Evaluation and Review** – Section 6 references the strategies used by the System to regularly evaluate the effectiveness and adherence of the investment processes outlined within the Policy. This includes sections on reporting the progress toward stated strategic objectives, measuring investment risk, System and asset class performance vs. stated benchmarks, and finally comparison toward applicable peers.

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

RVK believes the COAERS IPS is consistent with industry best practices, representing clearly defined language aimed at providing the Board governance standards when instituting their investment program. In RVK's review of Board and Investment Committee meeting minutes, the Board has reviewed, edited where necessary, and approved changes at least on an annual basis over the last three years. As RVK has been an active member within the updating of this policy alongside the Board and Investment Staff, we have no material edits outside those listed in later sections for consideration at this time.

SUMMARY OF THE IIP

The IIP is a supporting document to the IPS, further detailing specific oversight and process requirements as it relates to selecting, contracting, monitoring and retaining investment managers. The document contains 12 sections and accompanying appendix items that pertain to the following oversight processes:

- *Purpose, Scope and Revision, Strategy and Philosophy, Fiduciary Conduct, Manager Responsibilities, Manager Selection, Manager Contracting, Portfolio Guidelines, Permissible Investments, Reporting, Evaluation and Monitoring, Retention, Transition Management, Proxy Voting, Site Visits, Manager Reporting Requirements, Third Party Marketing, Political Contributions, Improper Influence, and Placement Agents and Finders.*

May 2020



The language contained within the IIP allows for the Board to establish a set of overarching governance with respect to manager interaction, while simultaneously ensuring that the Investment Staff has authority to act on the Board's behalf in a manner that is mutually agreed upon. Additionally, it allows the Investment Staff to have one set of guidelines to communicate to prospective and current managers. We have reserved additional space to review this policy and its investment implications within the investment manager selection and monitoring process section (Section 5).

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

RVK believes the COAERS IIP is consistent with industry best practices, representing a clear extension of the IPS, aimed at providing the Board further implementation details when instituting their investment program. As RVK has been an active member within the updating of this policy alongside the Board and Investment Staff, we have no edits beyond those noted in Section 5 for consideration at this time.

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



May 2020



DOCUMENTS REVIEWED:

- ✓ Investment Policy Statement
- ✓ Investment Staff and Investment Consultant Presentations to the IC and Board
- ✓ Asset/Liability Study (May 2018)
- ✓ Actuarial Valuation
- ✓ Asset Allocation Studies and Accompanying Presentations

(A) The process for determining target allocations.

COAERS' 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, COAERS performs an A/L Study at least once every five years, with the most recent study performed in May 2018 based on the December 31, 2017 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.

COAERS 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 the COAERS' 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 2019 RVK Capital Markets 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 COAERS Investment Staff and RVK complete the first round of analysis, a target allocation recommendation is presented to the COAERS Investment Committee for feedback. After incorporating any Investment Committee feedback, the proposed target allocation is sent to the Board for approval. Finally, once the Board has approved a target allocation, COAERS 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 Committee, 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 Investment Committee meetings, sometimes covering the majority of any given calendar year. For example, the most recent change to the Target Allocation was approved by the Board in December 2019, but the Investment Staff started educating the Investment Committee on potential changes in February 2019. This included a review

May 2020



of 2019 capital markets assumptions from the Investment Consultant and other industry experts, a discussion regarding potential changes to the Investment Policy Statement and Investment Implementation Policy, as well as analyses on current market conditions and the Investment Staff's view on potential enhancements to the portfolio. Similar items were discussed throughout the year, with formal reviews and analyses presented to the Investment Committee during the May, August, and November 2019 meetings. Figure 2.1 below shows the high level changes to the Strategic Target Allocation over the past two calendar years; however, it is critical to note that related discussions and changes to sub-Target Allocations were occurring during that entire time period.

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

Date	Description of Changes Made
December 2019	Established 1% target to Cash & Equivalents, reduced Multi Asset target
December 2018	Reduced Global Equity & Fixed Income targets, increased Real Assets target
July 2018	Reduced Global Equity & Fixed Income targets, increased Multi Asset target

May 2020

**(B) The expected risk and expected rate of return, categorized by asset class.****Figure 2.2: Summary of Expected Risk and Return by Asset Class**

Asset Class	Target Allocation* (%)	Arithmetic Return Assumption (%)	Compound Return Assumption (%)	Standard Deviation Assumption (%)
Global Equity	55.0	7.80	6.26	18.40
Fixed Income	20.0	3.75	3.58	6.00
COAERS Real Assets ¹	15.0	6.08	5.49	11.27
COAERS Multi-Asset ²	9.0	6.53	5.72	13.19
Cash Equivalents	1.0	3.00	2.96	3.00

¹Consists of 2/3 Core Real Estate and 1/3 Infrastructure²Consists of 63% Global Equity, 22.5% US Agg Fixed Income, 10.5% Real Assets (5.5% Global REITs, 4% Infrastructure, and 1% Commodities), and 10% GTAA

*As of December 31, 2019

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

As of December 31, 2019, COAERS did not hold any alternative and/or illiquid assets in its portfolio. All invested assets are valued mark-to-market on a daily basis.

(D) Future cash flow and liquidity needs.

Based on the results from the A/L study conducted in May 2018, COAERS elected to adopt a predominantly liquid portfolio with an above average risk and return profile. However, the results of the study did not support taking on large amounts of risk in an attempt to close the funding gap due to limitations of the contribution policy. Summary comments from the May 2018 Asset Liability study are shown below.

"This A/L study shows that the System is currently underfunded and current static contribution rates set by statute do not allow for the System to fully fund the unfunded actuarial accrued liability during the 20 year projection period. The lower annual contributions (compared to a policy that contributes an actuarially determined employer contribution rate) lead to meaningful probabilities that the System will deplete assets or, at the very least, face liquidity constraints in the future. This may cause the System to take risk to increase expected future returns.

The System can best meet its objectives through the continued use of an efficiently diversified investment portfolio that is compensated for the risks taken and focuses on maintaining reasonable

May 2020



liquidity. However, positive outcomes are limited due to the current contribution policy. The study is not supportive of a long-term, ultra-conservative approach. The increasing potential for large one-year declines suggests that there is likely a limit to the net benefits of adding increased risk in pursuit of additional return. Progress should be monitored periodically through studies such as these, particularly if the System encounters a sustained period of lower returns in the capital markets (and thus for the System's assets) as well as material changes in contribution policy or benefit levels. Additionally, given the System's vulnerability to severe market drawdowns, a robust risk management framework should be considered.

