
















IC Meeting

Schedule Friday, February 18, 2022 10:00 AM — 1:00 PM CST
Venue 6850 Austin Center Blvd., Suite 320, Austin, TX 78731
Organizer Sarah McCleary





Agenda

- 10:00 AM 1. Call meeting to order
Presented by Committee Chair Benson
 [Item #1 Summary.docx](#)
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- 10:00 AM 2. Review order of business and establish meeting objectives
Presented by Committee Chair Benson
 [Item #2 Summary.docx](#)
 [02A Agenda with time frames 2022 02 18.pdf](#)
-
- 10:05 AM 3. Receive public comments
Presented by Committee Chair Benson
 [Item #3 Summary.docx](#)
-
- 10:10 AM 4. Consider approval of the November 19, 2021 Investment Committee minutes
Presented by Committee Chair Benson
 [Item #4 Summary.docx](#)
 [2021-11-19 Investment Committee.docx](#)
-
- 10:15 AM 5. Discuss and consider 2022 Investment Committee work plan
Presented by Christopher Hanson
 [Item #5 Summary.docx](#)
 [5B 2022 Investment Committee Work Plan DRAFT.docx](#)
 [5C 2021 Investment Committee Work Plan 2021-08.docx](#)
-
- 10:20 AM 6. Review investment performance including strategy, compliance, and delegation of authority
Presented by David Stafford and RVK

-  06A Item #6 Summary.docx
 -  06B COAERS Investment Strategy Dashboard 2021-Q4.pdf
 -  06C COAERS Compliance Dashboard 2021-Q4_.pdf
 -  06D COAERS Status of Delegated Authority 2021-Q4 .pdf
 -  06E RVK Summary Report of Fund Performance 2021-Q4.pdf
 -  06F Cash Activity Detail for IC 2021-Q4_.pdf
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10:50 AM 7. Discuss and consider investment strategy including Investment Risk Framework

Presented by David Stafford

-  07A Item Summary.docx
 -  07B Confidential Annual Review of the IRF.pptx
 -  07C Confidential Summary IRF Dashboard 2022-02-08.pdf
 -  07D Confidential Manager Strategy 2021-Q4.docx
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11:20 AM 8. Discuss and consider investment implementation including Premier List for Multi-Asset

Presented by Ty Sorrel

-  08A Item Summary.docx
 -  08B Confidential Implementation Update 2021-Q4 .docx
 -  08C Manager Monitoring Report 2021-Q4.docx
 -  08D COAERS Implementation Dashboard 2021-Q4.pdf
 -  08E Manager Fees by Quarter 2021-Q4.pdf
 -  08F RVK Summary of Manager Performance.pdf
 -  08G Confidential Current Premier List 2021-Q4.pdf
 -  08H Confidential Annual Review of Multi Asset Portfolio.pptx
 -  08I \$\$\$ Confidential Proposed Premier List 2021-Q4 .pdf
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12:05 PM 9. Discuss and consider strategic goals and policies of the investment program including:
A. Capital markets assumptions, program goals and guidelines
B. Proposed revisions to Investment Policy Statement and Investment Implementation Policy

9A Capital markets assumptions, program goals and guidelines
Presented by David Stafford and RVK


-  09A Item Summary.docx
 -  09A1 RVK Asset Allocation and Risk Tolerance.pdf
 -  09A2 Goals of the Investment Program.pptx
-

9B Proposed revisions to Investment Policy Statement and Investment Implementation Policy


Presented by David Stafford

-  09B Item Summary.docx
 -  09B1 Staff assessment of IPS & IIP .docx
 -  09B2 RVK review of IPS & IIP updates 2022-02.pdf
 -  09B3 Investment Policy Statement redlined.pdf
 -  09B4 Investment Implementation Policy redlined.pdf
-

12:50 PM 10. Receive update on Chief Investment Officer position
Presented by Christopher Hanson

-  Item #10 Summary.docx
-

12:55 PM 11. Receive key meeting takeaways and call for future agenda items
Presented by Committee Chair Benson

-  Item #11 Summary.docx
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1. Call meeting to order

Presented by Committee Chair Benson

AGENDA ITEM 1:
Call meeting to order

AGENDA ITEM OBJECTIVE

The objective of the agenda item is to formally begin the Committee meeting.

2. Review order of business and establish meeting objectives

Presented by Committee Chair Benson

AGENDA ITEM 2:

Review order of business and establish meeting objectives

AGENDA ITEM OBJECTIVE

This agenda item provides Trustees the opportunity to review the order of business and to express a desire to take an agenda item out of order, and to discuss the key objectives of the meeting. The time frames on the agenda are for informational purposes only.

RELEVANCE TO STRATEGIC PLAN

This agenda item meets **COAERS Strategic Plan Goal 4: Identify and implement leading practices in board governance, pension administration, and investment management**. It is an industry best practice to establish meeting objectives and review them at the outset of each meeting.

MEETING OBJECTIVES

1. As part of its **oversight** responsibility, the Committee will:
 - Receive reports on the Fund's performance relative to investment policy goals and objectives as well as the use of delegated authority in the pursuit of those goals (Agenda Item #6).
 - Receive reports on employment of the Fund's investment strategy including the Investment Risk Framework (Agenda Item #7).
 - Receive reports on the Fund's implementation approach including the status of COAERS Investment Manager Premier Lists (Agenda Item #8).
 - Receive an update on efforts to fill the Chief Investment Officer position (Agenda Item #10).
2. As part of its **review** responsibility, the Committee will:
 - Review the 2021 Committee Work Plan and discuss development of the 2022 Committee Work Plan (Agenda Item #5).
3. As part of its **approval** responsibility, the Committee will:
 - Consider the Premier List for Multi-Asset (Agenda Item #8).
 - Consider updates to the Investment Policy Statement and Investment Implementation Policy (Agenda Item #9).

ATTACHMENT

1. Proposed timeline of agenda items with potential time frames

Agenda Timeframes

February 18, 2022

Committee:
Investment Committee

Agenda Number	Agenda Item	Duration	Start	End
1	Call meeting to order – Committee Chair Benson		10:00 AM	10:00 AM
2	Review order of business and establish meeting objectives – Committee Chair Benson	0:05	10:00 AM	10:05 AM
3	Receive public comments – Committee Chair Benson	0:05	10:05 AM	10:10 AM
4	Consider approval of the November 19, 2021 Investment Committee minutes – Committee Chair Benson	0:05	10:10 AM	10:15 AM
5	Discuss and consider 2022 Investment Committee Work Plan - Committee Chair Benson	0:05	10:15 AM	10:20 AM
6	Review investment performance including strategy, compliance, and delegation of authority – David Stafford and RVK	0:30	10:20 AM	10:50 AM
7	Discuss and consider investment strategy including Investment Risk Framework - David Stafford	0:30	10:50 AM	11:20 AM
8	Discuss and Consider investment implementation including Premier List for Multi-Asset – Ty Sorrel	0:45	11:20 AM	12:05 PM
9	Discuss and consider strategic goals and policies of the investment program including: A. Capital markets assumptions, program goals and guidelines – David Stafford and RVK B. Proposed revisions to Investment Policy Statement and Investment Implementation Policy – David Stafford	0:45	12:05 PM	12:50 PM
10	Receive update on Chief Investment Officer position – Christopher Hanson	0:05	12:50 PM	12:55 PM
11	Review key meeting takeaways and call for future agenda items – Committee Chair Benson	0:05	12:55 PM	1:00 PM
		3 Hr & 0 Min		

3. Receive public comments

Presented by Committee Chair Benson

AGENDA ITEM 3:
Receive public comments

AGENDA ITEM OBJECTIVE

This standing agenda item allows System Members and members of the public the opportunity to provide comments to the Board.

RELEVANCE TO STRATEGIC PLAN/CORE COMPETENCIES

This agenda item meets the core competency established in the **COAERS Strategic Plan** “*Transparency: Complying with open meeting and public information laws to ensure the decision-making process is clear to members and the public.*”

The Chair will recognize any person who wishes to comment for up to three minutes per person.

4. Consider approval of the November 19,
2021 Investment Committee minutes

Presented by Committee Chair Benson

AGENDA ITEM 4:

Consider approval of the November 19, 2021 Investment Committee minutes

AGENDA ITEM OBJECTIVE

This standing agenda item seeks approval of the minutes from the prior quarterly Investment Committee meeting. The charter for the Investment Committee by the Board requires the IC to keep minutes of its meetings and to make these materials available to Trustees.

RELEVANCE TO STRATEGIC PLAN

This agenda item meets the core competency established in the **COAERS Strategic Plan** “*Transparency: Complying with open meeting and public information laws to ensure the decision-making process is clear to members and the public.*”

RECOMMENDATION FOR COMMITTEE ACTION

Staff recommends approval of the minutes of the November 19, 2021 Investment Committee meeting.

ATTACHMENT

1. Draft minutes of November 19, 2021 Investment Committee meeting

MINUTES

INVESTMENT COMMITTEE

Public Meeting held in person and videoconference

on November 19, 2021 at 9:00 a.m. CT

Pursuant to Texas Govt. Code 551.125 – COVID-19 circumstances

**Committee Members
Present/(Absent)**

Michael Benson,
Committee Chair
Amy Hunter
Frank Merriman†
Randy Spencer
Chris Noak, ex officio

Guests:

Ian Bray*, RVK
Spencer Hunter*, RVK
Paige Saenz*, General
Counsel
Anna Bezuidenhout*

**Other Board Trustees
Present/(Absent)**

(Kelly Crook)
(Yuejiao Liu)
(Leslie Pool)
(Anthony B. Ross, Sr.)
(Brad Sinclair)
(Diana Thomas)

Others Present

Staff:

Christopher Hanson
Russell Nash
David Stafford
Sarah McCleary
Ty Sorrel
Kelly Doggett
Yun Quintanilla
Donna Boykin
Mehrin Rahman
Amy Kelley
Jenni Bonds

* present telephonically

† present via videoconference

1 Call meeting to order

Chair Chris Noak called the meeting to order at 9:08 a.m. The following Committee members were present in person: Hunter, Spencer and Noak. Mr. Merriman was in virtual attendance.

2 Review order of business and establish meeting objectives

Chair Noak reviewed the order of business and meeting objectives with the Committee. No changes were made to the order of business.

3 Receive public comments

Chair Noak asked if any members of the public wished to speak, either now or during an agenda item. There were no comments.

4 Consider approval of the August 20, 2021 Investment Committee minutes

Chair Noak asked the Committee to review the Investment Committee minutes. Ms. Amy Hunter moved approval of the August 20, 2021 Investment Committee minutes. Mr. Randy Spencer seconded, and the motion passed 4-0.

5 Review investment performance including strategy, compliance, and delegation of authority

The Committee reviewed performance data from RVK through September 30, 2021. Staff reported Fund investments lost 0.86% net of fees during the quarter and gained 18.70% during the trailing one-year period. It was noted that inflationary pressures and disrupted supply chains contributed to a quarter of mixed results.

Mr. Mike Benson arrived at 9:26 a.m.

Mr. David Stafford reviewed the investment strategy dashboard and noted that net returns exceeded 9% and the assumed actuarial rate of return for the System across a 3-, 5-, and 10-year horizon. He also noted that, accounting for CEM median fees, net of fees performance was in the second quartile of comparable small peers and strongly exceeded goals on a risk adjusted basis. Staff, RVK and the committee discussed the differences between net and gross of fees performance across peers and noted the best-in-class fee reporting implemented by the System.

Mr. Stafford also reviewed the compliance report, the delegation of authority report, and the investment cash activity report.

6 Review investment strategy including Investment Risk Framework (IRF)

Mr. Stafford reviewed the risk/return outlook for the Fund via the IRF. He noted that the risk regime is normal with options markets implying near-term volatility of 11.1% for neutral Fund positioning. He noted that stretched equity valuations moderate the return outlook, and that US treasuries are still acting as an effective hedge to equity risk. He also noted that Fund positioning near neutral remains appropriate with a backdrop of normal volatility but elevated concentration and valuation risks.

7 Review investment implementation including Premier Lists for Real Assets

Mr. Ty Sorrel presented an update on implementation activities during the quarter, reviewed the manager monitoring report, and discussed investment manager fees by quarter.

RVK discussed benchmarking in Real Assets, noting the key differences between public and private markets approaches. RVK's review of System benchmarks in Real Assets suggested that current selected benchmarks are institutional in quality and in line with the investment beliefs adopted in the Investment Policy Statement. RVK also discussed the tracking error that was likely to result in Real Assets because of

the mismatch between public markets benchmarks and private markets implementation.

Mr. Stafford reviewed the role of Real Assets in the total portfolio context and noted that this asset class is expected to provide growth, diversification, and inflation protection. He discussed how current implementation has led to strong risk adjusted returns and that both public and private markets implementation provide important characteristics in achieving these goals.

Mr. Sorrel provided the annual review of Real Assets including the different allocations of both public and private markets and the associated Premier Lists. He noted that Real Assets are in line with their respective neutral allocations at all the major asset class and sub-asset class levels and outlined the sub-asset classes of Real Estate Equity and Infrastructure Equity. He noted that both public and private markets mandates within these asset classes have performed as expected in the current market environment.

Mr. Noak moved to recommend to the Board approval of the proposed changes to the Premier List for Real Assets. Ms. Hunter seconded, and the motion passed unanimously.

8 Discuss and consider 2022 Investment Budget

Mr. Stafford provided a history of investment expenses and noted that a recent CEM Benchmarking report placed COAERS in the top 6-8% for cost effectiveness. For 2021, he noted that investment expenses will largely come in at or below budget with the notable exception of manager fees, which increased due to asset growth and strong performance. He presented a proposed budget which is largely flat year over year which still allows for key 2022 initiatives and continues the strong stewardship of System assets.

Mr. Randy Spencer moved to recommend the proposed 2022 Investment Budget to the Board for approval. Ms. Hunter seconded, and the motion passed unanimously.

9 Receive update on Chief Investment Officer position

Mr. Christopher Hanson noted that he cast a wide net for applicants and had begun initial conversations with applicants.

10 Discuss and consider 2022 Investment Committee Work Plan

Trustees reviewed the 2021 Work Plan and noted that their committee had successfully met all 2021 goals. Trustees were supportive of the 2022 Work Plan.

11 Review key meeting takeaways and call for future agenda items

Committee Chair Benson summarized the actions taken and information discussed at the meeting and provided an opportunity to add future agenda items.

5. Discuss and consider 2022 Investment Committee work plan

Presented by Christopher Hanson

AGENDA ITEM 5:
Discuss and consider 2022 Investment Committee work plan

AGENDA ITEM OBJECTIVE

This agenda item is for discussion and consideration of the 2022 Committee work plan (the 2021 Committee work plan has been included for reference purposes).

RELEVANCE TO STRATEGIC PLAN

This agenda item meets **COAERS Strategic Plan Goal 4: Identify and implement leading practices in board governance, pension administration, and investment management**. It is an industry best practice to establish and review Committee work plans.

RECOMMENDATION FOR COMMITTEE ACTION

At the Committee's discretion.

ATTACHMENTS

1. Draft 2022 Committee Work Plan
2. 2021 Committee Work Plan (for reference)

2022 Investment Committee Work Plan

Scheduled Quarterly Meetings

1. February meeting
 - Quarterly review of investment performance, positioning, strategy, and implementation
 - Quarterly reports on Premier Lists, delegated authority, manager fees, cash movements
 - Annual review of Investment Risk Framework process
 - Annual review of investment goals, assumptions, guidelines, and policies
 - Annual review of Investment Policy Statement (IPS)/Investment Implementation Policy (IIP)
 - Annual review of Premier List for Multi-Asset
2. May meeting
 - Quarterly review of investment performance, positioning, strategy, and implementation
 - Quarterly reports on Premier Lists, delegated authority, manager fees, cash movements
 - Annual review of Premier Lists for Fixed Income and Cash and Equivalents
 - Annual review of Investment Consultant
 - Discuss and consider investment beliefs, investment program goals and strategy
3. August meeting
 - Quarterly review of investment performance, positioning, strategy, and implementation
 - Quarterly reports on Premier Lists, delegated authority, manager fees, cash movements
 - Annual review of Premier List for Global Equities
 - Discuss and consider investment program goals and strategy
4. Board workshop
 - Discuss and consider secular trends
 - Discuss and consider investment strategy
 - Discuss and consider potential updates
5. November meeting
 - Quarterly review of investment performance, positioning, strategy, and implementation
 - Quarterly reports on Premier Lists, delegated authority, manager fees, cash movements
 - Annual review of Premier List for Real Assets
 - Annual review of Investment budget
 - Discuss Committee work plan for 2023
 - Discuss and consider investment program goals and strategy

2021 Investment Committee Work Plan

1. Strategic Goals

Goal #1: Manage a Sustainable Retirement System

- ✓ Asset Allocation Study

Goal #2: Responsibly Manage the Risks of the System

- ✓ Annual review of the risk budget and SAA parameters
- ✓ Annual review of Investment Risk Framework process

Goal #4: Identify and Implement Best Practices

- ✓ Annual review of key policies including IPS and IIP
- ✓ Ongoing education regarding emerging asset types and secular market trends

Goal #5: Identify Opportunities to Capitalize on Organizational Strengths

- ✓ Annual review of Premier Lists including opportunities for improved implementation
- ✓ Regular review of secular trends including demographics, technology, etc.

2. Core Competencies

Prudent Investment Management

- Quarterly reviews of:
 - ✓ Performance reporting from RVK
 - ✓ COAERS manager monitor from Staff
 - ✓ Manager fee payment report from Staff
 - ✓ Delegation of authority report from Staff
 - ✓ Cash movement report from Staff
 - ✓ IRF Summary Dashboard and Detailed Dashboard

Scheduled Quarterly Meetings

1. February meeting (02/26/21)
 - ✓ Quarterly review of investment performance, positioning, strategy, and implementation– Veal/RVK
 - ✓ Quarterly reports on Premier Lists, delegated authority, manager fees, cash movements - Veal
 - ✓ Annual review of Investment Risk Framework process – Stafford/Veal
 - ✓ Annual review of investment goals, assumptions, guidelines, and policies – Veal/RVK
 - ✓ Annual review of Investment Policy Statement (IPS)/Investment Implementation Policy (IIP) – Veal
 - ✓ Annual review of Premier List for Multi-Asset – Sorrel/Veal
 - ✓ Update on Custodial banking transition – Hanson

2. May meeting (05/21/21)
 - ✓ Quarterly review of investment performance, positioning, strategy, and implementation – Veal/RVK
 - ✓ Quarterly reports on Premier Lists, delegated authority, manager fees, cash movements – Veal
 - ✓ Annual review of Premier Lists for Fixed Income and Cash & Equivalents – Sorrel/Veal
 - ✓ Annual review of Investment Consultant – Veal

3. August meeting (08/20/21)
 - ✓ Quarterly review of investment performance, positioning, strategy, and implementation – Stafford/RVK
 - ✓ Quarterly reports on Premier Lists, delegated authority, manager fees, cash movements – Stafford
 - ✓ Discuss & consider currency hedging –Stafford (moved from May 2021 meeting)
 - ✓ Annual review of Premier List for Global Equities – Sorrel/Stafford

4. Board workshop/Investment Symposium IC (October 2021)
 - ✓ Discuss & consider secular trends including digital assets
 - ✓ Discuss & consider investment strategy
 - ✓ Discuss & consider potential updates

5. November meeting (11/19/21)
 - ✓ Quarterly review of investment performance, positioning, strategy, and implementation – Stafford/RVK
 - ✓ Quarterly reports on Premier Lists, delegated authority, manager fees, cash movements – Stafford
 - ✓ Annual review of Premier List for Real Assets – Sorrel/Stafford
 - ✓ Annual review of Investment budget – Stafford
 - ✓ Discuss Committee work plan for 2022 – Chair

6. Review investment performance including strategy, compliance, and delegation of authority

Presented by David Stafford and RVK

AGENDA ITEM 6:

Review investment performance including strategy, compliance, and delegation of authority

AGENDA ITEM OBJECTIVE

This agenda item is for the Committee to review the Fund’s performance through December 31, 2021, as well as receive reports on the investment program related to strategy, compliance, delegation of authority, and cash management.

RELEVANCE TO STRATEGIC PLAN

This item allows the Committee to review Fund performance and assess the extent to which the System is meeting **COAERS Strategic Plan Goal 1: Achieve and maintain a funding level that ensures the long-term sustainability of the retirement system** since long-term investment performance consistent with the investment program’s goals is central to long-term system sustainability. Additionally, the agenda item allows the Committee to review the approved risk parameters and compliance requirements to ensure the System is fulfilling **COAERS Strategic Plan Goal 2: Responsibly Manage the Risks of the System.**

BACKGROUND

Staff and Consultant will review the performance of the Fund and major asset classes through the most recent quarter, which is summarized below for the period ended December 31, 2021:

	QTD	1Y	3Y	5Y	10Y
Fund return - gross of fees	5.26	13.32	15.04	10.94	9.55
<i>Percentile Rank vs. all peers (1=highest)</i>	14	55	51	53	54
<i>Percentile Rank vs. small peers (1=highest)</i>	7	62	34	40	50
Fund return - net of fees	5.20	12.99	14.73	10.63	9.19
Policy Index - gross return	5.36	14.38	15.54	10.76	9.17
Passive Index - gross return	3.73	8.78	13.72	10.11	7.91
Realized risk – standard deviation	<i>N/A</i>	6.70	11.61	10.05	8.77
<i>Percentile Rank vs. all peers (1=highest)</i>	<i>N/A</i>	<i>N/A</i>	25	26	23

ATTACHMENTS

1. COAERS Investment Strategy Dashboard as of 2021-Q4
2. COAERS Investment Compliance Dashboard as of 2021-Q4
3. COAERS Staff Report on Status of Delegated Authority as of 2021-Q4
4. RVK Summary of Fund Performance for 2021-Q4
5. COAERS Investment Operations Cash Activity Detail for 2021-Q4

SUPPLEMENTAL MATERIALS PROVIDED VIA BOX.COM

1. RVK Quarterly Investment Performance Analysis for 2021-Q4
2. RVK Capital Markets Review for 2021-Q4
3. Callan Periodic Tables of Investment Returns for December 2021

INVESTMENT GOALS

1. Achieve long-term, annualized nominal rate of return net of fees that:

- Meets or exceeds the assumed actuarial rate of return for the System

	3Y	5Y	10Y
COAERS Fund - Net Return	14.73%	10.63%	9.19%
COAERS Actuarially Assumed Rate of Return	7.00%	7.00%	7.00%
Difference	7.73%	3.63%	2.19%
Status	ABOVE	ABOVE	ABOVE

- Ranks in the top quartile of peer comparisons consistently

Versus all plans and incorporating fee levels equal to the CEM Benchmarking median of 80 bps

	3Y	5Y	10Y
COAERS Fund - Net Return	14.73%	10.63%	9.19%
Top Quartile Net Return - All Peers	15.53%	11.08%	9.53%
Difference	-0.80%	-0.45%	-0.34%
Status	BELOW	BELOW	BELOW

Versus small plans and incorporating fee levels equal to the CEM Benchmarking median of 99 bps

	3Y	5Y	10Y
COAERS Fund - Net Return	14.73%	10.63%	9.19%
Top Quartile Net Return - Small Peers	14.84%	10.59%	9.22%
Difference	-0.11%	0.04%	-0.03%
Status	BELOW	ABOVE	BELOW

2. Achieve a long-term, risk-adjusted relative rate of return net of fees that:

- Meets or exceeds the Passive Index (i.e. the Reference Portfolio)

Passive Index: 60% MSCI ACWI Net USD Unhedged/40% Bloomberg Global Agg USD Unhedged

	3Y	5Y	10Y
COAERS Fund - Net Return	14.73%	10.63%	9.19%
COAERS Passive Index - Gross Return	13.72%	10.11%	7.91%
Difference	1.01%	0.52%	1.28%
Status	ABOVE	ABOVE	ABOVE

Incorporating fee levels for the Passive Index that are consistent with best COAERS Premier List fees (11 bps)

COAERS Passive Index - Net Return	13.61%	10.00%	7.80%
Difference	1.12%	0.63%	1.39%
Status	ABOVE	ABOVE	ABOVE

- Meets or exceeds the Policy Index (i.e. the Strategic Benchmark)

Policy Index: Target weighted composite of the benchmarks for the major asset classes in the SAA

	3Y	5Y	10Y
COAERS Fund - Net Return	14.73%	10.63%	9.19%
COAERS Policy Index - Gross Return	15.54%	10.76%	9.17%
Difference	-0.81%	-0.13%	0.02%
Status	BELOW	BELOW	ABOVE

Assuming fee levels for the Policy Index that are consistent with best COAERS Premier List fees (11 bps)

COAERS Policy Index - Net Return	15.43%	10.65%	9.06%
Difference	-0.70%	-0.02%	0.13%
Status	BELOW	BELOW	ABOVE

Investment returns are presented in an annualized net basis unless otherwise noted

INVESTMENT GOALS (continued)

3. Achieve these strategic objectives via fiduciary best practices that:

- Ensure proper diversification of asset classes and factor exposures
 - Fund is well-diversified across global markets, asset types, and implementation styles
 - Diversification is being enhanced further by adding potential hedges against adverse regimes
- Maintain appropriate long-term risk and return expectations
 - CMAs reviewed each year with IC/Board to assess outlook and market conditions
 - Key Investment Manager views and asset allocation strategies analyzed to inform outlook
- Adapt the asset allocation to changing market conditions
 - Asset/Liability Study completed in 2018, SAA parameters updated to reflect conclusions
 - Delegated authority to implement strategy within SAA parameters approved by Board
 - Investment Risk Framework approved by Board, regular reporting provided to IC

RISK BUDGET

ABSOLUTE RISK (aka VOLATILITY)						
	POLICY			REALIZED		
	MIN	TARGET	MAX	3Y	5Y	10Y
COAERS Fund - Volatility	10%	-	12%	11.6%	10.1%	8.8%
Status				WITHIN	WITHIN	BELOW
	MIN	TARGET	MAX	3Y	5Y	10Y
COAERS Fund - Sharpe Ratio	-	0.50	-	1.18	0.96	1.01
Status				ABOVE	ABOVE	ABOVE
RELATIVE RISK (aka TRACKING ERROR)						
	POLICY			REALIZED		
	MIN	NEUTRAL	MAX	3Y	5Y	10Y
COAERS Fund - Tracking Error	-	150	300	168	160	168
Status				WITHIN	WITHIN	WITHIN
	MIN	TARGET	MAX	3Y	5Y	10Y
COAERS Fund - Information Ratio	-	0.50	-	0.74	0.50	0.91
Status				ABOVE	ABOVE	ABOVE

ASSET ALLOCATION

	STRATEGIC GUIDELINES <i>as of Mar-2021</i>					ACTUAL FUND POSITIONING		
	MIN ^S	MIN ^T	TARGET	MAX ^T	MAX ^S	CURRENT	STATUS ^T	STATUS ^S
Major Asset Class Policy Weights & Rebalancing Ranges								
Global Equity	46.0%	51.0%	56.0%	61.0%	66.0%	56.9%	WITHIN	WITHIN
Real Assets	10.0%	11.0%	15.0%	19.0%	20.0%	16.1%	WITHIN	WITHIN
Fixed Income	16.0%	18.0%	21.0%	27.0%	33.0%	21.0%	WITHIN	WITHIN
Multi-Asset	2.5%	4.5%	7.0%	12.5%	15.0%	5.0%	WITHIN	WITHIN
Cash	-10.0%	-5.0%	1.0%	5.0%	10.0%	1.0%	WITHIN	WITHIN
Sub-Asset Class Policy Weights & Rebalancing Ranges								
US Equity	21.0%	28.0%	33.0%	38.0%	46.0%	34.3%	WITHIN	WITHIN
Developed Market Equity	10.0%	12.5%	15.0%	17.5%	19.0%	14.8%	WITHIN	WITHIN
Emerging Market Equity	3.0%	5.5%	8.0%	12.5%	15.0%	7.8%	WITHIN	WITHIN
Real Estate	5.0%	7.0%	10.0%	13.0%	15.0%	11.0%	WITHIN	WITHIN
Infrastructure & Other	0.0%	1.0%	5.0%	7.0%	10.0%	5.0%	WITHIN	WITHIN
US Treasuries	9.0%	11.0%	13.0%	21.0%	25.0%	14.3%	WITHIN	WITHIN
US Mortgages	2.0%	3.0%	4.0%	6.0%	8.0%	3.1%	WITHIN	WITHIN
US Credit	1.0%	2.5%	4.0%	7.0%	10.0%	3.6%	WITHIN	WITHIN
Asset Allocation	2.5%	3.5%	5.0%	7.5%	10.0%	4.0%	WITHIN	WITHIN
Commodities & Other	0.0%	1.0%	2.0%	5.0%	10.0%	1.1%	WITHIN	WITHIN
Cash & Equivalents (USD)	-10.0%	-5.0%	1.0%	5.0%	10.0%	0.9%	WITHIN	WITHIN
Other Currencies	0.0%	0.0%	0.0%	1.0%	2.0%	0.1%	WITHIN	WITHIN

INVESTMENT STRATEGY

1. Pursue a superior investment strategy by conducting:

- Formal Asset/Liability Study every 5 years or upon major changes to contributions, benefits, or capital markets.

	<u>Completion Date</u>	<u>As of Date</u>	<u>Service Provider</u>
Asset/Liability Study:	May 2018	December 2017	RVK

- Formal Asset Allocation Study every 3 years.

	<u>Completion Date</u>	<u>As of Date</u>	<u>Service Provider</u>
Strategic Asset Allocation Study:	February 2021	December 2020	RVK

- Review of Strategic Asset Allocation parameters at least every 1 year.

	<u>Completion Date</u>	<u>As of Date</u>
Strategic Asset Allocation Review:	February 2021	December 2020

- Review of IPS and IIP at least annually or upon major changes in capital markets or industry practices.

	<u>Last Review Date</u>	<u>Last Revision Date</u>
Investment Policy Statement:	March 30, 2021	March 30, 2021
Investment Implementation Policy:	June 29, 2021	June 29, 2021

ASSET DIVERSIFICATION

2. Maintain proper diversification of assets by:

- Reviewing investment concentration levels in any single public corporation.

	<u>Individual Holding Concentration Limits:</u>	<u>Largest Concentration</u>	<u>Company Name</u>	<u>Level</u>	<u>Status</u>
3% of the Fund in the securities of any one company:			EQUINIX INC	0.6%	OK
5% of the Fund of any class of voting security of any one company:			EQUINIX INC	0.6%	OK

- Reviewing investment concentration levels in any single investment manager or investment vehicle.

	<u>Investment Manager Concentration Limits:</u>	<u>Largest Concentration</u>	<u>Manager/Vehicle</u>	<u>Level</u>	<u>Status</u>
≤15% of Fund assets with any active manager:			Newton IM	8.4%	OK
≤30% of Fund assets with any passive manager:			Legal & General	12.7%	OK
≤20% of firm assets for any manager:			Agincourt	5.7%	OK
≤20% of vehicle assets unless a seed investment:			LGIMA MSCI USA	9.3%	OK

FUND LIQUIDITY

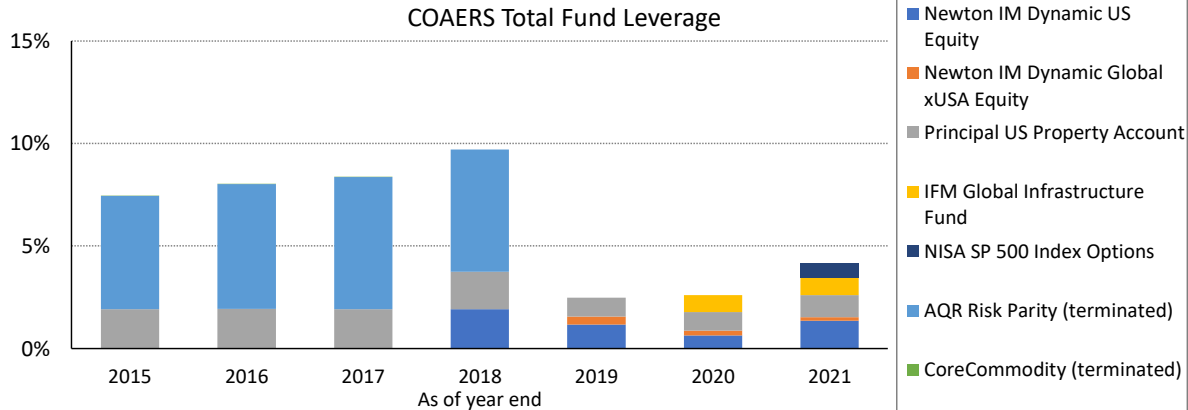
3. Ensure sufficient liquidity to meet benefit payment and other obligations by:

- Review allocation to highly liquid investments quarterly.

<u>Liquidity:</u>	<u>\$ millions</u>	<u>% of Fund</u>	<u>Accounts Included</u>
0 - 5 Days	2,683	76%	All except those listed below
5-30 Days	598	17%	1607, PGIM, DoubleLine, Fidelity, Agincourt
30+ Days	258	7%	Principal, IFM

FUND LEVERAGE

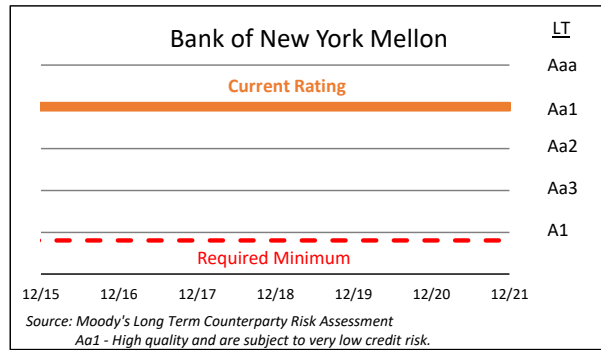
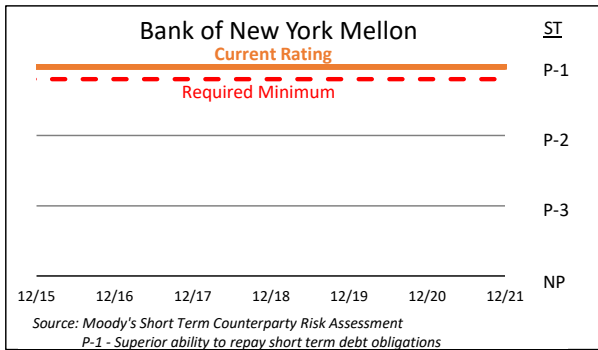
4. Monitor level of risk associated with leverage at the Fund level and within portfolios.



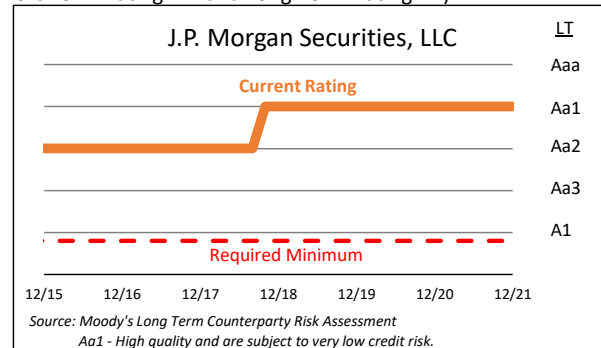
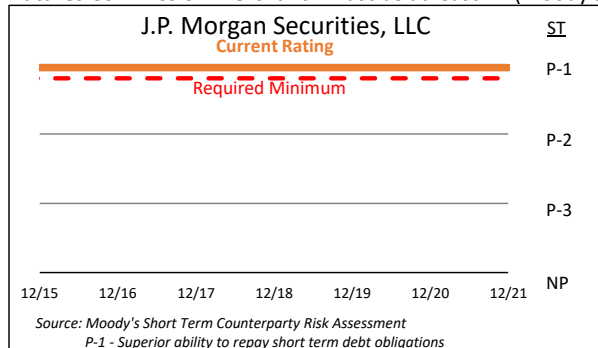
COUNTERPARTY MANAGEMENT

5. Monitor risk of loss from counterparty default and/or insolvency

Custodian: Must be at least A+ (Moody's Short Term Rating P-1 and Long Term Rating A1)



Futures Commission Merchant: Must be at least A+ (Moody's Short Term Rating P-1 and Long Term Rating A1)



Status of Authority Delegated To COAERS Staff

Source	Nature of Delegated Authority	Status during 2021-Q4
IPS Section I	Executive Director may approve variances to further compliance	Unused
IPS Section I	Executive Director may update policies for administrative items	Unused
IPS Section II	Executive Director may act to protect System assets	Unused
IPS Section IV	Fund positioning may be rebalanced due to market drift	Unused
IPS Section IV	Fund positioning may be rebalanced for risk management	Unused
IPS Section IV	Fund positioning may be rebalanced due to phased transition	Unused
IPS Section IV	Staff may move between lending and non-lending shares to manage risk	Unused
IIP Section I	Executive Director may update policies for administrative items	Unused
IIP Section IV	Staff may transition between approved Premier List managers	Unused
IIP Section V	Emergency termination of managers by Executive Director	Unused



Summary of Fund Performance

City of Austin Employees' Retirement System

Period Ended: December 31, 2021



Capital Markets Review		Market Performance					
<ul style="list-style-type: none"> Inflation remained a top concern among investors as the year-over-year change in the CPI reached 7.0% according to the December reading, the highest level in 30 years. GDP growth estimates for 2022 were impacted with forecasts trending lower, but most continue to reflect healthy growth expected next year. Treasury yields have trended upwards and credit spreads widened in the quarter. 		QTD	1 Year	3 Years	5 Years	10 Years	
		S&P 500 (Mkt Cap Wtd)	11.0	28.7	26.1	18.5	16.6
		Russell 2000	2.1	14.8	20.0	12.0	13.2
		MSCI EAFE (Net)	2.7	11.3	13.5	9.5	8.0
		MSCI Emg Mkts (Net)	-1.3	-2.5	10.9	9.9	5.5
		Bbrg US Agg Bond	0.0	-1.5	4.8	3.6	2.9
		Bbrg Cmdty (TR)	-1.6	27.1	9.9	3.7	-2.9
NCREIF ODCE (Net)	7.7	21.1	8.2	7.7	9.4		

Total Fund Performance												
	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017	2016
Total Fund	5.2	13.0	13.0	14.7	10.6	8.4	9.2	10.8	20.7	-5.9	16.6	8.1
Policy Benchmark	5.4	14.4	14.4	15.5	10.8	8.4	9.2	10.9	21.6	-6.8	16.0	7.5
Excess Return	-0.2	-1.4	-1.4	-0.8	-0.2	0.0	0.0	-0.1	-0.9	0.9	0.6	0.6

Total Fund Risk Metrics												
	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017	2016		
Sharpe Ratio	1.9	1.2	0.9	0.8	1.0	0.6	2.3	-0.9	7.8	1.0		
Standard Deviation	6.7	11.6	9.5	10.1	8.8	17.4	7.3	8.3	1.8	7.5		
Tracking Error	1.2	1.7	1.6	1.8	1.7	2.0	1.0	1.8	1.0	1.7		

Asset Class Performance						
	QTD	CYTD	1 Year	3 Years	Since Incep	Inception Date
Total Fund	5.2	13.0	13.0	14.7	10.0	06/01/1982
Policy Benchmark	5.4	14.4	14.4	15.5	N/A	
Excess Return	-0.2	-1.4	-1.4	-0.8	N/A	
US Equity	8.8	25.1	25.1	23.1	11.3	06/01/1988
US Equity Benchmark	10.0	26.5	26.5	26.0	11.4	
Excess Return	-1.2	-1.4	-1.4	-2.9	-0.1	
Developed Markets Equity	3.4	11.6	11.6	17.4	6.3	01/01/2008
Developed Market Equity Benchmark	3.1	12.6	12.6	14.1	3.1	
Excess Return	0.3	-1.0	-1.0	3.3	3.2	
Emerging Markets Equity	-1.7	-6.4	-6.4	9.9	2.3	03/01/2008
Emerging Market Equity Benchmark	-1.3	-2.5	-2.5	10.9	2.8	
Excess Return	-0.4	-3.9	-3.9	-1.0	-0.5	
Real Estate Equity	12.0	28.4	28.4	11.2	8.0	09/01/2004
Real Estate Equity Benchmark	16.3	43.2	43.2	18.4	9.9	
Excess Return	-4.3	-14.8	-14.8	-7.2	-1.9	
Infrastructure Equity	5.4	16.4	16.4	0.7	1.1	01/01/2020
Infrastructure Equity Benchmark	4.4	11.0	11.0	9.3	1.9	
Excess Return	1.0	5.4	5.4	-8.6	-0.8	
Global Fixed Income	1.0	-2.5	-2.5	4.7	5.7	02/01/1991
Global Fixed Income Benchmark	-0.7	-4.7	-4.7	3.6	5.5	
Excess Return	1.7	2.2	2.2	1.1	0.2	
Asset Allocation	3.6	8.8	8.8	N/A	17.2	05/01/2020
Multi-Asset Benchmark	3.7	11.3	11.3	13.6	22.1	
Excess Return	-0.1	-2.5	-2.5	N/A	-4.9	
Commodities & Other	3.5	-2.4	-2.4	N/A	N/A	07/01/2017
Commodities & Other Benchmark	-1.6	27.1	27.1	9.9	5.3	
Excess Return	5.1	-29.5	-29.5	N/A	N/A	

Performance Commentary

- The Total Fund returned 5.2% net of fees in the second quarter, underperforming the Policy Benchmark which returned 5.4%.
- Real Estate Equity was the best performing asset class on an absolute net of fees returning 12.0%. Commodities & Others had strong relative returns, outpacing its benchmark in Q4.

Asset Allocation vs. Target Allocation			
	Market Value (\$000)	Allocation (%)	Target (%)
US Equity	1,214,041	34.3	33.0
DM Equity	524,374	14.8	15.0
EM Equity	275,491	7.8	8.0
Real Estate Equity	390,036	11.0	10.0
Infrastructure Equity	178,255	5.0	5.0
Global Fixed Income	743,458	21.0	21.0
Asset Allocation	139,987	4.0	5.0
Commodities & Other	37,846	1.1	2.0
Cash & Equivalents	35,247	1.0	1.0
Total Fund	3,538,734	100.0	100.0

Schedule of Investable Assets					
Periods Ending	Beginning Market Value (\$)	Net Cash Flow (\$)	Gain/Loss (\$)	Ending Market Value (\$)	% Return
CYTD	3,183,142,083	-54,695,038	410,287,291	3,538,734,335	12.99

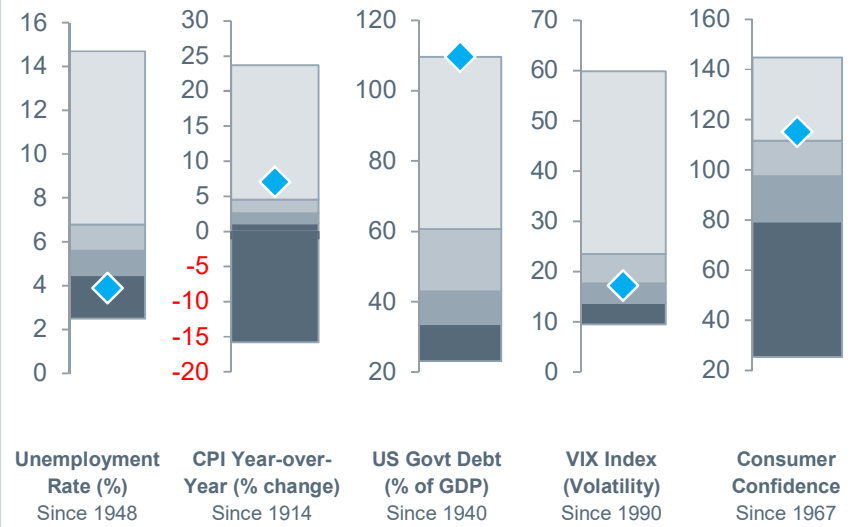
Performance shown is net of fees. Allocations shown may not sum up to 100% exactly. Tracking Error shown is relative to the Passive Benchmark. Risk statistics shown are less meaningful for periods less than one year. Please see the addendum for custom benchmark definitions.



Fourth Quarter Economic Environment

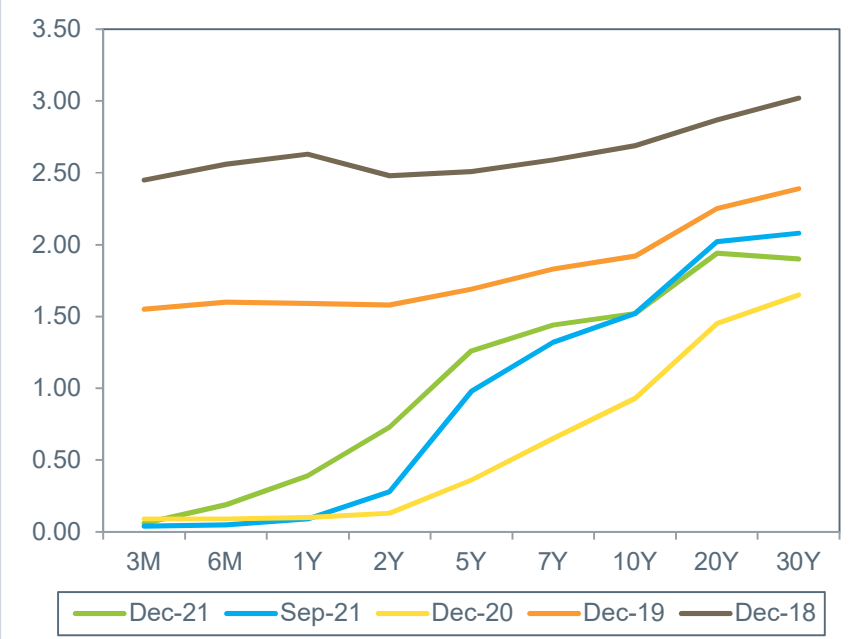
Inflation remained a top concern among investors as the year-over-year change in the CPI reached 7.0% according to the December reading, the highest level in 30 years. Nevertheless, consumer demand and the ability of companies to pass along increasing costs have buoyed corporate profits. Employment data has indicated mixed progress and has been complicated by releases missing expectations, only to be revised higher in subsequent reports. However, strong wage growth and a declining unemployment rate reflect incremental improvement in labor conditions. Headlines were dominated by the emergence of the omicron variant which early studies suggest spreads more quickly, but causes fewer hospitalizations. Continued vaccination efforts and the development of new treatments countered concerns regarding the increased spread of the virus. GDP growth estimates for 2022 were impacted with forecasts trending lower, but most continue to reflect healthy growth expected next year. For instance, the IMF released a 2022 GDP growth forecast of 4.9% in October representing a decline of 0.1% from its July estimate. In response to the current environment, the Federal Reserve has started to reduce measures taken during the pandemic. The tapering of bond purchases began in November and accelerated in December, a trend expected to continue in 2022. In response to these conditions, Treasury yields have trended upwards and credit spreads widened in the quarter.