Additionally, this study assumes no further changes are made to the benefit policy at any point during the 20 year projection period. Such changes would fall outside the reach of an Asset/Liability study. However, we do note that even small changes to the benefit policy can have a meaningful long-term impact on the likely future outcomes of the System."

Figure 2.3 below shows the status of the System at the time the A/L study was performed. The large gap between System assets and liabilities cannot be closed without significant changes to contribution policy due to increasing System liabilities as is shown in figures 2.4, 2.5, and 2.6.

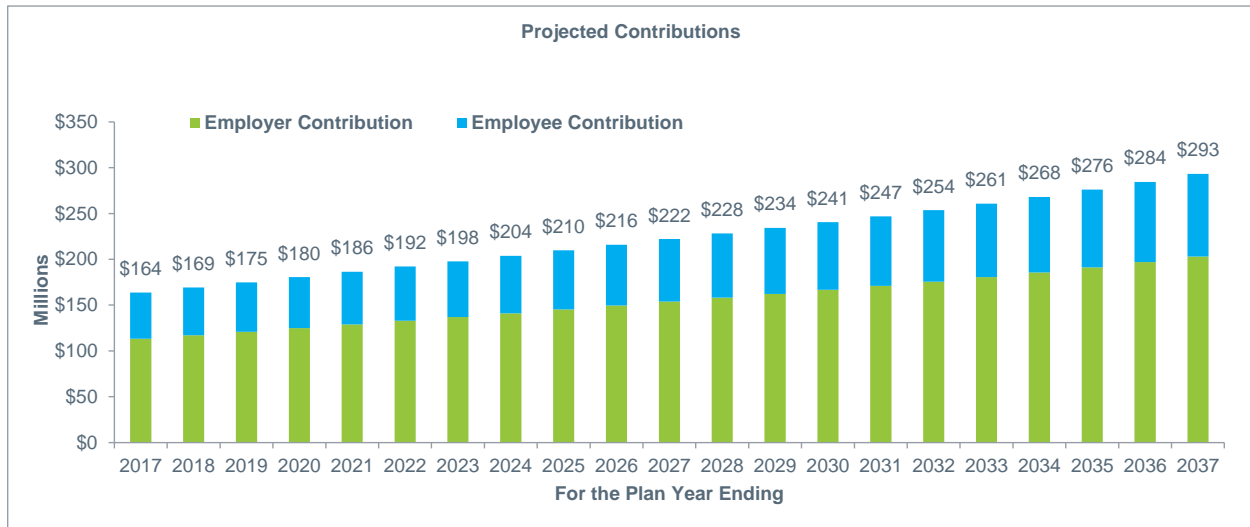
Figure 2.3: COAERS Funding Status at time of A/L Study

System Summary	December 31, 2017 (Valuation Date)
Market Value of Assets	\$2.7 billion
Actuarial Accrued Liability	\$3.8 billion
Deficit	\$1.1 billion
Market Value Funded Ratio	70%

May 2020

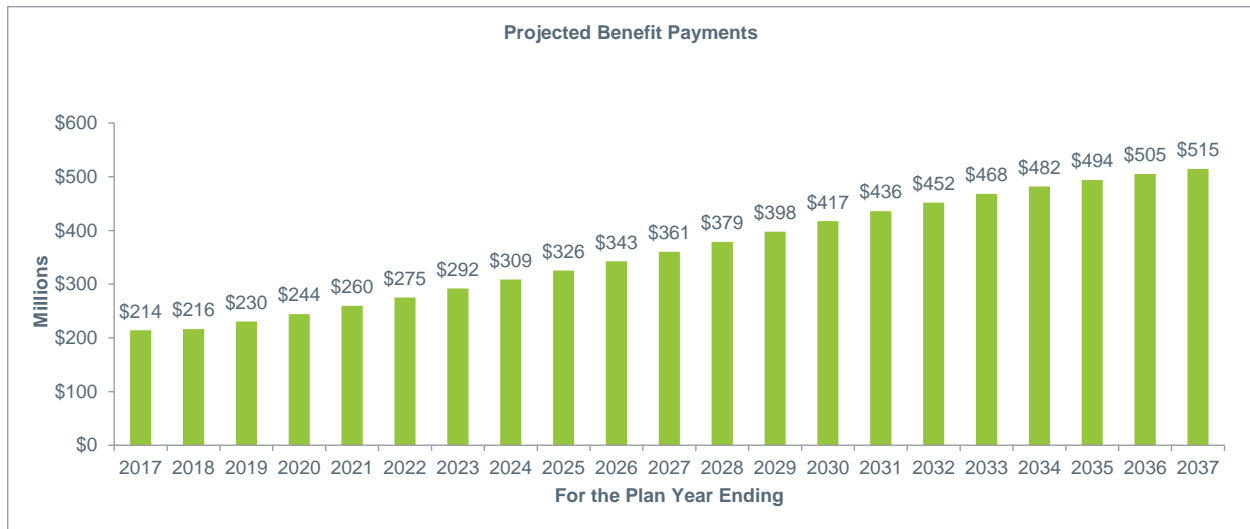


Figure 2.4: Projected System Contributions



As a result of an increasing number of beneficiaries and inflation, benefit payments to System participants are expected to increase by 140% over the next 20 years, as shown in Figure 2.5 below. Annual increases are projected to average approximately 4%.

Figure 2.5: Projected System Benefit Payments



As shown in Figure 2.6a, the expected net cash outflow increases significantly over the next 20 years. However, it is equally important to note that the gross payout ratio remains relatively constant over that

May 2020



same time period (Figure 2.6b). A consistent and relatively low payout ratio is an important indication of System health and should not constrain the System in its investment efforts. The ability to invest with a long-term horizon and/or contemplate less liquid investments would be hindered if the payout ratio increases by a material measure.

Figures 2.6a and 2.6b: Projected Net Cash Flow and Gross Payout Ratio for the System

Figure 2.6a:

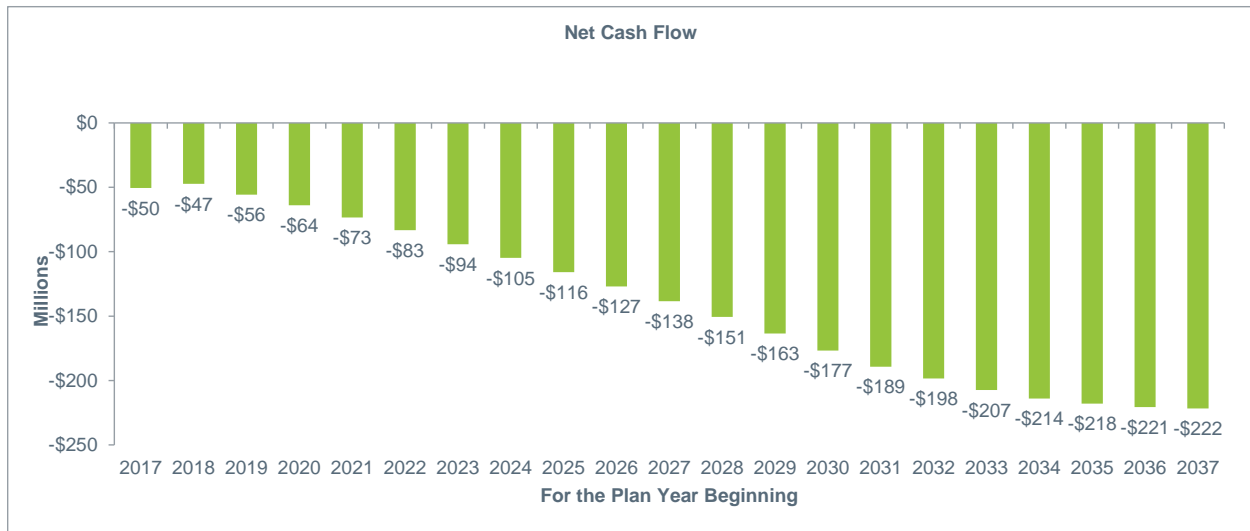
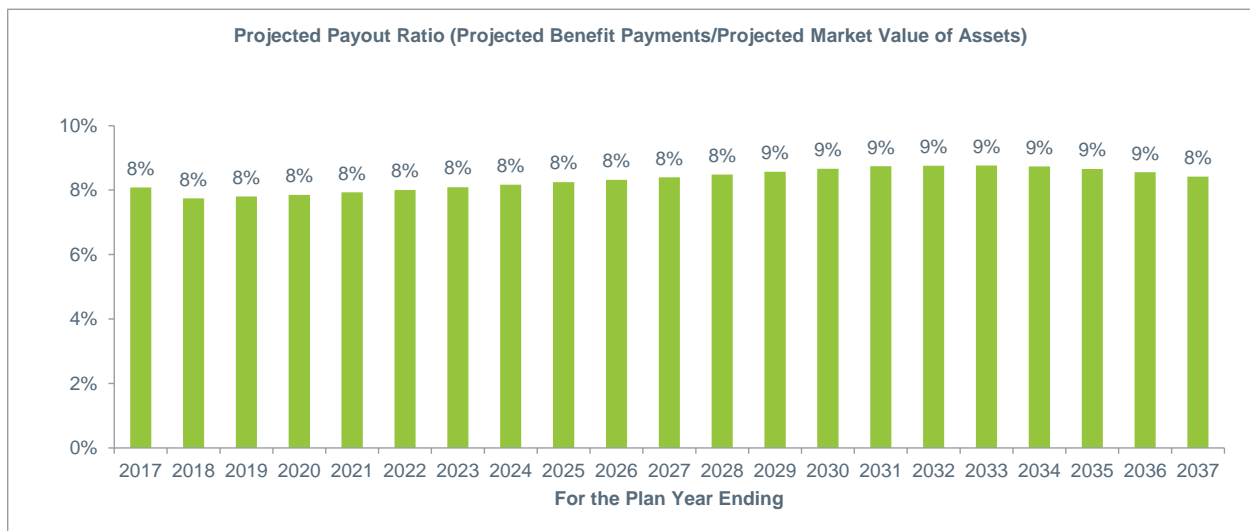


Figure 2.6b:

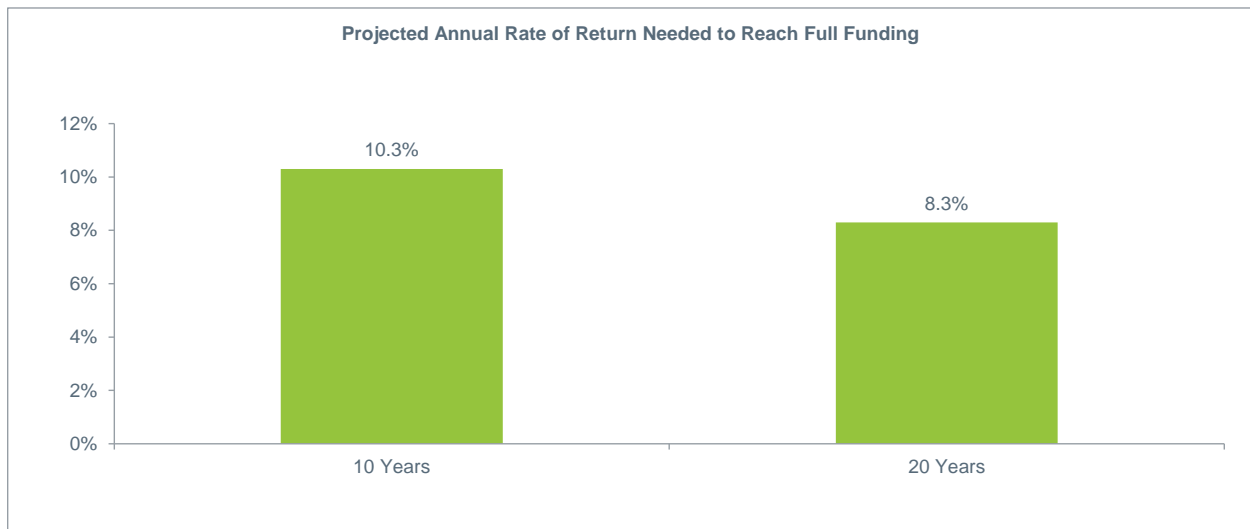


May 2020



In order to bring the System to full funding, an increase of 30%, the System assets would need to return over 8% each year across a 20 year period as is shown in Figure 2.7. This analysis assumed all other actuarial assumptions (such as contributions) are left unchanged over the same period. Based on expected returns for the portfolio, such a return outcome is unrealistic given current market conditions and the need to maintain a liquid and diversified portfolio.