Key Economic Indicators



Economic Indicators	Dec-21	Sep-21	Dec-20	Dec-18	20 Yr
Federal Funds Rate (%)	0.07 ▲	0.06	0.09	2.40	1.30
Breakeven Infl. - 5 Yr (%)	2.91 ▲	2.53	1.97	1.49	1.86
Breakeven Infl. - 10 Yr (%)	2.59 ▲	2.38	1.99	1.71	2.04
CPI YoY (Headline) (%)	7.0 ▲	5.4	1.4	1.9	2.2
Unemployment Rate (%)	3.9 ▼	4.7	6.7	3.9	6.1
Real GDP YoY (%)	5.5 ▲	4.9	-2.3	2.3	1.9
PMI - Manufacturing	58.8 ▼	60.5	60.5	54.9	53.5
USD Total Wtd Idx	115.32 ▲	114.67	111.33	115.57	103.10
WTI Crude Oil per Barrel (\$)	75.2 ▲	75.0	48.5	45.4	64.4
Gold Spot per Oz (\$)	1,829 ▲	1,757	1,898	1,282	1,086

Treasury Yield Curve (%)



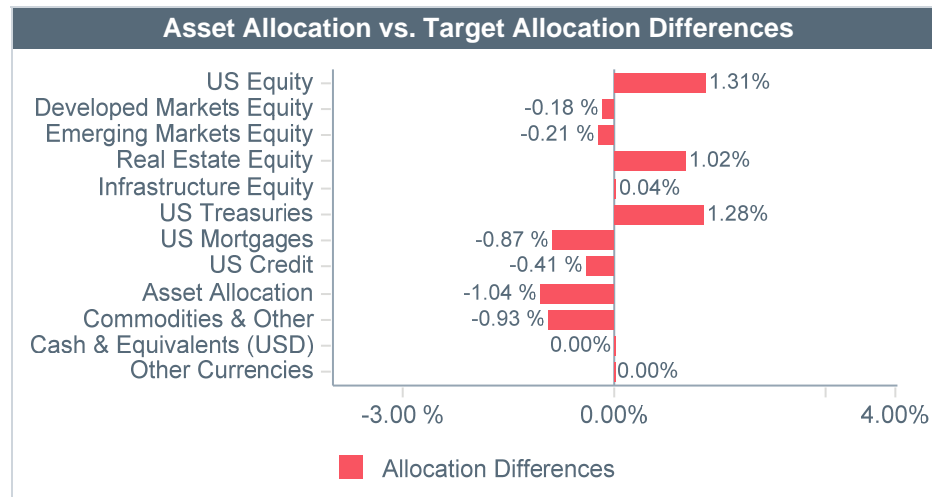
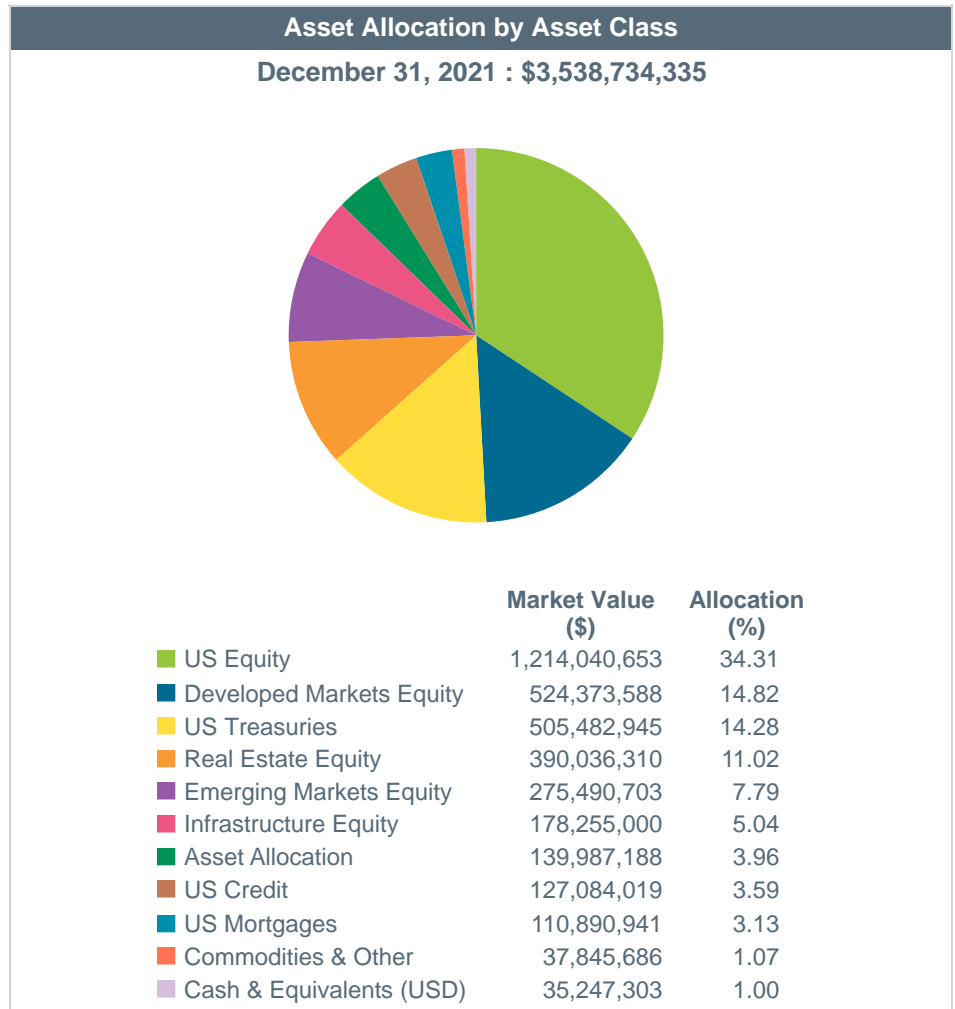
Market Performance (%)	QTD	CYTD	1 Yr	5 Yr	10 Yr
S&P 500 (Cap Wtd)	11.03	28.71	28.71	18.47	16.55
Russell 2000	2.14	14.82	14.82	12.02	13.23
MSCI EAFE (Net)	2.69	11.26	11.26	9.55	8.03
MSCI EAFE SC (Net)	0.07	10.10	10.10	11.04	10.80
MSCI Emg Mkts (Net)	-1.31	-2.54	-2.54	9.87	5.49
Bloomberg US Agg Bond	0.01	-1.55	-1.55	3.57	2.90
ICE BofAML 3 Mo US T-Bill	0.01	0.05	0.05	1.14	0.63
NCREIF ODCE (Gross)	7.97	22.17	22.17	8.71	10.45
FTSE NAREIT Eq REIT (TR)	16.31	43.24	43.24	10.75	11.38
HFRI FOF Comp	0.29	6.03	6.03	5.68	4.54
Bloomberg Cmdty (TR)	-1.56	27.11	27.11	3.66	-2.85

Composite: Total Fund

Asset Alloc. by Asset Class, Asset Alloc. vs. Target, and Schedule of Investable Assets

Schedule of Investable Assets					
Periods Ending	Beginning Market Value (\$)	Net Cash Flow (\$)	Gain/Loss (\$)	Ending Market Value (\$)	% Return
CYTD	3,183,142,083	-54,695,038	410,287,291	3,538,734,335	12.99
1 Year	3,183,142,083	-54,695,038	410,287,291	3,538,734,335	12.99
3 Years	2,447,648,033	-130,251,604	1,221,337,906	3,538,734,335	14.73

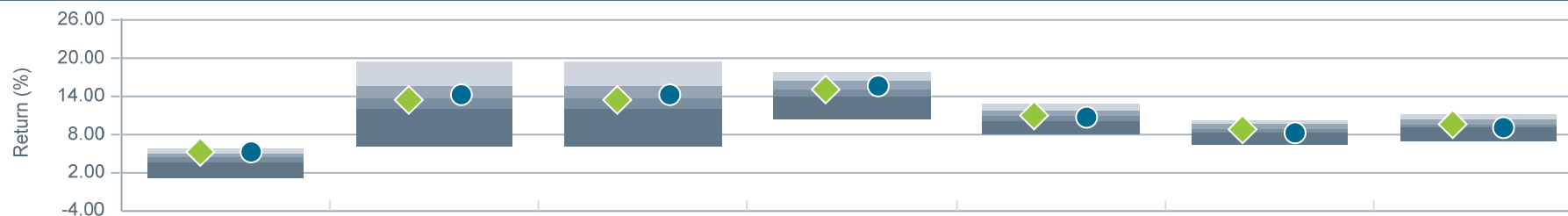
Asset Allocation vs. Target Allocation					
	Market Value (\$)	Allocation (%)	Neutral (%)	Min. (%)	Max. (%)
Total Fund	3,538,734,335	100.00	100.00	-	-
US Equity	1,214,040,653	34.31	33.00	28.00	38.00
Developed Markets Equity	524,373,588	14.82	15.00	12.50	17.50
Emerging Markets Equity	275,490,703	7.79	8.00	5.50	12.50
Real Estate Equity	390,036,310	11.02	10.00	7.00	13.00
Infrastructure Equity	178,255,000	5.04	5.00	1.00	7.00
US Treasuries	505,482,945	14.28	13.00	11.00	21.00
US Mortgages	110,890,941	3.13	4.00	3.00	6.00
US Credit	127,084,019	3.59	4.00	2.50	7.00
Asset Allocation	139,987,188	3.96	5.00	3.50	7.50
Commodities & Other	37,845,686	1.07	2.00	1.00	5.00
Cash & Equivalents (USD)	35,247,303	1.00	1.00	0.00	5.00
Other Currencies	-	0.00	0.00	0.00	1.00



Performance shown is net of fees. Allocations shown may not sum up to 100% exactly due to rounding. Performance is annualized for periods greater than one year. Total Fund market value does not include \$985,507 in assets remaining at Northern Trust - representing accruals, cash, tax reclaims, and some assets that were restricted from being delivered due to a liquidation or pending corporate action.

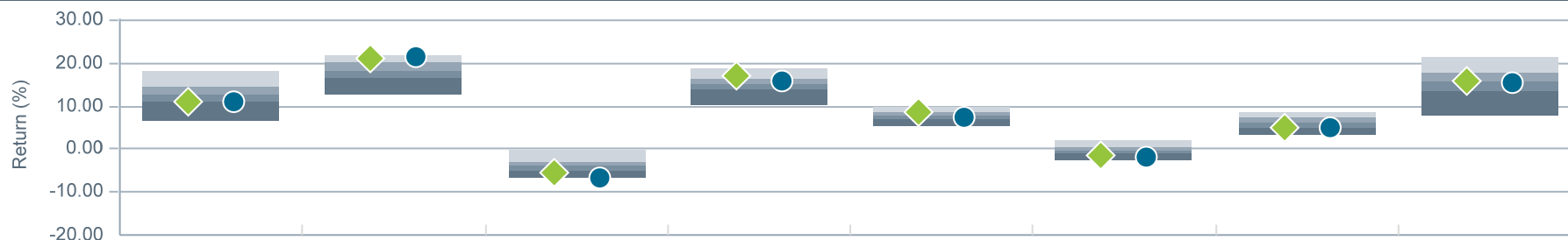


Rate of Return - Trailing



	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years
◆ Composite	5.26 (14)	13.32 (55)	13.32 (55)	15.04 (51)	10.94 (53)	8.71 (56)	9.55 (54)
● Benchmark	5.36 (12)	14.38 (40)	14.38 (40)	15.54 (41)	10.76 (61)	8.40 (70)	9.17 (68)
5th Percentile	5.91	19.53	19.53	17.81	12.79	10.28	11.19
1st Quartile	4.93	15.56	15.56	16.33	11.88	9.54	10.33
Median	4.32	13.60	13.60	15.08	10.98	8.86	9.69
3rd Quartile	3.56	12.09	12.09	13.92	10.26	8.23	8.99
95th Percentile	1.16	6.21	6.21	10.57	8.13	6.38	6.80

Rate of Return - Calendar

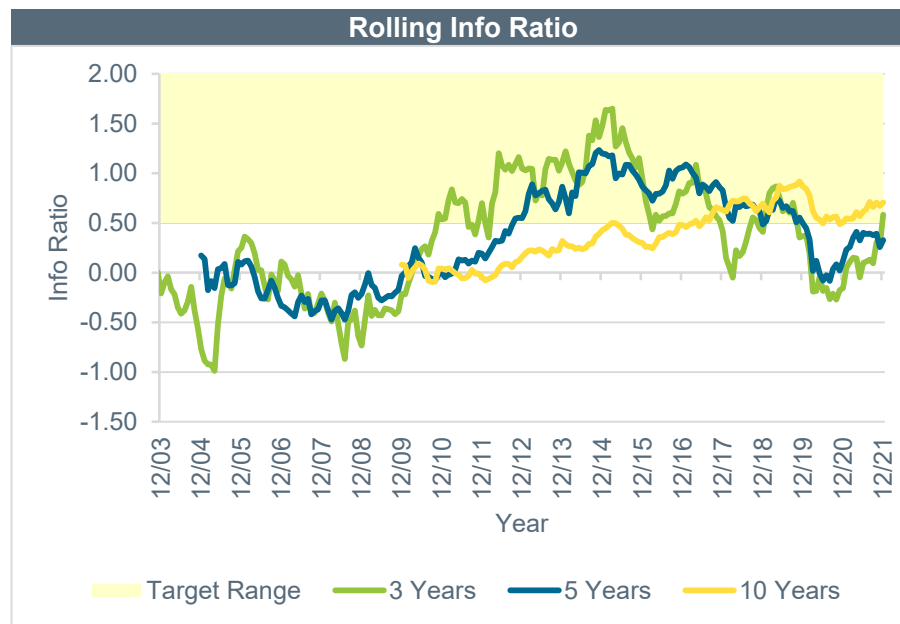
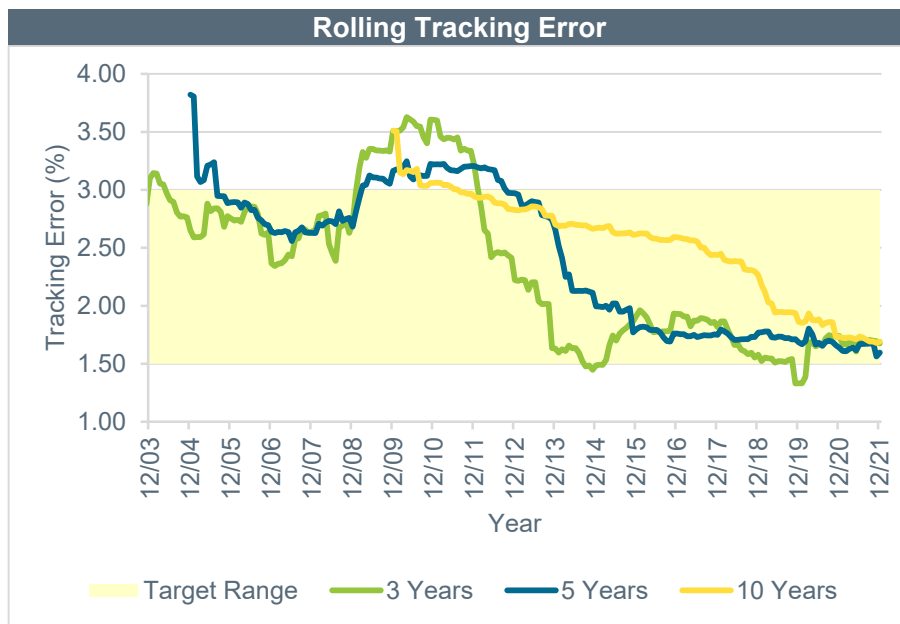
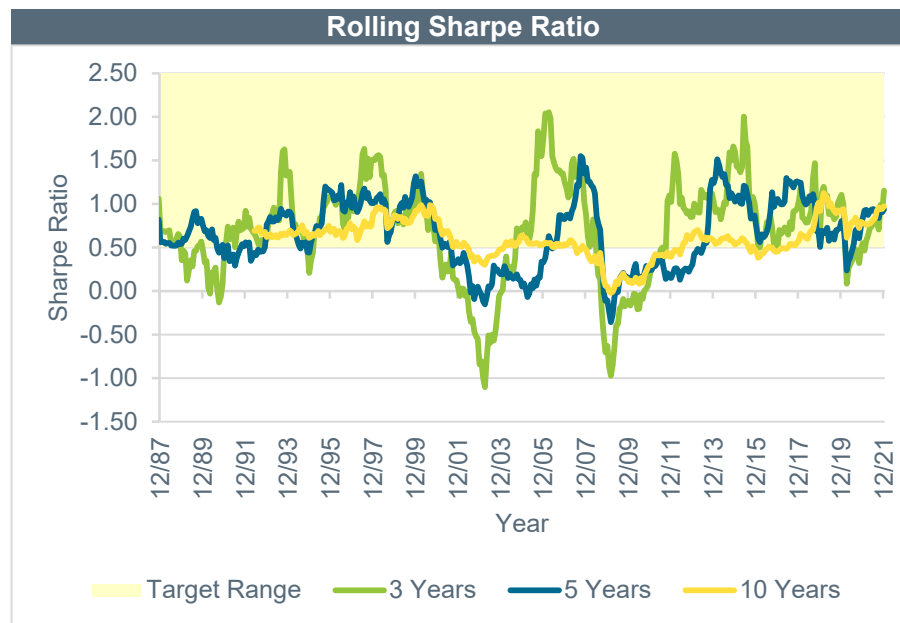
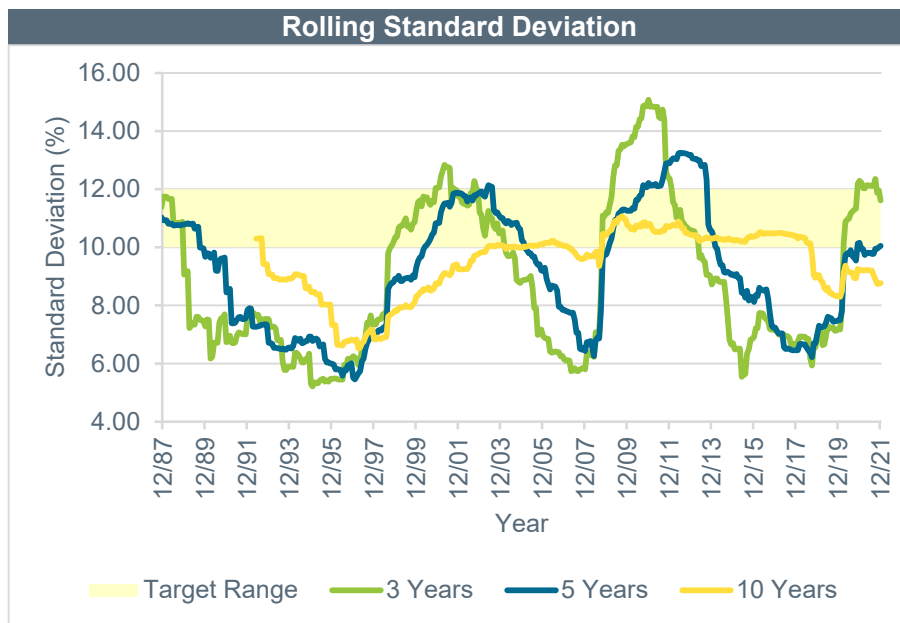


	2020	2019	2018	2017	2016	2015	2014	2013
◆ Composite	11.06 (74)	20.97 (16)	-5.63 (85)	16.96 (17)	8.44 (27)	-1.55 (81)	5.10 (75)	15.98 (48)
● Benchmark	10.92 (76)	21.57 (9)	-6.79 (97)	15.97 (35)	7.55 (53)	-1.92 (87)	4.91 (80)	15.45 (55)
5th Percentile	18.46	22.05	-0.15	18.63	9.96	2.08	8.66	21.67
1st Quartile	14.82	20.16	-2.90	16.43	8.50	0.71	7.25	17.96
Median	12.56	18.49	-4.05	15.09	7.66	-0.15	6.33	15.72
3rd Quartile	10.93	16.57	-5.12	13.80	6.87	-1.21	5.08	13.60
95th Percentile	6.64	12.57	-6.66	10.14	5.24	-2.66	3.24	7.93

Performance shown is gross of fees and is annualized for periods greater than one year. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

Composite: Total Fund
Rolling Risk Statistics (Net of Fees)

As of December 31, 2021



Performance shown is net of fees. Tracking Error and Info Ratio shown are relative to the Passive Benchmark.



Composite: Total Fund
Asset Allocation & Performance - Net of Fees

As of December 31, 2021

	Allocation		Rate of Return (%)							
	Market Value (\$)	%	QTD	CYTD	1 Year	3 Years	5 Years	10 Years	Since Incep.	Inception Date
Total Fund	3,538,734,335	100.00	5.20	12.99	12.99	14.73	10.63	9.19	9.99	06/01/1982
Policy Benchmark			5.36	14.38	14.38	15.54	10.76	9.17	N/A	
Excess Return			-0.16	-1.39	-1.39	-0.81	-0.13	0.02	N/A	
Passive Benchmark			3.73	8.78	8.78	13.72	10.11	7.91	N/A	
Excess Return			1.47	4.21	4.21	1.01	0.52	1.28	N/A	
Global Equity	2,013,904,944	56.91	5.83	16.24	16.24	19.53	13.99	11.85	9.61	06/01/1988
Global Equity Benchmark			6.10	18.22	18.22	20.20	14.12	11.84	N/A	
Excess Return			-0.27	-1.98	-1.98	-0.67	-0.13	0.01	N/A	
US Equity	1,214,040,653	34.31	8.82	25.10	25.10	23.10	15.93	14.86	11.33	06/01/1988
US Equity Benchmark			9.97	26.45	26.45	25.99	18.08	16.36	11.40	
Excess Return			-1.15	-1.35	-1.35	-2.89	-2.15	-1.50	-0.07	
Developed Markets Equity	524,373,588	14.82	3.41	11.60	11.60	17.40	12.54	9.75	6.25	01/01/2008
Developed Market Equity Benchmark			3.14	12.62	12.62	14.07	9.63	7.84	3.11	
Excess Return			0.27	-1.02	-1.02	3.33	2.91	1.91	3.14	
Emerging Markets Equity	275,490,703	7.79	-1.67	-6.39	-6.39	9.89	9.33	5.24	2.33	03/01/2008
Emerging Market Equity Benchmark			-1.31	-2.54	-2.54	10.94	9.87	5.49	2.81	
Excess Return			-0.36	-3.85	-3.85	-1.05	-0.54	-0.25	-0.48	
Real Assets	568,291,310	16.06	9.81	24.30	24.30	9.17	7.70	9.01	6.81	09/01/2004
Real Assets Benchmark			12.18	31.55	31.55	15.34	9.54	9.94	9.05	
Excess Return			-2.37	-7.25	-7.25	-6.17	-1.84	-0.93	-2.24	
Real Estate Equity	390,036,310	11.02	11.96	28.40	28.40	11.22	10.02	11.15	8.01	09/01/2004
Real Estate Equity Benchmark			16.31	43.24	43.24	18.41	11.72	11.32	9.93	
Excess Return			-4.35	-14.84	-14.84	-7.19	-1.70	-0.17	-1.92	
Infrastructure Equity	178,255,000	5.04	5.37	16.43	16.43	0.74	-1.18	N/A	1.11	01/01/2020
Infrastructure Equity Benchmark			4.42	11.04	11.04	9.30	6.86	6.81	1.90	
Excess Return			0.95	5.39	5.39	-8.56	-8.04	N/A	-0.79	

Performance shown is net of fees and is annualized for periods greater than one year. Indices show N/A for since inception returns when the fund contains more history than the corresponding benchmark.

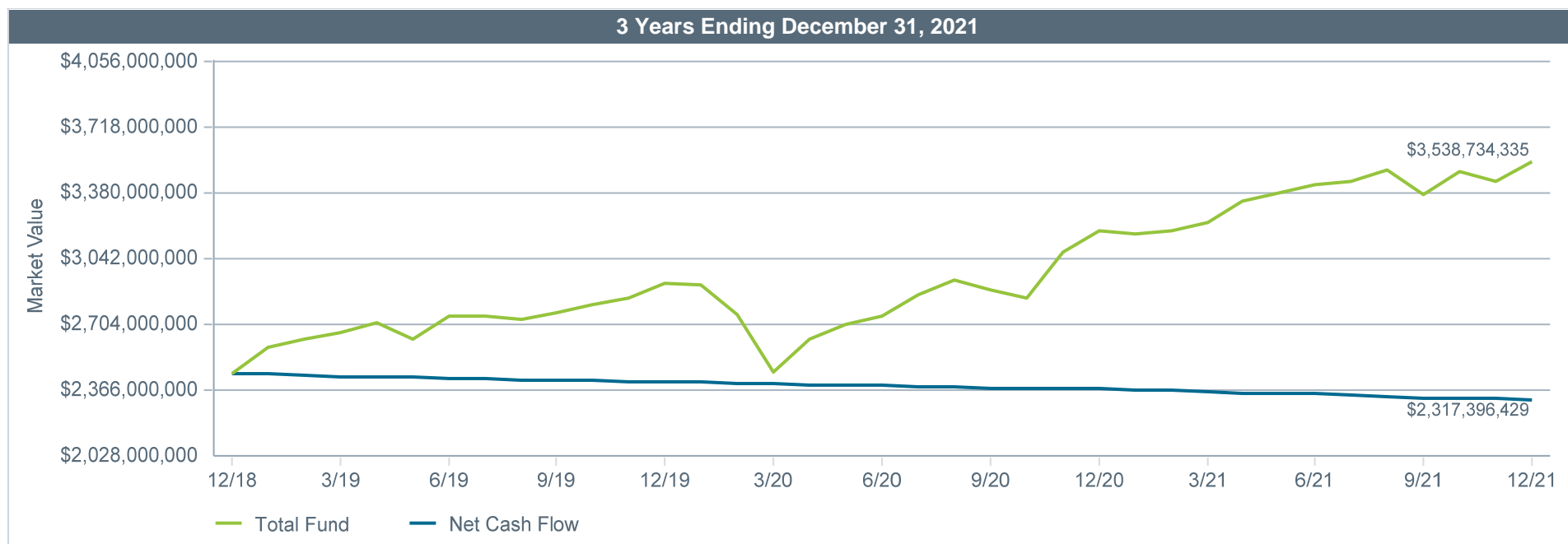


Composite: Total Fund
Asset Allocation & Performance - Net of Fees

As of December 31, 2021

	Allocation		Rate of Return (%)							
	Market Value (\$)	%	QTD	CYTD	1 Year	3 Years	5 Years	10 Years	Since Incep.	Inception Date
Global Fixed Income	743,457,905	21.01	0.99	-2.46	-2.46	4.65	3.49	2.98	5.66	02/01/1991
Global Fixed Income Benchmark			-0.67	-4.71	-4.71	3.59	2.89	2.56	5.48	
Excess Return			1.66	2.25	2.25	1.06	0.60	0.42	0.18	
US Treasuries	505,482,945	14.28	1.52	-3.82	-3.82	N/A	N/A	N/A	5.34	05/01/2019
US Treasuries Benchmark			0.18	-2.32	-2.32	4.07	3.07	2.13	3.89	
Excess Return			1.34	-1.50	-1.50	N/A	N/A	N/A	1.45	
US Mortgages	110,890,941	3.13	-0.48	-1.15	-1.15	N/A	N/A	N/A	1.70	08/01/2019
US Mortgages Benchmark			-0.37	-1.04	-1.04	3.01	2.50	2.28	1.85	
Excess Return			-0.11	-0.11	-0.11	N/A	N/A	N/A	-0.15	
US Credit	127,084,019	3.59	0.20	-0.37	-0.37	N/A	N/A	N/A	5.75	08/01/2019
US Credit Benchmark			0.22	-1.08	-1.08	7.17	5.05	4.45	4.80	
Excess Return			-0.02	0.71	0.71	N/A	N/A	N/A	0.95	
Multi-Asset	177,832,874	5.03	3.56	10.65	10.65	14.23	9.28	N/A	6.49	02/01/2014
Multi-Asset Benchmark			3.73	11.25	11.25	13.55	10.02	7.87	7.26	
Excess Return			-0.17	-0.60	-0.60	0.68	-0.74	N/A	-0.77	
Asset Allocation	139,987,188	3.96	3.58	8.83	8.83	N/A	N/A	N/A	17.15	05/01/2020
Multi-Asset Benchmark			3.73	11.25	11.25	13.55	10.02	7.87	22.13	
Excess Return			-0.15	-2.42	-2.42	N/A	N/A	N/A	-4.98	
Commodities & Other	37,845,686	1.07	3.48	-2.42	-2.42	N/A	N/A	N/A	7.60	04/01/2021
Commodities & Other Benchmark			-1.56	27.11	27.11	9.86	3.66	-2.85	18.88	
Excess Return			5.04	-29.53	-29.53	N/A	N/A	N/A	-11.28	
Cash & Equivalents	35,247,303	1.00	0.07	0.08	0.08	0.90	1.03	N/A	1.08	07/01/2017
Cash & Equivalents Benchmark			0.01	0.04	0.04	0.93	1.08	0.58	1.14	
Excess Return			0.06	0.04	0.04	-0.03	-0.05	N/A	-0.06	

Performance shown is net of fees and is annualized for periods greater than one year. Indices show N/A for since inception returns when the fund contains more history than the corresponding benchmark.



Schedule of Investable Assets - Quarter To Date						
Periods Ending	Beginning Market Value (\$)	Contributions (\$)	Withdrawals (\$)	Net Cash Flow (\$)	Gain/Loss (\$)	Ending Market Value (\$)
QTD	3,375,130,156	287,540,313	299,124,176	-11,583,862	175,188,042	3,538,734,335

Schedule of Investable Assets - Year To Date						
Periods Ending	Beginning Market Value (\$)	Contributions (\$)	Withdrawals (\$)	Net Cash Flow (\$)	Gain/Loss (\$)	Ending Market Value (\$)
CYTD	3,183,142,083	999,963,369	1,054,658,408	-54,695,038	410,287,291	3,538,734,335

Schedule of Investable Assets - 1 Year						
Periods Ending	Beginning Market Value (\$)	Contributions (\$)	Withdrawals (\$)	Net Cash Flow (\$)	Gain/Loss (\$)	Ending Market Value (\$)
1 Year	3,183,142,083	999,963,369	1,054,658,408	-54,695,038	410,287,291	3,538,734,335

Schedule of Investable Assets - 3 Years						
Periods Ending	Beginning Market Value (\$)	Contributions (\$)	Withdrawals (\$)	Net Cash Flow (\$)	Gain/Loss (\$)	Ending Market Value (\$)
3 Years	2,447,648,033	5,466,740,295	5,596,991,899	-130,251,604	1,221,337,906	3,538,734,335

Cash flows shown are net of fees. Net cash flow shown in the line chart represents the beginning market value, adjusted for cash flows. Contributions and withdrawals detail shown includes intra-portfolio cash flows.



Cash Activity - Investment Operations

01 October 2021 - 31 December 2021

DATE	FROM	TO	PURPOSE	AMOUNT
BENEFIT PAYMENTS				
11/24/21	AGINCOURT 1-3M US TREASURIES	COAERS CASH	WITHDRAW TO FUND BENEFITS	\$6,000,000.00
11/24/21	COAERS CASH	CHASE OPERATING ACCOUNT	TRANSFER TO FUND BENEFITS	(\$6,000,000.00)
12/22/21	AGINCOURT 1-3M US TREASURIES	COAERS CASH	WITHDRAW TO FUND BENEFITS	\$6,000,000.00
12/22/21	COAERS CASH	CHASE OPERATING ACCOUNT	TRANSFER TO FUND BENEFITS	(\$6,000,000.00)
SUBTOTAL				\$0.00
MANAGEMENT FEES				
10/29/21	AGINCOURT 10 YR UST	AGINCOURT 10 YR UST	MANAGEMENT FEE	(\$5,639.63)
10/29/21	AGINCOURT 1-3 YR UST	AGINCOURT 1-3 YR UST	MANAGEMENT FEE	(\$9,517.50)
10/29/21	AGINCOURT 1-3M US TB	AGINCOURT 1-3M US TB	MANAGEMENT FEE	(\$1,329.85)
10/29/21	AGINCOURT 1-5YR USTP	AGINCOURT 1-5YR USTP	MANAGEMENT FEE	(\$6,390.41)
10/29/21	AGINCOURT FTSENAREIT	AGINCOURT FTSENAREIT	MANAGEMENT FEE	(\$2,191.47)
10/29/21	AGINCOURT PASSIV IND	AGINCOURT PASSIV IND	MANAGEMENT FEE	(\$11,033.78)
10/29/21	HOISINGTON MACROECON	HOISINGTON MACROECON	MANAGEMENT FEE	(\$84,114.61)
11/08/21	PGIM US IG CORP BOND	PGIM US IG CORP BOND	MANAGEMENT FEE	(\$72,600.57)
11/30/21	1607 CAPITAL EAFE EQ	1607 CAPITAL EAFE EQ	MANAGEMENT FEE	(\$469,546.00)
11/30/21	DOUBLELINE MBS	DOUBLELINE MBS	MANAGEMENT FEE	(\$55,871.16)
11/30/21	FIDELITY DJBK F GLINF	FIDELITY DJBK F GLINF	MANAGEMENT FEE	(\$20,660.22)
11/30/21	FIDELITY US REITS	FIDELITY US REITS	MANAGEMENT FEE	(\$30,055.32)
11/30/21	COAERS CASH	LGIMA MSCI EM INDEX	MANAGEMENT FEE	(\$23,019.49)
11/30/21	COAERS CASH	LGIMA MSCI USA INDEX	MANAGEMENT FEE	(\$18,915.11)
11/30/21	COAERS CASH	LGIMA S&P 500 INDEX	MANAGEMENT FEE	(\$2,974.49)
11/30/21	NEWTON IM (DUSE)	NEWTON IM (DUSE)	MANAGEMENT FEE	(\$208,549.86)
11/30/21	COAERS CASH	NEWTON IM (DEXUS)	MANAGEMENT FEE	(\$27,239.88)
11/30/21	MELLON SCIBETA US DC	MELLON SCIBETA US DC	MANAGEMENT FEE	(\$43,340.18)
11/30/21	NISA 10 YR UST FUTUR	NISA 10 YR UST FUTUR	MANAGEMENT FEE	(\$6,080.65)
11/30/21	NISA 30 YR UST FUTUR	NISA 30 YR UST FUTUR	MANAGEMENT FEE	(\$7,221.38)
11/30/21	NISA GOLD FUTURES	NISA GOLD FUTURES	MANAGEMENT FEE	(\$5,306.41)
11/30/21	NISA MSCI EAFE FUTUR	NISA MSCI EAFE FUTUR	MANAGEMENT FEE	(\$5,213.81)
11/30/21	NISA MSCI EM FUTURES	NISA MSCI EM FUTURES	MANAGEMENT FEE	(\$5,311.44)
11/30/21	NISA S&P 500 FUTURES	NISA S&P 500 FUTURES	MANAGEMENT FEE	(\$17,338.60)
11/30/21	NISA SP 500 INDEX OP	NISA SP 500 INDEX OP	MANAGEMENT FEE	(\$6,442.53)
11/30/21	COAERS CASH	NTAM INTL SMALL CAP	MANAGEMENT FEE	(\$7,529.13)
11/30/21	SSGA MSCI USA EW IND	SSGA MSCI USA EW IND	MANAGEMENT FEE	(\$11,242.67)
11/30/21	COAERS CASH	SSGA MSCI USA SC IND	MANAGEMENT FEE	(\$5,007.33)
11/30/21	WALTER SCOTT EAFE EQ	WALTER SCOTT EAFE EQ	MANAGEMENT FEE	(\$246,420.10)
12/01/21	TOBAM MAXDIV USA	TOBAM MAXDIV USA	MANAGEMENT FEE	(\$83,678.12)
SUBTOTAL				(\$1,499,781.70)
ALLOCATION CHANGES				
11/18/21	NISA (SP500 FUTURES)	COAERS CASH	DECREASE ALLOCATION TO ACCOUNT	\$17,000,000.00
11/18/21	COAERS CASH	LGIMA INFLATION PLUS	INITIAL FUNDING TO ACCOUNT	(\$17,000,000.00)
12/03/21	1607 CAPITAL EAFE EQUITIES	COAERS CASH	DECREASE ALLOCATION TO ACCOUNT	\$7,000,000.00
12/03/21	WALTER SCOTT EAFE EQUITIES	COAERS CASH	DECREASE ALLOCATION TO ACCOUNT	\$18,000,000.00
12/03/21	COAERS CASH	NISA FX HEDGED EAFE IDX FUT	INITIAL FUNDING TO ACCOUNT	(\$25,000,000.00)
12/10/21	1607 CAPITAL EAFE EQUITIES	COAERS CASH	DECREASE ALLOCATION TO ACCOUNT	\$10,000,000.00
12/10/21	COAERS CASH	NISA FX HEDGED EAFE IDX FUT	INCREASE ALLOCATION TO ACCOUNT	(\$10,000,000.00)
12/16/21	COAERS CASH	NISA SHORT TERM SOVEREIGNS	INITIAL FUNDING TO ACCOUNT	(\$2,000,000.00)
12/16/21	COAERS CASH	MONEY MARKET FUNDS	INITIAL FUNDING TO ACCOUNT	(\$2,000,000.00)
SUBTOTAL				(\$4,000,000.00)
TOTAL EXTERNAL TRANSFERS				
BENEFIT PAYMENTS				(\$12,000,000.00)
MANAGEMENT FEES				(\$1,499,781.70)
TOTAL				(\$13,499,781.70)

7. Discuss and consider investment strategy including Investment Risk Framework

Presented by David Stafford

AGENDA ITEM 7:

Discuss and consider investment strategy including Investment Risk Framework

AGENDA ITEM OBJECTIVE

The Committee will receive a report from Staff on the annual review of the Investment Risk Framework (IRF) as well as insights from the IRF related to the Fund's investment strategy.

RELEVANCE TO STRATEGIC PLAN

This item meets **COAERS Strategic Goal 2: Responsibly Manage the Risks of the System**. Maintaining appropriate risk and return expectations is critical to meeting both strategic goals, and failure to do so raises the risk of large drawdowns and the risk of subpar long-term returns for the Fund.

RECOMMENDATION FOR COMMITTEE ACTION

For discussion and informational purposes only, no action required.

BACKGROUND

The Investment Policy Statement (IPS) requires Staff to develop and maintain the Investment Risk Framework (IRF) to determine when deviations from neutral policy weights are expected to be advantageous to the Fund. The IPS requires that the outputs be reported at regular meetings of the IC and more frequently if needed. The IPS empowers Staff to act upon the outputs of the IRF to rebalance the Fund to further the Board's strategic goals. Any such rebalancing is required to be (1) approved by the Executive Director, (2) reported to the Board within one business day, and (3) reviewed with the IC at its next regular meeting.

Staff will review insights from the current Investment Risk Framework (IRF) dashboard to help inform Fund positioning for the current market environment. This review will include discussion of key questions facing the Fund such as strategic positioning, expected returns, and the potential for regime changes.

ATTACHMENTS

1. Staff Presentation "Investment Risk Framework Review and Insights"
(CONFIDENTIAL)
2. IRF Summary Dashboard 2022-02 (CONFIDENTIAL)
3. Investment Manager Strategy Update (CONFIDENTIAL)

SUPPLEMENTAL MATERIALS PROVIDED VIA BOX.COM

1. IRF Detailed Dashboard 2022-02 (CONFIDENTIAL)
2. IRF Standard Operating Procedures (CONFIDENTIAL)

8. Discuss and consider investment implementation including Premier List for Multi-Asset

Presented by Ty Sorrel

AGENDA ITEM 8:

Discuss and consider investment implementation including Premier List for Multi-Asset

AGENDA ITEM OBJECTIVE

The Committee will conduct the required quarterly review of the implementation of the System's investment strategies and the status of System's funded investment managers.

RELEVANCE TO STRATEGIC PLAN

This agenda item is part of the core competency set forth in the **COAERS Strategic Plan "Prudent Investment Management: Fulfilling fiduciary duty through monitoring performance within adopted process and stated goals."** Committee review of the implementation of the investment program ensures that Trustees monitor the performance of the portfolio.

RECOMMENDATION FOR COMMITTEE ACTION

Staff recommends that the Committee refer to the Board for approval proposed changes to the Multi-Asset Premier List.

BACKGROUND

The Investment Implementation Policy (IIP) requires Staff to develop and maintain a Premier List of viable managers for potential inclusion within each allocation of the Fund. The IIP also requires the Premier List for each asset class to be reviewed with the Board via the Investment Committee on an annual basis.

Staff will lead the required annual review of the current construction and composition of the Multi-Asset allocations, including the associated Premier List.

ATTACHMENTS

1. Investment Implementation Update 2021-Q4 [CONFIDENTIAL]
2. Investment Manager Monitoring Report 2021-Q4 [CONFIDENTIAL]
3. Investment Implementation Dashboard 2021-Q4
4. Investment Manager Fees by Quarter 2021-Q4
5. RVK Summary of Manager Performance 2021-Q4
6. Current COAERS Premier Lists 2021-Q4 [CONFIDENTIAL]
7. Staff Presentation "Annual Review of Multi-Asset Portfolio" [CONFIDENTIAL]
8. Proposed COAERS Premier List [CONFIDENTIAL]

SUPPLEMENTAL INFORMATION PROVIDED VIA BOX.COM

1. RVK COAERS Investment Manager Compliance Reports
2. COAERS Funded Investment Manager Strategy Summaries

COAERS Implementation Dashboard

As of 12/31/2021

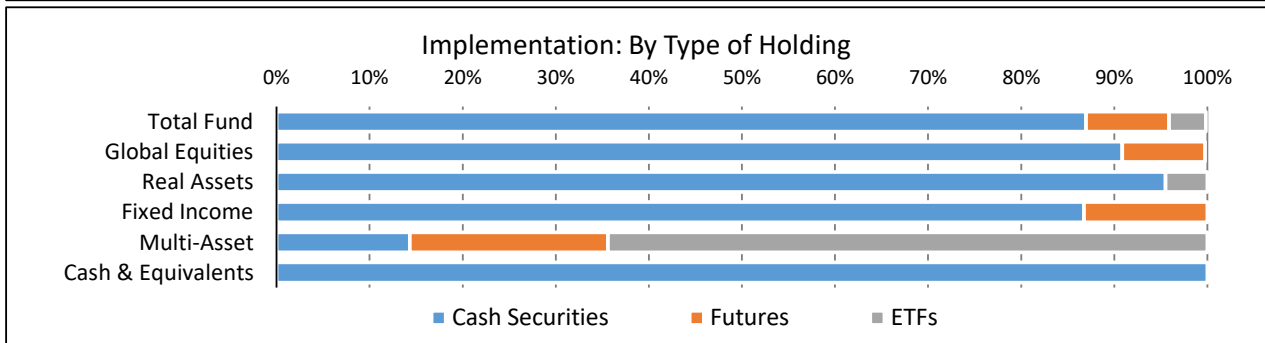
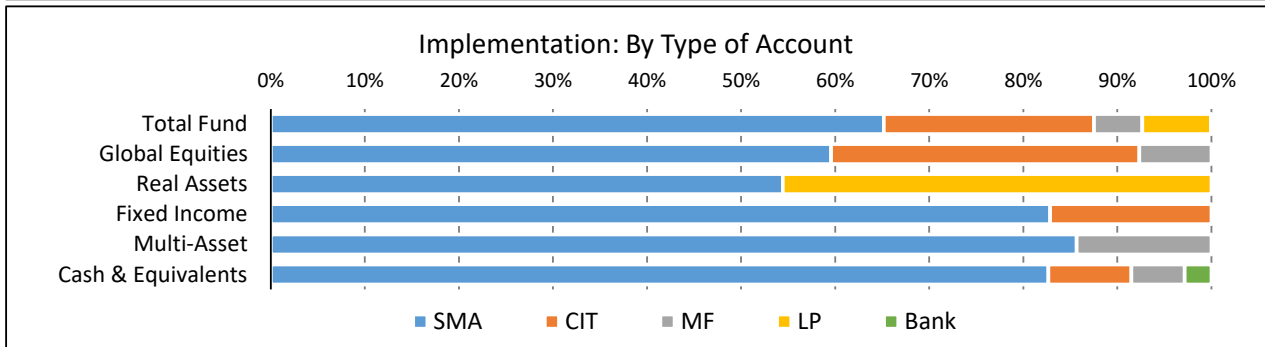
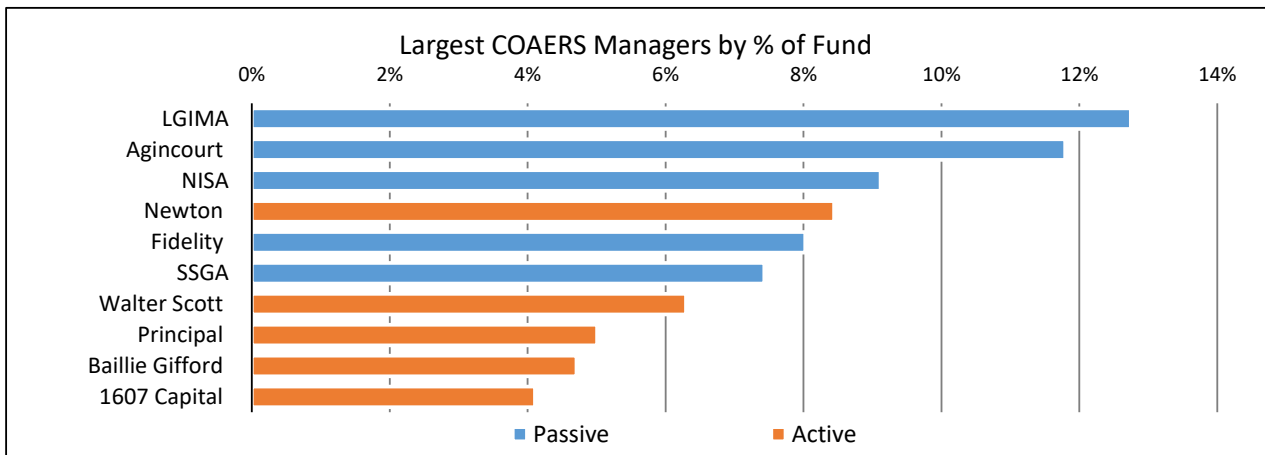
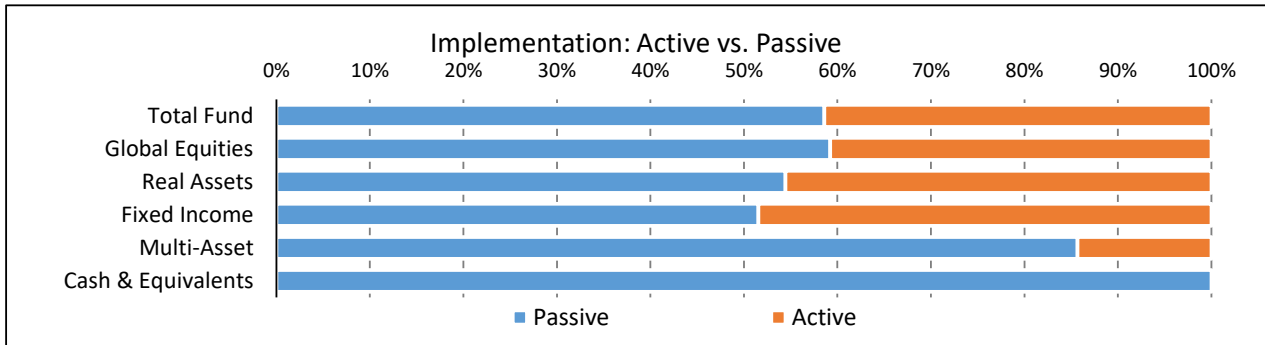
Asset Class	Manager and Mandate	AUM (\$MM)	% of Fund	Vehicle	Performance	Process	People
GLOBAL EQUITIES	NISA - S&P 500 INDEX FUTURES	72.9	2.1%	SMA			
	NISA - S&P 500 INDEX OPTIONS	5.1	0.1%	SMA			
	LGIMA - MSCI USA INDEX	226.9	6.4%	CIT			
	MELLON - SCIBETA US MAX DECORR INDEX	144.8	4.1%	SMA			
	LGIMA - SCIBETA INFLATION PLUS	101.2	2.9%	SMA		◆	
	NEWTON - DYNAMIC US EQUITY (DUSE)	266.7	7.5%	SMA			◆
	SSGA - MSCI USA EW INDEX	212.7	6.0%	CIT			◆
	TOBAM - MAX DIVERSIFICATION INDEX	133.4	3.8%	SMA			
	SSGA - MSCI USA SM CAP INDEX	49.8	1.4%	CIT			◆
	WALTER SCOTT - EAFE EQUITIES	222.3	6.3%	SMA			
	1607 CAPITAL - INTERNATIONAL EQUITIES	145.1	4.1%	SMA		◆	
	NEWTON - DYNAMIC EX-US EQUITY (DEXUS) FUND	31.6	0.9%	CIT			◆
	NISA - MSCI EAFE INDEX FUTURES	35.8	1.0%	SMA			
	NISA - MSCI HEDGED EAFE INDEX FUTURES	36.0	1.0%	SMA			
	NTAM - MSCI WORLD X-US SM CAP INDEX FUND	50.7	1.4%	CIT			◆
	BAILLIE GIFFORD - EM EQUITIES FUND	153.8	4.4%	MF			
	NISA - MSCI EM INDEX FUTURES	34.1	1.0%	SMA			
	LGIMA - MSCI EM INDEX FUND	87.5	2.5%	CIT			
REAL ASSETS	PRINCIPAL - US PROPERTY ACCOUNT	176.8	5.0%	LP			
	FIDELITY - US REITs COMPLETION INDEX	187.2	5.3%	SMA			
	IFM - GLOBAL INFRASTRUCTURE FUND	81.6	2.3%	LP			
	FIDELITY - GLOBAL INFRASTRUCTURE INDEX	96.2	2.7%	SMA			
	AGINCOURT - FTSE NAREIT	25.4	0.7%	SMA			
FIXED INCOME	PGIM - IG CORPORATE BOND FUND	127.1	3.6%	CIT			
	DOUBLELINE - AGENCY MORTGAGES	110.6	3.1%	SMA			
	AGINCOURT - 1-3Y US TREASURIES	128.3	3.6%	SMA			
	AGINCOURT - 10Y US TREASURIES	56.8	1.6%	SMA			
	AGINCOURT - 1-5Y US TIPS	64.4	1.8%	SMA			
	LGIMA - 5-15Y US TIPS	34.6	1.0%	SMA			
	NISA - 10Y US TREASURY FUTURES	47.2	1.3%	SMA			
	NISA - 30Y US TREASURY FUTURES	51.0	1.4%	SMA			
	HOISINGTON - MACROECONIC FIXED INCOME	121.5	3.4%	SMA			
MULTI-ASSET	BAILLIE GIFFORD - MULTI ASSET FUND	12.5	0.4%	MF			
	GMO - GLOBAL ASSET ALLOCATION FUND	13.0	0.4%	MF			
	AGINCOURT - PASSIVE INDEX	114.5	3.2%	SMA			
	NISA - GOLD FUTURES	37.8	1.1%	SMA			
CASH	AGINCOURT - 1-3M US TREASURIES	27.1	0.8%	SMA			
	BNY - GOVT SHORT TERM INV FUND	3.1	0.1%	CIT			
	BNY - USD DEPOSIT ACCOUNT	1.0	0.0%	Bank			
	BNY - MONEY MARKET FUND	2.0	0.1%	MF			
	BNY - FOREIGN CURRENCY	0.0	0.0%	Bank			
	NISA - FOREIGN SOVEREIGN	2.0	0.1%	SMA			

- ◆ indicates a note in the Investment Manager Monitoring Report
- ↗ indicates a rising level of comfort with any existing matters
- ↘ indicates a rising level of concern with new or existing matters

Green = satisfactory performance
 Yellow = areas of concern
 Red = significant concerns

COAERS Implementation Dashboard

As of 12/31/2021



COAERS Investment Manager Fees

DIRECT FEE PAYMENTS & ACCRUALS				
Earned In	4Q20	1Q21	2Q21	3Q21
Paid In	1Q21	2Q21	3Q21	4Q21
1607 Capital Intl Equities	315,805	317,800	361,755	469,546
Agincourt: 1-3M US Treasuries	1,404	2,400	2,661	1,330
Agincourt: 1-3Y US Treasuries	6,492	6,479	9,014	9,518
Agincourt: 10Y US Treasuries	5,894	5,477	5,654	5,640
Agincourt: 1-5Y TIPS	3,181	3,213	5,845	6,390
Agincourt Passive Index	478	5,219	10,427	11,034
Agincourt FTSE NAREIT Equity	-	-	1,871	2,191
BlackRock	42,790	44,728	-	-
Doubleline MBS	56,023	55,971	55,920	55,871
Fidelity DJ Brookfield	14,432	15,116	19,760	20,660
Fidelity US REITs	23,444	25,339	28,630	30,055
Hoisington	88,543	80,846	84,098	84,115
LGIMA - MSCI USA	15,057	16,165	17,666	18,915
LGIMA - MSCI EM	20,752	23,392	23,566	23,019
LGIMA - S&P 500	2,892	2,690	2,771	2,974
Mellon DEXUS	54,459	54,682 *	58,689	27,240
Mellon DUSE	174,213	185,118 *	205,756	208,550
Mellon Scibeta US Max Decorr	37,778	39,852 *	43,254	43,340
NISA Futures	41,558	41,277	44,607	52,915
NT Dev Intl Small Cap Fund ¹	-	6,740	7,169	7,529
SSGA MSCI USA Equal Weight	-	10,721	22,344	11,243
SSGA MSCI USA SmallCap	-	4,242	10,156	5,007
TOBAM Max Decorrelation	71,105	76,881 *	81,539	83,678
Walter Scott Intl Equities	239,401	226,746 *	235,014	246,420
TOTAL DIRECT PAYMENTS	1,215,700	1,251,093	1,338,166	1,427,181
INDIRECT FEE PAYMENTS				
Earned In	1Q21	2Q21	3Q21	4Q21
Paid In	1Q21	2Q21	3Q21	4Q21
Baillie Gifford Emerging Market	273,613	265,002	265,402	247,437
Baillie Gifford Multi-Asset	4,246	4,483	4,865	5,096
GMO Global Asset Allocation	18,120	20,034	19,132	18,786
IFM Infrastructure	132,647	143,027	148,298	155,237
PGIM US Credit	70,916	69,381	70,067	72,601
Principal US Property	287,044	297,867	313,652	338,889
SUBTOTAL INDIRECT	786,587	799,794	821,416	838,046
TOTAL FEES	2,002,287	2,050,887	2,159,582	2,265,227

1 NTAM Management Fees are paid in the quarter they are earned.

* Payment of fee fell into the following quarter



Summary of Manager Performance

City of Austin Employees' Retirement System

Period Ended: December 31, 2021

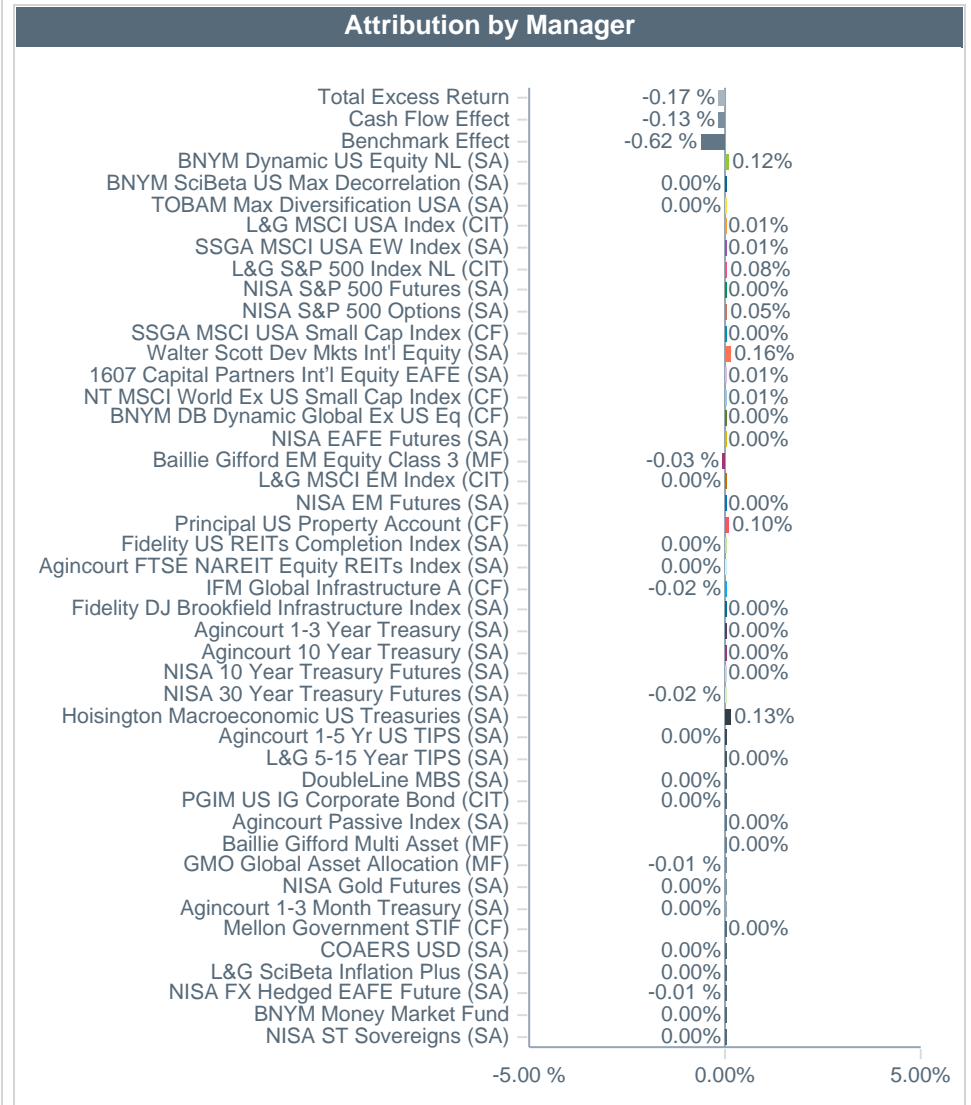


Composite: Total Fund
Benchmark: Policy Benchmark

As of December 31, 2021

	Market Value (\$)	Allocation (%)
BNYM Dynamic US Equity NL (SA)	266,691,086	7.54
L&G MSCI USA Index (CIT)	226,938,061	6.41
Walter Scott Dev Mkts Int'l Equity (SA)	223,788,903	6.32
SSGA MSCI USA EW Index (SA)	212,918,195	6.02
Fidelity US REITs Completion Index (SA)	187,823,304	5.31
Principal US Property Account (CF)	176,772,484	5.00
Baillie Gifford EM Equity Class 3 (MF)	153,834,886	4.35
1607 Capital Partners Int'l Equity EAFE (SA)	146,443,276	4.14
BNYM SciBeta US Max Decorrelation (SA)	144,951,544	4.10
TOBAM Max Diversification USA (SA)	133,495,218	3.77
Agincourt 1-3 Year Treasury (SA)	129,067,039	3.65
PGIM US IG Corporate Bond (CIT)	127,084,019	3.59
Hoisington Macroeconomic US Treasuries (SA)	122,075,833	3.45
Agincourt Passive Index (SA)	114,507,824	3.24
DoubleLine MBS (SA)	110,890,941	3.13
L&G SciBeta Inflation Plus (SA)	101,233,261	2.86
Fidelity DJ Brookfield Infrastructure Index (SA)	96,620,624	2.73
L&G MSCI EM Index (CIT)	87,522,861	2.47
IFM Global Infrastructure A (CF)	81,634,375	2.31
NISA S&P 500 Futures (SA)	72,894,812	2.06
Agincourt 1-5 Yr US TIPS (SA)	64,612,304	1.83
Agincourt 10 Year Treasury (SA)	56,847,130	1.61
NISA 30 Year Treasury Futures (SA)	50,952,943	1.44
NT MSCI World Ex US Small Cap Index (CF)	50,749,215	1.43
SSGA MSCI USA Small Cap Index (CF)	49,781,918	1.41
NISA 10 Year Treasury Futures (SA)	47,216,853	1.33
NISA Gold Futures (SA)	37,845,686	1.07
NISA FX Hedged EAFE Future (SA)	36,026,790	1.02
NISA EAFE Futures (SA)	35,807,512	1.01
L&G 5-15 Year TIPS (SA)	34,710,842	0.98
NISA EM Futures (SA)	34,132,957	0.96
BNYM DB Dynamic Global Ex US Eq (CF)	31,557,892	0.89
Agincourt 1-3 Month Treasury (SA)	27,134,948	0.77
Agincourt FTSE NAREIT Equity REITs Index (SA)	25,440,522	0.72
GMO Global Asset Allocation (MF)	12,980,102	0.37
Baillie Gifford Multi Asset (MF)	12,499,262	0.35
NISA S&P 500 Options (SA)	5,136,558	0.15
Mellon Government STIF (CF)	3,112,267	0.09
BNYM Money Market Fund	2,000,000	0.06
NISA ST Sovereigns (SA)	2,000,000	0.06
COAERS USD (SA)	1,000,088	0.03

Rate of Return	
	QTD
Composite	5.20
Benchmark	5.36
Excess Return	-0.16



Performance shown is net of fees. Calculation is based on monthly periodicity. Allocations shown may not sum up to 100% exactly due to rounding. See glossary for calculation definitions.



Composite: Total Fund
Asset Allocation & Performance - Net of Fees

As of December 31, 2021

	Allocation		Rate of Return (%)							
	Market Value (\$)	%	QTD	CYTD	1 Year	3 Years	5 Years	10 Years	Since Incep.	Inception Date
US Equity										
BNYM Dynamic US Equity NL (SA)	266,691,086	7.54	12.81	30.35	30.35	28.87	N/A	N/A	21.20	05/01/2018
S&P 500 Index (Cap Wtd)			11.03	28.71	28.71	26.07	18.47	16.55	19.52	
Excess Return			1.78	1.64	1.64	2.80	N/A	N/A	1.68	
IM U.S. Large Cap Core Equity (MF) Median			9.98	26.73	26.73	24.17	16.98	15.19	17.69	
Rank			4	11	11	5	N/A	N/A	7	
BNYM SciBeta US Max Decorrelation (SA)	144,951,544	4.10	7.41	23.99	23.99	N/A	N/A	N/A	34.47	10/01/2020
SciBeta Max Decorrelation Index			7.44	24.20	24.20	23.30	15.62	15.61	34.69	
Excess Return			-0.03	-0.21	-0.21	N/A	N/A	N/A	-0.22	
IM U.S. Large Cap Core Equity (MF) Median			9.98	26.73	26.73	24.17	16.98	15.19	32.55	
Rank			85	76	76	N/A	N/A	N/A	26	
TOBAM Max Diversification USA (SA)	133,495,218	3.77	2.52	10.81	10.81	N/A	N/A	N/A	20.19	10/01/2020
TOBAM Max Diversification Index			2.58	11.14	11.14	19.91	14.64	15.72	20.52	
Excess Return			-0.06	-0.33	-0.33	N/A	N/A	N/A	-0.33	
IM U.S. Large Cap Core Equity (MF) Median			9.98	26.73	26.73	24.17	16.98	15.19	32.55	
Rank			97	98	98	N/A	N/A	N/A	96	
L&G MSCI USA Index (CIT)	226,938,061	6.41	10.09	27.52	27.52	N/A	N/A	N/A	34.08	10/01/2020
MSCI USA Index (Net)			9.97	26.45	26.45	25.95	18.12	15.96	33.06	
Excess Return			0.12	1.07	1.07	N/A	N/A	N/A	1.02	
IM U.S. Large Cap Core Equity (MF) Median			9.98	26.73	26.73	24.17	16.98	15.19	32.55	
Rank			48	39	39	N/A	N/A	N/A	31	
SSGA MSCI USA EW Index (SA)	212,918,195	6.02	7.37	25.61	25.61	N/A	N/A	N/A	41.22	11/01/2020
MSCI USA Equal Weighted Index (Net)			7.26	25.13	25.13	22.87	15.01	14.70	40.67	
Excess Return			0.11	0.48	0.48	N/A	N/A	N/A	0.55	
IM U.S. Large Cap Core Equity (MF) Median			9.98	26.73	26.73	24.17	16.98	15.19	38.25	
Rank			85	61	61	N/A	N/A	N/A	18	
SSGA MSCI USA Small Cap Index (CF)	49,781,918	1.41	3.63	19.50	19.50	N/A	N/A	N/A	41.81	11/01/2020
MSCI US Sm Cap Index (USD) (Net)			3.51	19.11	19.11	21.33	13.32	13.97	41.28	
Excess Return			0.12	0.39	0.39	N/A	N/A	N/A	0.53	
IM U.S. Small Cap Equity (MF) Median			5.26	23.01	23.01	20.11	11.48	12.86	44.68	
Rank			69	63	63	N/A	N/A	N/A	58	

Performance shown is net of fees and is annualized for periods greater than one year.



Composite: Total Fund
Asset Allocation & Performance - Net of Fees

As of December 31, 2021

	Allocation		Rate of Return (%)							
	Market Value (\$)	%	QTD	CYTD	1 Year	3 Years	5 Years	10 Years	Since Incep.	Inception Date
NISA S&P 500 Futures (SA)	72,894,812	2.06	11.07	28.14	28.14	N/A	N/A	N/A	23.95	02/01/2020
S&P 500 Index (Cap Wtd)			11.03	28.71	28.71	26.07	18.47	16.55	24.61	
Excess Return			0.04	-0.57	-0.57	N/A	N/A	N/A	-0.66	
IM U.S. Large Cap Core Equity (MF) Median			9.98	26.73	26.73	24.17	16.98	15.19	22.38	
Rank			26	29	29	N/A	N/A	N/A	40	
NISA S&P 500 Options (SA)	5,136,558	0.15	74.70	N/A	N/A	N/A	N/A	N/A	71.23	07/01/2021
S&P 500 Index (Cap Wtd)			11.03	28.71	28.71	26.07	18.47	16.55	11.67	
Excess Return			63.67	N/A	N/A	N/A	N/A	N/A	59.56	
IM U.S. Large Cap Core Equity (MF) Median			9.98	26.73	26.73	24.17	16.98	15.19	9.92	
Rank			1	N/A	N/A	N/A	N/A	N/A	1	
L&G SciBeta Inflation Plus (SA)	101,233,261	2.86	N/A	N/A	N/A	N/A	N/A	N/A	4.02	12/01/2021
SciBeta Inflation Plus Index			N/A	N/A	N/A	N/A	N/A	N/A	4.03	
Excess Return			N/A	N/A	N/A	N/A	N/A	N/A	-0.01	
IM U.S. Large Cap Core Equity (MF) Median			9.98	26.73	26.73	24.17	16.98	15.19	4.53	
Rank			N/A	N/A	N/A	N/A	N/A	N/A	70	
Developed Markets Equity										
Walter Scott Dev Mkts Int'l Equity (SA)	223,788,903	6.32	5.12	12.72	12.72	20.53	15.81	11.31	9.19	10/01/1992
MSCI EAFE Index (USD) (Net)			2.69	11.26	11.26	13.54	9.55	8.03	6.19	
Excess Return			2.43	1.46	1.46	6.99	6.26	3.28	3.00	
IM All EAFE (MF) Median			2.93	10.79	10.79	13.49	9.29	7.87	7.28	
Rank			9	25	25	7	3	6	2	
1607 Capital Partners Int'l Equity EAFE (SA)	146,443,276	4.14	2.52	11.74	11.74	17.19	12.57	10.32	9.25	08/01/2010
90% MSCI EAFE/10% MSCI EM Index			2.29	9.85	9.85	13.33	9.62	7.82	6.75	
Excess Return			0.23	1.89	1.89	3.86	2.95	2.50	2.50	
IM International Core Equity (MF) Median			2.66	10.83	10.83	13.22	9.06	7.69	6.51	
Rank			53	34	34	6	4	7	5	
BNYM DB Dynamic Global Ex US Eq (CF)	31,557,892	0.89	2.11	8.29	8.29	N/A	N/A	N/A	13.21	09/01/2019
MSCI ACW Ex US Index (USD) (Net)			1.82	7.82	7.82	13.18	9.61	7.28	13.11	
Excess Return			0.29	0.47	0.47	N/A	N/A	N/A	0.10	
IM ACWI Ex US Core (MF) Median			2.36	8.98	8.98	14.54	10.11	7.73	14.07	
Rank			61	61	61	N/A	N/A	N/A	67	

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Composite: Total Fund
Asset Allocation & Performance - Net of Fees

As of December 31, 2021

	Allocation		Rate of Return (%)							
	Market Value (\$)	%	QTD	CYTD	1 Year	3 Years	5 Years	10 Years	Since Incep.	Inception Date
NISA EAFE Futures (SA)	35,807,512	1.01	2.69	10.99	10.99	N/A	N/A	N/A	10.66	02/01/2020
MSCI EAFE Index (USD) (Net)			2.69	11.26	11.26	13.54	9.55	8.03	11.18	
Excess Return			0.00	-0.27	-0.27	N/A	N/A	N/A	-0.52	
IM All EAFE (MF) Median			2.93	10.79	10.79	13.49	9.29	7.87	11.49	
Rank			56	47	47	N/A	N/A	N/A	64	
NT MSCI World Ex US Small Cap Index (CF)	50,749,215	1.43	0.72	11.14	11.14	16.60	N/A	N/A	8.26	08/01/2018
MSCI Wrld Ex US Sm Cap Index (USD) (Net)			0.39	11.14	11.14	16.27	11.03	9.99	7.96	
Excess Return			0.33	0.00	0.00	0.33	N/A	N/A	0.30	
IM International SMID Cap Equity (MF) Median			0.76	12.70	12.70	15.71	11.03	10.11	7.40	
Rank			51	67	67	45	N/A	N/A	41	
NISA FX Hedged EAFE Future (SA)	36,026,790	1.02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	01/01/2022
MSCI EAFE Index (USD) (Net) (Hedged)			4.21	19.43	19.43	15.12	10.17	11.03	N/A	
Excess Return			N/A	N/A	N/A	N/A	N/A	N/A	N/A	
IM All EAFE (MF) Median			2.93	10.79	10.79	13.49	9.29	7.87	N/A	
Rank			N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Emerging Markets Equity										
Baillie Gifford EM Equity Class 3 (MF)	153,834,886	4.35	-1.93	-9.03	-9.03	14.74	14.48	N/A	12.12	10/01/2016
MSCI Emerging Markets Index (USD) (Net)			-1.31	-2.54	-2.54	10.94	9.87	5.49	8.50	
Excess Return			-0.62	-6.49	-6.49	3.80	4.61	N/A	3.62	
IM Emerging Markets Equity (MF) Median			-1.26	-1.60	-1.60	11.81	9.59	5.62	8.05	
Rank			60	88	88	29	9	N/A	11	
L&G MSCI EM Index (CIT)	87,522,861	2.47	-1.36	-2.71	-2.71	N/A	N/A	N/A	12.95	10/01/2020
MSCI Emerging Markets Index (USD) (Net)			-1.31	-2.54	-2.54	10.94	9.87	5.49	13.11	
Excess Return			-0.05	-0.17	-0.17	N/A	N/A	N/A	-0.16	
IM Emerging Markets Equity (MF) Median			-1.26	-1.60	-1.60	11.81	9.59	5.62	13.85	
Rank			53	60	60	N/A	N/A	N/A	57	
NISA EM Futures (SA)	34,132,957	0.96	-1.30	-3.09	-3.09	N/A	N/A	N/A	10.38	02/01/2020
MSCI Emerging Markets Index (USD) (Net)			-1.31	-2.54	-2.54	10.94	9.87	5.49	10.43	
Excess Return			0.01	-0.55	-0.55	N/A	N/A	N/A	-0.05	
IM Emerging Markets Equity (MF) Median			-1.26	-1.60	-1.60	11.81	9.59	5.62	11.35	
Rank			52	62	62	N/A	N/A	N/A	60	

Performance shown is net of fees and is annualized for periods greater than one year.



Composite: Total Fund
Asset Allocation & Performance - Net of Fees

As of December 31, 2021

	Allocation		Rate of Return (%)							
	Market Value (\$)	%	QTD	CYTD	1 Year	3 Years	5 Years	10 Years	Since Incep.	Inception Date
Real Estate Equity										
Principal US Property Account (CF)	176,772,484	5.00	10.06	22.78	22.78	9.51	9.00	10.63	7.73	09/01/2004
NCREIF ODCE Index (AWA) (Net)			7.69	21.06	21.06	8.24	7.75	9.44	7.38	
Excess Return			2.37	1.72	1.72	1.27	1.25	1.19	0.35	
Fidelity US REITs Completion Index (SA)	187,823,304	5.31	13.26	32.73	32.73	N/A	N/A	N/A	13.57	01/01/2020
Fidelity REITs Completion Index			13.28	32.85	32.85	N/A	N/A	N/A	13.66	
Excess Return			-0.02	-0.12	-0.12	N/A	N/A	N/A	-0.09	
Agincourt FTSE NAREIT Equity REITs Index (SA)	25,440,522	0.72	16.09	N/A	N/A	N/A	N/A	N/A	21.60	05/01/2021
FTSE NAREIT All Eq REITs Index (TR)			16.17	41.30	41.30	19.93	12.46	12.22	20.65	
Excess Return			-0.08	N/A	N/A	N/A	N/A	N/A	0.95	
Infrastructure Equity										
IFM Global Infrastructure A (CF)	81,634,375	2.31	3.66	17.49	17.49	N/A	N/A	N/A	13.91	04/01/2020
S&P Gbl Infrastructure Index (Net)			4.42	11.04	11.04	9.30	6.86	6.81	24.57	
Excess Return			-0.76	6.45	6.45	N/A	N/A	N/A	-10.66	
Fidelity DJ Brookfield Infrastructure Index (SA)	96,620,624	2.73	6.86	20.84	20.84	N/A	N/A	N/A	5.04	01/01/2020
DJ Brookfield Gbl Infrastructure Comp Idx			6.70	20.23	20.23	11.43	7.36	7.84	4.30	
Excess Return			0.16	0.61	0.61	N/A	N/A	N/A	0.74	
US Treasuries										
Agincourt 1-3 Year Treasury (SA)	129,067,039	3.65	-0.56	-0.73	-0.73	N/A	N/A	N/A	1.79	05/01/2019
Bloomberg US Trsy 1-3 Yr Index			-0.58	-0.60	-0.60	2.03	1.61	1.09	1.83	
Excess Return			0.02	-0.13	-0.13	N/A	N/A	N/A	-0.04	
IM U.S. Short Term Treasury/Govt Bonds (MF) Median			-0.59	-0.92	-0.92	1.84	1.42	0.94	1.58	
Rank			44	41	41	N/A	N/A	N/A	33	
Agincourt 1-5 Yr US TIPS (SA)	64,612,304	1.83	1.11	5.23	5.23	N/A	N/A	N/A	5.54	01/01/2020
Bloomberg US TIPS 1-5 Yr Index			1.17	5.53	5.53	5.44	3.48	1.97	5.62	
Excess Return			-0.06	-0.30	-0.30	N/A	N/A	N/A	-0.08	
IM U.S. TIPS (MF) Median			1.71	5.29	5.29	7.50	4.56	2.48	7.56	
Rank			84	53	53	N/A	N/A	N/A	85	

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Composite: Total Fund
Asset Allocation & Performance - Net of Fees

As of December 31, 2021

	Allocation		Rate of Return (%)							
	Market Value (\$)	%	QTD	CYTD	1 Year	3 Years	5 Years	10 Years	Since Incep.	Inception Date
Agincourt 10 Year Treasury (SA)	56,847,130	1.61	0.80	-3.54	-3.54	N/A	N/A	N/A	4.93	05/01/2019
Bloomberg US Trsy Bellwethers 10 Yr Index			0.67	-3.60	-3.60	5.11	3.47	2.42	4.80	
Excess Return			0.13	0.06	0.06	N/A	N/A	N/A	0.13	
IM U.S. Intermediate Government (MF) Median			-0.29	-1.64	-1.64	3.44	2.43	1.81	3.17	
Rank			1	100	100	N/A	N/A	N/A	1	
NISA 10 Year Treasury Futures (SA)	47,216,853	1.33	0.72	-2.77	-2.77	N/A	N/A	N/A	-2.45	05/01/2020
Bloomberg US Trsy Bellwethers 10 Yr Index			0.67	-3.60	-3.60	5.11	3.47	2.42	-3.27	
Excess Return			0.05	0.83	0.83	N/A	N/A	N/A	0.82	
IM U.S. Intermediate Government (MF) Median			-0.29	-1.64	-1.64	3.44	2.43	1.81	-0.70	
Rank			1	89	89	N/A	N/A	N/A	100	
L&G 5-15 Year TIPS (SA)	34,710,842	0.98	2.09	N/A	N/A	N/A	N/A	N/A	2.09	10/01/2021
Bloomberg US TIPS 5-15 Year Index			2.06	5.77	5.77	8.64	5.54	3.27	2.06	
Excess Return			0.03	N/A	N/A	N/A	N/A	N/A	0.03	
IM U.S. TIPS (MF) Median			2.08	5.73	5.73	8.37	5.37	3.16	1.92	
Rank			48	N/A	N/A	N/A	N/A	N/A	39	
NISA 30 Year Treasury Futures (SA)	50,952,943	1.44	3.24	-5.04	-5.04	N/A	N/A	N/A	-5.87	05/01/2020
Bloomberg US Trsy Bellwethers 30 Yr Index			4.70	-4.62	-4.62	9.65	6.96	4.40	-7.21	
Excess Return			-1.46	-0.42	-0.42	N/A	N/A	N/A	1.34	
IM U.S. Long Term Treasury/Govt Bond (MF) Median			-0.03	-2.53	-2.53	3.79	2.79	2.01	-1.64	
Rank			6	93	93	N/A	N/A	N/A	96	
Hoisington Macroeconomic US Treasuries (SA)	122,075,833	3.45	3.80	-5.65	-5.65	N/A	N/A	N/A	10.32	05/01/2019
Bloomberg US Trsy Index			0.18	-2.32	-2.32	4.07	3.07	2.13	3.89	
Excess Return			3.62	-3.33	-3.33	N/A	N/A	N/A	6.43	
IM U.S. Long Term Treasury/Govt Bond (MF) Median			-0.03	-2.53	-2.53	3.79	2.79	2.01	3.59	
Rank			6	98	98	N/A	N/A	N/A	4	
US Mortgages										
DoubleLine MBS (SA)	110,890,941	3.13	-0.48	-1.15	-1.15	N/A	N/A	N/A	1.70	08/01/2019
Bloomberg US MBS Index (Unhgd)			-0.37	-1.04	-1.04	3.01	2.50	2.28	1.85	
Excess Return			-0.11	-0.11	-0.11	N/A	N/A	N/A	-0.15	
IM U.S. Mortgage Backed Bonds (MF) Median			-0.69	-1.33	-1.33	2.85	2.21	2.05	1.69	
Rank			26	44	44	N/A	N/A	N/A	50	

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Composite: Total Fund
Asset Allocation & Performance - Net of Fees

As of December 31, 2021

	Allocation		Rate of Return (%)							
	Market Value (\$)	%	QTD	CYTD	1 Year	3 Years	5 Years	10 Years	Since Incep.	Inception Date
US Credit										
PGIM US IG Corporate Bond (CIT)	127,084,019	3.59	0.20	-0.37	-0.37	N/A	N/A	N/A	6.16	08/01/2019
Bloomberg US Crdt Index			0.22	-1.08	-1.08	7.17	5.05	4.45	4.80	
Excess Return			-0.02	0.71	0.71	N/A	N/A	N/A	1.36	
IM U.S. Corporate Bonds (MF) Median			-0.08	-1.13	-1.13	7.13	4.82	4.32	4.80	
Rank			19	27	27	N/A	N/A	N/A	15	
Asset Allocation										
Agincourt Passive Index (SA)	114,507,824	3.24	3.78	9.66	9.66	N/A	N/A	N/A	9.66	01/01/2021
Passive Benchmark			3.73	8.78	8.78	13.72	10.11	7.91	8.78	
Excess Return			0.05	0.88	0.88	N/A	N/A	N/A	0.88	
Baillie Gifford Multi Asset (MF)	12,499,262	0.35	3.75	6.62	6.62	N/A	N/A	N/A	14.32	05/01/2020
Multi-Asset Benchmark			3.73	11.25	11.25	13.55	10.02	7.87	22.13	
Excess Return			0.02	-4.63	-4.63	N/A	N/A	N/A	-7.81	
GMO Global Asset Allocation (MF)	12,980,102	0.37	1.67	7.03	7.03	N/A	N/A	N/A	16.94	05/01/2020
Multi-Asset Benchmark			3.73	11.25	11.25	13.55	10.02	7.87	22.13	
Excess Return			-2.06	-4.22	-4.22	N/A	N/A	N/A	-5.19	
Commodities & Other										
NISA Gold Futures (SA)	37,845,686	1.07	3.48	-2.42	-2.42	N/A	N/A	N/A	4.41	05/01/2020
Bloomberg Gold Sub Index (TR)			3.96	-4.28	-4.28	10.97	8.42	0.67	2.60	
Excess Return			-0.48	1.86	1.86	N/A	N/A	N/A	1.81	
Cash & Equivalents										
Agincourt 1-3 Month Treasury (SA)	27,134,948	0.77	0.00	-0.02	-0.02	N/A	N/A	N/A	0.71	05/01/2019
Bloomberg US T-Bills 1-3 Mo Index			0.01	0.04	0.04	0.93	1.08	0.58	0.75	
Excess Return			-0.01	-0.06	-0.06	N/A	N/A	N/A	-0.04	
Mellon Government STIF (CF)	3,112,267	0.09	0.40	N/A	N/A	N/A	N/A	N/A	0.49	02/01/2021
Bloomberg US T-Bills 1-3 Mo Index			0.01	0.04	0.04	0.93	1.08	0.58	0.03	
Excess Return			0.39	N/A	N/A	N/A	N/A	N/A	0.46	
COAERS USD (SA)	1,000,088	0.03	0.00	0.01	0.01	N/A	N/A	N/A	0.01	05/01/2020
Bloomberg US T-Bills 1-3 Mo Index			0.01	0.04	0.04	0.93	1.08	0.58	0.07	
Excess Return			-0.01	-0.03	-0.03	N/A	N/A	N/A	-0.06	

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As of December 31, 2021

	Allocation		Rate of Return (%)							
	Market Value (\$)	%	QTD	CYTD	1 Year	3 Years	5 Years	10 Years	Since Incep.	Inception Date
BNYM Money Market Fund	2,000,000	0.06	N/A	N/A	N/A	N/A	N/A	N/A	N/A	01/01/2022
Bloomberg US T-Bills 1-3 Mo Index			0.01	0.04	0.04	0.93	1.08	0.58	N/A	
Excess Return			N/A	N/A	N/A	N/A	N/A	N/A	N/A	
NISA ST Sovereigns (SA)	2,000,000	0.06	N/A	N/A	N/A	N/A	N/A	N/A	N/A	01/01/2022
Bloomberg US T-Bills 1-3 Mo Index			0.01	0.04	0.04	0.93	1.08	0.58	N/A	
Excess Return			N/A	N/A	N/A	N/A	N/A	N/A	N/A	

Performance shown is net of fees and is annualized for periods greater than one year.





Annual Review of Multi-Asset Portfolio

David Stafford and Ty Sorrel

February 18, 2022



Evolution of Multi-Asset Mandates

Strategic Approach

May 2017

- In reviewing the strategic approach to employing the investment program, the Board considered and implemented a variety of improvements to the “Austin Model” of investment management
- Staff noted that **80-90%** of long-term performance is determined by the effectiveness of asset allocation choices, while investors typically only allocate **20%** of their resources to this process

During this process, the Board considered better alternatives for investment resources, governance, and mandate specification



Organizational beliefs

- Asset allocation is by far the most important investment process for the Fund
- Diversification across sources of return can improve Fund performance
- Diverse opinions from trusted advisors are valued when making important decisions



Organizational challenges

- Of 15 COAERS managers, none was positioned to advise on asset allocation
- Internal resources were insufficiently developed to inform allocation decisions
- Board relied solely on its investment consultant for advice on asset allocation

Approach to Multi-Asset Mandates

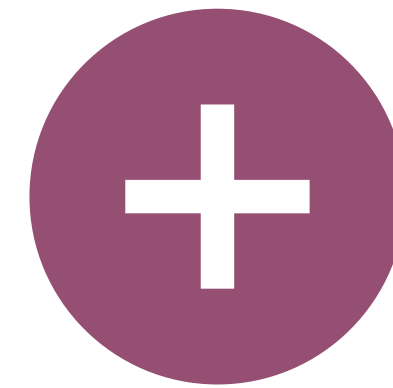
- In a multi-year process, one adopted solution to bolster these capabilities was the use of Multi-Asset mandates through dedicated allocations in the Strategic Asset Allocation
- Multi-Asset mandates are unique in that they allow a single mandate to invest across all of the investable asset classes in the Strategic Asset Allocation
- These strategies are intended to provide a variety of differentiated benefits to the System:



Diversification:
Highly diversified strategy across asset classes and risk factors in one mandate



Partnership:
Strategic advice from well aligned partners to help strengthen the “Austin Model”



Performance:
Risk-adjusted returns in excess of key COAERS benchmarks

Evolution of Multi-Asset

- Over the past several years, Multi-Asset mandates have taken a variety of forms which have helped inform the overall strategy for the investment program:

Risk Parity: highly leveraged strategies which attempt to target volatility by allocating to equities, bonds and inflation sensitive assets

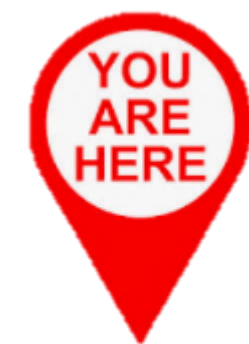
- + Adding leverage to a highly diversified portfolio is more efficient than concentrating risk
- Difficult to balance volatility targeting with reasonable amounts of leverage

Strategic Partnership: customized strategies which are given investment guidelines similar to the Strategic Asset Allocation

- + COAERS is big enough for customized partnerships, but just barely
- Differentiated processes can be hamstrung by marrying them too tightly to our SAA

Asset Allocation: smaller, complementary mandates through an “off the shelf” allocation to mutual funds

- + Research and knowledge share is valuable and available, though not always in a timely fashion
- High fees and poor performance from the underlying mandates



Continued Evolution of Multi-Asset

- Throughout this process, Staff and the Board have gained valuable insights into portfolio construction and the best ways to strategically implement the investment program
- Through the Premier List and Investment Risk Framework, many of the organizational challenges faced by the Board are now well addressed
- Looking forward, Staff views this portion of the SAA as an opportunity for continued evolution which could include restructuring into new asset classes or approaches

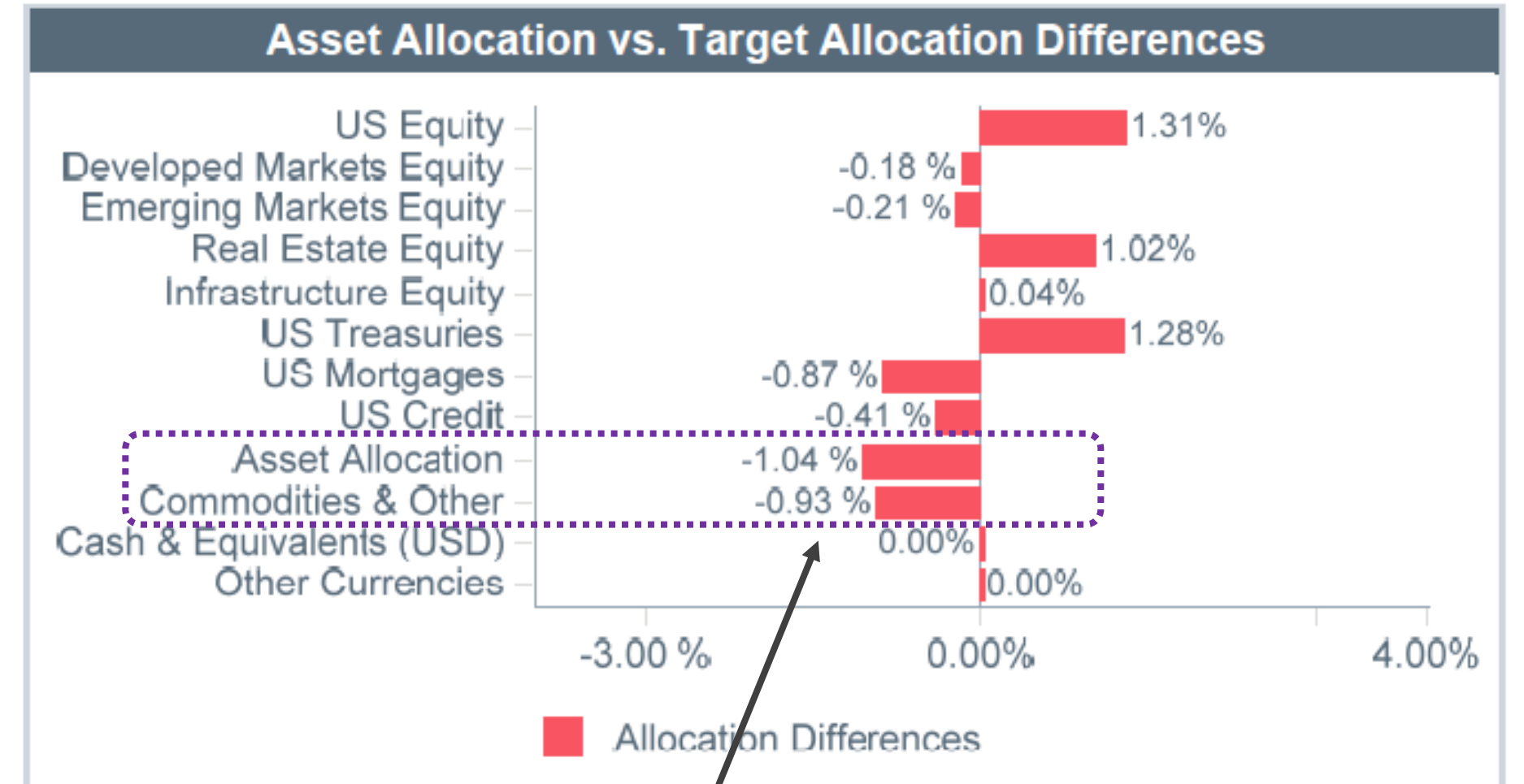
Organizational Challenge:	Lack of internal resources for asset allocation	Board solely relied on investment consultant for asset allocation advice	No investment managers able to inform asset allocation decisions
Key Achievement:	Investment staff increased from 1 to 4	Investment Risk Framework process	Premier List approach to partner with best-in-class managers



Current Implementation & Performance of Multi-Asset

Multi-Asset – Overview

- As of the end of Q4, Multi-Asset mandates carried an allocation of 5% of the Fund, which is below the neutral allocation of 7%
- Multi-Asset consists of two sub-asset classes:
 - Asset Allocation mandates consist of strategies that invest across a broad range of asset classes and have a 5% neutral weighting
 - Commodities & Other mandates are intended to provide additional diversification benefits against undue inflation and have a 2% neutral weighting

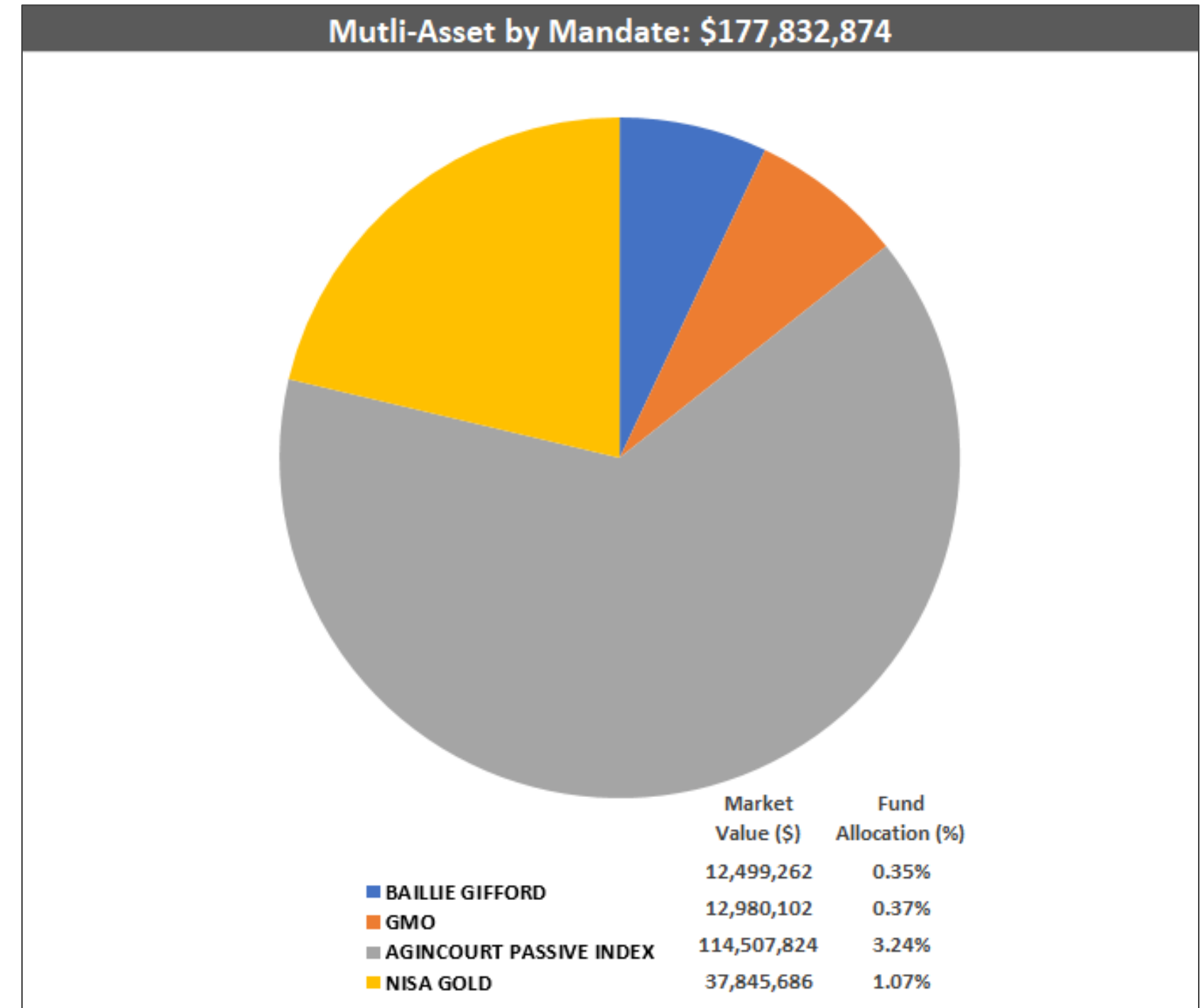


Multi-asset has been underfunded since the termination of BlackRock's Strategic Partnership allocation