Figure 2.7: Projected Annual Rate of Return Needed to Reach Full Funding



Two additional and unique “sensitivity analyses” were performed during the A/L study to demonstrate the impact various market conditions may have on the System. In Figures 2.8a and 2.8b, the System was hypothetically exposed to both “V” and “W” shaped events, defined by a fund return of -15% in year one, followed by a market return of 15% in year two (“V shaped”), as well as a market return pattern of -10%, 10%, -10%, 10% (“W shaped”). The importance of these analyses can be seen in the results, which shows that the size and timing of market losses can significantly impact the funding status, deficit, and market value of System assets over the hypothetical 20 year period.

May 2020



Figures 2.8a and 2.8b: Sensitivity Analyses

Figure 2.8a (“V shape”):

	Value in 2037			
	Actuarially Assumed Rate of Return	V Shaped Market Event	Impact of Reduced Return	
Projected Payout Ratio	8%	12%	3%	▲
Projected Employer Contributions (millions)	\$203	\$203	\$0.0	↔
Projected Benefit Payments/Projected Total Contributions	176%	176%	0%	↔
Projected Actuarial Accrued Liabilities (billions)	\$7.5	\$7.5	\$0.0	↔
Projected Market Value of Assets (billions)	\$6.1	\$4.4	(\$1.7)	▼
Projected Deficit (millions)	\$1,425	\$3,156	\$1,731	▲
Projected Market Funded Ratio	81%	58%	-23%	▼
20 Year Cumulative Total				
Projected Cumulative Employer Contributions (billions)	\$3,256	\$3,256	\$0	↔

Figure 2.8b (“W shape”):

	Value in 2037			
	Actuarially Assumed Rate of Return	W Shaped Market Event	Impact of Reduced Return	
Projected Payout Ratio	8%	16%	8%	▲
Projected Employer Contributions (millions)	\$203	\$203	\$0.0	↔
Projected Benefit Payments/Projected Total Contributions	176%	176%	0%	↔
Projected Actuarial Accrued Liabilities (billions)	\$7.5	\$7.5	\$0.0	↔
Projected Market Value of Assets (billions)	\$6.1	\$3.2	(\$2.9)	▼
Projected Deficit (millions)	\$1,425	\$4,341	\$2,916	▲
Projected Market Funded Ratio	81%	42%	-39%	▼
20 Year Cumulative Total				
Projected Cumulative Employer Contributions (billions)	\$3,256	\$3,256	\$0	↔

May 2020



RVK RECOMMENDATIONS

- **Consider policy language defining a reporting and/or valuation process for less liquid and illiquid investments.**
 - As of December 31, 2019, COAERS does not have exposure to investment vehicles which would be considered less liquid or illiquid; the private real estate mandate managed by Principal is less liquid in nature, but does have daily liquidity with certain exceptions. However, with the future addition of private infrastructure and potentially other private real estate, it may be beneficial to have a stated policy in place surrounding securities or vehicles with liquidity provisions. The policy language may include verbiage to detail the process by which these assets will be reported by the custodian bank, Investment Consultant, and investment managers. Additionally, it is important to consider how these assets may be accounted for with “stale” or “lagged” valuations.

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



May 2020


DOCUMENTS REVIEWED:

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

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

Mandate	Universe Median Fee (bps)	Rank (1= least costly)
BNYM Dynamic US Equity NL (CF)	40	36
Intech Enhanced Large Cap Index (SA)	50	1
L&G S&P 500 Index NL (CIT)	41	2
SciBeta US 4F EW MBMS Index (SA)	43	1
SciBeta US 6F EW MBMS HFI Index (SA)	43	1
L&G Russell 2000 Index (CIT)	75	1
Walter Scott Dev Mkts Int'l Equity (SA)	58	17
1607 Capital Partners Int'l Equity EAFE (SA)	59	69
SciBeta DM ex US 4F EW MBMS Index (SA)	68	2
BNYM DB Dynamic Global Ex US Eq (CF)	75	5
NT MSCI World Ex US Small Cap Index (CF)	87	1
Baillie Gifford EM Equity Class 3 (MF)	105	20
L&G SciBeta Emerging Mkts 4F EW MBMS CN Index (CIT)	84	5
Agincourt 1-3 Year Treasury (SA)	22	1
Agincourt 1-5 Year TIPS (SA)	20	1
Agincourt 10 Year Treasury (SA)	27	1
Hoisington Macroeconomic US Treasuries (SA)	27	76
DoubleLine MBS (SA)	25	16
PGIM US IG Corporate Bond (CIT)	24	40
Loomis US IG Corporate Bond (CIT)	24	23
Principal Global Investment (CF)	89*	N/A*
Fidelity US REITs Completion Index (SA)	59	1
Fidelity DJ Brookfield Infrastructure Index (SA)	72	1
BlackRock Strategic Partnership (SA)	67	2
Agincourt 1-3 Month Treasury (SA)	12	1
Northern Trust Government STIF (CF)	14	65

*Peer universe for Principal Global Investment (CF) is not available; the one year fee spread for NCREIF ODCE (EWA) Index as of December 31, 2019 is used as proxy for the industry average for US core real estate fund fees.

May 2020



As part of this review, RVK spent considerable time analyzing the fees paid to individual investment managers currently in the COAERS 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 COAERS 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
1 st to 24 th	20
25 th to 49 th	2
50 th to 74 th	2
75 th to 100 th	1

As clearly detailed above, COAERS has been highly successful in negotiating attractive fees with its managers. The process for investment manager selection, more thoroughly explained in Section 5 of this report, has likely created significant efficiencies in this area. Furthermore, COAERS has a clear set of investment beliefs which favor the use of passive management as a default, with active management only used wherever the expected likelihood of outperformance is high. These characteristics will inherently lead to lower fees in general, but even the fees paid to passive managers are below industry average; this translates to fee savings and a significant “head start” in return expectations for the System.