Source: RVK Quarterly Report as of December 31, 2021

Multi-Asset – Current Implementation

- **Asset Allocation Mandates:**
 - Active: Baillie Gifford and GMO are both actively managed mutual funds with small allocations
 - Passive: Agincourt’s Passive Index mandate uses ETFs to replicate the COAERS Passive Benchmark and is the primary implementation in this sub-asset class
- **Commodities & Other Mandates:**
 - Passive: NISA’s Gold mandate is the only mandate in Commodities & Other and holds gold warrants after taking delivery of such last year



Source: Staff analysis of Bank of New York Mellon data, December 31, 2021

Multi-Asset Performance

- Overall, Multi-Asset has experienced strong absolute performance, but has lagged its benchmark during the recent market rally
 - Asset Allocation was weighed down by the more highly diversified approaches and poor manager specific performance
 - Commodities & Other struggled to provide the expected diversification benefits during a year characterized by high inflation

	Allocation		Rate of Return (%)								
	Market Value (\$)	%	MTD	QTD	CYTD	1 Year	3 Years	5 Years	10 Years	Since Incep.	Inception Date
Multi-Asset	177,832,874	5.03	1.67	3.56	10.65	10.65	14.23	9.28	N/A	6.49	02/01/2014
Multi-Asset Benchmark			2.34	3.73	11.25	11.25	13.55	10.02	7.87	7.26	
Excess Return			-0.67	-0.17	-0.60	-0.60	0.68	-0.74	N/A	-0.77	
Asset Allocation	139,987,188	3.96	2.12	3.58	8.83	8.83	N/A	N/A	N/A	17.15	05/01/2020
Multi-Asset Benchmark			2.34	3.73	11.25	11.25	13.55	10.02	7.87	22.13	
Excess Return			-0.22	-0.15	-2.42	-2.42	N/A	N/A	N/A	-4.98	
Commodities & Other	37,845,686	1.07	0.07	3.48	-2.42	-2.42	N/A	N/A	N/A	7.60	04/01/2021
Commodities & Other Benchmark			3.53	-1.56	27.11	27.11	9.86	3.66	-2.85	18.88	
Excess Return			-3.46	5.04	-29.53	-29.53	N/A	N/A	N/A	-11.28	

Source: RVK Monthly Investment Performance Report, December 31, 2021



Review of Asset Allocation

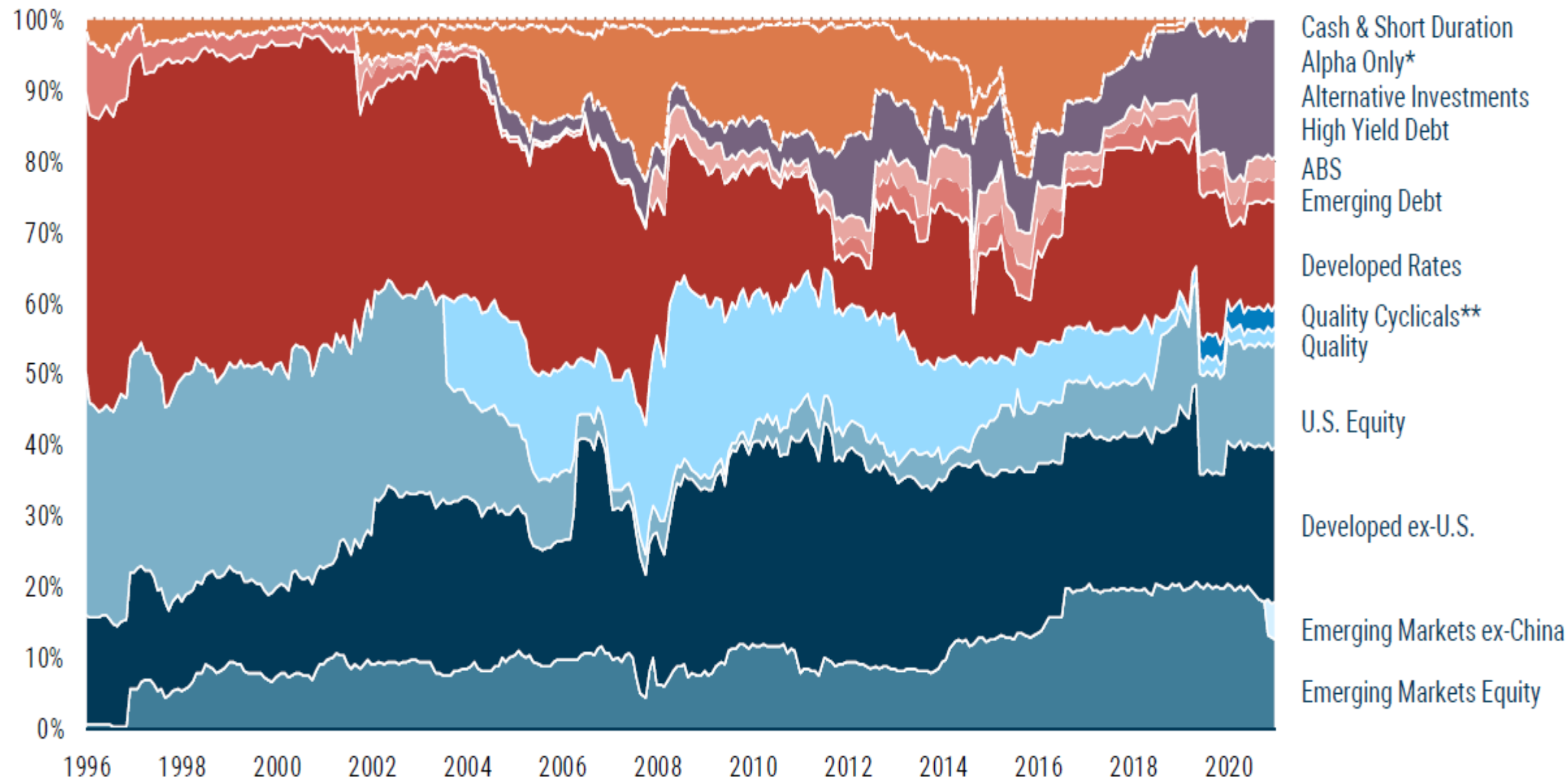
Agincourt Passive Index Performance

- Despite being a passive mandate, Agincourt's Passive Index mandate outperformed its benchmark as the ETFs chosen for this mandate have some tracking error
- This is reflected in the mandate's tracking error of 76 bps due to the currency hedged bond ETF used and differences in rebalancing frequency

	Allocation		Rate of Return (%)								
	Market Value (\$)	%	MTD	QTD	CYTD	1 Year	3 Years	5 Years	10 Years	Since Incep.	Inception Date
Asset Allocation											
Agincourt Passive Index (SA)	114,507,824	3.24	2.03	3.78	9.66	9.66	N/A	N/A	N/A	9.66	01/01/2021
Passive Benchmark			2.34	3.73	8.78	8.78	13.72	10.11	7.91	8.78	
Excess Return			-0.31	0.05	0.88	0.88	N/A	N/A	N/A	0.88	
Baillie Gifford Multi Asset (MF)											
Baillie Gifford Multi Asset (MF)	12,499,262	0.35	1.29	3.75	6.62	6.62	N/A	N/A	N/A	14.32	05/01/2020
Multi-Asset Benchmark			2.34	3.73	11.25	11.25	13.55	10.02	7.87	22.13	
Excess Return			-1.05	0.02	-4.63	-4.63	N/A	N/A	N/A	-7.81	
GMO Global Asset Allocation (MF)											
GMO Global Asset Allocation (MF)	12,980,102	0.37	3.68	1.67	7.03	7.03	N/A	N/A	N/A	16.94	05/01/2020
Multi-Asset Benchmark			2.34	3.73	11.25	11.25	13.55	10.02	7.87	22.13	
Excess Return			1.34	-2.06	-4.22	-4.22	N/A	N/A	N/A	-5.19	
Commodities & Other											
NISA Gold Futures (SA)	37,845,686	1.07	0.07	3.48	-2.42	-2.42	N/A	N/A	N/A	4.41	05/01/2020
Bloomberg Gold Sub Index (TR)			2.94	3.96	-4.28	-4.28	10.97	8.42	0.67	2.60	
Excess Return			-2.87	-0.48	1.86	1.86	N/A	N/A	N/A	1.81	

Source: RVK Monthly Investment Performance Report, December 31, 2021

GMO Global Asset Allocation Fund Review



- Though GMO produces commentary on a number of helpful topics (i.e., value investing, geographic selection), the fund has underperformed with higher risk
- Over time, GMO has increased the amount of risk in the portfolio by allocating more of the fund to Alternative Investments (purple section, 20% at year end) which have made some concentrated bets on interest rates

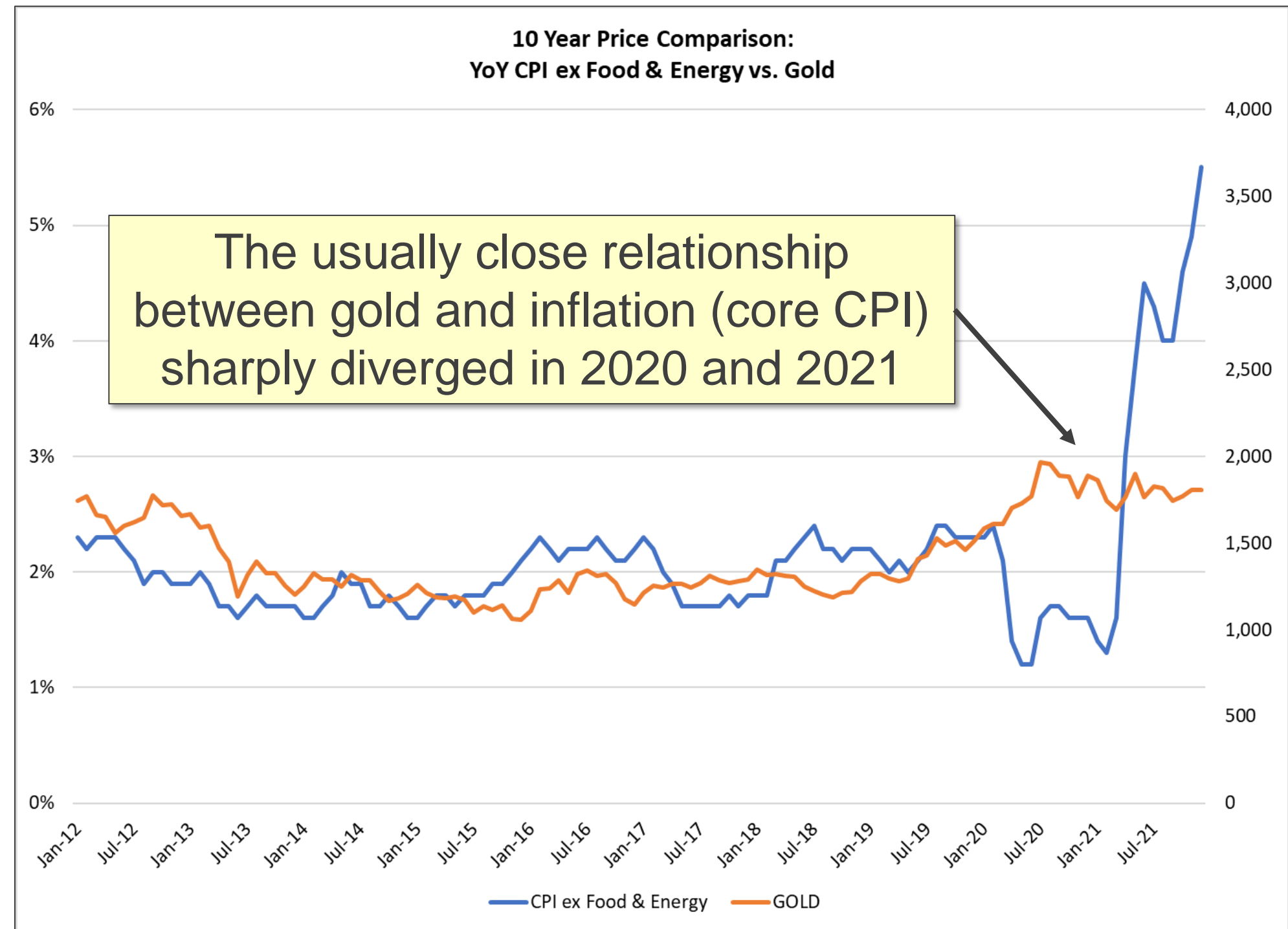
Source: GMO Asset Allocation Review, February 2022



Review of Commodities & Other

Commodities & Other – NISA Gold Futures

- NISA's Gold Futures mandate provides passive exposure to gold by investing in futures contracts which also allow for taking delivery of physical gold (represented by warrants)
- Though the relationship between physical gold and inflation is not perfect, a small allocation to gold has historically served as a portfolio diversifier and inflation protection



Source: Staff analysis of Bloomberg data

Key Takeaways from Multi-Asset's Evolution & Implementation

- Strategies that are truly differentiated from peers require an acceptance of the respective risk(s) (i.e., new assets classes, fewer constraints, more leverage, etc.)
- COAERS is the right size for current strategic allocations to public securities, but will have to think creatively about allocating to private assets
- Strategies and managers with high fees are acceptable when value is being created



9. Discuss and consider strategic goals and policies of the investment program including:

A. Capital markets assumptions, program goals and guidelines

B. Proposed revisions to Investment Policy Statement and Investment Implementation Policy

9A Capital markets assumptions, program goals and guidelines

Presented by David Stafford and RVK

AGENDA ITEM 9:

Discuss and consider strategic goals and policies of the investment program including

A. Capital markets assumptions, program goals and guidelines

AGENDA ITEM OBJECTIVE

This item fulfills the Board's requirement for annual reviews of the key strategic assumptions, the Strategic Asset Allocation (SAA) parameters, the Investment Policy Statement (IPS) and the Investment Implementation Policy (IIP).

RELEVANCE TO STRATEGIC PLAN

This agenda item is central to **COAERS Strategic Plan Goal 1: Maintain a Sustainable Retirement System**. Income from the COAERS investment program accounts for 60%-70% of future benefit payments from the System. The Committee must regularly review the goals, assumptions, guidelines, and policies of the COAERS investment program to maintain the System's sustainability.

BACKGROUND

In keeping with the Board's fiduciary duty of oversight, the IPS and IIP require annual reviews of:

1. The risk budget of the Fund for appropriateness in light of market conditions.
2. The SAA parameters for reasonableness relative to significant economic and market changes, to reflect updated capital market assumptions and other market-related inputs, and to incorporate changes in the Board's long-term goals and objectives.
3. The performance benchmarks with attention paid to the selection of the constituent indices for continued relevance, applicability, and investability.

In fulfillment of this responsibility, Staff presents the enclosed material to inform the Committee's review. These documents include an Asset Allocation and Risk Tolerance study from RVK.

ATTACHMENTS

1. RVK presentation "Asset Allocation and Risk Tolerance"
2. Staff presentation "Goals of the Investment Program"

SUPPLEMENTAL INFORMATION PROVIDED VIA BOX.COM

1. Various Capital Market Assumption Reports

February 18, 2022



AA & Risk Tolerance Discussion

City of Austin Employees' Retirement System



RVK Capital Market Assumption Overview



Capital Market Assumptions (CMAs)

Philosophy

- Each year, RVK's general consulting and research teams collaborate to review the capital market environment and update long-term, forward-looking capital market (CM) expectations for each asset class utilized by our clients.
- The forecast horizon is for long-term periods, typically 10 years or more.
- The components we estimate include:
 - Return
 - Risk (volatility of returns)
 - Correlation (relationship of asset class returns with all other asset classes)
- Return assumptions are generally index-based and assume no investment manager alpha.
- Annual updates are typically gradual and incorporate historical performance, current valuations, as well as the overall economic environment.

What does it mean to get CM Assumptions “right”?

Relative accuracy is most important...

- **Relative Accuracy:** Assumptions capture the relative relationships between asset classes – particularly closely related ones.
 - Having some assumptions that are spot on and others that are far off will produce unbalanced and poorly diversified portfolios.

But “absolute” accuracy matters too—just not as much.

- **Absolute Accuracy:** Assumptions reflect the absolute values actually experienced in future long-term market environments.
 - Having CM assumptions that are too high or too low across the board can cause a Fund to believe it can spend more than it can afford or restrict spending more than necessary.

Factors to keep in mind when evaluating assumptions...

- While excessively high capital market assumptions provide the hope of higher rates of expected return, this prospect may not actually materialize if the market environment does not support them and can often lead to suboptimal portfolio structures.
- A well-structured and executed investment program will be best positioned to benefit from the available market returns ***regardless of the forecasts for total return.***
- Well-structured asset allocations (and the resulting outcomes) are largely produced by the relative accuracy of assumptions, not simply by forecasting higher absolute returns.

RVK CMAs – 2021 vs. 2022

Asset Class	2021			2022			Change (2021 - 2022)		
	Nominal Return (Arith.)	Risk (St. Dev.)	Nominal Return (Geo.)	Nominal Return (Arith.)	Risk (St. Dev.)	Nominal Return (Geo.)	Nominal Return (Arith.)	Risk (St. Dev.)	Nominal Return (Geo.)
Large/Mid Cap US Equity	6.00%	16.00%	4.81%	5.75%	16.00%	4.56%	-0.25%	0.00%	-0.25%
Small Cap US Equity	6.50%	19.00%	4.84%	6.25%	19.00%	4.59%	-0.25%	0.00%	-0.25%
Broad US Equity	6.05%	16.05%	4.86%	5.80%	16.00%	4.61%	-0.25%	-0.05%	-0.25%
Dev'd Large/Mid Cap Int'l Equity	7.50%	17.00%	6.18%	7.50%	17.00%	6.18%	0.00%	0.00%	0.00%
Dev'd Small Cap Int'l Equity	8.00%	20.00%	6.19%	8.00%	20.00%	6.19%	0.00%	0.00%	0.00%
Emerging Markets Equity	10.00%	25.00%	7.26%	10.25%	25.00%	7.52%	0.25%	0.00%	0.26%
Broad International Equity	8.30%	18.80%	6.70%	8.35%	18.65%	6.78%	0.05%	-0.15%	0.08%
Global Equity	7.05%	16.60%	5.79%	6.80%	16.40%	5.56%	-0.25%	-0.20%	-0.22%
US Aggregate Fixed Income	2.00%	5.00%	1.88%	2.50%	5.00%	2.38%	0.50%	0.00%	0.50%
Non-US Dev'd Sovereign Fixed Income UH	1.00%	8.50%	0.64%	1.25%	8.50%	0.90%	0.25%	0.00%	0.25%
Emerging Markets Debt Hard Currency	5.00%	10.00%	4.53%	6.00%	10.00%	5.53%	1.00%	0.00%	1.00%
Emerging Markets Debt Local Currency	5.00%	11.50%	4.38%	5.75%	11.50%	5.13%	0.75%	0.00%	0.75%
TIPS	1.50%	5.50%	1.35%	2.00%	5.50%	1.85%	0.50%	0.00%	0.50%
Low Duration Fixed Income	1.50%	2.50%	1.47%	2.00%	2.50%	1.97%	0.50%	0.00%	0.50%
Long Duration Fixed Income	2.50%	10.00%	2.02%	2.75%	10.00%	2.27%	0.25%	0.00%	0.25%
High Yield	4.75%	10.00%	4.28%	5.50%	10.00%	5.03%	0.75%	0.00%	0.75%
Bank Loans	4.75%	8.00%	4.45%	5.00%	8.00%	4.70%	0.25%	0.00%	0.25%
Core Real Estate	5.75%	12.50%	5.02%	6.00%	12.50%	5.27%	0.25%	0.00%	0.25%
Global REITs	6.75%	21.00%	4.74%	6.50%	21.00%	4.49%	-0.25%	0.00%	-0.25%
MLPs	9.25%	23.00%	6.91%	8.75%	23.00%	6.40%	-0.50%	0.00%	-0.51%
Funds of Hedge Funds	4.25%	9.50%	3.82%	4.25%	9.50%	3.82%	0.00%	0.00%	0.00%
Multi-Strategy Hedge Funds	5.00%	8.50%	4.66%	5.00%	8.50%	4.66%	0.00%	0.00%	0.00%
GTAA	5.00%	9.00%	4.62%	5.00%	9.00%	4.62%	0.00%	0.00%	0.00%
Private Credit	6.75%	13.00%	5.97%	7.25%	13.00%	6.47%	0.50%	0.00%	0.50%
Senior Secured Direct Lending	5.75%	9.00%	5.37%	6.00%	9.00%	5.62%	0.25%	0.00%	0.25%
Private Equity	8.75%	22.00%	6.59%	9.00%	22.00%	6.85%	0.25%	0.00%	0.25%
Commodities	5.00%	17.50%	3.57%	5.50%	17.50%	4.08%	0.50%	0.00%	0.51%
Diversified Inflation Strategies	4.45%	11.55%	3.82%	4.70%	11.55%	4.07%	0.25%	0.00%	0.25%
US Inflation	2.00%	1.50%	1.99%	2.50%	2.50%	2.47%	0.50%	1.00%	0.48%
Cash Equivalents	1.50%	2.00%	1.48%	1.50%	2.00%	1.48%	0.00%	0.00%	0.00%

RVK 2021 Capital Markets Assumptions

	Arithmetic Return Assumption	Standard Deviation Assumption	Compound Return Assumption
Broad US Equity*	5.80	16.00	4.86
Global Equity	6.80	16.40	5.56
US Agg Fixed Income*	2.50	5.00	2.38
COAERS Fixed Income ¹	2.31	6.27	2.12
COAERS Real Assets ²	6.50	14.41	5.54
COAERS Multi-Asset ³	5.70	12.17	5.01
Cash Equivalents	1.50	2.00	1.48

	Broad US Equity	Global Equity	US Agg FI	COAERS FI	COAERS RA	COAERS MA	Cash
Broad US Equity	1.00	0.95	0.15	0.09	0.82	0.95	-0.03
Global Equity	0.95	1.00	0.00	-0.13	0.84	0.98	-0.11
US Agg Fixed Income	0.15	0.00	1.00	0.98	0.01	0.13	0.30
COAERS Fixed Income	0.09	-0.13	0.98	1.00	-0.17	-0.04	0.24
COAERS Real Assets	0.82	0.84	0.01	-0.17	1.00	0.91	-0.07
COAERS Multi-Asset	0.95	0.98	0.13	-0.04	0.91	1.00	-0.12
Cash Equivalents	-0.03	-0.11	0.30	0.24	-0.07	-0.12	1.00

¹Fixed Income = 75% US Agg Fixed Income, 25% US Long Duration Government Fixed Income.

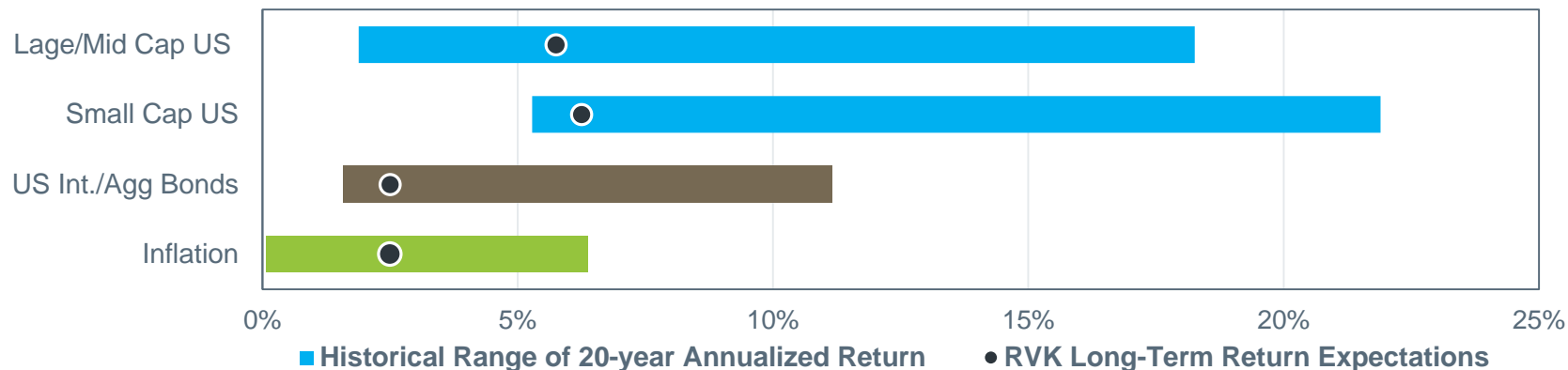
²Real Assets = 33% each Core Real Estate, US REITs, and listed Infrastructure.

³Multi-Asset = 56% Global Equity, 21% US Agg Fixed Income, 10% US REITs, 5% listed Infrastructure, 7% GTAA (Global 60/40), and 1% Cash.

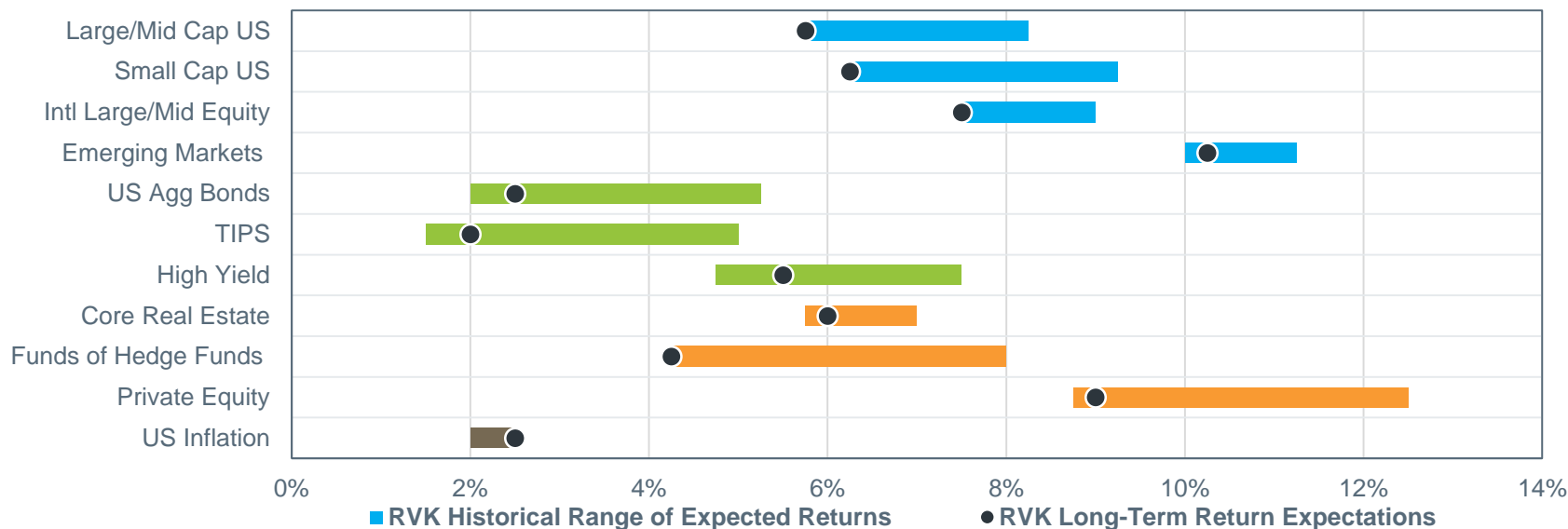
*Asset classes shown for comparative purposes.

Historical Perspective of Expected Returns

RVK Long-Term Expected Returns vs. Historical Range of Returns¹



2022 Expected Returns vs. RVK Historical Range of Expected Returns²

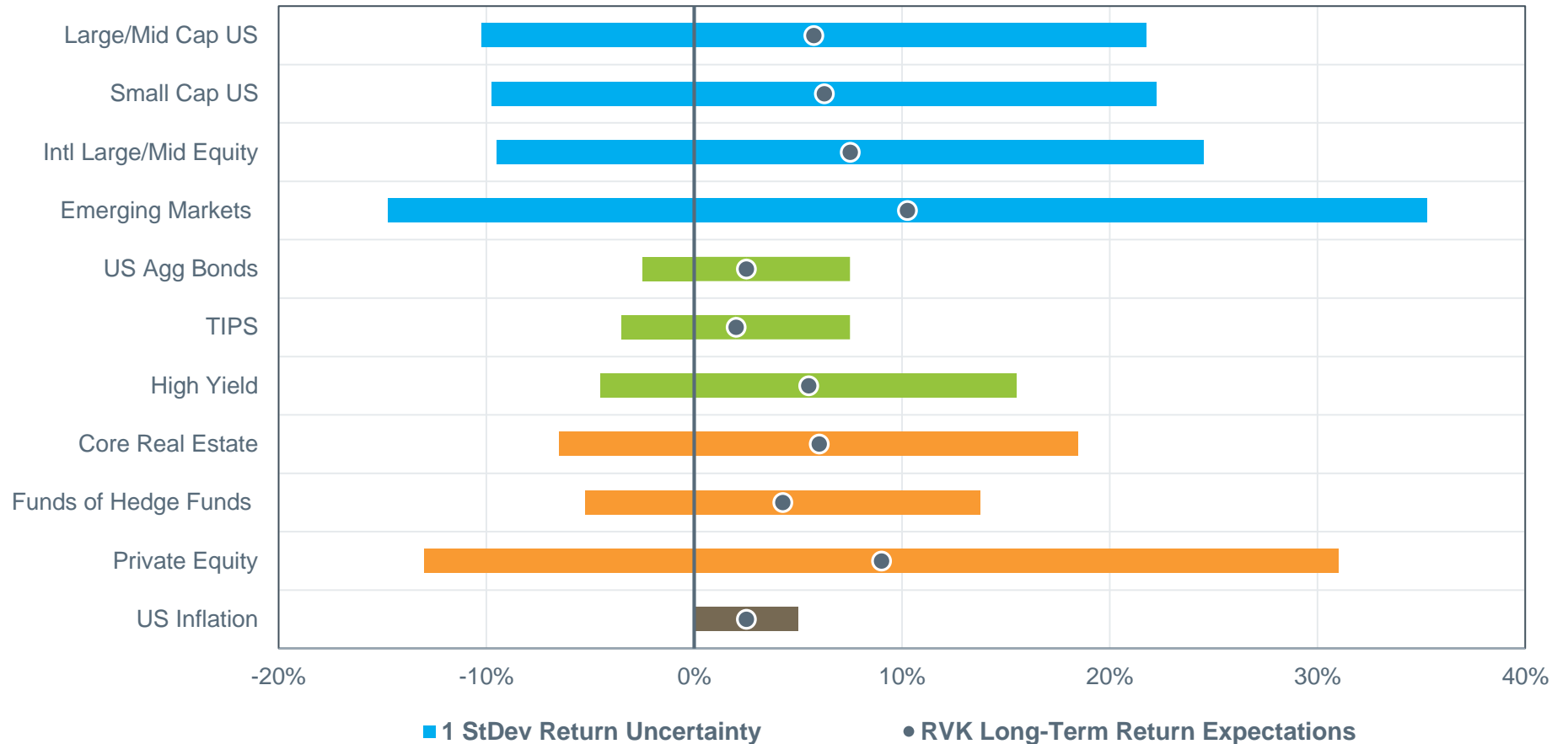


¹ Historical range shows the minimum and maximum 20-year annualized return for a given asset class based on monthly rolling 20-year annualized return series starting from Jan 1926. Large/Mid Cap US is represented by SBBI US Large Stock; Small Cap US by SBBI US Small Stock; US Int./Agg Bonds by SBBI US Intermediate Government Jan 1926 – December 1999 and Barclays US Aggregate Bond Index thereafter; Developed International Equity by SBBI US Inflation by SBBI US Inflation.

² Data shown includes 2007 through 2022 Capital Market Assumptions for selected asset classes.

Asset Return Expectations and Uncertainty

RVK 2022 Long-Term Return Expectations and Uncertainty of Returns Distribution



¹ StDev return uncertainty is based on RVK 2022 CMA risk assumption for each asset class.

RVK 2022 Compound Return Assumptions



COAERS Asset Allocation Analysis



Asset Allocation Modeling Inputs – *Strategic Bands*

	Strategic Policy Bands	Lower Bound – S	Current Target	Upper Bound – S (UL)	Upper Bound – S (L)
Global Equity	46 - 66	46	56	66	66
COAERS Fixed Income	16 – 33	31.5	21	16	16
COAERS Real Assets	10 – 20	10	15	15	20
COAERS Multi-Asset	2.5 – 15	2.5	7	3	8
Cash Equivalents	-10 – 10	10	1	0	-10
Total		100	100	100	100
Growth Assets		56	71	81	86
Return (Compound)		4.41	5.03	5.22	5.52
Risk (Standard Deviation)		9.01	11.80	12.96	14.25
Equity Beta (vs. S&P 500)		0.55	0.71	0.77	0.84
Sharpe Ratio		0.37	0.35	0.35	0.35
1 Year Max Drawdown		-25.99	-33.85	-37.53	-41.30

Growth Assets (%) is the total portfolio allocation less the allocations to Multi-Asset, Fixed Income, and Cash. Allocations may not sum exactly to 100% due to rounding. Sharpe Ratio assumes a 1.50% risk-free rate. 1 Year Max Drawdown represents the 1st Percentile 1 Year Expected Return.

Asset Allocation Modeling Inputs – *Tactical Bands*

	Tactical Policy Bands	Lower Bound – T	Current Target	Upper Bound – T (UL)	Upper Bound – T (L)
Global Equity	51 - 61	51	56	61	61
COAERS Fixed Income	18 – 27	27	21	18	18
COAERS Real Assets	11 – 19	11	15	16.5	19
COAERS Multi-Asset	4.5 – 12.5	6	7	4.5	7
Cash Equivalents	-5 – 5	5	1	0	-5
Total		100	100	100	100
Growth Assets		62	71	77.5	80
Return (Compound)		4.71	5.03	5.16	5.31
Risk (Standard Deviation)		10.36	11.80	12.51	13.16
Equity Beta (vs. S&P 500)		0.62	0.71	0.75	0.78
Sharpe Ratio		0.36	0.35	0.35	0.35
1 Year Max Drawdown		-29.22	-33.85	-36.34	-38.22

Growth Assets (%) is the total portfolio allocation less the allocations to Multi-Asset, Fixed Income, and Cash. Allocations may not sum exactly to 100% due to rounding. Sharpe Ratio assumes a 1.50% risk-free rate. 1 Year Max Drawdown represents the 1st Percentile 1 Year Expected Return.

Monte Carlo Comparison

Probability of achieving or exceeding different return levels (%)

1 Year	Current Target	LB-S	LB-T	UB-T (UL)	UB-S (UL)	UB-T (L)	UB-S (L)
Target 6.50%	49	44	46	49	50	50	51
Target 6.75%	48	43	46	49	49	49	51
Target 7.00%	47	42	45	48	48	49	50

3 Years	Current Target	LB-S	LB-T	UB-T (UL)	UB-S (UL)	UB-T (L)	UB-S (L)
Target 6.50%	44	37	41	45	46	47	48
Target 6.75%	43	36	40	44	45	45	47
Target 7.00%	42	34	38	43	43	44	46

5 Years	Current Target	LB-S	LB-T	UB-T (UL)	UB-S (UL)	UB-T (L)	UB-S (L)
Target 6.50%	42	34	38	43	44	45	46
Target 6.75%	40	32	36	42	42	43	45
Target 7.00%	38	30	34	40	41	42	43

10 Years	Current Target	LB-S	LB-T	UB-T (UL)	UB-S (UL)	UB-T (L)	UB-S (L)
Target 6.50%	37	27	32	39	39	41	43
Target 6.75%	35	24	30	37	37	39	41
Target 7.00%	33	22	27	35	36	37	39

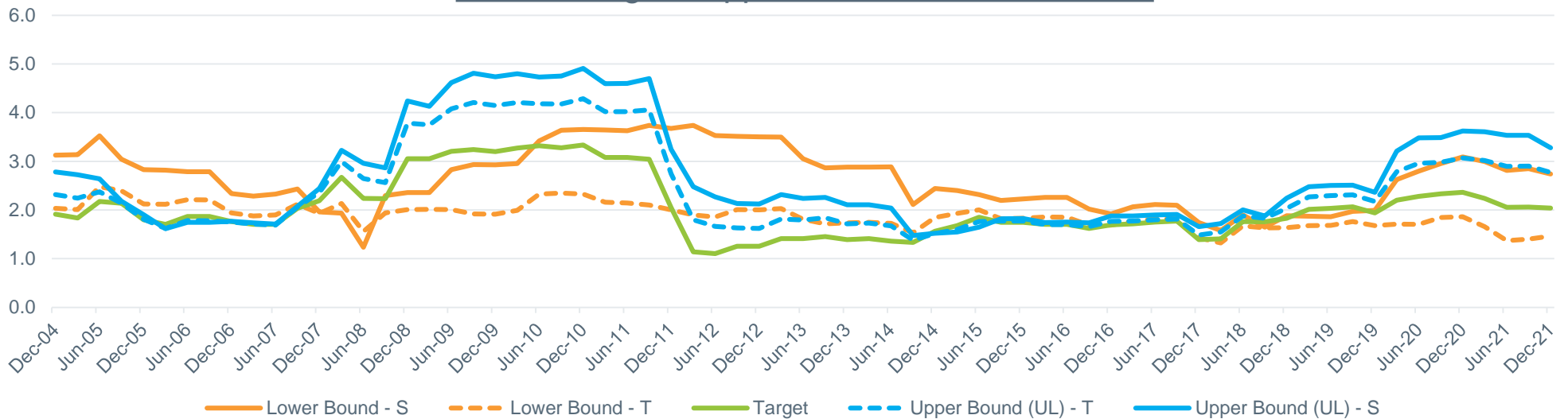
Monte Carlo Comparison

Expected return outcomes from worst (1st percentile) to best case (99th percentile) including median (50th percentile)

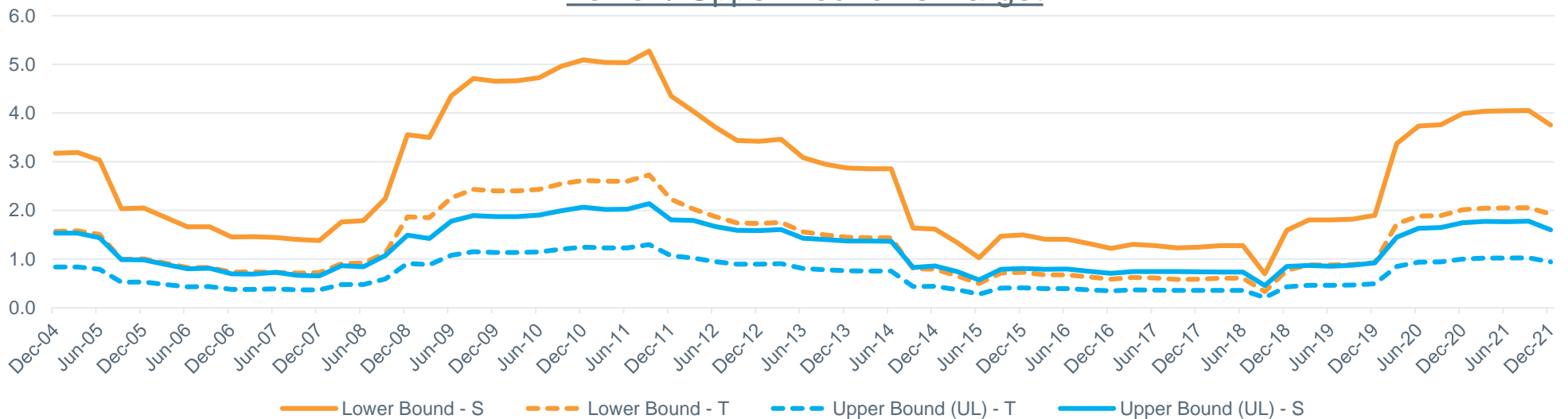
1 Year	Current Target	LB-S	LB-T	UB-T (UL)	UB-S (UL)	UB-T (L)	UB-S (L)
1st Percentile	-33.85	-25.99	-29.22	-36.34	-37.53	-38.22	-41.30
5th Percentile	-15.68	-11.79	-13.50	-17.01	-17.79	-17.78	-19.44
25th Percentile	-2.16	-1.43	-1.79	-2.54	-2.88	-2.56	-2.97
50th Percentile	5.94	5.01	5.46	6.18	6.26	6.52	6.88
75th Percentile	14.29	11.48	12.82	15.12	15.59	15.74	16.81
95th Percentile	27.27	21.72	24.34	29.11	30.38	30.33	32.63
99th Percentile	37.30	29.65	33.35	39.77	41.44	41.23	44.29
3 Years	Current Target	LB-S	LB-T	UB-T (UL)	UB-S (UL)	UB-T (L)	UB-S (L)
1st Percentile	-21.98	-15.25	-18.10	-24.25	-25.20	-26.20	-29.34
5th Percentile	-8.89	-6.37	-7.47	-9.85	-10.40	-10.49	-11.55
25th Percentile	0.34	0.76	0.61	0.08	-0.12	0.09	-0.12
50th Percentile	5.45	4.70	5.06	5.61	5.64	5.82	6.08
75th Percentile	10.45	8.63	9.50	10.96	11.30	11.38	12.07
95th Percentile	17.51	14.16	15.72	18.54	19.21	19.25	20.57
99th Percentile	22.93	18.55	20.62	24.50	25.39	25.38	27.24
5 Years	Current Target	LB-S	LB-T	UB-T (UL)	UB-S (UL)	UB-T (L)	UB-S (L)
1st Percentile	-15.83	-10.57	-12.86	-17.52	-18.64	-19.87	-22.73
5th Percentile	-6.32	-4.20	-5.07	-7.12	-7.52	-7.64	-8.58
25th Percentile	1.21	1.38	1.30	1.03	0.87	1.05	0.89
50th Percentile	5.35	4.59	4.95	5.48	5.50	5.68	5.90
75th Percentile	9.15	7.58	8.33	9.54	9.77	9.93	10.51
95th Percentile	14.78	11.98	13.27	15.60	16.11	16.16	17.24
99th Percentile	19.05	15.28	17.05	20.20	20.93	20.98	22.43
10 Years	Current Target	LB-S	LB-T	UB-T (UL)	UB-S (UL)	UB-T (L)	UB-S (L)
1st Percentile	-9.43	-5.85	-7.43	-10.80	-11.42	-12.44	-15.13
5th Percentile	-3.50	-1.91	-2.53	-4.04	-4.37	-4.56	-5.28
25th Percentile	2.05	2.09	2.10	1.92	1.83	1.92	1.84
50th Percentile	5.07	4.46	4.78	5.19	5.21	5.36	5.54
75th Percentile	7.94	6.71	7.30	8.27	8.44	8.58	9.05
95th Percentile	12.04	9.90	10.88	12.66	13.02	13.15	13.99
99th Percentile	15.01	12.20	13.44	15.85	16.31	16.43	17.47

Estimated Tracking Error – Rolling 3 Years

Lower / Target / Upper vs. Passive Benchmark

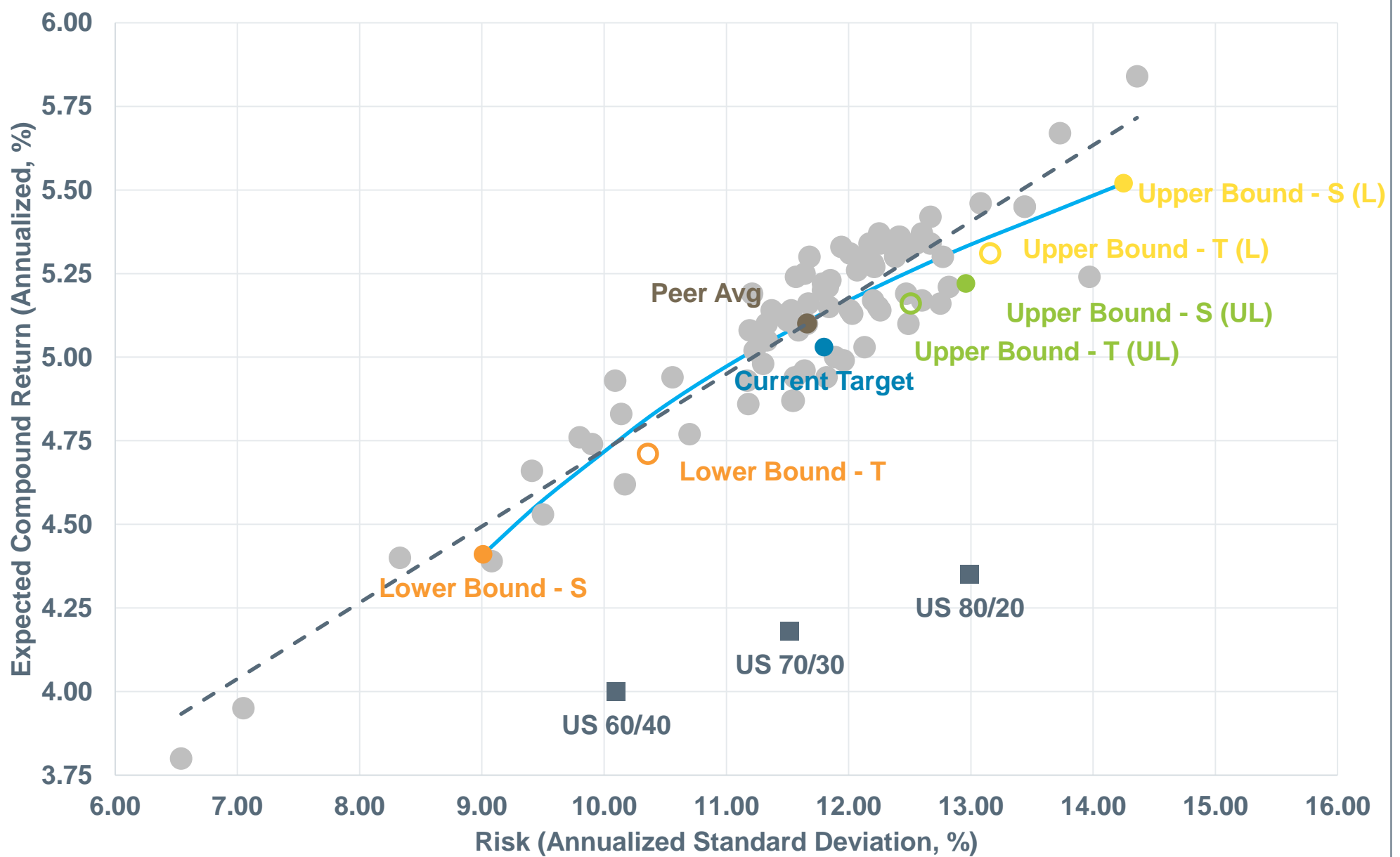


Lower / Upper Bound vs. Target



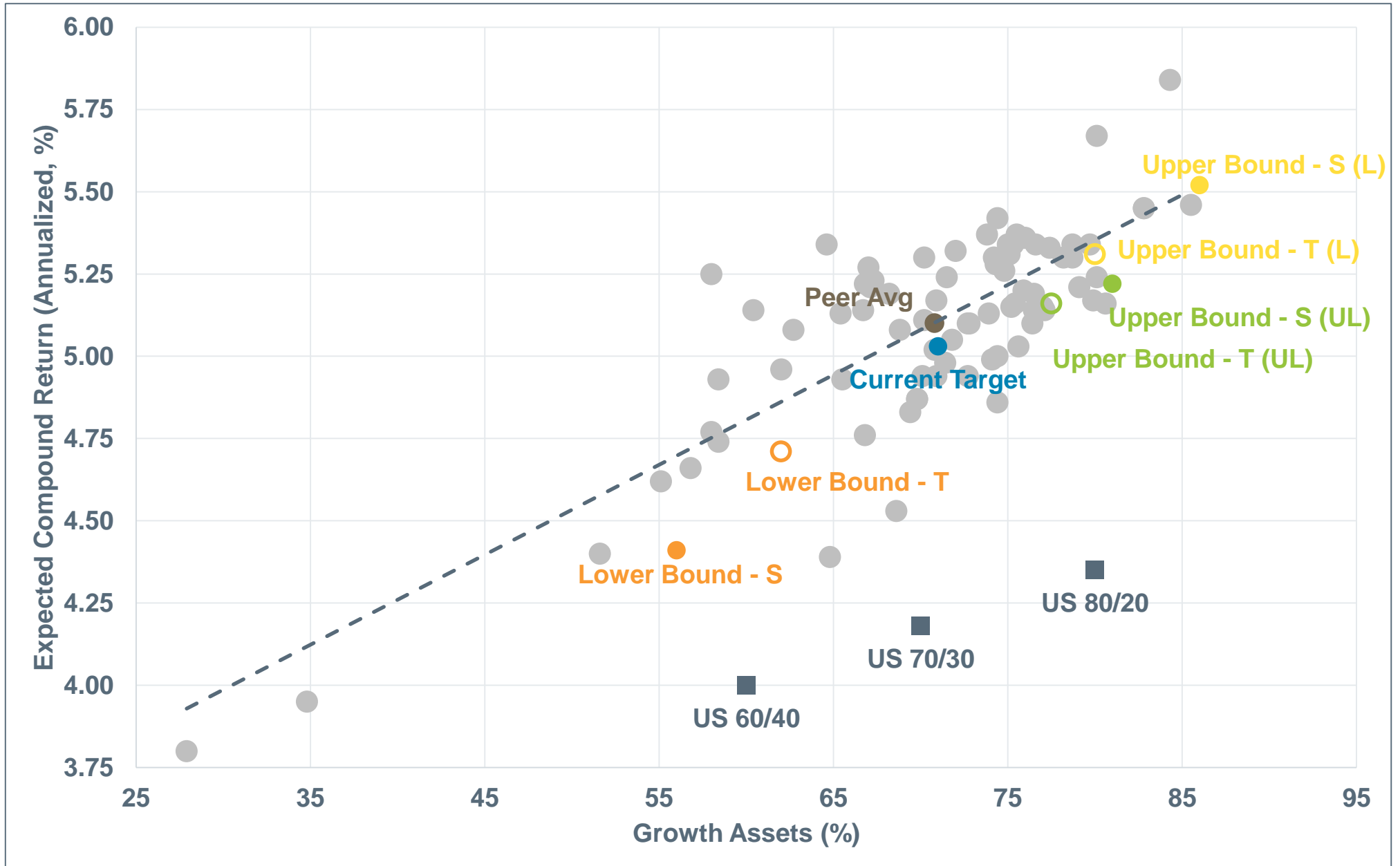
Passive Benchmark consists of 60% MSCI ACWI (Net) and 40% Bloomberg Global Aggregate Index.

COAERS vs. Peers (Return & Standard Deviation)



The efficient frontier (blue line) illustrates COAERS' range of potential asset allocations given the approved policy ranges. Peers reflect the asset allocations of various US public funds. Allocations are mapped to RVK's 2022 CMAs. Population = 60

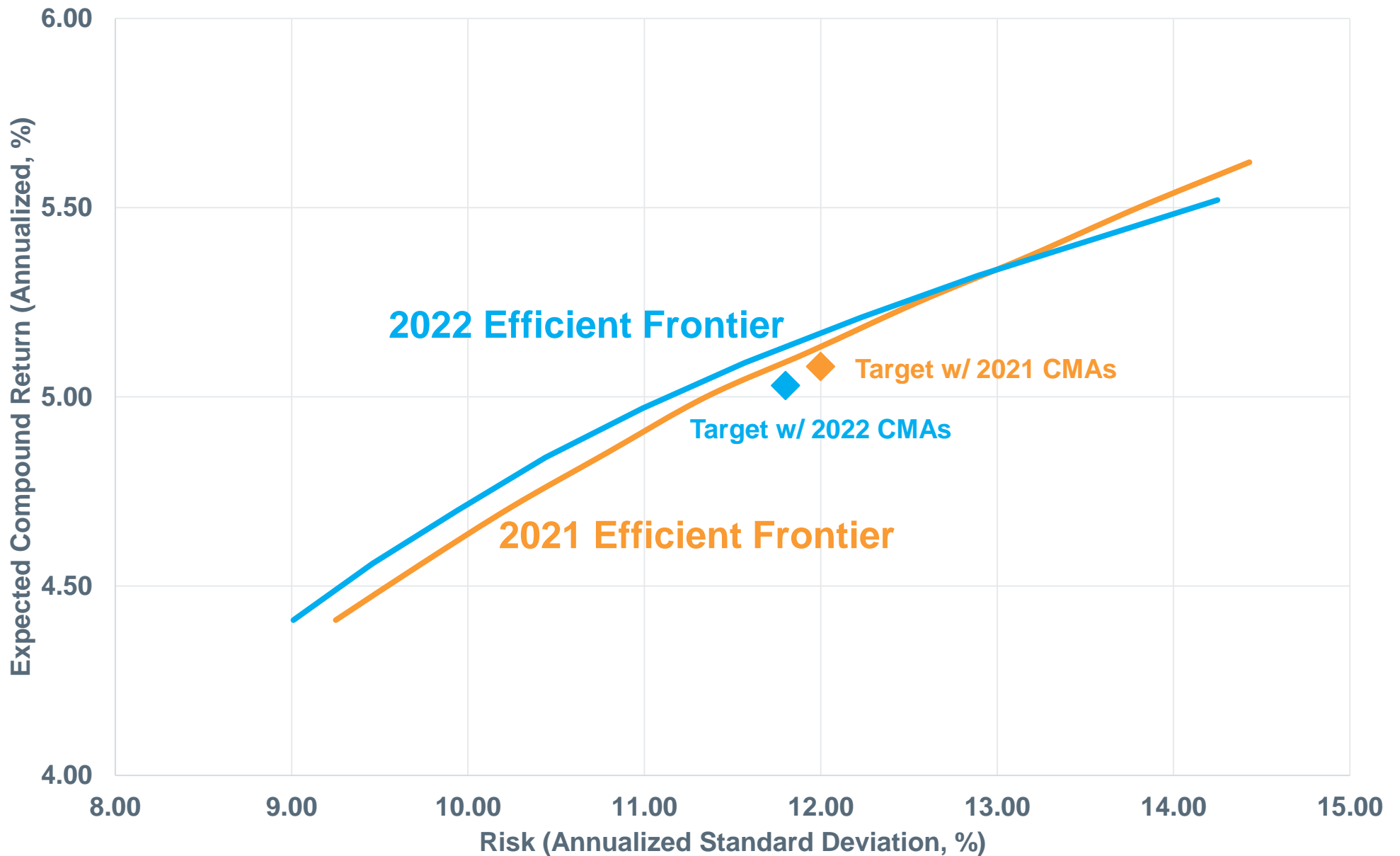
COAERS vs. Peers (Return & Growth Assets)



Growth Assets (%) is the total portfolio allocation less allocations to Multi-Asset, Fixed Income, and Cash.
 Peers reflect the current asset allocations of various US public funds. Allocations are mapped to RVK's 2022 CMAs. Population = 80



2022 vs. 2021 Capital Market Assumptions



Tradeoffs of Increasing Risk Budget

	Min	Max	2022 Target	14% Vol Portfolio (L)	14% Vol Portfolio (UL) ¹
Global Equity	46	66	56.0	66.0	69.0
COAERS Fixed Income	16	33	21.0	16.0	9.0
COAERS Real Assets	10	20	15.0	20.0	19.0
COAERS Multi-Asset	3	15	7.0	6.0	3.0
Cash Equivalents	-10	10	1.0	-8.0	0.0
Expected Risk (Standard Deviation)			11.80	14.00	14.00
Expected Compound Return			5.03	5.47	5.40
Sharpe Ratio			0.35	0.35	0.34
1 Year Max Drawdown			-33.85	-39.08	-39.37
Time to Recovery ²			6.73	7.14	7.29

- Increasing the System's long-term expected compound return would imply a significant increase in expected risk, either through meaningful increases in leverage and/or risk assets.
- This increase in leverage and/or risk assets would likely come at the cost of portfolio diversifiers such as fixed income and multi-asset – noticeably increasing the potential 1 year maximum drawdown.
- While an oversimplification, Time to Recovery (years) has been included in the table to the left in order to illustrate the number of years it would take each portfolio at its expected compound return to recover from a maximum drawdown event. This highlights the tradeoff between stretching for higher expected returns and the potential negative stress it can cause a System that is already exposed to sequence risk.



¹14% Vol Portfolio (UL) ignores strategic min and max bands required by the IPS and is shown for illustrative purposes only.

²Time to Recovery is an illustrative measure expressed in years and calculated as the 1-year maximum drawdown / expected compound return.

Allocations may not sum exactly to 100% due to rounding. Sharpe Ratio assumes a 1.50% risk-free rate. 1 Year Max Drawdown represents the 1st Percentile 1 Year Expected Return.

Appendix



Summary of Expected Return Methodology

Building Block Methodology	Income	+	Inflation	+	Real Growth	+ -	Valuation Change
Cash Equivalents	Income						
Fixed Income	Income + OAS change + Expected interest rate changes (and duration impact)						
TIPS	Real Income + Inflation						
Public Equity	Income + Inflation + Real GDP/earnings growth + / - Currency Effect + / - Valuation						
Core Real Estate	Income + Inflation + / - Valuation – Investment fees						
Hedge Funds	Income (collateral return, cash) + Beta return + Alpha return						
Commodities	Collateral return (cash assumption) + Spot return (inflation assumption) + Roll return						

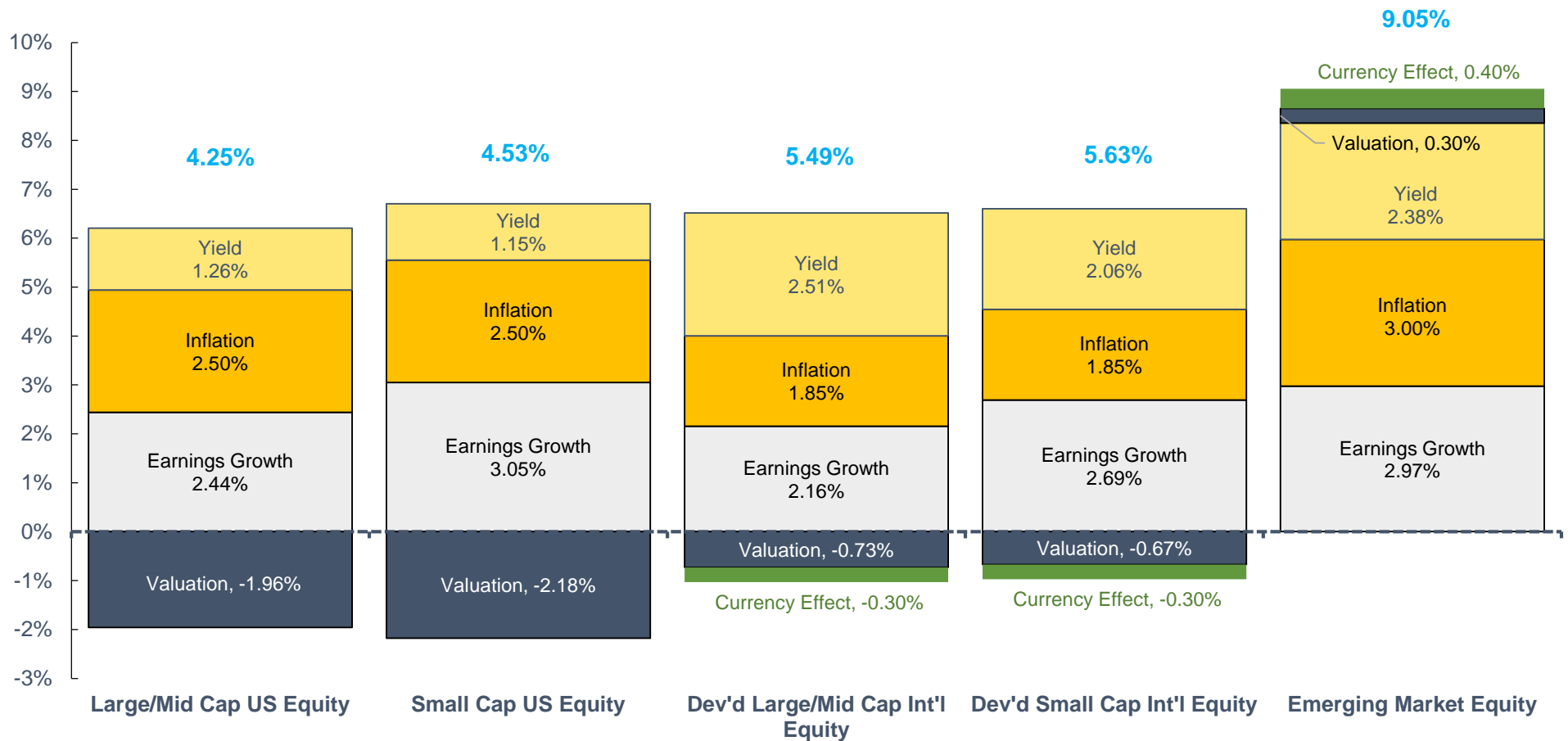
Spread Methodology	Beta assumption	+	Illiquidity premium
Private Credit	Bank loan assumption + Return premium		
Private Equity	US large/mid cap equity assumption + Return premium		

Asset Blend Methodology	
GTAA	30% global equity + 25% US Agg fixed income + 5% int'l developed fixed income + 10% EMD (local) + 10% TIPS + 10% high yield + 10% commodities
Diversified Inflation Strategies	1/3 TIPS + 1/3 commodities + 1/3 global REITs

While the above factors generally inform the direction and magnitude of the capital market assumptions, RVK also considers qualitative, triangulation, and other factors as needed, when arriving at final assumption values.

RVK Return Methodology for Equities

2022 Decomposition of the Building Blocks for Public Equity Asset Classes



Key Terms Defined – Strategic and Tactical Bands

- Strategic Bands, asset class ranges, each of which is allowable under approved IPS guidelines:

“Strategic Bands” – minimum and maximum major asset class weights

- Tactical Bands, asset class ranges, each of which is allowable under approved IPS guidelines:

“Tactical Bands” – minimum and maximum major asset class weights within the strategic bands where Staff has delegated authority under the proposed Investment Policy Statement

Key Terms Defined – Portfolios Modeled

– Seven options, each of which is allowable under approved IPS guidelines:

“Lower Bound” – the lowest volatility portfolio within allowable ranges. One lower bound for the strategic bands and one for the tactical bands.

“Target” – the approved target allocation for the System.

“Upper Bound (UL)” – the highest volatility portfolio within allowable ranges, without leverage. One upper bound for the strategic bands and one for the tactical bands.

“Upper Bound (L)” – the highest volatility portfolio within allowable ranges, with 10% (max) leverage for the strategic bands and 5% (max) leverage for the tactical bands. One upper bound for the strategic bands and one for the tactical bands.

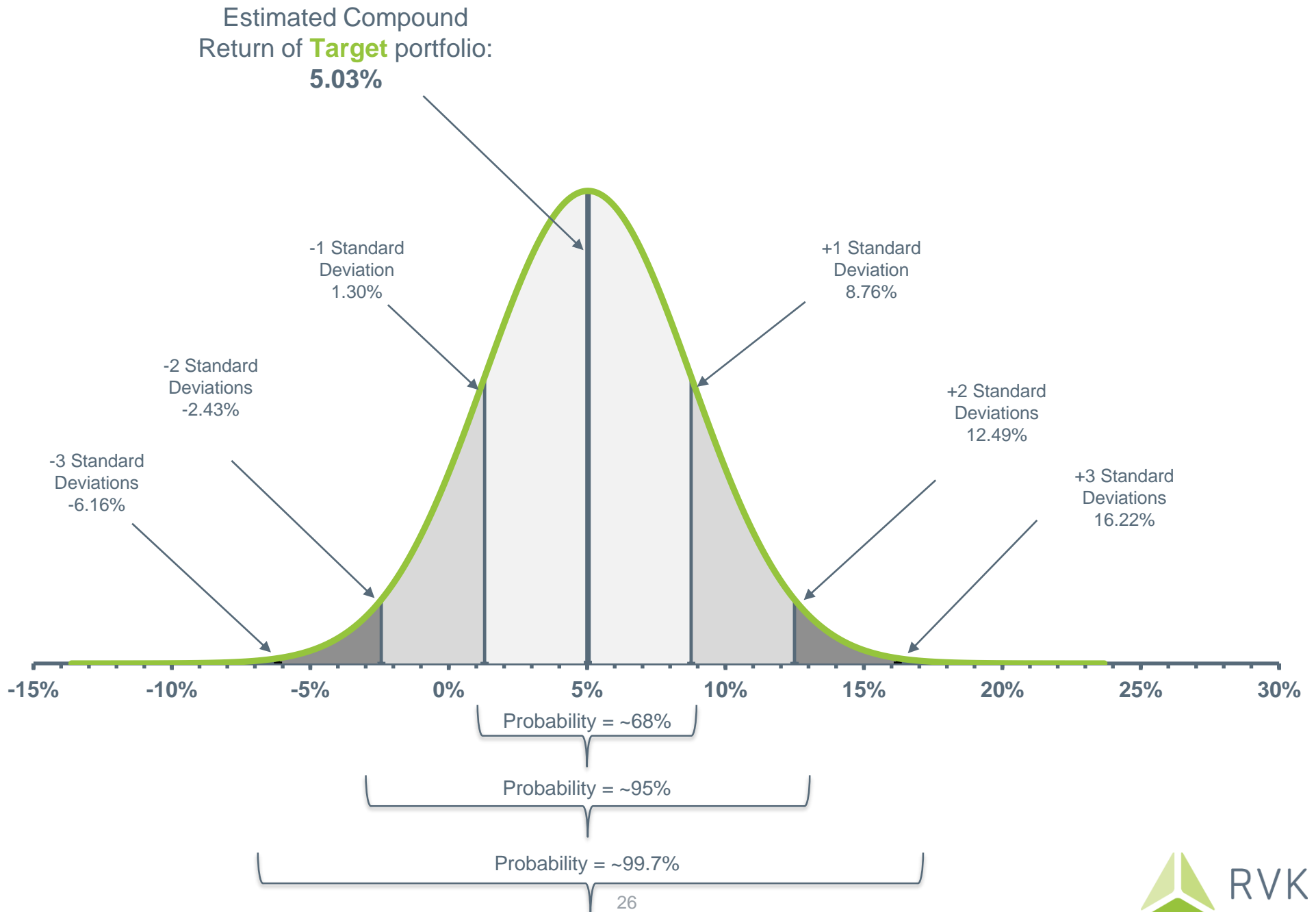
– Simplistic US equity/fixed income blends, for comparison purposes:

“US 60/40” – 60% US equity and 40% US core fixed income.

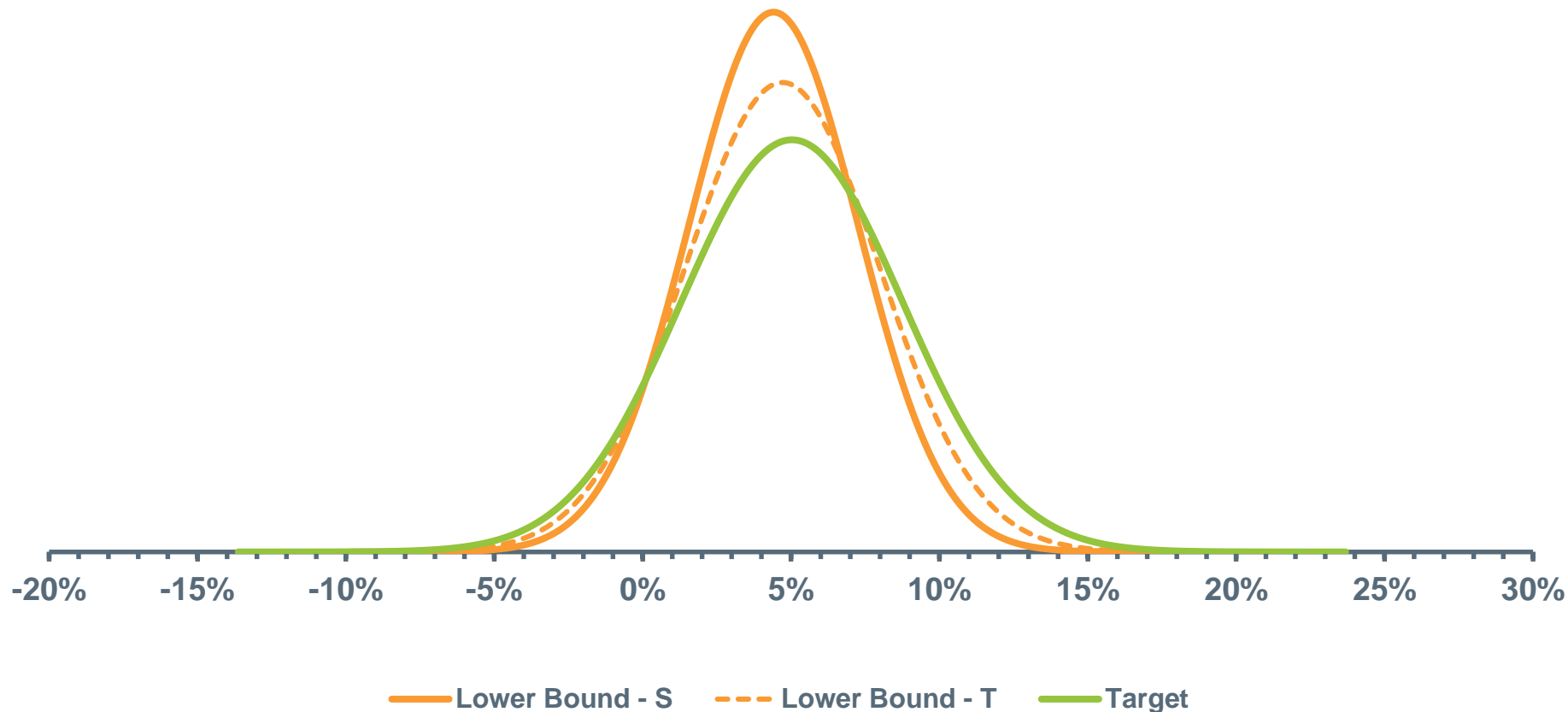
“US 70/30” – 70% US equity and 30% US core fixed income.

“US 80/20” – 80% US equity and 20% US core fixed income.

An Introduction to Distribution of Return Outcomes

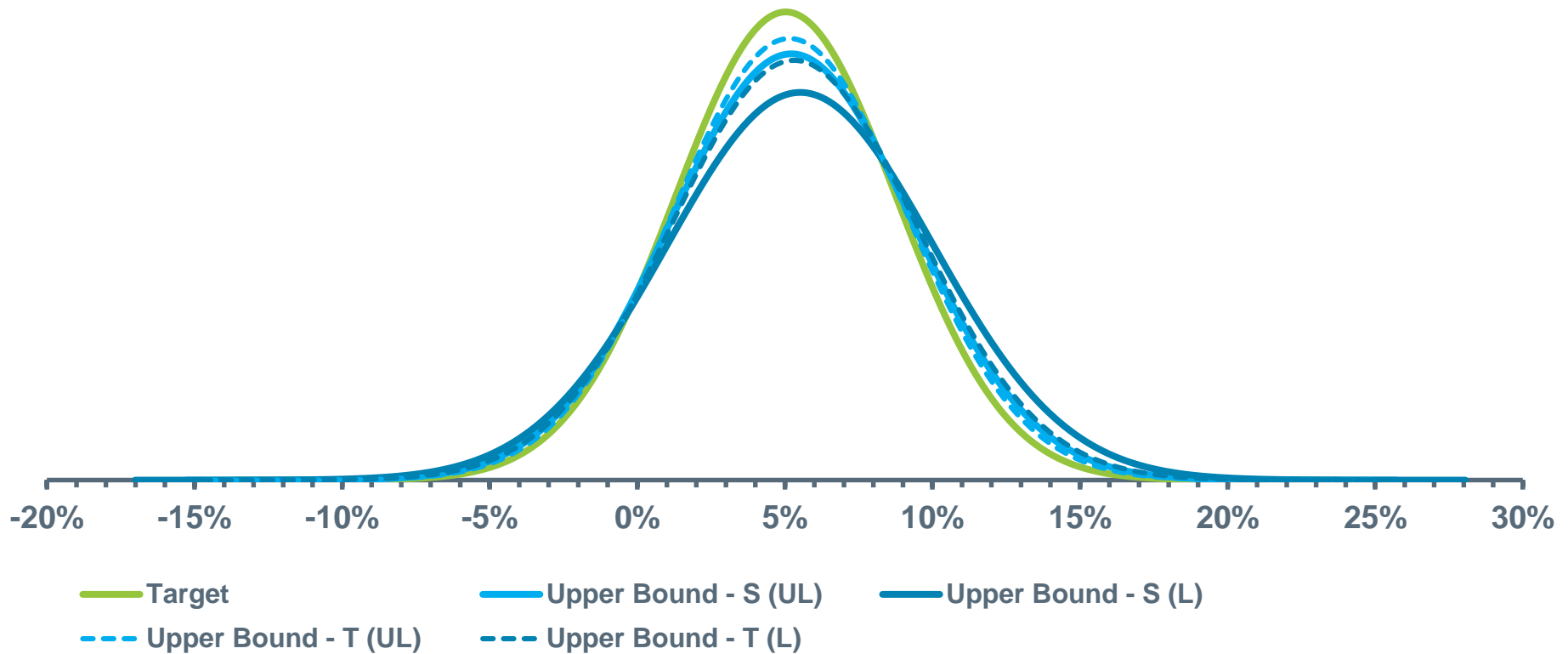


Distribution of Returns – Lower Bounds vs. Target



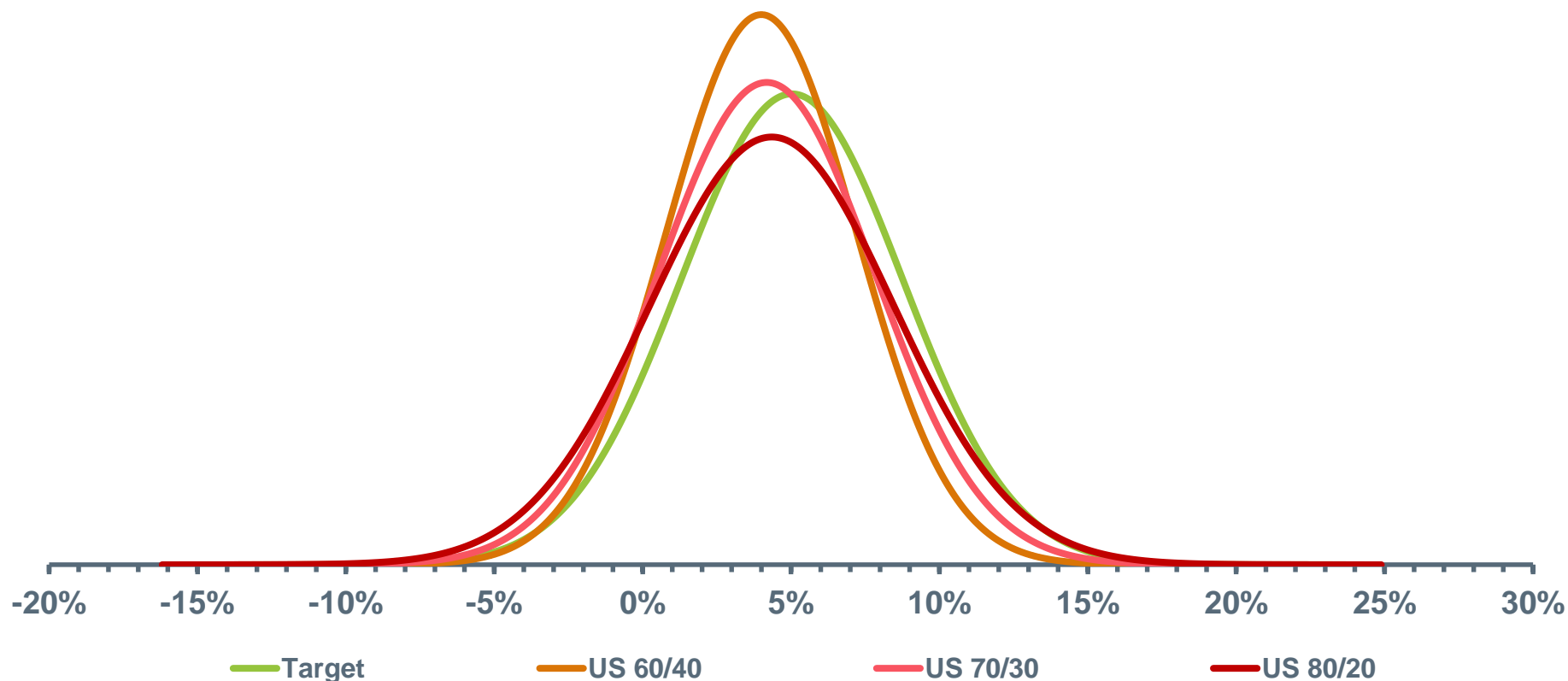
- The current Target portfolio has an expected long-term compound return distribution that while somewhat similar to the Lower Bound portfolios at the median (5.03% vs. 4.41% for Strategic and 4.71% for Tactical), has only a slightly larger probability of a more negative outcome, while positive outcomes become meaningfully more probable.

Distribution of Returns – Target vs. Upper Bounds



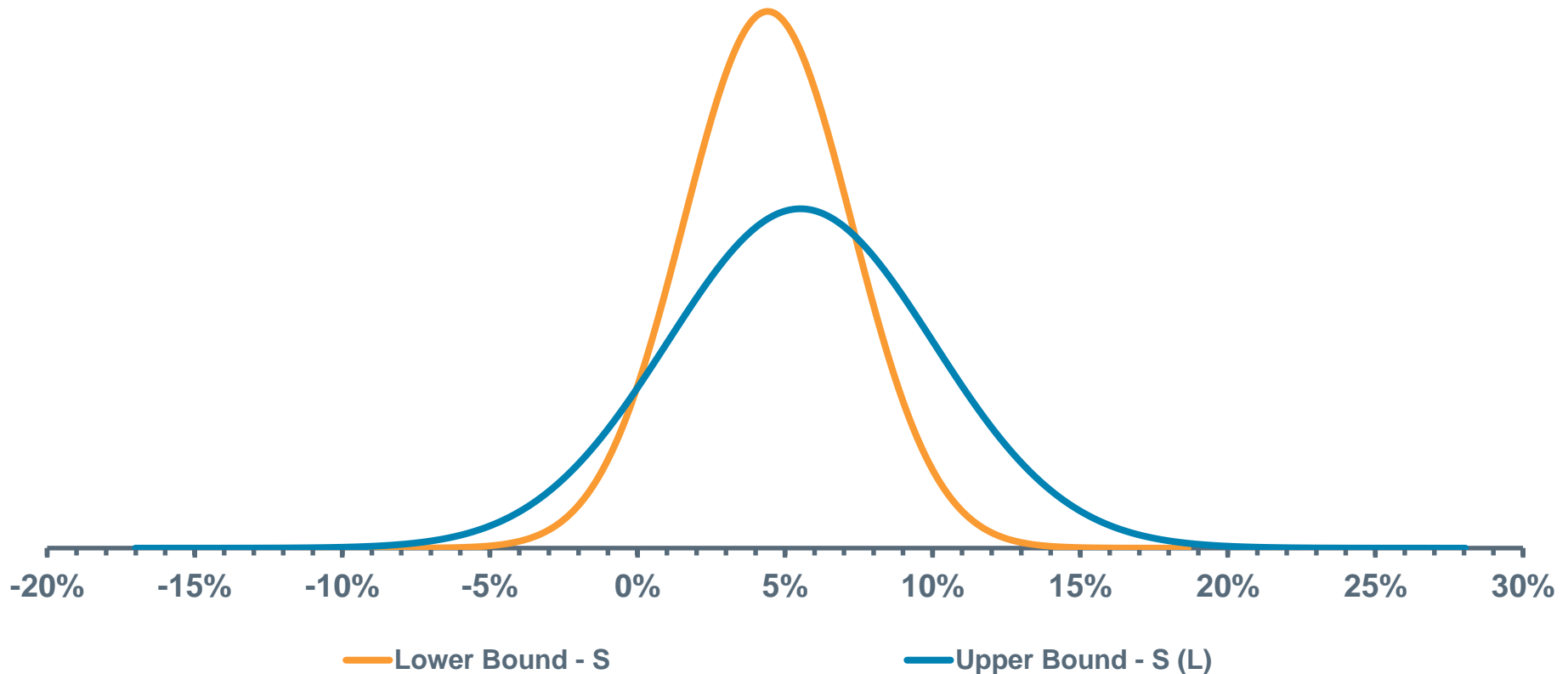
- All four Upper Bound portfolios provide the potential for more positive outcomes vs. the Target, however at the expense of slightly larger potential left tail events.
- In summary, COAERS' ability to effectively navigate throughout the spectrum of possible portfolio allocations within the approved policy ranges illustrates the potential benefits of a flexible allocation model. Even on the margin, capturing slightly less downside and more upside can yield meaningful results for System health.

Distribution of Returns – Target vs. Simplistic



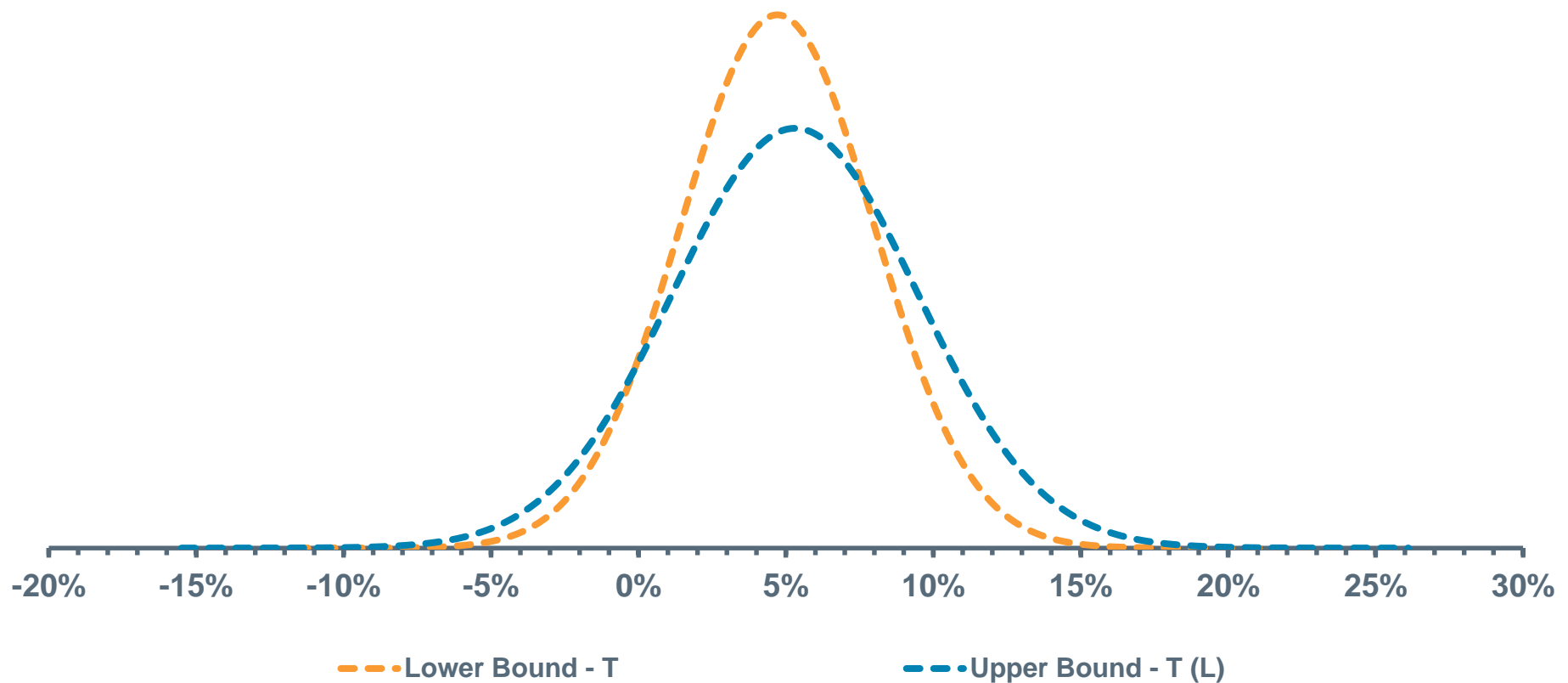
- When the long-term strategic asset allocation of COAERS' Target portfolio is compared to more simplistic portfolio implementation options, the added benefit of additional diversification is clearly noticeable.
- Not only is the median outcome higher than all 'simplistic' portfolios, but left tail events are also minimized, while only slightly reducing the potential for larger expected portfolio gains when compared against the more volatile US 80/20 allocation.

Distribution of Returns – Lower Strategic Bound vs. Upper Strategic Bound (L)



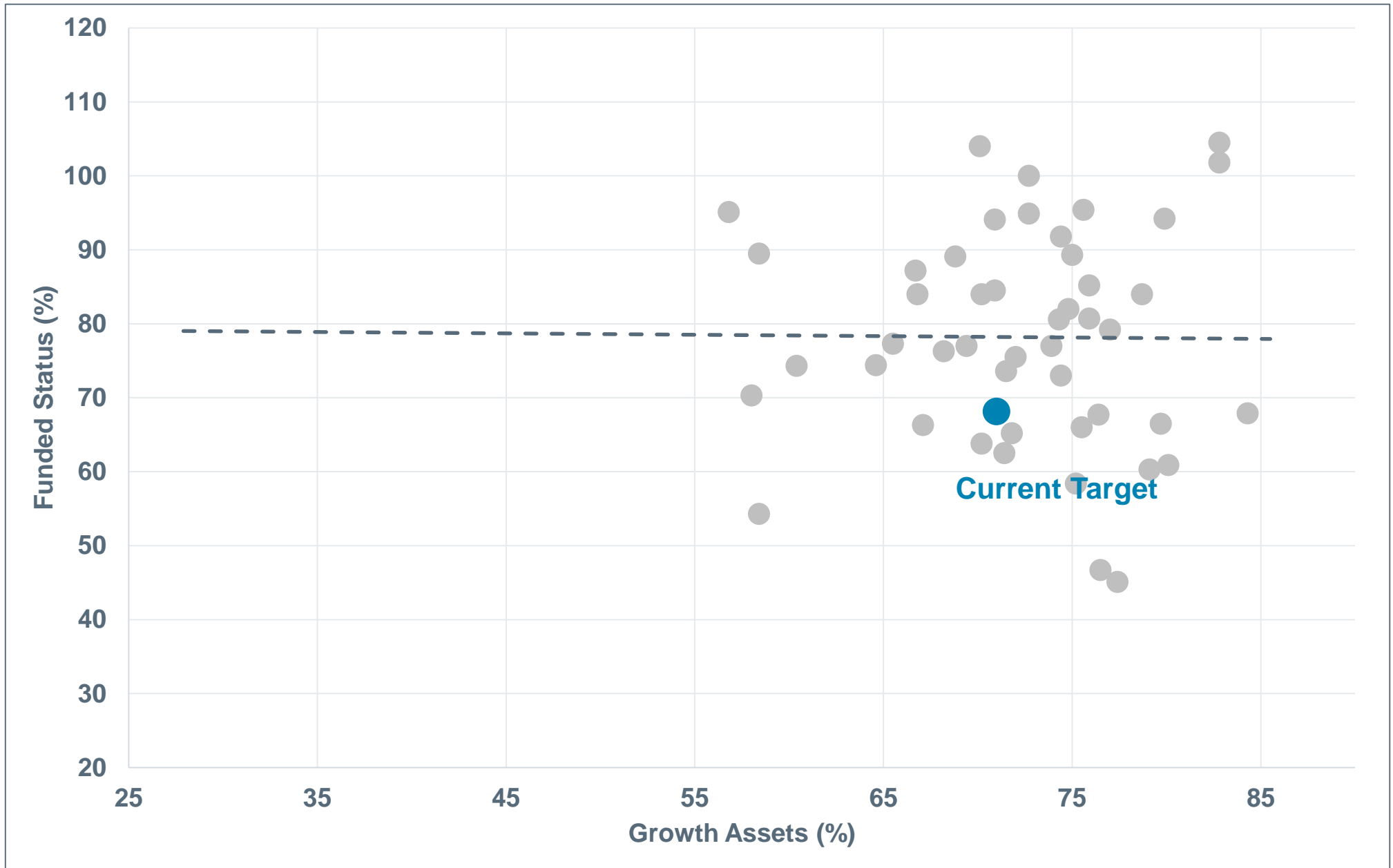
- Under the approved IPS guidelines, the distribution of expected annual returns could range from the Lower Bound portfolio, all the way to the Upper Bound (levered) portfolio.
- This is one of the key measures of the true risk tolerance of the IC and Board; there should be a general comfort level with any outcomes that fall on or between the distributions shown here.

Distribution of Returns – Lower Tactical Bound vs. Upper Tactical Bound (L)



- Under the approved IPS guidelines, the distribution of expected annual returns could range from the Lower Bound portfolio, all the way to the Upper Bound (levered) portfolio on a tactical basis.
- This is one of the key measures of the true risk tolerance of the IC and Board; there should be a general comfort level with any outcomes that fall on or between the distributions shown here.

COAERS vs. Peers (Funded Status & Growth Assets)



Growth Assets (%) is the total portfolio allocation less allocations to Multi-Asset, Fixed Income, and Cash. Funded Status (%) for peers is sourced from RVK's June 30, 2021 Public Fund Survey. Peers reflect the target asset allocations of various US public funds. Target allocations are mapped to RVK's 2022 CMAs. Population = 47



PORTLAND

BOISE

CHICAGO

NEW YORK





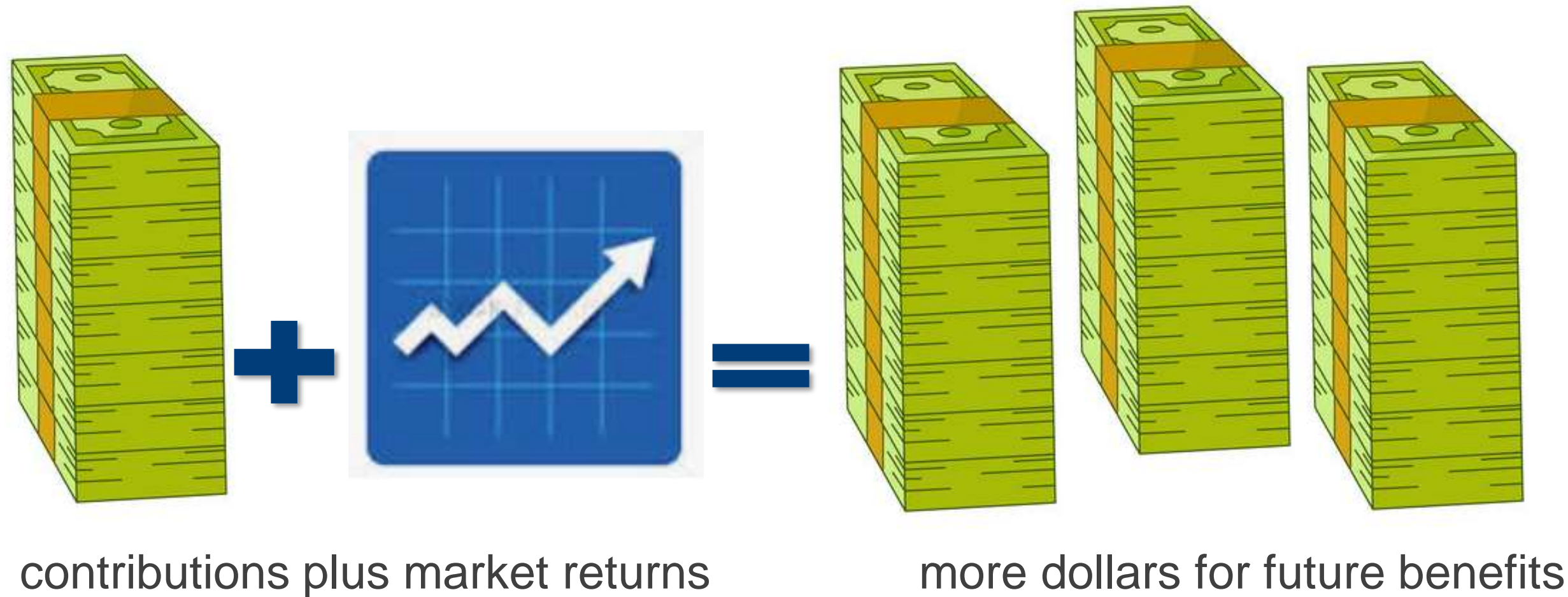
Goals of the Investment Program

David Stafford, Interim Chief Investment Officer

Purpose of the Fund

“The sole purpose of the Fund is to accumulate the financial reserves necessary to provide benefits to eligible members of the System and their beneficiaries.”