While not critical to the analysis, it is notable that a small number of agreements between COAERS and its managers contain performance-based or incentive-based fees. As these fees are generally predicated on some form of outperformance over a specified benchmark, we believe this can help align interests between parties and ultimately provide more attractive outcomes for COAERS.

Review of Commissions – Trade 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.

May 2020



RVK has reviewed recent reporting¹ provided by Zeno AN Solutions – the current provider of TCA for the COAERS to inform this brief summary of the findings. Note: for this reporting summary, RVK has sought to uniformly present costs as negative figures/units and cost savings as positive figures/units.

2019-Q3 COAERS Fixed Income Trading:

- Total of 253 trades / \$640 million in market value
- Primarily US Treasury trading
- Total Costs of -6 bps, comprised of the following:
 - Multi-Day Delay Costs of -12 bps
 - Impact Costs of -8 bps
 - Overnight Gap Cost Savings of +14 bps
 - Explicit Costs of 0 bps

2019-Q3 COAERS US Equity Trading:

- Total of 1,244,249 shares / \$86.1 million in market value
- Total Costs of -14.9 bps (ranking in the 87th percentile), comprised of the following:
 - Commission Costs of -1.2 bps (-0.85 cps) – ranking in the 19th percentile
 - Slippage Versus VWAP of -13.7 bps (-9.48 cps) – ranking in the 93rd percentile
- Overall commission cost levels appear at median or better (and no broker used was in the lowest quartile)
- Primary managers / accounts driving VWAP relative execution cost ranking are
 - INTECH (71.8% of total trading dollar volume) ranking in the 95th percentile
 - SCI BETA US HFI 6F (10.7% of total trading dollar volume) ranking in the 83rd percentile

2019-Q3 COAERS Non-US Equity Trading:

- Total of 2,238,843 shares / \$10.0 million in market value
- Total Costs of -13.4 bps (ranking in the 64th percentile), comprised of the following:
 - Commission Costs of -16.7 bps – ranking in the 89th percentile
 - Slippage Versus VWAP of 3.4 bps (gain) – ranking in the 25th percentile
- Commission cost levels rank poorly (and appear to be driven by high volumes executed in UK and Australia at higher basis point execution levels of -19.3 bps and -17.4 bps, respectively). In the case of Australia, strong VWAP relative execution is evident – this is not apparent for the UK by contrast.
- Primary managers / accounts driving both commission and total execution cost rankings, partially offset by execution gains, are
 - 1607 CAP (89.3% of total trading dollar volume) ranking in the 93rd percentile for commissions; 25th percentile for execution cost/gains relative to VWAP and 68th percentile overall.

¹ Third Quarter 2019 TCA: Fixed Income Monitor; FX Monitor; Trading Summary Report – Global; Trading Summary Report – United States Market; supporting Global Trading details for two managers (SciBeta DM Ex-US MBMS and 1607 CAP); and supporting US Trading details for four managers (1607 CAP; INTECH; NT SciBeta; and SciBeta US HFI 6F).

May 2020



2019-Q3 COAERS FX Execution:

- Total of 57 trades / \$5.7 million in FX – 37% Spots; 63% Forwards
- Total costs vs. the Average Daily Mid-Point were -3 bps
- 79% of trades were done with the custodian and were generally more costly
 - Average cost of -6 bps vs. Average Daily Mid-Point
- 21% of trades were done with a non-custodian counterparty and were generally cost-saving
 - Average cost savings of +8 bps vs. Average Daily Mid-Point
- All trades were done in “non-restricted”² markets.
- Continued discussion with manager’s regarding usage of custodial vs. non-custodial venues is reasonable.
 - 1607 CAP
 - 100% of executions were with the custodian with an average cost of -9 bps vs. Average Daily Mid-Point
 - SCIBETA DM EX-US MBMS
 - 35% of executions were with a custodian with an average cost of -1 bp vs. Average Daily Mid-Point
 - 65% of executions were done with non-custodian counterparties with an average cost savings of +8 bps vs. Average Daily Mid-Point.

In summary, the use of TCA reporting and the regular review of results remain prudent fiduciary exercises. There may be points of discussions on manager trade and transaction execution approaches worthy of consideration, but commissions are generally in line or slightly better than industry norms. RVK also cautions that it is important to consider these observations within the context of longer term trends and the qualitative observations and findings from discussions with managers which may offer additional justification and/or clarification.

Overall Fees

COAERS, like many of their 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. COAERS has taken a thoughtful approach within all of these areas and continues to be an industry leader in controlling and managing investment fees, effectively deploying a small overall fee budget and thus ranking favorably among peers.

² Restricted Markets include markets where policies, practices, or market conventions may limit the use of third-party execution, trade date settlement restrictions, and/or the required use of an on-shore counterparty such as a sub-custodian affect trading. Execution practices, timing, and pricing may vary for these markets.

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 Implementation Policy**
- ✓ **Investment Staff and Investment Consultant Presentations to the IC and Board**
- ✓ **PRB Training Requirements – Core and Continuing MET Requirements**

Our review of the COAERS investment decision-making process indicates it broadly reflects a comprehensive implementation of best practices. More specifically we would point out the following items that support this conclusion.

- A. The COAERS Investment Policy itself, while appropriately not specifying required processes in detail, nonetheless provides an indispensable sound foundation for investment decision-making. At the policy level, it clearly calls out adherence to key investment principles that are the touchstones of best institutional investment management, including but not limited to:
- a. The critical role of diversification
 - b. The importance of periodic asset/liability and asset allocation analyses
 - c. The absolute primacy of the interests of the plan's beneficiaries
 - d. The requirements and guidelines for portfolio rebalancing
 - e. The obligation to incorporate risk considerations
 - f. The requirement to seek advice from experts, and importantly, experts which are free from conflicts of interest

The outcome of individual investment decisions is always uncertain, but investment decisions that lack a policy foundation that we observe in the COAERS Investment Policy can be fraught with risk.

- B. The COAERS Implementation Policy is a sound and appropriately detailed manual expressing how the Board wishes the implementation of the investment program to be accomplished. Not all boards of trustees in the US have adopted the simultaneous development and use of an Investment Policy as well as a more granular, process-oriented Implementation Policy. Our firm views a supplementary process-oriented policy document such as the one COAERS employs quite favorably. The use of a separate Implementation Policy provides valuable clarity to all parties involved in the execution of the COAERS investment program in that it allows the Investment Policy to focus solely on foundational principles, policy, and policy guidelines.

The Implementation Policy covers a broad array of investment activities common to defined benefit pension plans like the COAERS plan. For example, it sets forth processes and methods to be employed in manager and investment product due diligence, investment manager selection and monitoring, performance evaluation, permissible investments, execution of major asset flows associated with fund management, etc. It requires common best practices methods and implementation steps without being so prescriptive that it excessively constrains the flexibility necessary for effective decisions as execution takes place.

May 2020



DELEGATION OF INVESTMENT AUTHORITY:

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

- **Authority held by Board:** Clarity that while the Board may delegate duties, it cannot delegate away overall responsibility for the operation of the plan, including the management of the funds held in trust solely for the benefit of the plans participants and their beneficiaries.
- **Authority held by Committee(s) of Board:** Clarity regarding the delegation of investment decision-making to the Investment Committee of the Board.
- **Authority held by Executive Staff:** Clarity on the authority granted to the Executive Director regarding investment decisions. Furthermore, we find that that the COAERS governance documents set forth in substantial detail not only the direct authority delegated to him/her, but also the limits of the associated obligations to keep the Board informed on the timely basis when it is exercised. Similarly, we conclude that there is also notable clarity regarding the role and obligations of the Chief Investment Officer with respect to investment decisions. We would further comment on this point by offering two examples of how the COAERS Investment Policy and Implementation Policy knit together policy direction, approved implementation procedures, and delegation of authority to Executive and Investment Staff.
- **Authority held by Investment Staff:** The governance structure addresses this point by noting that both the Executive Director and the Chief Investment Officer may delegate authority to non-executive investment staff, while making clear that they remain responsible for its execution.
- **Authority held by outside consultants:** There is substantial clarity regarding the role of the investment consultant with respect to its obligations to the COAERS Board, the requirement to collaborate with investment staff yet retain the independence necessary to be an effective direct advisor to the IC and Board, and the importance COAERS places on all involved parties avoiding conflicts of interest.

BOARD INVESTMENT EXPERTISE AND EDUCATION:

As part of this analysis, we reviewed the full log of educational sessions held by and for the COAERS Board and Investment Committee. The providers of the sessions varied and included the Investment Staff, Investment Consultant, and outside speakers. All sessions focused on topics relevant to the plan's investment mission and its execution. Relevance to actual investment decisions made by or overseen by the COAERS Board and Investment Committee was a particular focus of our attention. We observed that the educational sessions in all instances were focused on areas which were central to the investment strategy and program. Topics covered ranged from macro analysis of capital markets to specific portfolio management and implementation strategies which could potentially add value to the System's portfolio. We concluded that the number, breadth, and relevance of the educational sessions were adequate, if not moderately ambitious. We would further observe that it is likely the education provided to the Board and IC exceeds the educational efforts of many public pension plans in the US, in addition to meeting PRB requirements.

May 2020



Finally, we would note that education opportunities for the Board and the Investment Committee are not limited to formal educational sessions. As in our broad experience with institutional investors of all types, including public funds, the presentations and discussion of key analyses required by the COAERS Investment Policy and Implementation Policy offer critically important educational opportunities.

The Board, as of December 31, 2019, shown below in Figure 4.1, represents a diverse mix of Trustees elected, appointed, and designated. The composition of the Board is similar to many other public pensions in the state and throughout the US, but has seen less turnover than most in our opinion. 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

Place	Type	Member	Date Appointed/Elected	Current Term	Title
1	City Council Member	Leslie Pool	2/15 - Appointed		
2	City Manager Designee	Ed Van Eenoo	6/11 - Appointed		
3	Council Appointed Citizen	Stephanie Beach	2/18 - Appointed	2/18 - 12/20	
4	Council Appointed Citizen	Frank Merriman	4/17 - Appointed	1/18 - 12/21	
5	Board Appointed Citizen	Randy Spencer	1/18 - Appointed	1/18 - 12/21	
6	Active Elected Member	Michael Benson	1/20 - Elected	1/20 - 12/23	2019 Chair
7	Active Elected Member	Amy Hunter	1/20 - Elected	1/20 - 12/23	
8	Active Elected Member	Chris Noak	1/10 - Elected	1/18 - 12/21	
9	Active Elected Member	Yuejiao Liu	12/17 - Elected	1/18 - 12/21	

May 2020



10	Retired Elected Member	Eyna Canales-Zarate	12/16 - Elected	1/17 - 12/20	2019 Vice-Chair
11	Retired Elected Member	Anthony B. Ross, Sr.	12/18 - Elected	1/19 - 12/22	

Investment Staff Biographies

David Veal is Chief Investment Officer at COAERS. He has also held positions at both the Texas Teachers and Texas Employees Retirement Systems, worked for Morgan Stanley as an equity research analyst, and served as a US Navy officer. He holds an MBA from the University of Michigan and an engineering degree from Auburn University. He is a CFA® charterholder and has also earned both the Chartered Alternatives Investment Analyst designation and the Financial Risk Manager designation.

David Stafford is the Director of Investment Strategy at COAERS. He has a background in multi-asset portfolio construction and previously held positions at Merrill Lynch Wealth Management and Bank of America. He holds an MBA from the University of Oklahoma and a BS from the University of Texas. He is a CFA® charterholder.

Ty Sorrel is the Director of Investment Implementation at COAERS. With twenty years of experience in financial markets, Ty's previous roles include chief operating officer, fixed income salesman, and futures trader. Ty holds a BBA in Finance from Texas A&M University.

Kelly Doggett is the Portfolio Manager for Investment Analytics for COAERS. Prior to joining COAERS, he held investment positions at Teachers Retirement System of Texas and the USAA Investment Management Company. He is a CFA® charterholder and has degrees in both Finance and Accounting from Texas A&M University.

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



May 2020



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 clients have

May 2020



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 described in greater detail later in this section.