- COAERS Investment Policy Statement



Return Goals in Policy

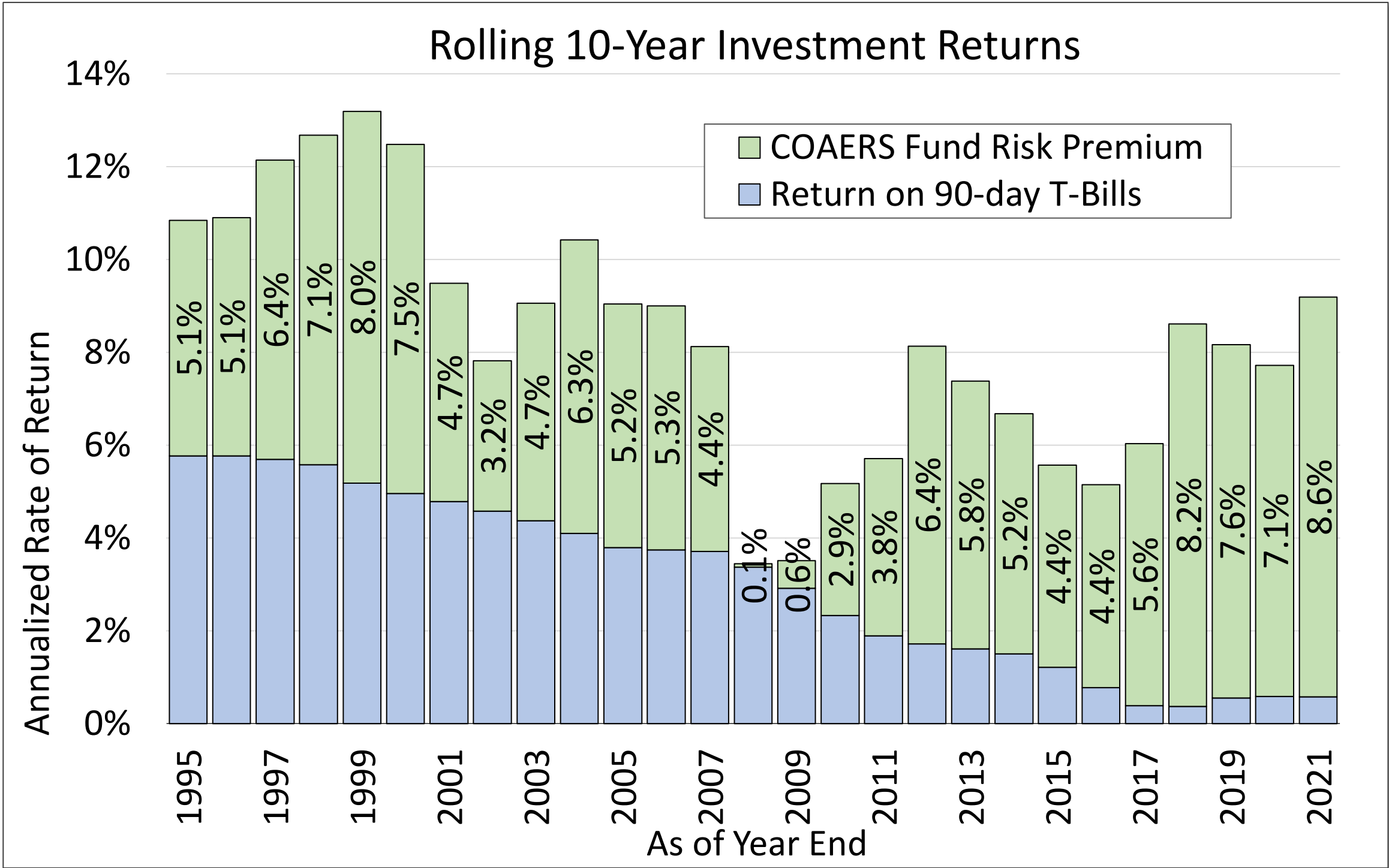
- The IPS lays out a variety of return goals, but the most important in ensuring the mission of the System is to exceed the actuarially **assumed rate of return of 7%**
- Doing so helps ensure that the assets of the System are sufficiently able to pay current and future expected benefits

50-60% of future retirement benefits are funded by future investment returns



80-90% of long-term investment returns are determined by asset allocation

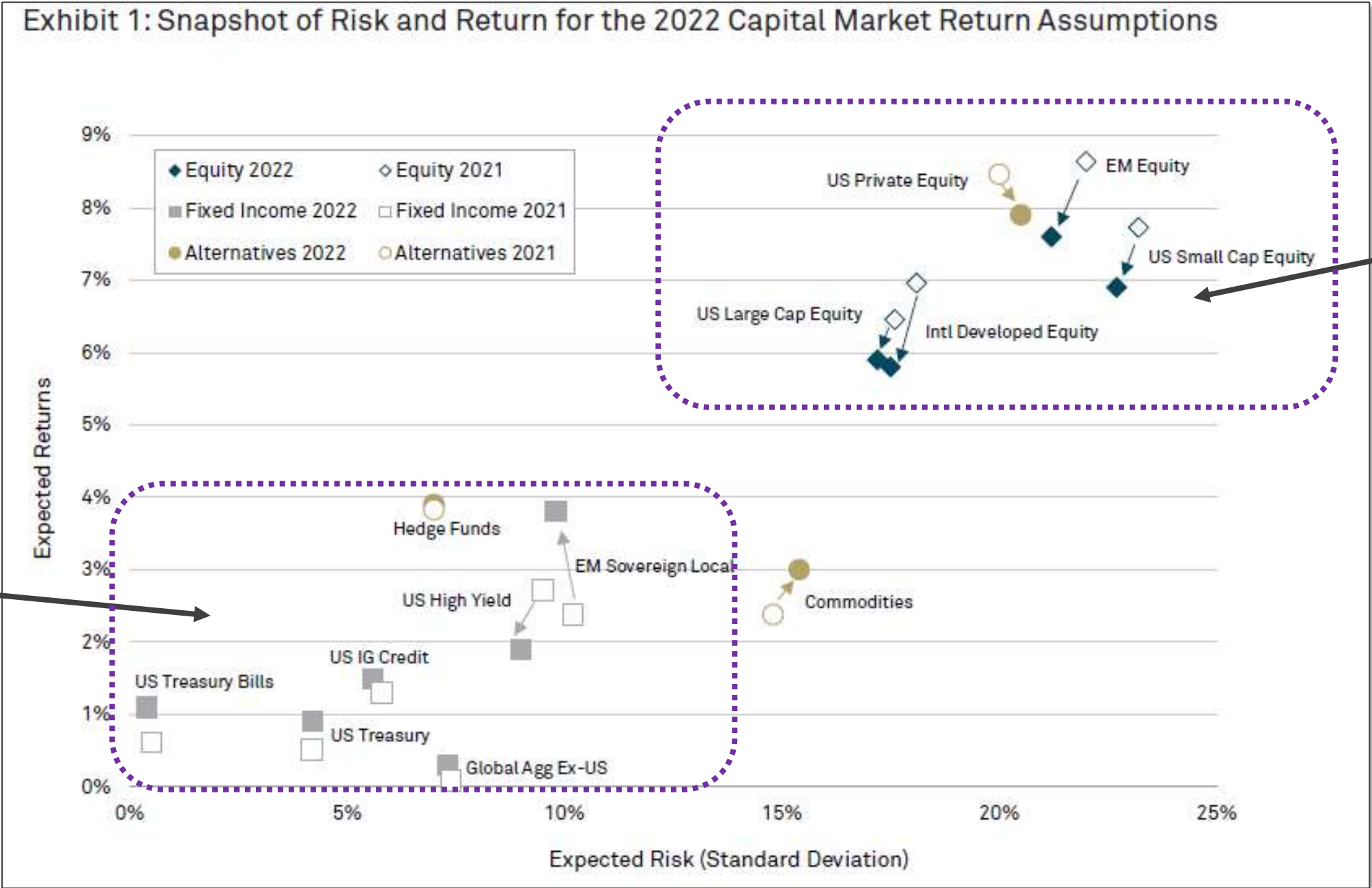
Structure of the Investment Program



- In pursuit of this goal, the Fund adopts a highly diversified Strategic Asset Allocation to earn a risk premium over cash to help pay System benefits
- **Recently, this premium is the highest it has been in 25+ years at 8.6%** in excess of cash, well above the long-term average of 5.3%
- If this rate were to revert to its long-term average alongside continued low cash rates, expected returns for the Fund could fall below 7%

Looking Forward: Capital Market Assumptions for 2022

- Capital market assumptions (CMAs) are long term estimates of how different investment strategies will act including returns, volatility, and correlations

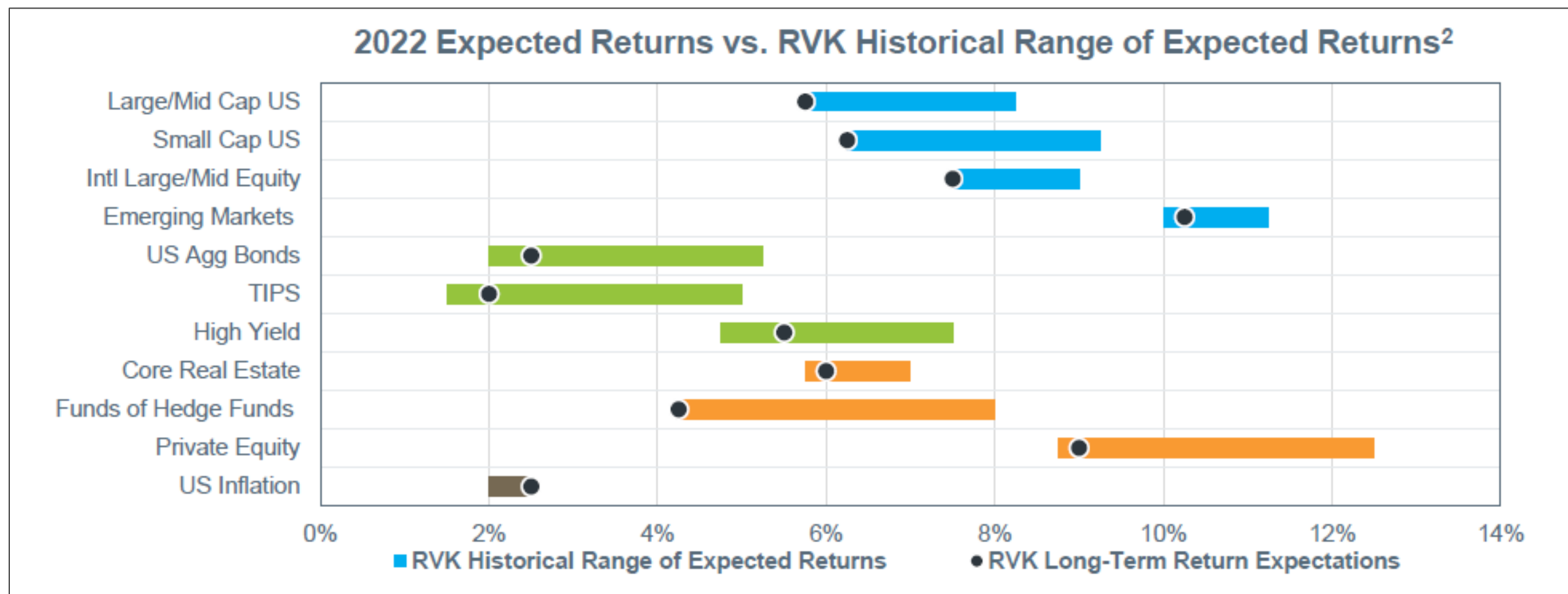


...while higher yields increase the return outlook for bonds

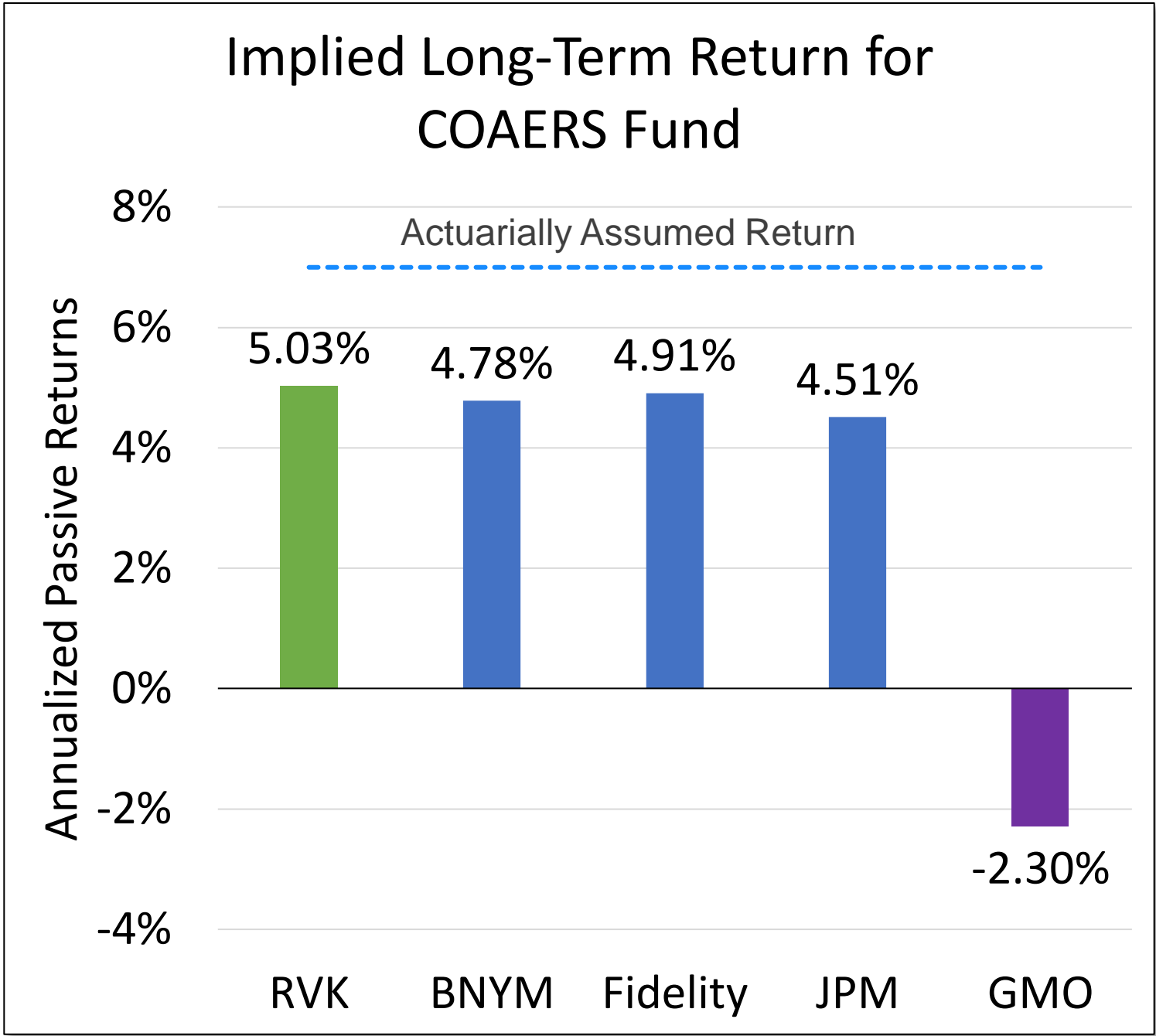
Higher valuations suggest lower return expectations for equities...

RVK CMAs for COAERS

- Applying RVK CMAs to the COAERS Strategic Asset Allocation suggests passive market returns of **5.03%**, a small decrease compared to 5.08% last year
- Expected returns across asset classes are at or near the bottom of their historical range, suggesting a challenging market environment going forward



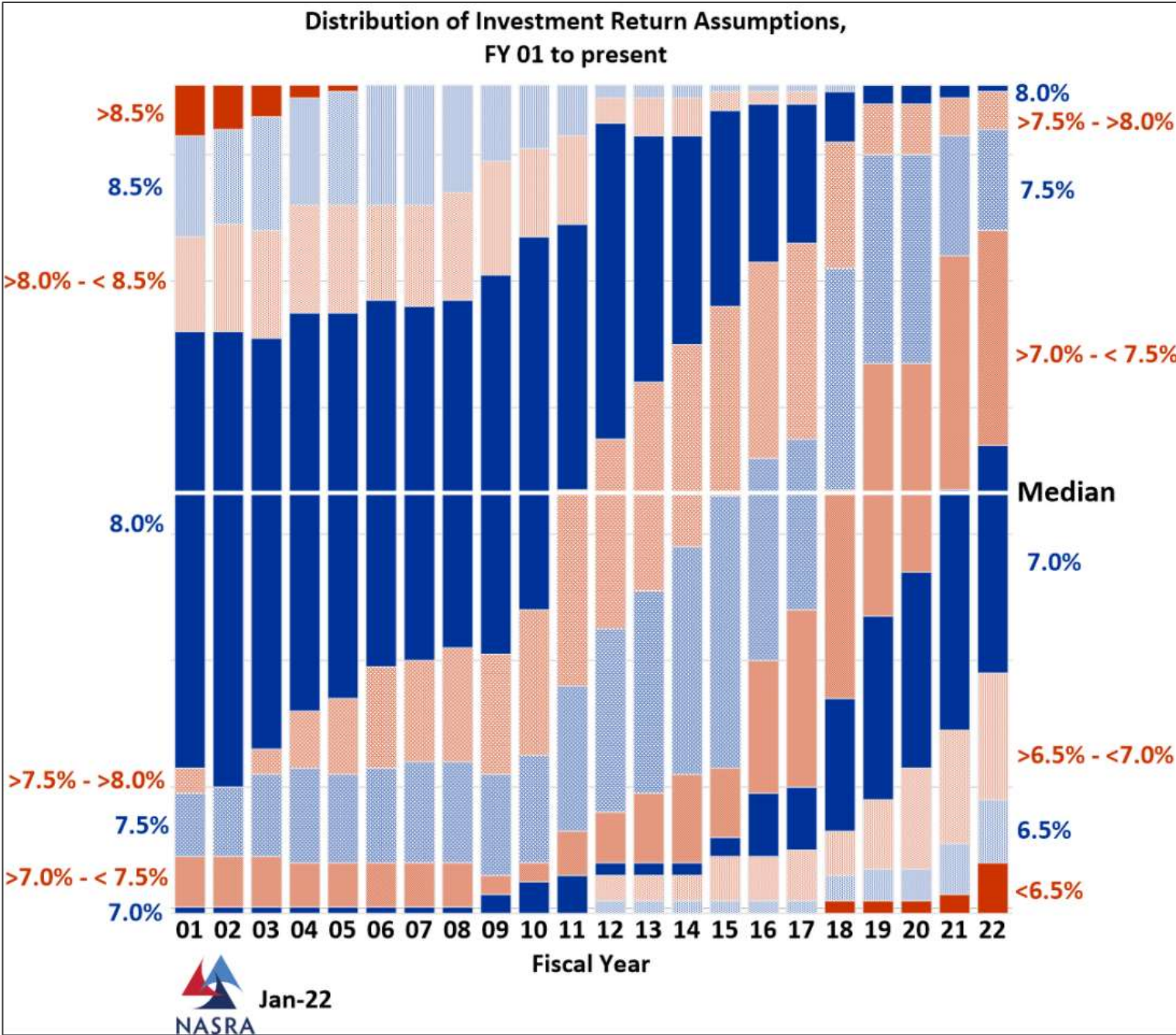
Range of CMAs from Different Providers



- Assumed passive rates of return for the COAERS Fund tend to hover **at or below 5%**, with the notable outlier of GMO at **-2.3%**
- These forward-looking projections are below the 7% assumed rate of return, suggesting that significant implementation gains over passive markets are required to achieve this goal

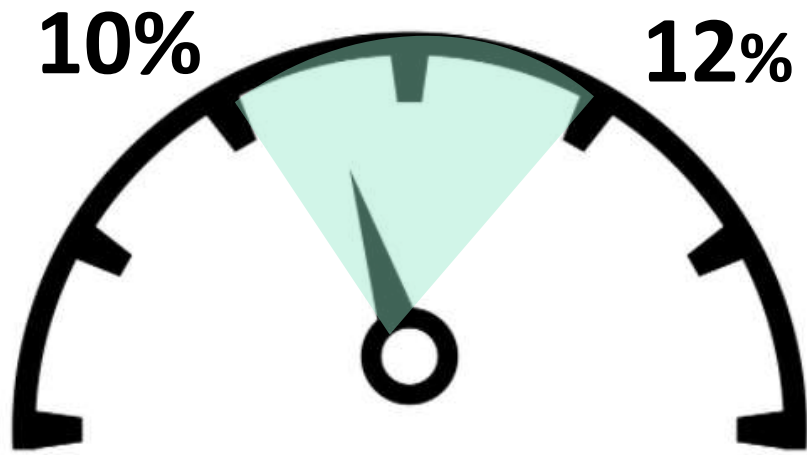
Peers: Rate of Return Assumptions Falling Alongside CMAs

- The majority of NASRA member public pension plans now have assumed rates of return at or below 7%
- This has been a continuing trend over the past 20+ years as the majority of plans in 2001 had assumed rates of return at or above 8%



Evaluating Return Expectations Using our Risk Budget

ABSOLUTE RISK

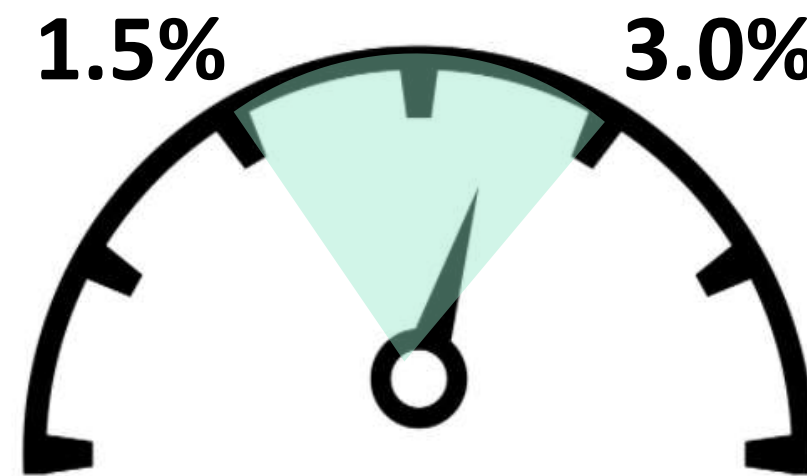


TARGET VOLATILITY

Sharpe ratio of **0.4** on **10-12%** volatility implies a **4-5%** passive market risk premium



RELATIVE RISK



TARGET TRACKING ERROR

Information ratio of **0.5** on **1.5-3.0%** tracking error implies a **0.75-1.50%** excess return

Processes to manage these risks:
Investment Risk Framework and Premier List

Risk Budgets Are Reasonable for SAA as Constructed

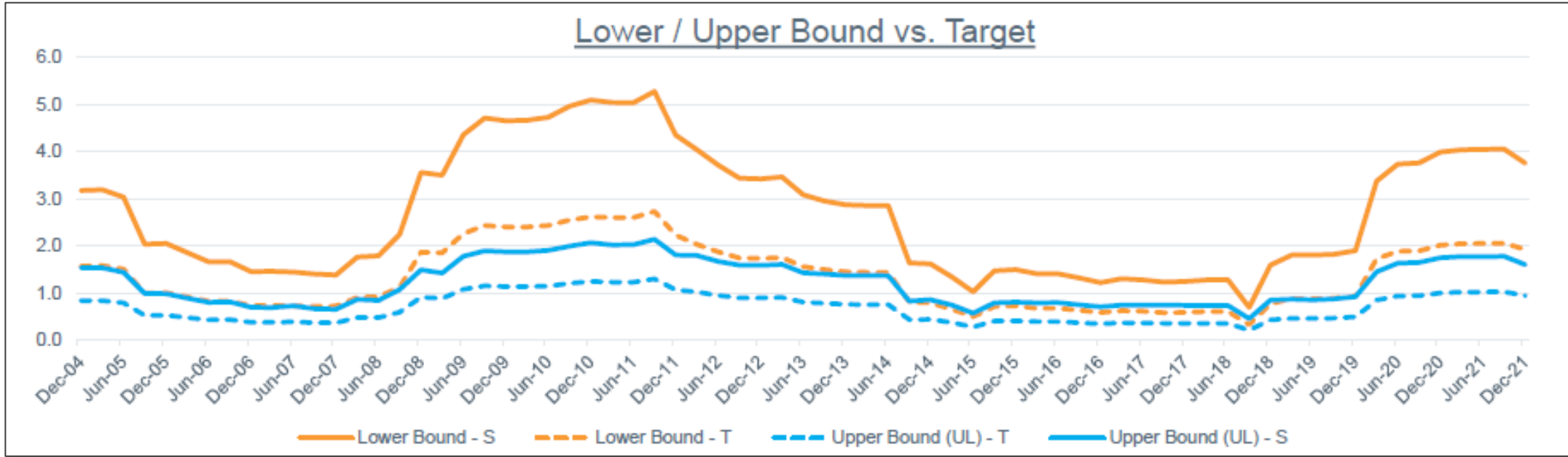
ABSOLUTE RISK

The SAA parameters allow for 9-14% risk, which allows latitude to achieve 10-12% risk budget

	Strategic Policy Bands	Lower Bound - S	Current Target	Upper Bound - S (UL)	Upper Bound - S (L)
Return (Compound)		4.41	5.03	5.22	5.52
Risk (Standard Deviation)		9.01	11.80	12.96	14.25

RELATIVE RISK

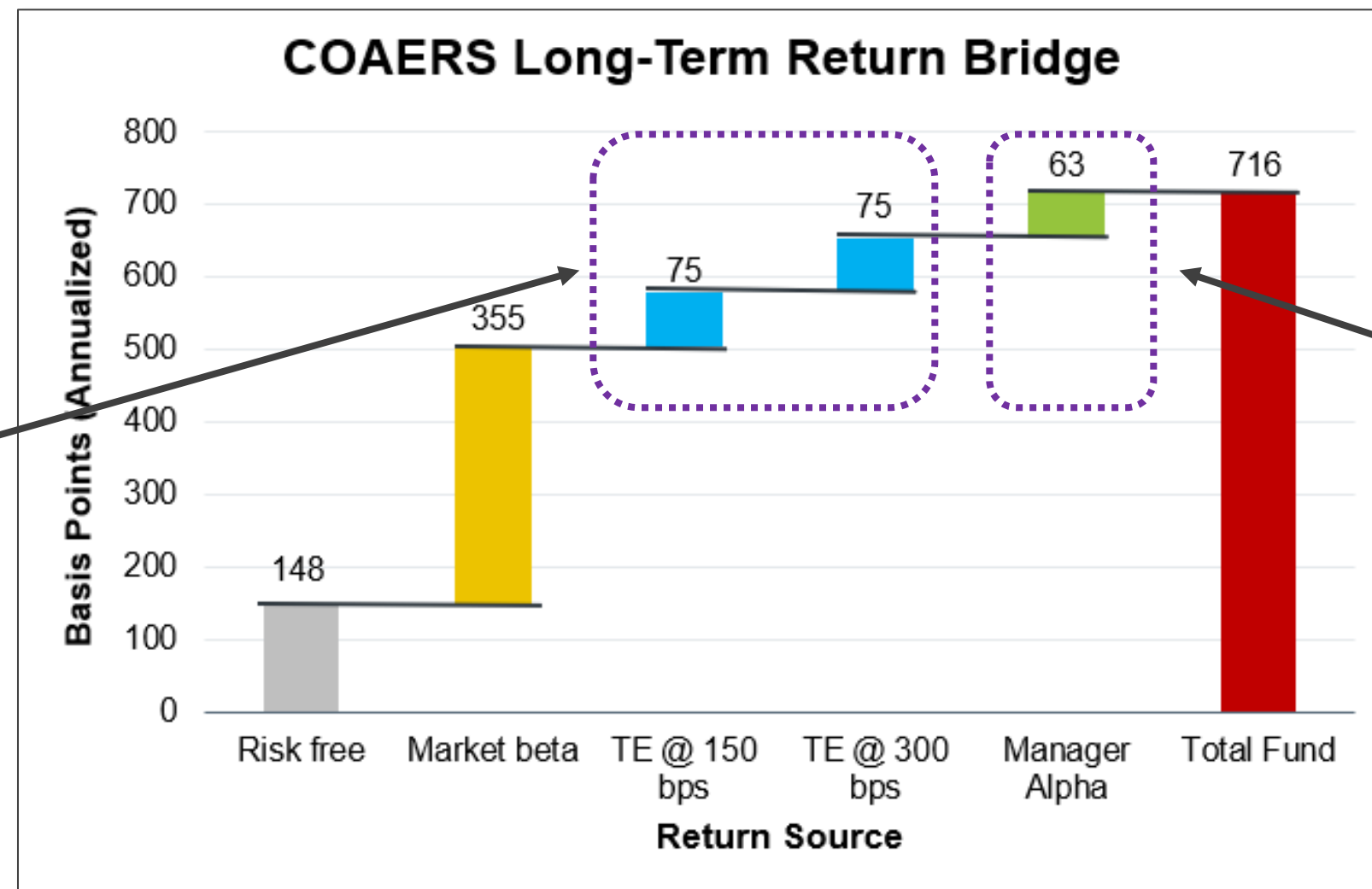
Similarly, relative risk can vary between 70-500 bps of tracking error, which can be managed to achieve 150-300 bps budget



Using our Risk Budgets to Achieve 7%

- Using the risk budgets effectively provides for a way to bridge the gap between passive market returns and the assumed rate of return
- The bridge to 7% requires effective, full use of the risk guidelines laid out in policy and leaves little room for error

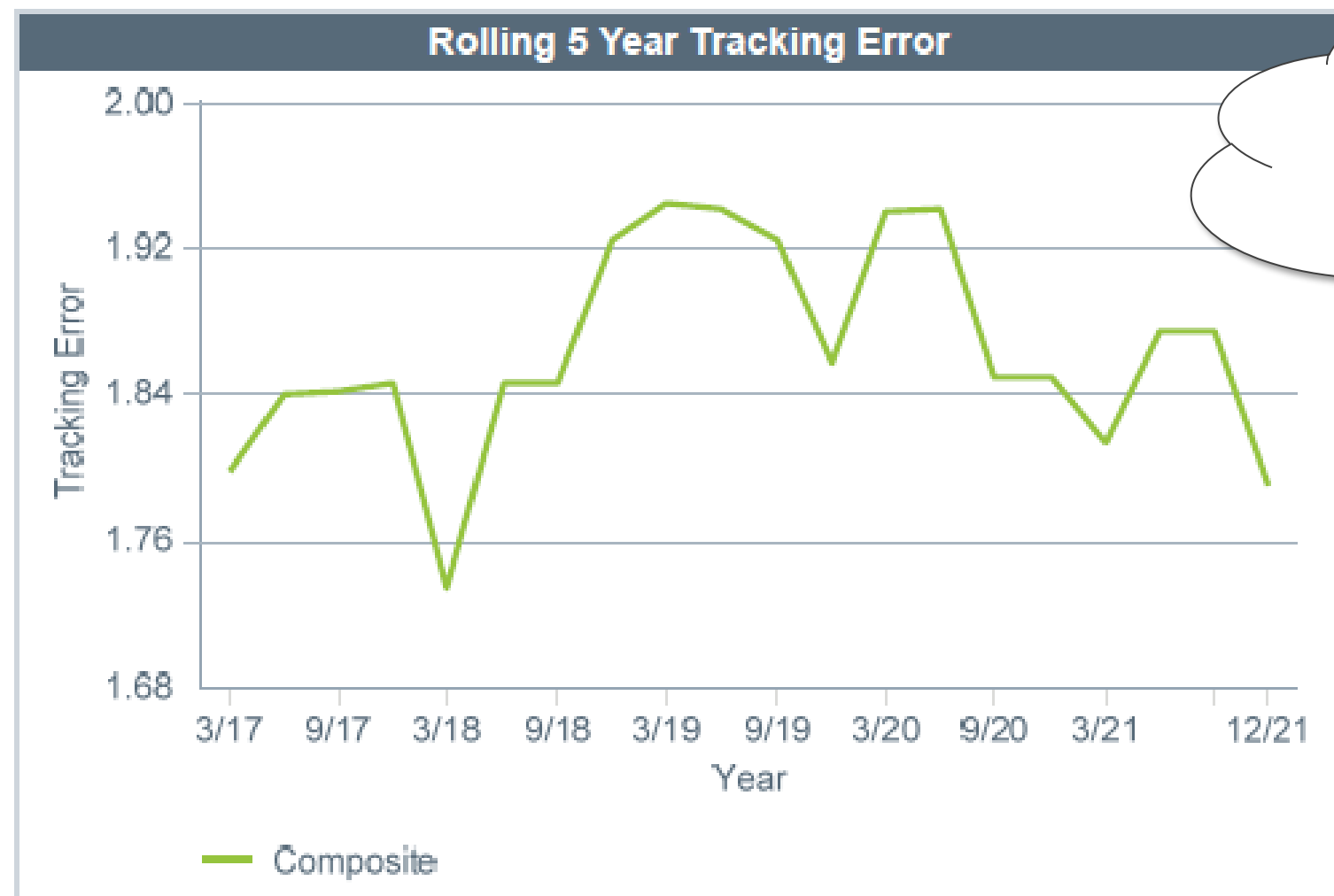
Successful use of the budgeted tracking error requires effective and full use of the SAA bands



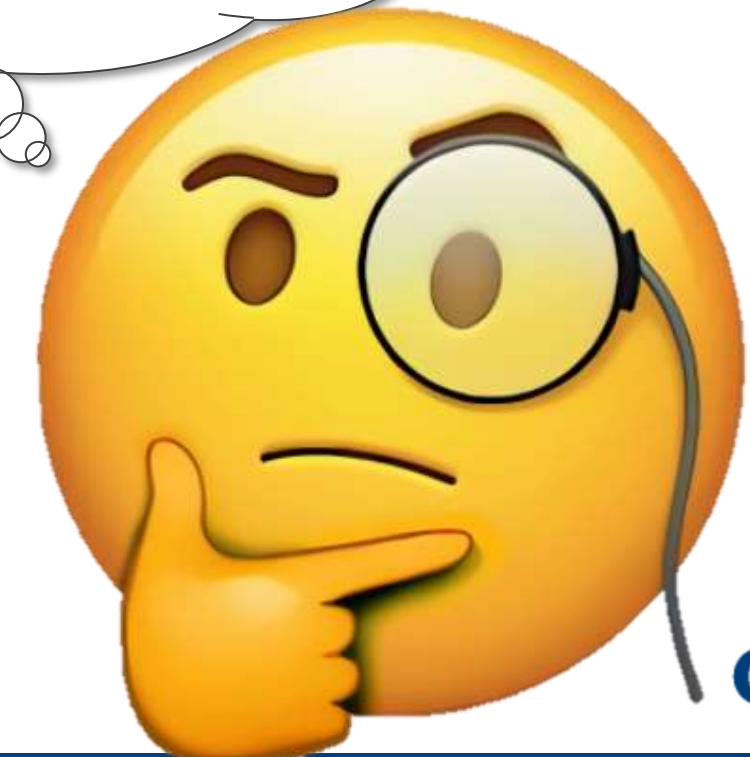
Manager alpha is needed to help bridge the gap but may contribute to additional tracking error

Squaring the Circle Between CMAs and Assumed ROR

- CMAs, while imperfect, suggest that the return environment going forward is likely to be challenging and that significant implementation gains are likely to be needed
- Given this backdrop and realized tracking error on the lower end of the budgeted range, it may be appropriate to consider ways to increase the likelihood of success for the investment program

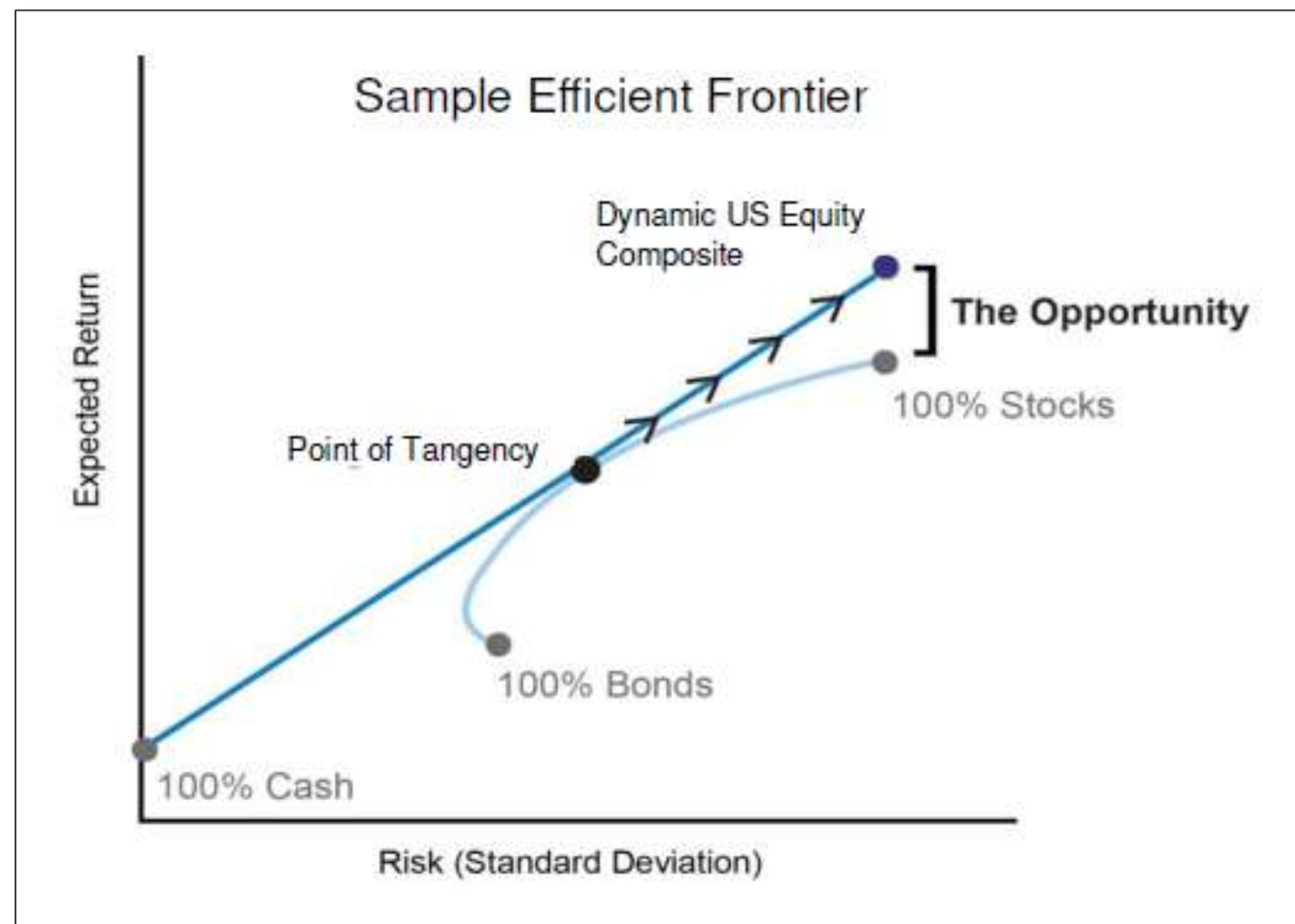


What might be some of the ways to improve the investment program?



Applying Lessons From Multi-Asset to the Total Fund

- One of the key lessons learned through the Multi-Asset program is how modest amounts of leverage can be used to achieve better outcomes
- The SAA currently allows for 5%-10% of asset allocation leverage and increasing this amount could help increase returns in a risk controlled, diversified manner



Newton DUSE employs a similar approach by applying modest amounts of leverage to a more diversified portfolio to achieve better risk-adjusted outcomes than the S&P 500

Considering the Range of Investment Choices

Asset Class	2021			2022			Change (2021 - 2022)		
	Nominal Return (Arith.)	Risk (St. Dev.)	Nominal Return (Geo.)	Nominal Return (Arith.)	Risk (St. Dev.)	Nominal Return (Geo.)	Nominal Return (Arith.)	Risk (St. Dev.)	Nominal Return (Geo.)
Large/Mid Cap US Equity	6.00%	16.00%	4.81%	5.75%	16.00%	4.56%	-0.25%	0.00%	-0.25%
Small Cap US Equity	6.50%	19.00%	4.84%	6.25%	19.00%	4.59%	-0.25%	0.00%	-0.25%
Broad US Equity	6.05%	16.05%	4.86%	5.80%	16.00%	4.61%	-0.25%	-0.05%	-0.25%
Dev'd Large/Mid Cap Int'l Equity	7.50%	17.00%	6.18%	7.50%	17.00%	6.18%	0.00%	0.00%	0.00%
Dev'd Small Cap Int'l Equity	8.00%	20.00%	6.19%	8.00%	20.00%	6.19%	0.00%	0.00%	0.00%
Emerging Markets Equity	10.00%	25.00%	7.26%	10.25%	25.00%	7.52%	0.25%	0.00%	0.26%
Broad International Equity	8.30%	18.80%	6.70%	8.35%	18.65%	6.78%	0.05%	-0.15%	0.08%
Global Equity	7.05%	16.60%	5.79%	6.80%	16.40%	5.56%	-0.25%	-0.20%	-0.22%
US Aggregate Fixed Income	2.00%	5.00%	1.88%	2.50%	5.00%	2.38%	0.50%	0.00%	0.50%
Non-US Dev'd Sovereign Fixed Income UH	1.00%	8.50%	0.64%	1.25%	8.50%	0.90%	0.25%	0.00%	0.25%
Emerging Markets Debt Hard Currency	5.00%	10.00%	4.53%	6.00%	10.00%	5.53%	1.00%	0.00%	1.00%
Emerging Markets Debt Local Currency	5.00%	11.50%	4.38%	5.75%	11.50%	5.13%	0.75%	0.00%	0.75%
TIPS	1.50%	5.50%	1.35%	2.00%	5.50%	1.85%	0.50%	0.00%	0.50%
Low Duration Fixed Income	1.50%	2.50%	1.47%	2.00%	2.50%	1.97%	0.50%	0.00%	0.50%
Long Duration Fixed Income	2.50%	10.00%	2.02%	2.75%	10.00%	2.27%	0.25%	0.00%	0.25%
High Yield	4.75%	10.00%	4.28%	5.50%	10.00%	5.03%	0.75%	0.00%	0.75%
Bank Loans	4.75%	8.00%	4.45%	5.00%	8.00%	4.70%	0.25%	0.00%	0.25%
Core Real Estate	5.75%	12.50%	5.02%	6.00%	12.50%	5.27%	0.25%	0.00%	0.25%
Global REITs	6.75%	21.00%	4.74%	6.50%	21.00%	4.49%	-0.25%	0.00%	-0.25%
MLPs	9.25%	23.00%	6.91%	8.75%	23.00%	6.40%	-0.50%	0.00%	-0.51%
Funds of Hedge Funds	4.25%	9.50%	3.82%	4.25%	9.50%	3.82%	0.00%	0.00%	0.00%
Multi-Strategy Hedge Funds	5.00%	8.50%	4.66%	5.00%	8.50%	4.66%	0.00%	0.00%	0.00%
GTAA	5.00%	9.00%	4.62%	5.00%	9.00%	4.62%	0.00%	0.00%	0.00%
Private Credit	6.75%	13.00%	5.97%	7.25%	13.00%	6.47%	0.50%	0.00%	0.50%
Senior Secured Direct Lending	5.75%	9.00%	5.37%	6.00%	9.00%	5.62%	0.25%	0.00%	0.25%
Private Equity	8.75%	22.00%	6.59%	9.00%	22.00%	6.85%	0.25%	0.00%	0.25%
Commodities	5.00%	17.50%	3.57%	5.50%	17.50%	4.08%	0.50%	0.00%	0.51%
Diversified Inflation Strategies	4.45%	11.55%	3.82%	4.70%	11.55%	4.07%	0.25%	0.00%	0.25%
US Inflation	2.00%	1.50%	1.99%	2.50%	2.50%	2.47%	0.50%	1.00%	0.48%
Cash Equivalents	1.50%	2.00%	1.48%	1.50%	2.00%	1.48%	0.00%	0.00%	0.00%

- While the SAA includes a range of diversified asset classes, there are still many strategies either not included or not allowed in the IPS that may be able to add to diversification or expected returns for the Fund
- Most CMAs suggest that higher returns might be available in private markets, despite the governance and resources required to effectively implement

Increasing the Risk Budget

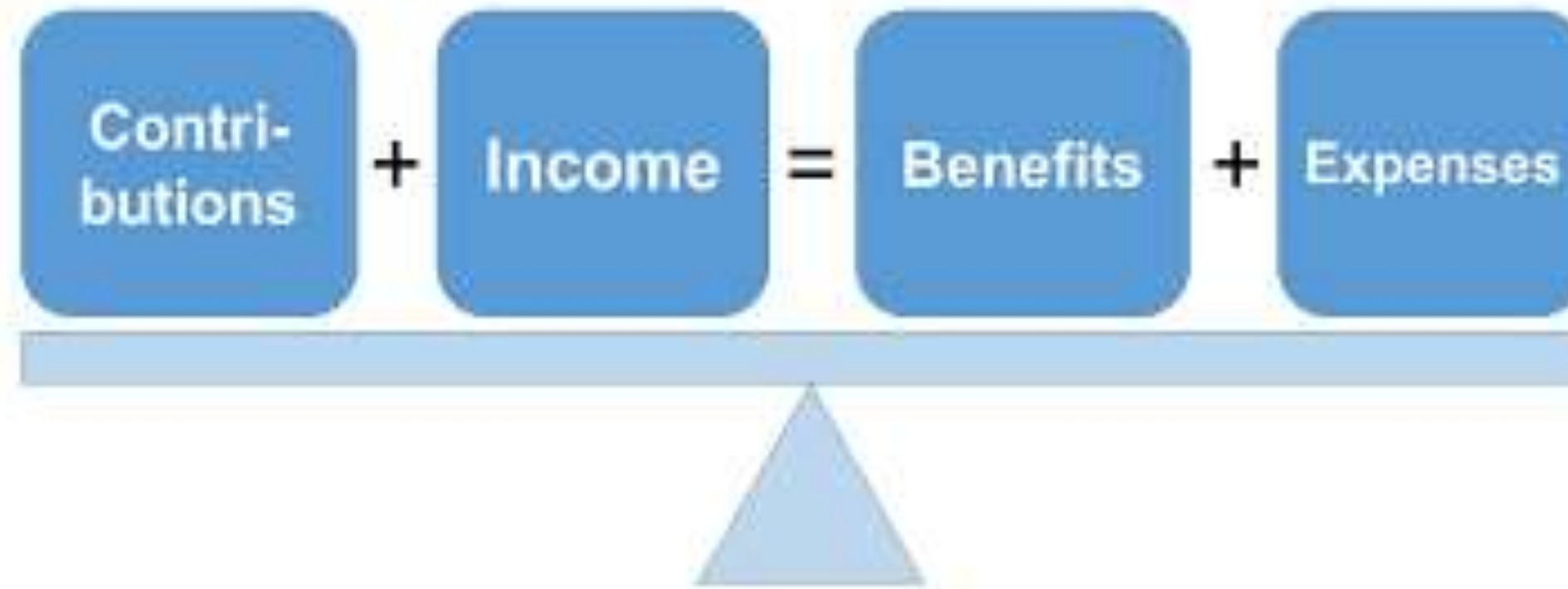
- As discussed, the Board has adopted a risk budget of 10-12% volatility for which the SAA is currently well constructed to meet
- Increasing this risk budget could allow for increases in the expected return at the expense of increased path dependency and possibly larger drawdowns

RVK CMAs suggest that achieving higher levels of volatility are already possible with the existing SAA by using some leverage or increasing growth-oriented assets



Lowering the Assumed Rate of Return

- Lowering the assumed rate of return could reduce some of the pressure on the investment program by requiring less in future investment gains, though other items in the funding equation below also require consideration



Staff Recommendation: Revisit Investment Beliefs

Investment Beliefs

The Fund is a permanent entity with long-lived liabilities and, as such, it should strive to be a thoughtful, analytical, and patient investor that is focused on achieving successful outcomes.