Short-List Candidate Search

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

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

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

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

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

May 2020



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

COAERS - INVESTMENT MANAGER SELECTION

It is important to note that the manager selection process is often influenced by the asset class under consideration and thus, it is often appropriate to utilize multiple processes to source and select managers. COAERS' selection process can be best summarized by language currently found in the Investment Implementation Policy:

"The Board believes that developing long-term relationships with a small group of high potential managers allows for a more thoughtful and robust evaluation of potential candidates than starting every search from scratch. As such, the Investment Staff will, in coordination with the Investment Consultant, develop and maintain a "Premier List" of 3-4 viable managers (including at least one passive index option) for potential inclusion within each allocation of the Fund. Doing so is intended to allow for (1) ongoing competitive benchmarking of existing managers and (2) rapid, effective replacement of any Manager that may be deemed by the Board to no longer be able to accomplish its mandate, including an emergency termination by the Executive Director as described in this policy."

COAERS takes a unique and differentiated approach to manager selection, opting for a less regimented search process for each mandate under consideration. In contrast to the more traditional approach to screening the existing universe of candidates within a particular asset class only when a need is identified, the "Premier List" is an ongoing process. While such an approach to manager selection is not common among its peers, RVK believes it does provide COAERS with many advantages, including:

- Less reliance on backward-looking performance metrics, as typical search documents rely heavily on point-in-time analyses that tend to lead to performance chasing.
- Better relationships with potential managers over longer time horizons, allowing Investment Staff to leverage knowledge and other resources available to them.
- Reduced implementation lag; if a manager is already on the Premier List, the time from decision making to implementation is significantly reduced as contracts and mandates are pre-negotiated

May 2020



- More downward pressure on fees and service from existing and potential managers; as managers know they can quickly be replaced – or not ever receive an active mandate – it is more likely to receive lower fees and better service in order to entice COAERS.

In order for a manager to be approved for inclusion on the Premier List for a given asset class, initial due diligence will be performed by both the Investment Staff and Investment Consultant. The process to identify potential managers includes collaboration from Investment Staff and Investment Consultant, including but not limited to direct sourcing from manager meetings, universe screening, and other research relevant to the particular asset class in question.

As potential finalist managers are considered for inclusion on the Premier List, a more thorough quantitative and qualitative assessment is performed by both Investment Staff and Investment Consultant. This includes industry-standard risk and performance metrics, a detailed review of strategy-specific Due Diligence Questionnaires, reference checks, and site visits. The rationale and general guidelines for site visits is clearly defined in Appendix II of the IIP.

Further, the Investment Committee will review pertinent documentation provided by Investment Staff, Investment Consultant, and any potential manager before inclusion or exclusion from the Premier List. The recommendation provided by Investment Staff to the IC also includes a “neutral” and “maximum” allocation to each potential manager; it is important to note that not all managers approved for the Premier List will automatically receive a mandate. The manager selection process as described simply recommends managers to be included in the Premier List, not necessarily to receive funds to manage at time of approval.

COAERS - INVESTMENT MANAGER MONITORING

The COAERS IIP details a variety of methods for ongoing monitoring of System managers. Generally, the monitoring efforts can be summarized into three main categories:

- **Ongoing Due Diligence:** Both Investment Staff and Investment Consultant are tasked with the ongoing monitoring of managers, through regular and ad-hoc meetings with managers. This due diligence is often conducted independently, meaning Investment Staff will hold its own meetings with managers separate from those held by the Investment Consultant. As the Investment Staff and Investment Consultant work closely together on a regular basis – including weekly update calls – it forms a strong base for due diligence efforts. Both parties are conducting due diligence efforts to ensure consistency of strategy, compliance with applicable guidelines, as well as general firm and market updates as applicable. The IIP clearly defines multiple reporting lines, but the following section encapsulates the documentation which would include the aforementioned due diligence efforts:

“Comprehensive Manager reviews are to be conducted and documented at least annually, to include quantitative as well as qualitative factors and may incorporate a due diligence visit by Investment Staff to the Managers’ offices and meeting with all key relevant participants in the management of the COAERS portfolio. The results of an annual or ad hoc comprehensive review will be reported to the Board along with recommended action, if appropriate.”

- **Performance Evaluation:** The Board reviews multiple performance evaluation reports from both the Investment Staff and Investment Consultant. A monthly performance summary and more

May 2020



comprehensive quarterly report are prepared by the Investment Consultant, while Investment Staff prepares reports based on the most relevant topics facing the System. These reports include pertinent information relating to manager performance, risk, and current positioning. The COAERS IIP documents the expectations set forth for these reports, noting:

“Performance evaluation is designed to monitor selection decisions to test the continued validity of these decisions and to trigger an analysis of underperformance or undue volatility. Comprehensive reviews will include a review of the Manager’s performance, current investment strategy or style, and other issues related to the Manager’s organization, personnel, or investment philosophy and process including compliance with requirement for best execution. If performance or organizational issues arise for a specific Manager, Investment Staff should be in contact with the Manager on a regular basis until the issues are resolved.”

Further, the IIP specifically addresses the information to be presented to the Board in quarterly and annual reports, which assist the decision making process relating to hiring, retaining, or firing managers. The metrics noted in the IIP are consistent with the decision making process and include industry standard statistics and qualitative considerations.

It is also important to note that the IIP clearly mentions the requirement to review components of the managers’ performance that are less apparent and often operational in nature. These include proxy voting, commissions, and indirect exposure to brokerage firms. COAERS also utilizes a TCA provider to assist with more a more technical analysis of commissions relative to best execution.

- **Adherence to Guidelines and Watch List:** Falling under the “Retention” section within the IIP, there is significant consideration given to the ongoing monitoring of managers via the “Watch List”, with language carefully crafted to ensure adequate monitoring of managers relative to guidelines and expectations:

“Investment Staff shall maintain a Manager Watch List for the purpose of ensuring the any concerns regarding any Manager are recognized, appropriately addressed and resolved. At the discretion of the CIO and in consultation with the Investment Consultant, a Manager may be included on the Watch List based on written internal procedures. Once a Manager is placed on a Watch List, the Investment Committee will be notified at its next meeting. Performance will be closely monitored and scrutinized until Investment Staff either removes a Manager from the Watch List and notifies the Board of such action, or a recommendation to terminate the Manager is made to the Board.”

Importantly, the current language relating to the Watch List does not require termination of a manager over a given time period, but is taken on a “case-by-case” basis. A certain amount of discretion is warranted surrounding manager terminations and the current language and practice balances the need for additional monitoring without forced action. It is also important to note that it is not simply performance that may place a manager on the Watch List:

“In addition to quantitative factors, significant adverse events may be considered a reason to add the manager to the Watch List. Example include, but are not limited to, these events:

- *Significant changes in firm ownership and/or structure,*
- *Loss of one or more key personnel,*

May 2020



- *Significant loss of clients and/or assets under management,*
- *Shifts in the firm's philosophy or process,*
- *Evidence that best execution policies are not being adhered to,*
- *Significant and persistent lack of responsiveness to client requests,*
- *Chronic violations of the IPS or guidelines, or*
- *Any other materials issue of which Investment Staff and/or Consultant become aware."*

The Board via the Investment Committee receives a copy of the Watch List on a quarterly basis, as well as affirmations provided by each manager stating their understanding and compliance with their agreed upon guidelines. The IIP also gives consideration to termination events that require more immediate action, granting the Executive Director authority to terminate a Manager based on a recommendation with supporting documentation from both the CIO and Investment Consultant.

RVK RECOMMENDATIONS

- **Consider the addition of a formal manager review policy with a more specific timeframe.**
 - The current language in the IIP states, "*Comprehensive Manager reviews are to be conducted and documented at least annually....*" The language is somewhat unclear if this requires Comprehensive Reviews of all managers annually, or simply a subset. A potential solution for this is to require Comprehensive Reviews – including visits – for all managers to be conducted every other year, allowing for more flexibility in completing the required analyses.
- **Consider verbiage edits to the Watch List section.**
 - While it is not entirely prescriptive, some of the current language surrounding the monitoring of performance could be perceived as an "if, then" scenario.
- **Consider clarifying language regarding reporting for managers with "live" mandates vs. those currently on the Premier List.**
 - In practice, the reporting requirements are only applied to the managers currently with a live mandate; however, the IIP does not distinguish between the two as it relates to reporting requirements. Language could be added to clarify, or reporting on all Premier List managers should be provided to the Board.
- **Consider the addition of performance metrics for non-public securities and/or vehicles.**
 - While current exposure to private markets is limited, it may be beneficial to create a distinct set of reporting requirements for non-public mandates. The data and performance metrics used to review private markets mandates can be substantially different than that of public markets, and as such, COAERS may benefit from clearly defining its expectations for managers with unique mandates.

Appendix A: Background of RVK Project Team Members

Appendix A: Background of RVK Project Team Members

May 2020



Ian Bray, CFA – Consultant, Principal

Ian joined RVK in 2011 and is based in Spokane, Washington, supported by our Portland office. He has held various roles at RVK before being promoted to the position of Consultant in 2016. The majority of his time is focused on public funds, specifically as it relates to asset allocation and risk management.

In addition to serving many of the firm's public fund clients, Ian also works closely with a number of Taft Hartley and corporate clients. His responsibilities include asset allocation, investment manager research, forward-looking capital market assumptions, and asset class portfolio structuring.

Ian earned a Bachelor of Science degree with a major concentration in Finance coupled with a minor in Economics from Montana State University. He holds the Chartered Financial Analyst designation and is a member of the CFA Institute and the CFA Society of Spokane. Ian 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 clients. His responsibilities include asset allocation and policy setting, investment manager research and due diligence, forward-looking capital market assumptions, asset class portfolio structuring, and many of the firm's internal research projects.

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

May 2020



Janelle Booth, CFA – Consultant

Janelle joined RVK in 2011 and is located in our New York office. She has held various roles at RVK, including Senior Investment Analyst, Investment Associate, Associate Consultant, and currently, Consultant.

Janelle serves many of the firm's public fund clients as well as endowments and foundations, defined contribution plans, and health organizations. Her responsibilities include asset allocation, investment manager research, forward-looking capital market assumptions, asset class portfolio structuring, and client education presentations.

Janelle graduated magna cum laude from the University of Portland with a Bachelor of Business Administration degree in Finance and a minor in Economics. She holds the Chartered Financial Analyst designation and is a member of the CFA Institute and the CFA Society of New York.



Kevin Wyllie – Associate Consultant

Kevin joined RVK in 2013 and is located in our Portland office. He has held various roles at RVK, including Senior Investment Analyst, Investment Associate, and currently, Associate Consultant.

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

Kevin graduated from Gonzaga University with a Bachelor of Business Administration degree with concentrations in Finance and Marketing. He also earned a Master of Finance degree from Tulane University, A.B. Freeman School of Business.

May 2020



Jake Theno – Investment Associate

Jake joined RVK in 2016 and is located in our Portland office. He has held various roles at RVK, including Investment Analyst, Senior Investment Analyst, Team Lead, and currently, Investment Associate.

Jake works with a diverse client base including public and corporate pensions, endowments and foundations, Taft-Hartley plans, high net worth individuals and defined contribution plans. As a member of our consulting team, Jake works on a variety of projects including asset allocation studies, manager style analyses, investment policy revisions, client education presentations, and portfolio rebalancing and assisting with letters of instruction.

Jake graduated from Linfield College with a Bachelor of Science degree in Finance.



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,

May 2020



and Master of Public Policy degree from Harvard University. Jim is a shareholder of the firm and serves on the firm's Board of Directors.



Marcia Beard – Senior Consultant, Principal

Marcia is a Senior Consultant with RVK and is located in our Portland office. She joined the firm in 1996 and has 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.



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 client assignment as well as the efficacy of firms currently managing assets for clients. 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.

May 2020



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 client 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.

Stephen Drgastin – Senior Investment Analyst, Team Leader

Stephen joined RVK in 2018 and is located in our Portland office. He currently serves as both a Senior Investment Analyst and Team Lead.

As a member of our Performance Measurement and Analytics department, Stephen works on a variety of client types and focuses on preparing customized performance reports, assisting with portfolio rebalancing, and leading a team of other investment analysts.

Stephen graduated from the University of Portland with a Bachelor of Business Administration degree in Finance.