Clear governance and decision-making structures that promote decisiveness, simplicity, efficiency, and accountability are effective and add value to the Fund.

To the extent possible, investment decision-making should be driven by data and analysis, including the findings of relevant research on financial markets and investment management.

Strategic asset allocation is the most critical aspect of the investment process, with the level of risk assumed by the Fund driven primarily by its allocation to equity investments.

The Fund should seek to be well compensated for the investment risks it chooses to bear, risks that should be articulated at the time of investment and revisited regularly.

Diversification across asset classes and risk factors is central to the System's investment strategy, and investments that may improve the Fund's risk/return profile will be considered.

Equities are the most prudent investment vehicle for long-term growth of real values, and the associated drawdown risk should be carefully managed in light of the Fund's liabilities.

Costs can significantly reduce net returns and therefore must be carefully measured and managed when making decisions regarding investment strategy and implementation.

Implementation should occur passively and in public markets unless a high likelihood of success on a risk-adjusted, net-of-fees basis can be expected from other approaches.

- Adopted in 2017, the System's investment beliefs are the core building blocks to the philosophical approach to structuring and implementing the investment program
- Given the varying considerations of one or all of these ideas, Staff recommends that the Board review adopted investment beliefs to help guide the decision-making process

Charting the Path Forward

- Staff suggests that the Board consider these concepts in a deliberate and strategic approach over the coming quarters
- Doing so will help define the role of the investment program in contributing to the overall funding equation for the System
- This process will seek to inform the right amount of return/risk to seek in the investment program and explore the best ways to pursue those goals

Illustrative Process



**9B Proposed revisions to Investment
Policy Statement and Investment
Implementation Policy**

Presented by David Stafford

AGENDA ITEM 9:

Discuss and consider strategic goals and policies of the investment program including

B. Proposed revisions to Investment Policy Statement and Investment Implementation Policy

AGENDA ITEM OBJECTIVE

This item fulfills the Board's requirement for annual reviews of the key strategic assumptions, the Strategic Asset Allocation (SAA) parameters, the Investment Policy Statement (IPS) and the Investment Implementation Policy (IIP).

RELEVANCE TO STRATEGIC PLAN

This agenda item is central to **COAERS Strategic Plan Goal 1: Maintain a Sustainable Retirement System**. The Committee annually reviews guidelines and policies of the COAERS investment program to maintain the System's sustainability.

RECOMMENDATION FOR COMMITTEE ACTION

Staff recommends that the Committee refer to the Board for approval the proposed changes to the Investment Policy Statement and Investment Implementation Policy.

BACKGROUND

In keeping with the Board's fiduciary duty of oversight, the IPS and IIP require annual reviews of the IPS and IIP to determine whether these policies:

1. Remain appropriate considering the Board's investment philosophy and objectives.
2. Reflect changes in the capital markets and industry best practices for prudent investors.

Staff will review a summary of the proposed changes to both the IPS and IIP for Committee consideration.

ATTACHMENTS

1. Staff report "Staff Assessment of the IPS/IIP and Summary of Key Proposed Changes"
2. RVK memorandum "IPS & IIP Updates Review"
3. Draft Investment Policy Statement REDLINE
4. Draft Investment Implementation Policy REDLINE

Annual Staff Review of Policies and Summary of Proposed Changes

Overall Assessment

Based on its most recent annual review, Staff believes that the current policies regarding investments (i.e., the Investment Policy Statement and Investment Implementation Policy) are well-crafted and appropriate. In particular, these policies align well with the goals set forth in the System's Strategic Plan for 2022-2026, and Staff believes that only minor updates need to be made at this time.

As Staff has noted previously, the System has entered a 20-year period of increasing cash outflows that make the management of drawdown risk for the Fund an increasingly critical activity for the System. To that end, the Board has articulated an explicit risk budget that includes both market risk and active risk. The updates proposed here aim to make the risk budget even clearer.

These policies have also undergone external scrutiny by the System's Investment Consultant and received high marks in the process. In its report from February 2020 pursuant to Texas Government Code 802.109 report, RVK stated that:

"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."

This achievement was the product of a long period of focus and consideration by the Board regarding the investment strategies and governance structures needed to achieve top tier investment results. Given only minor updates since this report from RVK, Staff views these comments to still be applicable to the current policy and as such only minor recommendations are proposed at this time.

Specific Aspects

In conducting its annual review of these policies, Staff examined several important aspects of these documents including:

- **Investment Beliefs (IPS).** Staff believes the current set of Investment Beliefs remains best in class, though a refresh of these beliefs is likely prudent due to the time elapsed and changes in Board composition. During the last several years these statements have functioned well as the foundational principles for decision making within the Investments program. Going forward, refreshed investment beliefs could help guide Staff and the Board in considering further enhancements to the investment program.
- **Performance goals (IPS).** Each of the four performance targets included in policy is appropriately ambitious in seeking to set the bar high for the achievement of the System's long-term goals. Even so, these goals can often be conflicting with one

another, such as in the tradeoff between absolute return targets and relative returns where the ardent pursuit of one could work against the pursuit of the other. Staff suggests rank ordering these return goals in order to help define which outcomes are most important:

1. Meets or exceeds the actuarial rate of return
 - Meeting this goal helps to ensure that the investment program earns returns sufficient to help solve the funding equation for the System
 2. Meets or exceeds the Passive Benchmark on a long-term, risk-adjusted basis
 - Meeting this goal shows the value added by adopting a highly diversified strategic asset allocation and pursuing an investment program (instead of “doing nothing”)
 3. Meets or exceeds the Policy Benchmark on a long-term, risk-adjusted basis
 - Meeting this goal shows the value added in implementing the investment policy statement through activities including manager selection, index selection and Fund positioning
 4. Ranks in the top quartile of comparable peers on a long-term, risk-adjusted basis
 - Meeting this goal shows how the System compares to relevant peers in pursuing their goals, is more informational in nature, and is less vital to the overall success of the investment program
- **Risk budget (IPS).** Risk parameters for the Fund are well-defined and appropriately established as specific focus has been given on this area of policy in recent iterations. However, like conflicts between return goals, conflicts in the risk budget may also appear when absolute risk targets of 10-12% do not fall within the 2nd or 3rd quartile of comparable peer rankings. As such, the proposed policy updates delineate that the risk target is 10-12% volatility and note that peer rankings may not fall within these quartile ranks.
 - **SAA parameters (IPS).** The ranges established by the SAA process appear sufficiently broad in pursuit of the prescribed risk budget. The IPS specifies that these ranges are to be calibrated relative to peers as is shown in the appendix to this document. This analysis suggests that these ranges are generally consistent with peers with some notable exceptions. Staff notes that year over year, peer allocations have changed meaningfully resulting in rankings that are quite high in DM equities, EM equities and real assets. As the Board considers policy and strategy changes in the future, this policy language could be updated to better reflect the opportunity set for the SAA.

Additionally, emerging markets equities are overweight relative to the underlying Global Equities benchmark and as such Staff recommends reweighting the sub-asset classes within Global Equities to align with the benchmark more closely. Future updates to the SAA parameters could include removing the target sub-asset class weights within Global Equities and replacing them with regional guidelines that are relative to the Global Equities benchmark.

- **Permissible investments (IIP).** The list of permissible investments is adequate to allow for diversification and maintains a clear differentiation between the asset classes. At present, the System could benefit from a more inclusive list of assets to allow for greater protection of the Fund during various market regimes. Staff notes that possible future improvements to move towards best-in-class policy in this section could include setting guidelines at the asset or sub-asset class level instead of listing out specifically permissible investments.

Proposed Updates

To fulfill its role in facilitating the continuous improvement for these policies, Staff proposes the routine updates summarized below:

Investment Policy Statement (IPS)

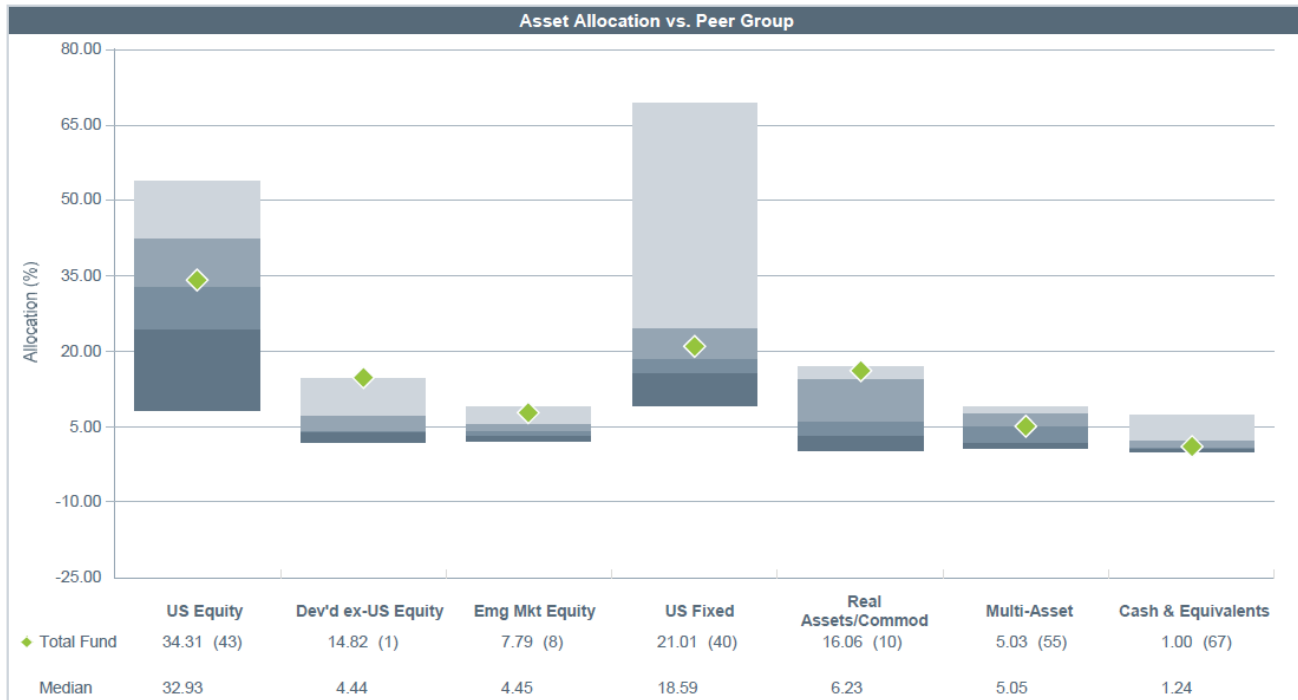
- Rank orders the four investment return goals in order of importance and changes comparable peer rankings to risk-adjusted (page 1).
- Defines the market risk budget at 10-12% volatility and notes that this is expected to fall within 2nd or 3rd quartile of comparable peers (page 9).
- Reduces the neutral allocation to EM Equity by 2% and increases US and DM Equity by 1% apiece to align with the Global Equity benchmark more closely (page 13).
- Notes that Cash & Equivalents and Commodities & Other both have neutral weights at or below 4% (page 14).
- Expands on the securities litigation policy by providing delegated authority to staff and general counsel to effectively pursue legal action alongside the claims processor when appropriate (pages 19,20).
- Updates the performance language consistent with the rank ordering of the investment return goals (page 22, 24).

- More clearly defines the interpretation of the Passive and Policy Benchmarks (page 23).
- Drops the tickers for Real Assets and the Passive Benchmark as these are for internal use only (pages 23, 24).

Investment Implementation Policy (IIP)

- Updates the reporting requirements for investment managers (page 21).

Appendix: COAERS SAA parameters vs. peers





Memorandum

To	City of Austin Employees' Retirement System ("COAERS")
From	RVK, Inc. ("RVK")
Subject	Investment Policy Statement & Investment Implementation Policy Updates Review
Date	February 18, 2022

Summary

RVK has reviewed the proposed edits by Staff to the Investment Policy Statement ("IPS") and Investment Implementation Policy ("IIP") to be approved by the Investment Committee and Board and have no concerns with the recommended updates.

Below is a quick overview of the more meaningful updates in our opinion, and our accompanying thoughts on each.

IPS Updates:

- Page 1 – Outlining the System's goals clearly and concisely is an important aspect of an IPS. By updating the structure of the IPS to highlight these goals in order of importance, we believe this is a favorable stance on focusing oversight efforts to the most critical System goals.
- Page 9 – Comparing long-term volatility goals in order to achieve the System's stated return objectives to peer rankings can be highly variable in the short and even to medium to long-term term outlooks due to differences in defining applicable peers. Reflecting the variability and difficulty in interpreting these measures in the IPS is worthwhile as is not the ultimate measure of success.
- Page 13 – Minor adjustments to the sub-asset class target weightings within Global Equity aim to reflect a neutral regional stance to the System's benchmark. A future initiative could potentially focus on removing stated sub-asset class targets and instead simply outline that regional neutrality is the default target with any deviations instead coming from market movements or tactical positioning informed by the System's Investment Risk Framework ("IRF").
- Page 19 – While RVK would ultimately defer to the System's legal counsel opining on the updated securities litigation language, the drafted updates appear reasonable from our review.

IIP Updates:

- Page 23 – Drafted additions to the language around quarterly manager reporting requirements now including highlighting changes to investment process and stewardship are improvements for periodic staff evaluations.

Board Approved Policy

Subject: Investment Policy Statement

Review Committee: Investment Committee

Date Implemented: December 10, 2019

Date Updated: March 3~~1~~⁰, 202~~1~~⁰ effective date April 1, 2022

Signature of Chairperson: _____

Chris Noak

Adopted
March 3~~10~~, 202~~21~~

Investment Policy Statement (IPS)

for

City of Austin Employees' Retirement System (COAERS)

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Investment Policy Statement (IPS)

for

City of Austin Employees' Retirement System (COAERS)

I. STATEMENT OF POLICY

Purpose and Scope

This document is the official Investment Policy of the City of Austin Employees' Retirement System (the "System"). The policies in this document (the "Policy") have been adopted by the Board of Trustees of the System (the "Board") to establish the objectives and policies of the System's investment program. This document also articulates the policies and guidelines and procedures that are employed in the day-to-day management of System investments by Staff. No responsible party shall deviate from the terms and requirements of this policy without the prior authorization of the Board. Specific guidelines for the implementation of this policy, including contracting terms and the mandate details for each strategy/manager, are set forth in the Investment Implementation Policy, which is incorporated into and made a part of this policy by reference.

Investment Goals

The sole purpose of the Fund is to accumulate the financial reserves necessary to provide benefits to eligible members of the System and their beneficiaries. To achieve this outcome consistently and sustainably, the Fund will be structured and managed to maximize, in rank order of importance, net of all fees and expenses, the probability of achieving:

- ~~1. Achieving a~~ long-term, annualized nominal rate of return that ~~;~~
 - ~~1. M~~meets or exceeds the actuarially assumed rate of return for the System; and
 - ~~2. A long-term, risk-adjusted relative rate of return that M~~meets or exceeds the Passive Benchmark (i.e., the Reference Portfolio); and;
 - ~~3. A long-term, risk-adjusted relative rate of return that meets or exceeds the Policy Benchmark (i.e., the Strategic Benchmark); and~~
~~2.4. A long-term, risk-adjusted relative rate of return the ranks in the top quartile of comparable peers consistently~~

~~Ranks in the top quartile of peer comparisons consistently.~~

The Fund will pursue

~~Achieving a long-term, risk-adjusted relative rate of return that:~~
~~Meets or exceeds the Policy Benchmark (i.e., the Strategic Benchmark); and~~
~~Meets or exceeds the Passive Benchmark (i.e., the Reference Portfolio).~~

Achieving menting of these strategic objectives via fiduciary best practices that:

- Ensure proper diversification of asset classes and factor exposures; and

-
- Maintain appropriate long-term risk and return expectations; and
 - Adapt the Fund's positioning to changing market conditions.

The Board, with consultation, advice and assistance from the System's Staff and Investment Consultant, will use the Fund's strategic asset allocation process and its effective implementation as the primary tools to achieve these goals. A primary emphasis of the management of the Fund is consistency of growth by seeking to balance the risk of inadequate long-term returns against the risk of permanent impairment of capital. Taxes shall not be a consideration except that the System's tax-exempt status should be preserved.

Investment Beliefs

The Fund is a permanent entity with long-lived liabilities and, as such, it should strive to be a thoughtful, analytical, and patient investor that is focused on achieving successful outcomes.

Clear governance and decision-making structures that promote decisiveness, simplicity, efficiency, and accountability are effective and add value to the Fund.

To the extent possible, investment decision-making should be driven by data and analysis, including the findings of relevant research on financial markets and investment management.

Strategic asset allocation is the most critical aspect of the investment process, with the level of risk assumed by the Fund driven primarily by its allocation to equity investments.

The Fund should seek to be well compensated for the investment risks it chooses to bear, risks that should be articulated at the time of investment and revisited regularly.

Diversification across asset classes and risk factors is central to the System's investment strategy, and investments that may improve the Fund's risk/return profile will be considered.

Equities are the most prudent investment vehicle for long-term growth of real values, and the associated drawdown risk should be carefully managed in light of the Fund's liabilities.

Costs can significantly reduce net returns and therefore must be carefully measured and managed when making decisions regarding investment strategy and implementation.

Implementation should occur passively and in public markets unless a high likelihood of success on a risk-adjusted, net-of-fees basis can be expected from other approaches.

Interpretation, Review and Revision

It is intended that this policy and all addenda hereto be construed and administered such that they comply with all applicable federal and state laws and regulations, as

such may be amended from time to time to reflect best practices for prudent investors.

The Executive Director is authorized to approve variances from the policies set forth herein in furtherance of such compliance. The Executive Director is also authorized to update this policy for strictly administrative items subject to approval by the General Counsel. Any variance approved for compliance with law shall be approved by General Counsel, Investment Counsel, or Tax Counsel as appropriate. The Executive Director shall report any such variances or updates to the Board at its next regular meeting via the Investment Committee.

All previous System investment policies and objectives are superseded by this document. The Board will formally review this Policy at least annually to determine whether it remains appropriate in light of the Board's investment philosophy and objectives. This document will also be reviewed periodically and updated as necessary to reflect changes in the capital markets and to reflect best industry practices for prudent investors. Any revisions to this document will be promptly supplied to the appropriate parties in written form.

II. INVESTMENT RESPONSIBILITIES

The System's investments (the "Fund") are held in trust for the exclusive benefit of its members, beneficiaries, and retirees and may not be diverted under any circumstances. This "exclusive benefit" rule shall be strictly followed when making, implementing and monitoring investment decisions. Specific care should also be taken to structure the System's investment relationships to maximize alignment while mitigating the conflicts of interest and agency problems that often exist in the financial services industry.

Specific duties and responsibilities are set forth below for the parties that are established to act as fiduciaries regarding the investment program for the Fund in achieving its objectives.

Board of Trustees

The Board has the fiduciary duty of overseeing the management of the Fund and the associated investment process. In fulfilling this responsibility, the Board will establish, maintain, and require compliance with this policy and its stated objectives. Within this framework, the Board will select, retain, monitor, and evaluate the Investment Consultant, Investment Managers, Custodian (as defined herein), and other parties to serve the goal that actual results meet the objectives. At its discretion, the Board may delegate authority for strategic and operational aspects of the Fund to Staff, though it may not delegate overall responsibility for the program.

The Investment Committee is chartered to assist the Board of Trustees in fulfilling its fiduciary oversight responsibility for the management of the System's investments. Duties of the Investment Committee may include, but are not limited to:

- formulating and recommending to the Board the overall investment policies of the System,

-
- establishing and recommending to the Board investment guidelines in furtherance of those policies, all of which shall be subject to approval by the Board,
 - monitoring investment performance relative to the strategic objectives and compliance with relevant investment risk guidelines set forth in policy, and
 - monitoring the management of the Fund for compliance with relevant investment policies and guidelines.

Professional Staff

The Executive Director, the Chief Investment Officer, the Chief Financial Officer, and other Investment Staff will constitute the System's Professional Staff ("Staff"). Staff is responsible for rendering to the Board objective, competent, professional investment advice that is free from conflicts of interest. Staff will make recommendations to the Board regarding the Fund and will be responsible for implementing both Board decisions and applicable portions of this policy.

Executive Director

The Executive Director is appointed by the Board to manage and administer the System and its investments under the supervision and direction of the Board, and in accordance with applicable state and federal laws. In carrying out these responsibilities, the Executive Director has fiduciary responsibilities delegated by the Board under applicable law and is authorized to exercise his or her best judgment and discretion in planning, organizing, and administering the operations and investments of the System and ensuring that internal controls are in place to safeguard System assets. The Executive Director is hereby authorized by the Board to exercise his or her fiduciary responsibilities to take such action(s) as are necessary or appropriate to protect the investments of the System using his or her best judgment and discretion, based on advice of the Chief Investment Officer and Consultant(s), and as practicable and appropriate, reviewed by General Counsel, Investment Counsel, and/or Board Chair. The Executive Director is also responsible for informing the Board of any such action taken or other situation involving the investment program that merit its attention.

The Executive Director will establish procedures and controls for efficient implementation of investment programs by Investment Staff. The Executive Director may delegate to another member of Staff any right, power or duty assigned to the Executive Director in this policy. Such delegation may include, but not be limited to, the Executive Director's delegation to the Chief Investment Officer to supervise and oversee the performance of any responsibilities delegated to Investment Staff set forth in this policy, provided that the Executive Director shall be responsible for the supervision and oversight of the Staff member to whom such right, power, or duty is assigned.

Investment Staff

Investment Staff is required by the Board to provide professional investment analysis and support, to exercise a standard of care consistent with fiduciary duty, and to maintain the integrity of the investment program. Responsibilities of

Investment Staff include investment analysis and research, asset allocation recommendations, risk management, manager selection and monitoring, rebalancing, and trade cost analysis. Investment Staff support the investment program at the strategic and operational levels through the establishment of appropriate policies and procedures. Investment Staff are also responsible for implementation and maintenance of analytical tools to measure and monitor risk as further described in this policy and internal procedures. Investment Staff will also advise regarding the development of this policy and its implementation, and provide assistance in selection and monitoring of all Managers, Consultants, and Custodians.

Chief Investment Officer

The Chief Investment Officer (CIO) is part of the Investment Staff and directs the investment program consistent with Board-adopted investment goals and objectives, this policy and the Investment Implementation Policy, and within applicable state and federal laws. The CIO works with the Executive Director to ensure that adequate resources are available to implement the Board's investment policies, including custody relationships, internal procedures, qualified investment staff, and analytical and risk management tools, subject to the budget approval process. The CIO works closely with non-CIO Investment Staff and the Investment Consultant(s) to ensure that policies and procedures provide adequate controls to protect the integrity of the investment program, and oversees all investment processes including the selection and oversight of Managers.

Any reference to Investment Staff responsibilities in this policy, including any addendum to this policy, should be construed to mean that the Chief Investment Officer has supervisory and oversight authority of such delegated responsibilities.

Non-CIO Investment Staff

The non-CIO Investment Staff report to the CIO and are primarily responsible for the daily operation and implementation of the investment program. Non-CIO Investment Staff members work with the CIO and Consultant(s) to advise the Board on investment policy and management issues. Such issues may include without limitation, the development of investment goals and objectives, investment policies and strategies, investment risk management policies, asset allocation decisions, the hiring or termination of Managers, the establishment of investment performance benchmarks, and the development of investment management guidelines and restrictions.

Finance Staff

Finance Staff is independent of the Investment Staff and serves as the record keeper for the System's investments. The Chief Financial Officer (CFO) directs the Finance Staff and is primarily responsible for cash management as outlined in this policy, including the monitoring of liquidity requirements to meet benefit payments. Finance Staff is also responsible for ensuring the timely payment of manager fees and tracking these fees for budgeting purposes.

Investment Consultant(s)

The Board may obtain the services of one or more qualified firms or individuals to assist and advise the Board and Staff regarding the structure, strategy, management, and investment of the Fund (a “General Investment Consultant”). The duty of a General Investment Consultant is to render objective, competent, professional advice and assistance that is free from conflicts of interest and to work with the Board and Staff regarding the investment process. This responsibility includes meeting regularly with the Board to provide perspective on the Fund’s goals, strategy, structure, and risk as well as the progress toward fulfilling the Fund’s long-term objectives.

A General Investment Consultant will advise, consult and work with the Board and Investment Staff to develop and maintain a well-diversified portfolio of investments for the Fund. Fund positioning and performance will be reviewed regularly, and recommendations will be made as appropriate. A General Investment Consultant will assist the Board and Staff in manager selection and monitoring as needed, including informing the Board promptly of material changes to portfolio investments. Within this process, a General Investment Consultant assumes fiduciary responsibility for advice given regarding the management of the investment process. A General Investment Consultant will perform its duties and obligations in conformance with generally accepted industry standards and its contract with the System.

The Board may also hire one or more qualified firms or individuals to assist and advise the Board and Staff regarding specialized mandates such as selection of managers and/or investments (a “Specialized Investment Consultant”). For example, should the Board consider making direct investments, it may obtain the services of one or more qualified firms or individuals to assist and advise the Board and Staff regarding the selection of specific investments (a “Direct Investments Consultant”). Within this context direct investments are defined for the purpose of this policy as investments that are not invested or managed by an investment manager appointed by the Board pursuant to Section 802.204, Texas Government Code.

The Specialized Investment Consultants are hired by, and report to, the Board to assist in the management of the specialized portfolio. The Specialized Investment Consultants provide advice to the Board on specific asset class policies, recommends pacing commitments, Manager selection and terminations, Manager guidelines and restrictions, participates in the due diligence process and ongoing monitoring of Managers including policy compliance, provides analysis of investment performance, and provides advice on other investment-related issues. Specialized Investment Consultants work closely with Staff in all aspects of the specialized investment portfolio including its relationship to the Fund as a whole.

It is imperative that Consultants have the independence and ability to inform the Board in the event of any concerns related to investment activity. If any Consultant learns of a material issue regarding deviation from prudence, objectivity, policy or parameter adherence or any other matter of concern involving the investment program, the Consultant has a duty to express that concern in writing to the Executive Director and CIO while also recommending any action to be taken as

deemed necessary. The Consultant shall also contact the Board if it concludes that further immediate action is required and is beyond the authority granted to the Executive Director or Investment Staff. In any event, all such material matters will be reported to the Board at its next regularly scheduled meeting.

Investment Managers

Except for direct investments, investments for the Fund shall be made and managed by one or more investment managers (“Managers”) who meet the requirements of Sections 802.203(d) and 802.204, Texas Government Code. Managers will construct and manage a portfolio of investments (the “Portfolio”) consistent with the investment philosophy and strategy they are hired to implement in compliance with this policy and/or any agreement(s) they execute with the System. The Board’s Investment Implementation Policy sets out specific processes and procedures with respect to manager selection, contracting, monitoring, and retention.

Custodian(s)

Custodian bank(s) (“Custodian” or “Custodians”) will maintain custody of the cash, securities, commingled funds and other investments of the Fund. The Custodian(s) will be responsible for safekeeping, clearing and settling securities as appropriate for the accounts they are assigned. The Custodian(s) will regularly value, list and summarize these holdings for review by the Board, Staff and Consultant. In addition, a bank or trust depository arrangement with the Custodian(s) may be utilized to invest cash in liquid, interest-bearing instruments.

A Master Custodian will be designated to accurately record all transactions affecting the Fund. The audited entries from the Master Custodian shall constitute the official book of record for the Fund. All Custodians will be directed to provide timely and accurate information to the Master Custodian.

III. FIDUCIARY CONDUCT

An investment fiduciary includes, but is not limited to, a person who exercises discretionary authority or control in the investment of the investments of the System or who renders, for a fee, advice to the System. The term investment fiduciary includes, but is not limited to, the members of the Board, the General Counsel of the System, the System’s Staff, Investment Consultant(s), Managers, and the Custodian.

An investment fiduciary shall discharge his or her duties exclusively in the interest of the participants in the System and their beneficiaries and shall:

1. Act with the same care, skill, prudence, and diligence under the circumstances then prevailing that a prudent person acting in a similar capacity and familiar with those matters would use in the conduct of a similar enterprise with similar aims;
2. Act with due regard for the management, reputation, and stability of the issuer and the character of the particular investments being considered;

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3. Act in accordance with this Policy and ensure that the Fund is invested in a manner consistent with this Policy;
 4. Make investments for the sole purpose of providing benefits to participants and participants' beneficiaries, and of defraying reasonable expenses of supervising, safeguarding, and investing the assets of the System; and
 5. Give appropriate consideration to those facts and circumstances that an investment fiduciary knows or should know are relevant to the particular investment or investment course of action involved, including the role which the investment or investment course of action plays in that portion of the investments for which an investment fiduciary has responsibility. For purposes of this subdivision, "appropriate consideration" shall include, but is not necessarily limited to, a determination by an investment fiduciary that a particular investment or investment course of action is reasonably designed, as part of the investments of the System, to further the purposes of the System, taking into consideration the risk of loss and the opportunity for gain or other return associated with the investment or investment course of action. Trustees shall give consideration of the following factors as they relate to System's investment strategy:
 - (a) the diversification of the investments of the System;
 - (b) the liquidity and income profile of the investments of the System relative to the anticipated cash requirements of the System; and
 - (c) the projected return of the investments of the System relative to the funding objectives of the System.

Every investment will be subject to thorough due diligence, which shall be conducted by Staff with assistance from the Investment Consultant and reviewed by the Investment Committee. Notwithstanding the performance of such due diligence, the determination of whether prudence has been exercised with respect to an investment decision shall be made by taking into consideration the overall diversification of the Fund within the context of its investment strategy rather than evaluating the merits of a single investment in isolation.

In adopting this Policy, the Board requires all Trustees and Staff involved in the investment of Fund assets to make all investment decisions in the best interest of the System and to abide by the System's Ethics Policy. This Policy states that no covered person may solicit, accept, or agree to accept any gifts, personal benefits, or personal favors offered to them because of their position with the System.

Within this context, the acceptance by Staff of invitations to seminars, conferences, receptions and business meals when (1) such event has a presentation or discussion of topics pertinent to the investment of Fund assets or relates to the official duties of the individual and (2) the sponsor or a representative of the sponsor is present are permitted if not otherwise prohibited by law. This exception also applies to the acceptance of transportation, lodging and meals in connection with conferences, seminars, and advisory committee meetings where the services rendered by Staff are more than merely perfunctory as in accordance with applicable laws. In all cases,

Staff should use reasonable care and judgment to not place themselves in a situation that might cause, or be perceived to cause, a loss of independence or objectivity.

IV. INVESTMENT RISK MANAGEMENT

Purpose and Scope

The Board recognizes that bearing prudent levels of compensated investment risk is critical in meeting the Fund's long-term return objectives, which are in turn essential to the sustainable provision of adequate benefits.

- **Market Risk (i.e., Volatility or Absolute Risk):** Market risk is associated with making investments in the pursuit of long-term capital gains while facing the potential for infrequent but significant losses. Market risk is typically defined in terms of market volatility, which is often expressed as the standard deviation of monthly returns over three or more years. Given the System's purpose, liquidity requirements, absolute return objective and predictability of contributions, the Board elects to assume levels of market risk, defined as realized long-term volatility, of approximately 10%-12% on an annualized basis. that rank in the second or third quartile of its comparable peers in pursuing the investment program. Based on this philosophy and its absolute return objective, the Fund's long-term volatility is expected to be approximately 10%-12% on an annualized basis. Based on this philosophy, the Board expects that market risk will likely rank in the second or third quartile of its comparable peers over the long term, but notes that differences in asset mix and risk regimes may cause risk to be higher or lower than these peer rankings.
- **Active Risk (i.e., Tracking Error or Relative Risk):** Active Risk refers to the amount of risk in the portfolio that is attributable to the management decisions made by its fiduciaries. A common measure of active risk is commonly called tracking error, which can be best estimated within portfolios of tradable liquid securities.

Tracking error budgets relative to the assigned benchmarks are established for the total Fund and its actively managed public market portfolios as follows:

	Neutral	Maximum
TOTAL FUND	150 bps	300 bps
US Equity	200 bps	500 bps
Developed Market Equity	400 bps	700 bps
Emerging Market Equity	500 bps	800 bps
Fixed Income	150 bps	300 bps
Real Assets	350 bps	500 bps
Multi-Asset	300 bps	600 bps

These figures shall be measured on both a realized and prospective basis using rolling three- and five-year horizons. Deviations from these risk ranges will be reviewed with the Board via the Investment Committee along with the justification and recommended remedy.

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- **Mission Risk.** Risk for the System should also be viewed more broadly to include the probability of not meeting its primary investment objective, which is to enable the provision of promised benefits in perpetuity. To this end, the Investment Risk Management effort seeks (1) to identify the key sources of uncertainty with the greatest potential impact on Fund performance, (2) to identify potential regime changes in market conditions that could have significant impact on the long-term performance of the Fund (such as economic growth and inflation) or affect the appropriateness of its asset allocation parameters and/or implementation approach, and (3) to measure, monitor and manage those risks in view of the level of compensation that has been realized and is expected for bearing those risks.

This risk budgeting framework defines the Board's tolerance for volatility and tracking error at the Fund level and provides a transparent, measurable methodology for allocating risk to implementation efforts in pursuit of the System's investment objectives. To ensure that this Risk Budget continues to be appropriate it will be reviewed at least annually concurrent with the Strategic Asset Allocation review and formal asset allocation study. A more in-depth review will be done at least every five years and coincide with the formal Asset/Liability Study.

Other Types of Investment Risk

The Board takes several steps throughout the investment process to identify, measure, and report on investment risk at a variety of different levels. The key risks that are to be identified and addressed in the internal processes of the Investment Staff include:

- **Strategy Risk:** Strategy risk is the risk of pursuing an inferior investment strategy due to lack of clarity in investment beliefs, objectives, and/or risk tolerance. To the extent any of these decision components change, the parameters established in the Strategic Asset Allocation may no longer be appropriate and require review. To ensure that the Strategic Asset Allocation process and parameters remain appropriate:
 - A formal pension financial (asset/liability) study will be conducted at least every five years, or whenever there have been material changes to the contribution or benefit policy.
 - A formal asset allocation study will be conducted at least every three years to validate or amend the SAA parameters.
 - The Strategic Asset Allocation process and parameters will be reviewed at least annually for reasonableness relative to significant economic and market changes and to changes in the Board's long-term goals and objectives.
- **Asset Allocation Risk:** the Board uses a number of critical assumptions to set the Strategic Neutral Allocations and Rebalancing Ranges for the Fund as part of the SAA process. This effort is in support of its goal of establishing an investment program that will allow the System to meet its long-term liabilities through investment returns as well as contributions, but faulty assumptions can jeopardize this aim. The Board via the Investment Committee will monitor these

assumptions as well as Fund positioning relative to SAA parameters set forth elsewhere in this Policy at least quarterly.

- **Implementation Risk:** Implementation Risk is the risk of losses or unmet expectations due to either poorly designed investment guidelines or Managers not delivering on the expectations that are embedded in well-designed guidelines. These risks are managed through proper and timely initial and ongoing due diligence programs, portfolio oversight and monitoring, and a willingness to make timely changes when appropriate.
- **Liquidity Risk:** the Board acknowledges that sufficient liquidity must be maintained to meet benefit payment obligations. The allocation to highly liquid investments will be monitored on a quarterly basis, as will the Fund's anticipated contributions, benefit payments, and any capital calls or other investment commitments. Liquid investments may be used to meet short-term cash needs and due consideration will be given to transaction costs when raising cash to meet benefit payments and other commitments.
- **Currency Risk:** to the extent that the Fund invests extensively in international markets, a negative currency return may result from adverse movements in foreign exchange rates. Over long periods of time, currency movements are not expected to add significant returns to the portfolio but may add to its volatility. As such, the Board may authorize Staff to hedge this risk or seek return from this risk by employing active currency management at the Fund level. The Fund utilizes unhedged benchmarks and does not require its Managers to hedge the currency exposure in their portfolios.
- **Leverage Risk:** Leverage is an exposure to an asset class that is not fully collateralized by cash or an exposure to an asset that has been acquired without being fully funded. There are two primary types of leverage: financial leverage and economic leverage. Leverage by itself does not necessarily create additional market risk or variation in market returns, and in fact can be used to deliver greater diversification and better risk-adjusted returns than an unlevered but concentrated portfolio.

The Fund has exposure to leverage through different structures and vehicles and that leverage is inherent in some investment strategies as a means to achieve their target market exposures. The use of leverage will be monitored in portfolios where derivatives or other forms of leverage are employed (such as in Real Estate and Infrastructure) and also at the Fund level.

- **Statutory Risk:** the Board will track compliance with any and all statutes or laws related to the investment program.
- **Solvency Risk:** trends that could serve to erode the long-term funded status of the System (such as low investment returns, weak global growth, and poor demographics) are to be identified, considered, and evaluated on a regular basis.

V. ASSET ALLOCATION

Strategic Asset Allocation

The Board, with advice from Investment Staff and Investment Consultant, is responsible for establishing the Strategic Asset Allocation (SAA) process and parameters for the Fund. SAA refers to the establishment of neutral weights and suitable ranges for the appropriate asset types (i.e., financial instruments sharing certain fundamental and risk-based characteristics) that determine the distribution of investments within the Fund. The SAA process will seek to optimize expected return net of fees for the Fund within the established risk budget over a long-term horizon by maintaining a highly efficient portfolio at all times. Key parameters of the SAA in this regard will include the Strategic Neutral Allocations, Strategic Rebalancing Ranges, and Tactical Rebalancing Ranges as described further below.

Since the Fund is designed to benefit both current and future generations of beneficiaries, its time horizon is long. More specifically, the Board should calibrate the SAA process toward the aim of meeting the System's investment objectives and risk budget over a time horizon of ten years or more. However, since the benefit payment obligations of the System must be met on a timely and regular basis, cash flow considerations (including the potential for a sustained period of net outflows) will generally be given precedence over the long-term liability stream when setting the SAA parameters and the associated risk budget.

At least every five years (or more frequently if warranted by a material event in either the liability structure of the Fund, the contribution policy, and/or the capital markets) the Board will conduct a formal Asset/Liability Study to review asset classes, risk-return assumptions, and correlation of returns, and implementation styles using applicable benchmarks and other relevant data. These periodic studies will provide the primary basis for significant changes to the Fund's strategic asset allocation parameters.

The primary objective of the Asset/Liability Study shall be the development, through statistical modeling techniques and the use of capital market assumptions, of a highly diversified portfolio structure that specifies a long-term neutral position for each asset class and sub-asset class (the "Strategic Neutral Allocation") as well as prudent maximum and minimum ranges ("Rebalancing Ranges") of portfolio exposures around those neutral weights. These SAA parameters represent the policy weights on a market value basis that, under current assumptions and when effectively implemented by Staff, are expected to maximize the probability of meeting the Board's investment objectives.

Experience has shown that the long-term performance of the SAA process depends greatly on the accuracy of the assumptions used to establish its key parameters. As such, this information should be monitored continually and revisited regularly by Investment Staff with the results reported to the Board each quarter via the Investment Committee. Formal reviews of the adopted SAA parameters using updated capital market assumptions and other market-related inputs shall also be conducted at least annually.

Asset Class Diversification

The Board has found it prudent to diversify both across and within the major asset classes in order to construct a highly efficient portfolio (i.e., one that delivers strong compound returns on a long-term, risk-adjusted basis). Each of the major asset classes outlined below provides a distinct and purposeful role within the Fund, and careful attention should be paid to the changing correlations between them. The sub-asset class categories within each major asset class and their proportion of the total are shown below.

Asset Class/Sub-Asset Class Policy Weights & Rebalancing Ranges							
	Asset Class	Min ^S	Min ^T	Neutral	Max ^T	Max ^S	
Growth-Oriented Assets	Global Equity	46.0%	51.0%	56.0%	61.0%	66.0%	
	US Equity	<u>22.0</u> 21.0%	<u>29.0</u> 28.0%	<u>34.0</u> 33.0%	<u>39.0</u> 38.0%	<u>47.0</u> 46.0%	
		DM Equity	<u>11.0</u> 10.0%	<u>13.5</u> 12.5%	<u>16.0</u> 15.0%	<u>18.5</u> 17.5%	<u>20.0</u> 19.0%
		EM Equity	<u>2.0</u> 3.0%	<u>4.0</u> 5.5%	<u>6.0</u> 8.0%	<u>10.5</u> 12.5%	<u>13.0</u> 15.0%
	Real Assets	10.0%	11.0%	15.0%	19.0%	20.0%	
	Real Estate Equity	5.0%	7.0%	10.0%	13.0%	15.0%	
	Infrastructure Equity	0.0%	1.0%	5.0%	7.0%	10.0%	
Liquidity & Diversifying Assets	Fixed Income	16.0%	18.0%	21.0%	27.0%	33.0%	
	US Treasuries	9.0%	11.0%	13.0%	21.0%	25.0%	
		US Mortgages	2.0%	3.0%	4.0%	6.0%	8.0%
		US Credit	1.0%	2.5%	4.0%	7.0%	10.0%
	Multi-Asset	2.5%	4.5%	7.0%	12.5%	15.0%	
	Asset Allocation	2.5%	3.5%	5.0%	7.5%	10.0%	
		Commodities & Other	0.0%	1.0%	2.0%	5.0%	10.0%
	Cash & Equivalents	-10.0%	-5.0%	1.0%	5.0%	10.0%	
	US Dollar instruments	-10.0%	-5.0%	1.0%	5.0%	10.0%	
Other currencies		0.0%	0.0%	0.0%	1.0%	2.0%	

T: Tactical Rebalancing Range S: Strategic Rebalancing Range

While proper diversification is prudent and central to the System's investment strategy of bearing prudent levels of well-compensated risk, over-diversification can be detrimental to the Fund. Therefore, the Board will not typically consider a sub-

asset class for inclusion in the SAA framework that does not warrant a maximum weight of least 4%, with ~~cash~~ Cash & Equivalents and Commodities & Other being the standing exceptions.

Based on its most current determination of the appropriate risk tolerance of the Fund and its long-term return expectations, the Board in consultation with the Staff and Investment Consultant has established the Strategic Neutral Allocations, Strategic Rebalancing Ranges, and Tactical Rebalancing Ranges as percentages of the Fund's asset classes and sub-asset classes shown below. These prescribed ranges for the policy weights allow for the fluctuations in Fund positioning that are inherent in market values of portfolio investments and for prudent risk management for the Fund in pursuit of an efficient portfolio.

These rebalancing ranges are established according to the following philosophy and criteria:

- Tactical Rebalancing Ranges are calibrated to reflect the diversity of asset mix among peers with second or third quartile allocations as determined by investment consultant data. These ranges aim to delineate the typical operating range of the actual positioning of the Fund under normal market conditions.
- Strategic Rebalancing Ranges are calibrated to reflect the diversity of asset mix among peers with first quartile and fourth quartile allocations excluding those peers in the top or bottom five percent as determined by investment consultant data. These ranges aim to delineate the less typical operating range of the actual positioning of the Fund under unusual market conditions.

Fund positioning shall in all cases conform to the prescribed ranges unless otherwise authorized at a regular or called meeting of the Board.

Rebalancing

The goal of rebalancing is to ensure that the long-term investment objectives of the System are achieved by allowing Investment Staff the flexibility to adjust for market movements and to adapt Fund positioning to current market conditions. The Board has chosen to adopt a rebalancing policy that allows Investment Staff to rebalance the portfolio between major asset classes as well as within the sub-asset classes, a framework that is governed by the Board-approved risk budget and ranges rather than fixed allocations or time periods. These ranges are specified in the table above and are a function of the volatility of each asset class and sub-asset class relative to the proportion of the Fund allocated to each.

The Strategic Rebalancing Ranges serve to establish the outer bounds for the allocation of the Fund and to allow for flexibility during times of market stress or dislocation. The Tactical Rebalancing Ranges allow for routine fluctuations that are inherent in market values of portfolio investments and establish Board-approved parameters for management of the Fund's risk exposures and overall diversification level by Investment Staff.

Staff is authorized to effect rebalancing under any of the following three conditions:

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- **Market drift:** Market movements and cash draws for benefit payments may cause current Fund positioning to drift away from neutral positioning and potentially beyond the prescribed ranges above.
 - When a month-end report shows that Fund positioning has drifted outside the Strategic Rebalancing Ranges at either the asset class or sub-asset class level, rebalancing shall be effected to increase its positioning to the midpoint of the Strategic Minimum and the Tactical Minimum (if the allocation has fallen below the Strategic Minimum) or to reduce its positioning to the midpoint of the Strategic Maximum and the Tactical Maximum (if the allocation has increased above the Strategic Maximum) by the end of the next month.
 - When two consecutive month end reports show that Fund positioning has drifted from within to outside the Tactical Rebalancing Ranges at either the asset class or sub-asset class level, rebalancing shall be effected to increase its positioning to the Tactical Minimum (if the allocation has fallen below the prescribed minimum) or to reduce the positioning to the Tactical Maximum (if the allocation has increased above the prescribed maximum) by the end of the next month unless a temporary deviation until the next Investment Committee meeting is granted in writing by the Executive Director.
 - Determinations made under this authority shall include adjustments as needed to account for notional exposures beyond the market values shown in reports from the custodian and/or investment consultant. Any rebalancing under this authority shall be carried out by Investment Staff after prior notification to the Executive Director and in consultation with the Investment Consultant.
 - **Risk management:** Changing market conditions may cause the risk-return profile of the Fund to deviate from the risk budget prescribed in this document. Changing market conditions may also cause the near-term risk/return characteristics of one or more asset classes or sub-asset classes to diverge from its long-term absolute fundamentals or from its peers on a relative basis. In such cases, one or more deviations from neutral positioning may be desirable to improve the risk-return profile (i.e., the diversification level) of the Fund overall.

When the analytical framework employed by Investment Staff, which for the purposes of this Policy shall be referred to as the Investment Risk Framework (IRF), leads to a determination that one or more deviations is likely to be advantageous to the Fund's risk-return profile, Staff is authorized to rebalance the Fund within the Tactical Rebalancing ranges for both asset class and sub-asset classes. Such rebalancing authority under this provision shall be distinct from any authority to reallocate between managers granted by this Policy or the IIP.

The IRF, including its underlying philosophy and key inputs, will be approved by the Board prior to deployment and its outputs reported at regular meetings

of the Investment Committee and more frequently if market conditions warrant. The Executive Director shall be responsible for ensuring that rebalancing undertaken under this authority is based on the consistent application of the IRF.

Rebalancing activities under this authority shall result in Fund positioning that falls within the Tactical Rebalancing ranges and conforms to the risk guidelines set forth elsewhere in this Policy unless otherwise authorized by a regular or called meeting of the Board.

- **Phased transition:** During times of phased transition to a new set of SAA parameters, interim rebalancing weights and procedures may be chosen until the implementation of the new parameters can be prudently completed. In addition, Staff and Consultant may each recommend to the Board temporary deviations from these weights if it is believed that doing so can be reasonably expected to further the investment objectives set forth in this Policy or to more effectively implement the program. During the transition towards the new parameters, certain asset classes may exceed prescribed limits and will serve as either a funding source for new strategies or portfolios, or as a proxy pending implementation of certain allocations.

Investment Staff is responsible for developing and overseeing all portfolio rebalancing activities, and is authorized to carry out these activities in accordance with this section. All rebalancing activities permitted by this section must be authorized by the Executive Director in the form of approved instructions to the investment manager(s) and/or custodial bank.

In all cases the potential benefits of rebalancing must be weighed against the costs, including explicit transaction costs such as commissions and market impact as well as opportunity costs such as Staff time and focus. Investment Staff will report the results of rebalancing activity to the Executive Director and Investment Consultant upon completion of the rebalance. The Board shall be notified of any such changes (1) by email within one business day of initiating the rebalancing with the Custodian and/or Manager(s) and (2) in writing at the next regular meeting of the Investment Committee.

VI. OPERATIONAL GUIDELINES

For the purposes of operational risk management, investment activities shall also be subject to the following guidelines:

- **Diversification.** Fund investments will be broadly diversified in order to minimize the risk of large losses from individual securities. The Fund will have beneficial ownership (as determined pursuant to Rule 13d-3 of the Securities Exchange Act of 1934) of no more than:
 - 3% of its investments at market value in the securities of any one corporation;
 - 5% of any class of voting securities of any one public corporation; and
 - 20% of a single commingled investment vehicle, based on market values, except as explicitly approved by the Board as a seed investment.

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- **Counterparty Requirements.** Counterparty creditworthiness will be monitored closely, and the following restrictions shall apply:
 - The Custodian(s) shall maintain a credit rating of at least A+ or equivalent
 - Futures Commission Merchants shall maintain a credit rating of at least A+ or equivalent
 - Broker/dealers shall be selected by Investment Managers in accordance with their internal trading policies as reviewed during the due diligence process

Credit ratings criteria should be met on both a long-term and short-term basis as rated by at least one nationally recognized rating services organizations (NRSROs) such as Moody's, S&P, and Fitch.

- **Leverage.** In addition to gross notional exposure, net exposure levels will be monitored at the asset class level and at the Fund level. Financial leverage is restricted at the Fund level to risk management purposes as described further in this section. Financial leverage is permitted under this Policy as a result of the following permissible activities:
 - Derivative overlay strategies used to carry out the System's investment strategy and deployed within the parameters of the Strategic Asset Allocation;
 - Derivative overlay strategies used to implement currency hedging;
 - Embedded leverage within commingled fund structures; and
 - Collateralized funding including securities lending activities.
- **Derivative Instruments.** The only authorized uses of derivative instruments are (1) to efficiently manage portfolios and risk and (2) to implement investment strategies authorized by this Policy more effectively and at a lower cost. The following derivative instruments are allowable, subject to the constraints listed below: futures, forwards, structured notes, and options. At the Fund level, purchases or short sales, or both, of appropriate derivatives may be used to:
 - Manage the total Fund more efficiently by altering its market (systematic) exposure in lieu of trading the underlying cash market securities;
 - Hedge and control risks so that the risk-return profile of the total Fund is more closely aligned with its target risk-return profile; and
 - Facilitate transition trading when rebalancing or reallocating among permissible investments as a result of policy changes.

Managers may only engage in derivatives transactions that are consistent with their investment guidelines as well as applicable laws and regulations. Specifically, these instruments may be used for constructing portfolios with risk and return characteristics that could not be created with cash market securities consistently with the objectives in this Policy and in compliance with applicable law.

- **Cash Management.** As a mature pension plan, cash disbursements of the System are expected to exceed cash receipts for the medium term. As such, sufficient funds must be made available for transfer from the System's

investments to meet the operating needs of the System. On at least a quarterly basis, Finance Staff will project the cash flow needs of the System based on the amount budgeted for administrative expenses and projected benefit payments, including retiree payroll. Cash draws should generally be made from asset classes and individual portfolios that are overweight relative to their strategic neutral weight, with those funds then transferred to the System's cash account at the Custodian Bank. A standing direction may be issued for monthly transfers from managed investments to address projected cash flow needs.

Each month, the Chief Financial Officer will review the anticipated disbursements, and will compare the disbursement requirements to funds available at the Operating Bank. A recommendation of the amount of cash draw required from the Custodian Bank will be made to the Executive Director, who will authorize the Custodian Bank to transfer the required funds to the Operating Bank on a specified date. Each quarter Staff will provide to the Board via the Investment Committee a report detailing all cash movements from the prior quarter that are related to investment program operations.

- **Securities Lending:** The Board may select a Securities Lending Agent(s) to generate incremental income by making term loans of eligible securities. Any such program shall not inhibit the trading activities of Managers and should not run counter to the investment strategy of the Fund overall. The agent(s) or its parent organization must:
 - be experienced in the operation of a fully secured securities lending program;
 - indemnify the System against any loss resulting from borrower default or from its own failure to properly execute its responsibilities under the lending agreement;
 - maintain a SSAE16 or ISAE 3402 report reflecting appropriate risk controls;
 - maintain a rating of at least "A" by two NRSROs; and
 - maintain Tier 1 and Total Capital Ratios of at least 7% and 10%, respectively.

The agent(s) shall have full discretion over the selection of borrowers and shall continually review credit worthiness of potential borrowers through adequate analysis of all relevant information. The agent must act as a fiduciary in the management of the account and manage the market risk of the reinvestment of cash collateral through careful monitoring and consideration of the maturity structure of the reinvested cash collateral relative to the System's outstanding loans.

The securities lending program shall utilize a high-quality and reasonably conservative cash collateral re-investment program that safeguards the return of principal and maintains adequate daily liquidity to support trade settlement activity and portfolio restructuring activities. Cash collateral or US Government securities must be received by the Securities Lending Agent, and should be held in a fully paid segregated account invested according to approved guidelines described below:

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- All loans shall be fully collateralized with cash, government securities or irrevocable bank letters of credit. Collateralization of such loans shall be at least 102% domestic/105% international of the market value of the loaned securities plus accrued income for U.S. and non-U.S. loans, respectively. Such collateralization procedures should be marked-to-market daily by the agent.
 - The securities lending agent must have written/internal guidelines for the investment of cash collateral, which shall be reviewed and incorporated into the System's agreement with the securities lending agent. A copy of the agent's cash collateral investment policy shall be sent to the System at least annually and any other time a material change is made to the document.
 - Income earned from securities lending in separate accounts will be deposited monthly in an account specified by Staff and invested in short-term instruments until allocated or used as needed to meet the liquidity requirements of the System.
 - The agent will be responsible for in-depth ongoing credit review of borrowers, independent of the agent's securities lending decision-makers. Staff may work with the securities lending agent to create and maintain a custom approved borrower list.

Should a violation of these guidelines occur, the Agent will notify Investment Staff within 3 business days who will promptly notify the CIO of the guidelines breach and appropriate steps to remedy the breach (if any), accompanied by a recommendation. However, a breach will not in itself cause the suspension or termination of the lending program.

Cash collateral may also be reinvested through a pooled fund managed by the Securities Lending Agent. Investment Staff shall evaluate and may recommend the use of a commingled pool by considering any liquidity benefits a pooled structure may offer along with its investment objectives, guidelines, restrictions, and strategy. Such analysis will also consider transparency of the investment process and internal controls.

For commingled funds where securities lending is performed by the Manager, Staff is authorized to adjust the allocation between lending and non-lending share classes to manage the risk profile of the program. The Board shall be notified of any such changes (1) by email within one business day of initiating the transaction with the Custodian and/or Manager(s) and (2) in writing at the next regular meeting of the Investment Committee.

- **Securities Litigation:** As a large institutional investor, the Fund frequently holds securities that are the subject of individual and class action securities litigation. The Custodian and other parties (the "Claims Processor") may be appointed by the Board to monitor such lawsuits, report to the Executive Director and Investment Staff, and file notice of claim as necessary or other necessary documentation. The Custodian-Claims Processor shall notify Managers of any potential or pending legal action.

In its role as a fiduciary, the Board may, with the advice and assistance of the System's General Counsel, determine that the Fund should pursue litigation where it has been harmed due to securities fraud or other bad acts. In most cases, the Funds' interest in securities litigation claims will be adequately addressed solely through participation as a class member, rather than taking a lead plaintiff role in such litigation. The following sections outline the process and delegated authority for pursuing lead plaintiff or a separate prosecution of claims.

Screening: The Board has set a "Threshold Value" to determine when the estimated financial loss to the System may warrant pursuing lead plaintiff status in a class action or separate prosecution of claims. The Threshold Value is defined as an estimated financial loss that exceeds 0.03% of Fund assets as of the most recent quarter end. Investment Staff shall promptly notify General Counsel and Executive Director of potential claims that exceed the Threshold Value. In certain rare cases, General Counsel and Executive Director may determine that the materiality of the financial loss to the Fund is exceptional and/or that the Trustee's fiduciary obligation requires active participation as lead or co-lead plaintiff in a class action or separate prosecution of claims.

Designated Authority: In those circumstances that the General Counsel and Executive Director determine that active participation as lead plaintiff in a class action or separate prosecution of claims is advisable, the Executive Director will generally present to the Board a filing recommendation. Notwithstanding the foregoing, the Executive Director is granted authority to make a filing decision in the event that any exigent circumstances require such a decision to be made quickly to preserve or protect any claim or right of the System. The Executive Director shall confer with the General Counsel and notify the Chair of the Board prior to exercising such authority. In all circumstances the Executive Director has authority to not pursue or not recommend a filing. The Executive Director will report any such actions taken in this paragraph at the next regularly scheduled meeting of the Board.

Case Management: The General Counsel or designee bears the primary responsibility for the management of all litigation matters and coordination with the Claims Processor. The authority granted in this paragraph shall be exercised, as warranted, in consultation with the Executive Director and Chief Investment Officer. The General Counsel and Executive Director will report on any ongoing case management matters regularly to the Board throughout any litigation process under this section.

~~In such event, the filing of any claim shall be prepared, processed, and managed by the Custodian on behalf of the Fund, at the direction and with the oversight and approval of Staff.~~

~~In those rare cases it may be determined that the materiality of the financial loss to the Fund is exceptional and/or that the Trustee's fiduciary obligation requires active participation or separate prosecution of claims. If so, the Executive Director may refer the case to appropriate legal counsel for evaluation and recommendation to the Board.~~

VI. REPORTING, EVALUATION AND REVIEW

Regular performance evaluation of the Fund by the Board is designed to monitor the effectiveness of the investment process in meeting the long-term objectives of the System. The purpose is to test the continued validity of the associated decisions and to prompt a review of underperformance or excessive risk. All performance measurement should be based on total returns, net of fees, adjusted for risk, as measured over a sufficient time period to reflect the benefits of any active decisions (typically a minimum of three years and preferably over five or more years and/or a full market cycle).

Investment Staff and Consultant, in consultation with the Executive Director, shall provide to the Board via the Investment Committee a written summary of the Fund's performance each quarter. This report shall include a comparison to performance benchmark objectives as well as the investment performance of other appropriate funds. The Consultant will conduct an in-depth performance attribution analysis, which will quantify the extent to which specific allocations, strategies, and/or managers added or detracted from overall Fund performance.

Strategic Objectives

The central strategic criteria for Fund performance will be the ability of the Fund's returns to fully fund the liabilities of the System over time. That is, the investment program overall should be oriented toward the outcome of achieving a long-term, annualized absolute rate of return that meets or exceeds the assumed actuarial rate of return for the System.

On a regular basis (typically quarterly but not less than annually) the Board will review actual investment results achieved and the attribution of those results to determine whether:

- the Fund meets or exceeds its long-term target rates of return;
- the extent to which Fund risk remains within budget in the pursuit of these objectives;
- the Fund's Strategic Asset Allocation process and parameters remain reasonable and appropriate in light of the long-term goals of the system (including its funding objectives and projected liabilities) and the prevailing conditions in the capital markets.

These assessments should also regularly consider the potential effects of past realized returns on future expected performance, such as whether high recent returns imply lower returns in the future or vice versa. Investment Staff shall report annually to the Investment Committee on the status and performance of delegated responsibilities including rebalancing, manager selection, and risk management.

Investment Risk

Widely accepted quantitative measures of risk such as volatility (i.e., standard deviation of returns) shall be regularly measured and monitored. The risk management efforts of the program are also to consider other statistical measures of historical and projected absolute risk such as Value-at-Risk (VaR) and maximum

drawdown. While acknowledging that investment risk cannot be eliminated but can instead be managed through appropriate diversification, the Board seeks to ensure that investment risks are adequately rewarded over time and that return expectations are consistent with the risk budget established by the SAA process. The program should target a long-term Sharpe Ratio of at least 0.5 for the Fund overall to ensure a level of investment efficiency in risk taking that is on par with its best-in-class peers.

Risk monitoring activities should also consider downside risk, which for these purposes is considered to be the permanent impairment of capital. However, since many risk models assume normality of returns and thus often fail to anticipate the severity of drawdowns, it is imperative to monitor the Fund's downside risk using forward-looking techniques such as scenario analysis and stress testing. These techniques can provide insight into potential future downside risks by utilizing historical market dislocations and potential future events to consider the resulting impacts on the portfolio. As such, these approaches will be incorporated into the Asset/Liability Studies and should also be incorporated into regular reporting where possible.

For actively managed strategies, the investment program should target an Information Ratio of at least 0.5 to ensure that the associated risk is adequately compensated. However, when relying on relative measures of risk such as tracking error, it is critical to note that the tracking error calculation does not distinguish between strategies that increase absolute risk from those that reduce it. As such, relative measures should be evaluated in conjunction with the absolute level of risk borne by that asset class or investment strategy. For example, when an asset class or investment strategy is outperforming its stated benchmark, if it does so with substantially more absolute risk than the benchmark that investment may in some cases be deemed unsuccessful. Likewise, the underperformance of a stated benchmark with substantially less risk may in some cases be deemed a success.

Fund/Asset Class/Sub-Asset Class Performance

Each asset class is to be benchmarked by an associated index that describes, in general terms, the opportunity set and return characteristics associated with the asset class. For certain private or more complex asset classes the index should serve as a proxy for expected returns rather than an approximation of the actual investments that will characterize that component of the portfolio. Within each asset class, the Chief Investment Officer, in consultation with the Executive Director, shall adopt portfolio implementation strategies and investment styles to meet the overall investment objective of each asset class. Investment Staff shall report to the Board via the Investment Committee quarterly on the current status and historical performance of these implementation decisions.

The ~~primary-relative~~ performance objectives for the Fund ~~is-are~~ to obtain risk adjusted net returns equal to or greater than the stated benchmark, including incremental returns that are proportionate to the amount of additional risk (tracking error or other appropriate risk metric) assumed. Benchmark returns for composite allocations are weighted according to the Neutral Weights set forth in the SAA parameters. Specifically, the Fund's net return shall aim to meet or exceed the:

- **Passive Benchmark:** This benchmark is intended to reflect the investment mix prevailing among institutional peer portfolios as implemented via low-cost passive investable indices. Outperformance relative to this benchmark should represent the value added through decisions made in the Strategic Asset Allocation process and should be evaluated on a risk-adjusted basis. As such, this can be interpreted to show the value of pursuing an investment program and the Board's adoption of a highly diversified portfolio structure. The Passive Benchmark will be set as outlined below.

Major Asset Classes			
Asset Class	Weight	Benchmark Index	Bloomberg Ticker
Global Equities	60%	MSCI All Country World Net Total Return USD Unhedged	NDUEACWF
Global Fixed Income	40%	Bloomberg Global Aggregate Total Return USD Unhedged	LEGATRUU

- **Policy Benchmark:** This benchmark is intended to reflect a passive implementation of the neutral weights established by the Board during the SAA process, and outperformance should represent the value added by investment implementation and risk management activities. As such, this can be interpreted to show the value gained while implementing this Policy through a variety of activities including, but not limited to, manager selection, index selection and Fund positioning. The Policy Benchmark is a neutral weighted composite of the benchmarks selected to track the major asset classes in the Strategic Asset Allocation and as such shall also be known as the Fund's Strategic Benchmark. The Strategic Benchmark will be set as outlined below.

Asset Class/Sub-Asset Class Benchmarks			
Asset Class		Benchmark Index	Bloomberg Ticker
Global Equity		MSCI All Country World IMI Net TR	MIMUAWON
	US Equity	MSCI USA Net TR	NDDUUS
	DM Equity	MSCI World ex-US Net TR	M1WOU
	EM Equity	MSCI Emerging Markets Net TR	NDUEEGF
Real Assets		Neutral weighted blend of sub-asset class benchmarks	COAERSRA
	Real Estate	FTSE NAREIT Equity REITS TR	FNRETR
	Infrastructure	S&P Global Infrastructure Net TR	SPGTINNT
Fixed Income		Bloomberg Global Aggregate Bond TR	LEGATRUU
	US Treasuries	Bloomberg US Treasuries TR USD	LUATTRUU
	US Mortgages	Bloomberg US MBS TR USD	LUMSTRUU
	US Credit	Bloomberg US Credit TR USD	LUACTRUU

Multi-Asset	COAERS Passive Benchmark	COAERSPAS
Asset Allocation	COAERS Passive Benchmark	COAERSPAS
Commodities & Other	Bloomberg Commodity TR Index	BCOMTR
Cash	Bloomberg 1-3 Month US T-Bill	LD12TRUU
US Dollars	Bloomberg 1-3 Month US T-Bill	LD12TRUU
Other currencies	Bloomberg 1-3 Month US T-Bill	LD12TRUU

- **top quartile** of comparable peers, which is to be used as a measure of the performance realized from the prevailing opportunity set within the global capital markets.

The baseline time period for achieving these objectives is three years, though shorter and longer time periods should also be considered. These benchmarks should be reviewed annually for potential adjustment, with attention paid to the selection of the constituent indices for continued relevance, applicability, and investability. These benchmarks are not expected to change except to reflect substantial changes in either long-term market opportunities and/or asset allocations by the System or its institutional peers.

Similar to the total Fund, the performance objective for asset class and sub-asset class composites is to obtain risk-adjusted returns in excess of those of stated objectives and peer results. Active returns relative to the adopted benchmark returns are expected to exceed the cost of management and be proportionate to the amount of risk assumed.

Board Approved Policy

Subject: Investment Implementation Policy

Review Committee: Investment Committee

Date Implemented: December 11, 2018

Date Updated: ~~June 29~~ March 31, 2022 [effective April 1, 2022]

Signature of Chairperson:

Chris Noak

Revised
~~June 29, 2021~~ March 31, 2022

Investment Implementation Policy (IIP)

for

City of Austin Employees' Retirement System (COAERS)

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**CITY OF AUSTIN EMPLOYEES' RETIREMENT SYSTEM
INVESTMENT IMPLEMENTATION POLICY (IIP)**

I. PURPOSE, SCOPE AND REVISION

This Policy aims to support the ability of the Board of Trustees and Investment Staff of the City of Austin Employees' Retirement System (the "System") to carry out their responsibilities with respect to selection, contracting, monitoring, and retention of Managers. This Policy is intended to complement the Investment Policy Statement (IPS) and is hereby incorporated into that document by reference. The Board will formally review this Policy at least annually to determine whether it remains appropriate considering the Board's investment philosophy and objectives, changes in the capital markets, and/or Fund structure. Any revisions to this document will be promptly supplied to the appropriate parties promptly in written format.

This Policy and all addenda hereto be construed and administered such that they comply with all applicable federal and state laws and regulations, as such may be amended from time to time. The Executive Director is authorized to approve variances from the policies set forth herein in furtherance of such compliance. The Executive Director is also authorized to update this Policy for strictly administrative items subject to approval by the General Counsel. The Executive Director shall report any variances or updates to the Board via the Investment Committee at its next quarterly meeting.

II. STRATEGY AND PHILOSOPHY

The Board has granted authority to the Investment Committee to oversee Managers and make recommendations to the Board regarding the System's Premier List. The Board believes that a superior process for developing and maintaining these relationships is critical to achieving the System's strategic goal of consistently delivering results that are in the top quartile of peers. In this regard, the Board intends this process to deliver long-term performance that is superior to the traditional approach to manager selection that focuses heavily on recent returns relative to a benchmark.

The Fund will develop long-term, mutually beneficial partnerships with Managers that meet or exceed the objectives of their specific mandates. To that end, the Board supports disciplined and rigorous processes for selection, monitoring, and retention of Managers, processes that are to be set forth in greater detail within internal Investment Staff procedures.

Implementation decisions should be made with particular attention to the Board's stated Investment Beliefs regarding the potential benefits of diversification and the significant impact of costs. Within that context, implementation of the investment strategy and Strategic Asset Allocation parameters set forth in the IPS may be carried out through:

-
- both public and private market vehicles, with public markets representing the default given their lower cost structure and greater liquidity. Specifically, private markets investments should be expected to add meaningful amounts of diversification to the Fund and/or earn returns that compensate at least fairly for the incremental risks (such as illiquidity, governance, etc.) that such structures typically entail.
 - through both active and passive strategies, with passive strategies representing the default option given their lower cost structure and greater liquidity. Specifically, active management should be expected to add meaningful amounts of diversification to the Fund and/or earn returns that compensate at least fairly for the incremental risks (including tracking error, turnover, etc.) that active strategies typically entail.
 - through both pooled vehicles and separate accounts, with separate accounts representing the default option given their greater transparency, customization, and liquidity. However, it is recognized that in some strategies and geographies (such as emerging markets) pooled vehicles may offer significant advantages over separate accounts such that they become the preferred implementation approach.

While the System may find great strategic benefit and economies of scale in concentrating its assets with certain managers, such concentration also carries potential risks. In active strategies no more than 15% of the System's investments shall be managed on a permanent basis by a single investment firm and for passive index strategies no more than 30%. Under no circumstance may any Manager oversee more than 30% of the System's investments. The System's investments shall not permanently constitute more than 20% of any firm's assets under management within the asset class managed for the System. Quarterly reporting on these restrictions shall be provided by Managers and presented by Investment Staff to the Board via the Investment Committee.

III. FIDUCIARY CONDUCT

In all cases, relationships with Managers should seek to mitigate agency problems and conflicts of interest that prevail in the financial services industry. Specifically, the use of performance-based contracts should be considered whenever possible. Conflicts of interest shall be disclosed at least annually or as required in accordance with the System's Ethics Policy. The process for selecting, monitoring, and terminating Managers shall protect against improper and/or unethical behavior including bribery, corruption and other contact between System representatives and Managers intended to influence the outcome inappropriately. Direct inquiries by Managers to individual Trustees regarding the System's investment program will be referred to Investment Staff.

IV. MANAGER RESPONSIBILITIES

The Board, acting through its Investment Committee and with advice from Investment Staff and its Investment Consultant(s), hires Managers to carry out its duties to implement the System's investment program. The terms, provisions, and

requirements set forth in this Policy, the IPS, applicable laws (which shall include US sanctions programs), relevant fund documents, and the agreement(s) executed by the Manager with the System (sometimes referred to herein as the “IMA”) establish the requirements governing the investment of System assets. Such requirements are sometimes collectively referred to as the “Guidelines” hereinafter.

The execution and delivery of an Investment Management Agreement (IMA) or other agreement approved by the Board by the Manager is an acknowledgement by the Manager that it has received the IPS and this policy, and that it will fully comply with the applicable terms and provisions therein as well as those of the IMA and all other Guidelines. No deviation or exemption from these requirements is permitted unless specifically authorized by the Board.

Within these Guidelines, Managers with live mandates are granted full discretion to manage the assigned Portfolio(s) by selecting specific investments as appropriate, either in a pooled vehicle or separate account as agreed with the System. Within this context of the strategy or strategies it is assigned, each Manager is expected to:

- maintain a consistent philosophy and strategy,
- perform well on a risk-adjusted basis versus peers pursuing a similar strategy,
- add value net of all costs, and
- provide investment management in accordance with the Guidelines.

Each Manager with a live mandate shall comply with all Annual and Quarterly Reporting Requirements set forth in Appendix III. Each Manager shall promptly inform the Investment Staff and Investment Consultant regarding all significant matters pertaining to its assigned mandate(s).

Each Manager with a live mandate shall maintain the insurance coverage established in their IMA with the System. If this insurance coverage lapses or violates established minimums, the Manager shall promptly notify the Investment Staff and Investment Consultant.

Each Manager with a live mandate is responsible for monitoring transaction costs and settlement processes. Each Manager is hereby authorized and empowered to vote proxies unless this delegation is revoked by the System, and all such voting shall be performed in good faith and for the exclusive benefit of the System participants and beneficiaries.

The Board via the Investment Committee shall be kept informed by the Investment Staff and Investment Consultant of major changes in investment strategy, portfolio structure, market value, strategy/fund assets, and other matters. The Board via the Investment Committee shall also be informed regularly of significant changes in the ownership, affiliation, organizational structure, financial condition, or professional staffing of the Manager’s organization.

V. MANAGER SELECTION

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 each search from scratch. As such, the

Investment Staff, in coordination with the Investment Consultant, will develop and maintain a “Premier List” of 3-4 viable managers (including at least one passive index option, which for Multi-Asset shall include allocating back to the Fund) for potential inclusion within each sub-asset class 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(s), including an emergency termination by the Executive Director as described in this Policy.

Mandate specification. The evaluation of potential Premier List candidates will begin with Investment Staff working with the Consultant to outline the specific needs of the particular mandate for which a Manager would be considered. Key characteristics to be articulated include the portfolio role, potential mandate size, and an evaluation of the likelihood of success for active managers within these mandates. For example, Investment Staff should evaluate the median universe returns within an asset class or strategy to determine whether a typical manager adds value net of all costs, which can in turn inform the extent to which active managers should even be considered.

Initial diligence. Once the specifications of the mandate have been established, available managers should be sourced and filtered from a variety of sources, including:

- Direct sourcing from inbound inquiries, conferences, etc.
- Commercial databases such as eVestment, Preqin, Bloomberg, etc.
- Investment Consultant diligence materials and research

This pool of managers should be screened on minimum performance metrics using performance analysis, Investment Consultant analytics, and philosophical agreement on investment style. Strategies that look promising will be subject to more detailed analysis, including via the use of statistical tools to the maximum extent possible to capture all available quantitative information available from the available data. For example, the analysis should look beyond the simple time period performance data and consider the trajectory of those returns over time using techniques such as CUSUM analysis. Managers should also be evaluated for fit within the existing portfolio using historical analysis of performance, risk measures, factor exposures, etc.

Finalist evaluation. Potential finalists should complete a strategy-specific Due Diligence Questionnaire (DDQ) on matters that shall include, but not be limited to:

- Investment style/process
- Historical risk and return
- Factor exposures
- Assets under management
- Organization/personnel
- Fees and other costs
- Trading capabilities
- Conflicts of interest

Onsite diligence with potential finalists shall be conducted according to the policies set forth in Appendix II and as supplemented by internal policies. Following the completion of onsite diligence that it deems successful, Investment Staff is authorized to negotiate an Investment Management Agreement (or other fund

documents as appropriate) for the potential mandate as a means to establish the fees and other terms under which an investment could be made by the System.

Review by IC/Board. Investment Staff shall propose successful candidates for the Premier List to the Investment Committee for potential recommendation to the Board, with all proposals including a proposed neutral and maximum allocation. Once approved by the Board, transitions between managers on a Premier List will typically occur with prior notification to the Investment Committee except in the cases of risk management or an emergency as determined by the Executive Director on the advice of Investment Staff and in consultation with the Investment Consultant. If the allocation to a manager breaches the maximum approved by the Board on a quarter end report, Staff shall report this variance to the Investment Committee at its next regularly scheduled meeting as well as any recommendations to bring the allocation to within guidelines. In the event of a transition, the Executive Director will notify the Board (1) by email within one business day of initiating the transition and (2) in writing at the next quarterly meeting of the Investment Committee. In all cases the potential benefits of transition must be weighed against the costs, including explicit transaction costs such as commissions and market impact as well as opportunity costs such as Staff time and focus.

Investment Staff shall also propose any removals from the Premier List to the Investment Committee for potential recommendation to the Board. The Premier List for each asset class shall be presented to the Investment Committee for ongoing review at least annually.

VI. MANAGER CONTRACTING

General investment guidelines are described within the asset class guidelines contained in this Policy and the IPS. In addition, guidelines more specific to a Manager's mandate may be appropriate and will be documented in the Manager's contract, side letter, or other agreements with the System. The Board may delegate to the Executive Director authority to contract with Managers subject to approval of the General Counsel and/or Investment Counsel regarding the form of the agreement and its consistency with Board intent.

In advance of funding, consensus should be reached among the Investment Staff, Investment Counsel, and the Manager regarding specific parameters to be contained in the Manager's contract which will include:

- authority of the Manager
- specific descriptions of the mandate
- relevant restrictions reflecting the risk management policies
- benchmarks and performance standards
- communication and reporting requirements
- proxy voting responsibilities
- fees
- termination clauses

The IPS, IIP and subsequent revisions must be referenced and become a part of all agreements related to separately managed accounts.

While managers will typically be compensated based on assets under management, the System may also enter into performance-based fee agreements with managers as a means to enhance alignment. While each specific contract will be the ultimate authority regarding the actual compensation arrangement, the following features should be consistent in any such contract unless otherwise determined to be favorable to the System:

- A **base fee** will be paid quarterly to the manager regardless of performance.
- A **percentage sharing formula** shall calculate the dollar amount of manager's net outperformance (net of the base fee) over the assigned benchmark for the determined period subject to a highwater mark, hurdle rate and/or loss carryforward as appropriate.
- A **performance fee ceiling** expressed in basis points that will not be exceeded regardless of performance.
- A rolling **time horizon** period for which the returns of both the Portfolio and the benchmark will serve as the basis for the performance calculation.

The Custodian's pricing of the Portfolio will serve as the primary basis for calculation of the specific Portfolio's market value for fee calculations and performance by Investment Staff and Investment Consultant. If such data from the custodian is unavailable or unreliable, verifiable manager data may instead be used as the basis for these calculations. Publisher data will determine the performance of the benchmark. If a Manager has a dispute with the Custodian's pricing, the Manager will express the discrepancy in writing to the Custodian, Investment Staff, and the Investment Consultant. Investment Staff will work with the Manager to resolve any fee calculation disputes.

VII. PORTFOLIO GUIDELINES

All portfolios will be invested exclusively as described here and in the Permissible Investments section. Managers are expected to avoid market-timing decisions by being fully invested at all times except as noted below. Managers will acknowledge that the effects of cash holdings on performance will be included for evaluation purposes.

Strategy Consistency

The most important feature any individual manager brings to the multi-manager diversification approach of the Fund is strategy adherence. Fundamental portfolio characteristics and strategy benchmark comparisons will be continually monitored for adherence to the Manager's assigned strategy.

For equity managers, the market capitalization of each stock in the portfolio shall be within the market capitalization range of the assigned benchmark (e.g., large cap, small cap, etc.) at the time of purchase. If more than 10% of aggregate holdings of the portfolio on a market value basis fall outside the capitalization range of the assigned benchmark for a period of over 30 days, written notification and justification shall be provided to Investment Staff and Investment Consultant.

For portfolios managed within a commingled or mutual fund structure, special reporting and notification arrangements may be granted by the Board on a case-by-case basis (e.g., notification of exception as of quarter-end, etc.).

Currency management within individual portfolios is at the discretion of the active managers with international exposure wherever permitted by the Guidelines.

Diversification

Appropriate diversification of the securities held in the Portfolio among sectors and issuers within the context of the mandate is the responsibility of the Manager. The Manager shall comply with the concentration limitations as presented in this Policy and the Guidelines. SEC Rule 144(a) securities shall be limited to no more than 5% of the portfolio at market value of any manager's portfolio.

Eligible Holdings

Managers shall not initiate any transaction that is in violation of this Policy or the Investment Policy Statement. In the event that changes in market conditions beyond the control of the Manager (e.g., changes in benchmark construction, change in credit rating, and change in security prices) occur that cause the Manager's Portfolio to violate these guidelines, the Manager shall promptly notify Investment Staff and the Investment Consultant.

If the Manager (as a fiduciary) deems it in the best interest of the Fund to remain in violation of the guidelines, the Manager shall prepare a written recommendation to Investment Staff stating as such. Following the receipt of the written Manager recommendation, Investment Staff shall accept, amend, or reject the recommendation and provide notification to the Board via the next quarterly meeting of the Investment Committee. The Manager shall be notified whether the recommendation has been accepted, and if it is not accepted the Manager will be provided with written instructions. During the period between the occurrence of the violation and the notification of the determination, the Manager (as a fiduciary) shall act as it deems appropriate in the sole interest of the System.

Equity Portfolios

Equity portfolios will be invested in publicly traded equity securities or via strategies that otherwise seek to achieve equity-like levels of risk. Initial Public Offerings are permissible investments, but restricted or letter stock are not permitted. Portfolios invested in publicly traded equities are to be fully invested (defined as less than 5% in cash equivalents) at all times, though cash may be held briefly between the time when a security is sold and a decision is made as to which new security should be purchased. If a manager remains less than fully invested for more than 30 days, the manager shall notify Investment Staff and the Investment Consultant in writing.

Fixed Income Portfolios

Fixed income portfolios will be invested in publicly traded fixed income securities unless otherwise authorized by the Board. Fixed income Managers may be exempted from the requirement to not have cash exceed 5% of the Portfolio value to allow the use of "barbell" strategies in constructing a fixed income Portfolio.

Fixed income securities shall not be rated lower than investment grade (Baa3 by Moody's or BBB- by Standard & Poor's or Fitch) by any of the three designated rating agencies unless authorization is granted to a Manager by the Board or the mandate provided to a Manager specifies otherwise. Split-rated securities in which the middle rating is below investment grade shall not comprise more than 5% of the market value of any Manager's Portfolio unless specific authority has been granted.

The issues of individual entities rated AAA to Aa3 (Moody's) or AA- (S&P, Fitch) may have a 7% position at market value. Issues of individual entities rated below Aa3 (Moody's) or AA- (S&P, Fitch) may have a 3% position at market value.

The ratings criteria and percentage limit requirements do not apply to direct obligations of the U.S. Government and its agencies (including GNMA, FNMA and FHLMC) as defined in the Permissible Investments section of this Policy, but the securities issued by any one issuer shall not otherwise, in the aggregate, exceed the foregoing limitations.

If specific Managers are given latitude to invest in securities issued by non-U.S. entities, the same quality restrictions shall apply.

Money market instruments shall have a minimum quality rating comparable to an A3 (Moody's) or A- (Standard & Poor's and Fitch) bond rating and commercial paper shall be rated A1/P1 unless held in a diversified short-term commingled fund.

VIII. PERMISSIBLE INVESTMENTS

Commingled vehicles including mutual funds and limited partnerships must always be invested in accordance with the relevant fund documents such as the prospectus, limited partnership agreement, etc. Managers of such investments must also comply with side letters or other such agreements with the System and promptly notify Investment Staff of any deviations.

For portfolios that are implemented in the public markets, the investments listed below are specifically permitted under this Policy. They are categorized according to the asset allocation guidelines in this Policy and the Investment Policy Statement.

Unless given authorization in writing, managers of public markets portfolios are allowed to invest only in the investments listed below for the asset classes for which they have been retained and, when included in this Investment Policy or the relevant agreement with the System, the assigned benchmark.

Global Equities

- Common Stocks
- Preferred Stocks
- Exchange Traded Funds (ETFs)
- Equity Futures
- Options on Equity Indices, Futures and ETFs

Fixed Income

- Domestic and Yankee Bonds
- Mortgages and Mortgage-Backed Securities
- Asset-Backed Securities
- Global Corporate Bonds
- Global Sovereign Debt
- Fixed Income Futures
- Interest Rate Futures

Cash & Equivalents

- Cash on deposit
- Cash-Equivalent Securities
- Money Market Funds, Bank STIF and STEP Funds
- Foreign currency deposits or futures

Real Assets

- Real Estate Investment Trusts
- Infrastructure Equities
- Options on Fixed Income Indices, Interest Rates, Futures and ETFs
- Digital currencies backed by a sovereign entity

Multi-Asset

- Assets allowable in other asset classes
- Commodity Futures

1. The above asset types may be held in separately managed accounts as well as commingled funds. If held in a Board-approved commingled fund or mutual fund, the prospectus, organizational document, or Declaration of Trust (including the associated list of permissible investments) takes precedence over this document solely to the extent of any conflict with this document, unless provided otherwise in a written agreement between COAERS and the Manager. If held in a collective investment trust, the terms of the relevant group trust governing such collective investment trust shall be incorporated by this reference and become a part of the System's plan solely with respect to the management of the assets held by such collective investment trust.
2. No investment may be made that is prohibited by the Internal Revenue Service, the Department of Labor, or other federal or state law.
3. SEC Rule 144(a) fixed income securities are allowable but private placement bonds are not.
4. Cash equivalent securities are defined as any fixed income investment with less than one year to maturity or reset date and may also include fully collateralized cash & carry futures strategies with a duration of less than one year.
5. Staff is authorized to select Money Market Funds that offer a constant net asset value (CNAV) and a minimum quality rating comparable to A3 (Moody's) or A- (S&P or Fitch).
6. The following portfolio concentration limitations will apply.
 - The securities representing equity of any one company shall not exceed 6% of the market value of any manager's Portfolio.
 - Fixed income securities of any corporate issuer may not exceed 6% of the Portfolio at market. This restriction also applies to asset-backed securities, non-agency mortgage-backed securities (including commercial mortgage-backed securities) and taxable municipals. This restriction does not apply to any agency mortgage-backed securities (including agency commercial mortgage-backed securities).
 - The total holdings of a federal agency-issued mortgage-backed security of the same coupon and maturity series of the same agency (i.e., issuance by issuance as identified by the same CUSIP) shall not exceed 20% of the Portfolio at market (such securities include, but are not limited to GNMA's, FNMA, and FHMLC).

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- The direct debt of the US government (Treasury bonds, TIPS, bills and notes) and its agencies (including any mortgage-backed securities issued or guaranteed by GNMA, FNMA and FHLMC) shall not be restricted as a percentage of the Portfolio.
7. Quantitative or Enhanced Index strategies may deviate from the above concentration limitations provided the manager is following a pre-established process and relative position limitation (i.e., index weight plus 1%) authorized in the IMA or specifically granted as an exception within this Policy. The manager of passive index replication strategies may also deviate from the above concentration limitations to the extent the underlying index does. The Manager shall monitor the account and shall promptly inform Investment Staff and Investment Consultant if the concentration restriction noted above is exceeded regardless of authorization or specifically granted exception.
 8. Equity managers may invest in depository receipts if the underlying security is permissible within these guidelines and the investment does not expose the Fund to any greater risk than the risk from holding the underlying security.
 9. Domestic equity managers can invest in dollar-denominated, SEC registered stock of foreign domiciled companies traded on the NYSE, AMEX or OTC markets. Concentration restrictions for these securities are the same as for any other equity security.
 10. Managers may be hired to invest primarily in closed-end and open-end funds as approved by the Board. In such accounts, closed-end and open-end funds are permissible holdings.
 11. Derivatives are permissible for the purpose of equitizing cash (e.g., an overlay program, reducing cash exposure, or in Portfolio transitions and rebalancing activities).
 12. Managers may be authorized to manage portfolios that gain exposure to asset classes by investing in futures and other derivative instruments.
 13. Securities are not allowed that use any form of leverage in which interest or principal position is tied to anything not specifically allowed in this Investment Policy or the IMA unless otherwise specifically authorized by the Board.
 14. The use of futures to invest in commodities shall include the ability to take delivery of warrants (i.e., legal document of title) as may be advantageous to the Fund.

IX. REPORTING, EVALUATION AND MONITORING

Manager Reporting

Managers with live mandates are required to assist the System in monitoring the Portfolio(s) and applicable data for compliance with the Guidelines. The form, content, and organization of the required report(s) for each Manager shall be presented as detailed in Appendix III. Managers shall immediately notify Investment Staff and the Investment Consultant of any changes in the primary personnel assigned to the

Portfolio, who shall in turn provide notification to the Board via the Investment Committee.

Managers that do not currently have live mandates will assist the System in monitoring the performance of the relevant strategy by proactively supplying regular updates to Investment Staff and Investment Consultant.

All Premier List Managers may be required to provide additional information as may be deemed necessary by the Board, the Investment Committee or Investment Staff.

Valuation Practices

Liquid assets (e.g., publicly traded securities held in SMAs) shall be valued using custodian pricing based on public market data unless an alternative pricing source has been documented in the agreement(s) executed by the Manager with the System.

Less liquid assets (e.g., commingled funds with daily NAVs, etc.) shall be valued using custodian pricing based on third-party sources unless an alternative pricing source has been documented in the agreement(s) executed by the Manager with the System.

Illiquid assets (e.g., limited partnerships and other funds that do not strike a daily NAV, etc.): shall be valued consistent with industry best practices and reported by funds on at least a quarterly basis. The scope of the valuation work must be sufficient to demonstrate that the value of the underlying assets has been appropriately determined. These practices should include but are not limited to:

- Documenting and following their internal written valuation policies.
- Using appropriate, established, industry-specific valuation techniques.
- Notifying Investment Staff and Investment Consultant of any changes to internal valuation policies.
- Ensuring oversight, review, and approval is independent of the portfolio manager.
- Reconciling any significant variance(s) from the prior appraisals.
- Providing sufficient documentation for auditors to re-compute key calculations

If an external valuation firm is used to conduct any part of the appraisal process, they must be performed in accordance with the appropriate authoritative standard for the country in which the asset is domiciled. Any material differences between external valuation and the valuation used in reporting by the Funds, as well the reason for the differences, must be disclosed to Investment Staff and Investment Consultant.

Investment Staff is required to confirm compliance by such funds with appropriate valuation procedures on an annual basis.

Performance Evaluation

Performance evaluation is designed to monitor the process of making manager selection decisions, to test the continued validity of the resulting decisions, and to develop a well-informed assessment of the results achieved related to the risks taken.

Comprehensive reviews will include an appraisal of the Manager's historical performance, current investment strategy or style, and other issues related to the

Manager's organization, personnel, investment philosophy and process. Evaluations may be made using the criteria below and other applicable standards:

- Against appropriate benchmark indices on both a risk-adjusted and nominal basis,
- Against peers within their style groups if data is available,
- Adherence to their stated investment styles,
- Adherence to the IPS, IIP and relevant Guidelines, and
- Against the specific expectations attributed to them within the framework of the System's Strategic Asset Allocation process and parameters.

Passive strategies are expected to produce gross of fees returns that match those of their assigned benchmark (and before accounting for any securities lending income) with low amounts of tracking error.

For actively managed strategies, the total return of portfolios should rank above the peer median on a risk-adjusted absolute and relative basis. Such mandates are to exceed, after fees and long-term on a risk-adjusted basis, the total return of the assigned benchmark. Actively managed mandates should target an Information Ratio of at least 0.5 to ensure that the associated risk is adequately compensated.

When relying on relative measures of risk to evaluate actively managed strategies, it is critical to note that tracking error calculations do not distinguish between strategies that increase absolute risk from those that reduce it. As such, relative measures should be evaluated in conjunction with the absolute level of risk incurred by that strategy. For example, a strategy that has outperformed its stated benchmark with substantially more absolute risk than the benchmark may in some cases be deemed unsuccessful. Likewise, underperforming a stated benchmark with substantially less risk may in some cases be deemed a success.

When performance or organizational issues arise for a specific mandate or Manager, Investment Staff should be in contact with the Manager on a regular basis until the issues are resolved. On a timely basis, normally quarterly, but not less than annually, the Board via the Investment Committee will review actual investment results achieved by each live mandate to determine whether:

1. Each Manager's strategy remains consistent with the Guidelines and the process represented by the Manager.
2. Managers performed in accordance with the Guidelines and objectives set forth herein and satisfactorily when compared with peers and assigned benchmark indices.
3. On an annual basis, Investment Staff and Consultant will review the Manager proxy voting procedures and proxy voting records as submitted in accordance with this Policy; and
4. On an annual basis the Investment Staff and Consultant will review commissions paid, commission rates incurred, and brokerage firms used by Managers. Compliance with specific directives regarding commission cost management will be regularly reviewed.

Shorter term examinations of the performance of each mandate will focus on strategy adherence, peer comparisons and assigned performance benchmarks.

Investment Staff and Investment Consultant, in consultation with the Executive Director, shall on a quarterly basis provide to the Board in writing a summary of the Fund's performance at the mandate level. This report shall include a comparison to performance benchmark objectives as well as the investment performance of other appropriate funds. Both absolute and relative results will be considered in the evaluation of the investment performance by Managers in the execution of the mandates they are assigned.

Staff Reporting

At least annually Investment Staff shall provide a report to the Board via the Investment Committee regarding compliance with the provisions regarding manager assets under management with this Policy. Investment Staff shall also provide a report to the Board via the Investment Committee of investment costs including management fees and commission costs not less than annually.

A comprehensive review of each Premier List Manager, both with and without live mandates, is to be conducted and documented at least annually. These reviews shall include quantitative as well as qualitative factors and should incorporate an onsite visit at least once every three years. The results of these reviews, any ad hoc review, and any resulting recommendations will be reported to the Board via the Investment Committee.

X. RETENTION

Manager retention decisions can have the same potential impact on performance as the initial selection of the Manager, and as such should be afforded the same degree of attention. As in the search process, a discipline is needed which will minimize the probability of retaining an underperforming Manager that will continue to underperform (i.e., a Type 1 error) or terminating a currently underperforming Manager just before a period of strong performance (i.e., a Type 2 error). Statistical methods shall be employed to maximize the probability of making sound decisions, recognizing that such decisions are probabilistic in nature and rooted in inherent uncertainty across all feasible time horizons.

Investment Staff shall maintain a Manager Watch List for the purpose of ensuring that concerns regarding any Manager with a live mandate are appropriately recognized, addressed, and resolved. At the discretion of the CIO based on written internal procedures and in consultation with the Investment Consultant, a Manager may be included on the Manager Watch List. The contents of this list will be reported to the Investment Committee at each regular meeting. Performance for each these Managers will be subject to additional scrutiny until either (1) the Investment Staff removes the Manager from the Watch List, or (2) a recommendation to terminate the mandate(s) assigned to the Manager and/or remove the Manager from the Premier List is made to the Board via the Investment Committee.

In addition to quantitative factors, adverse qualitative events may be considered a reason to include a Manager on the Manager Watch List. Examples include, but are not limited to:

- Significant changes in firm ownership and/or structure,
- Loss of one or more key personnel,
- Significant loss of clients and/or assets under management,
- Shifts in the firm's philosophy or process,
- Lack of adherence to best execution policies,
- Significant and persistent lack of responsiveness to client requests,
- Chronic violations of this IPS or guidelines, or
- Any other material issue of which Investment Staff and/or Consultant become aware.

Each situation should be handled on a case-by-case basis. Under certain circumstances, the Executive Director may exercise the authority granted within this Policy and the IPS (see Roles and Responsibilities) and act to terminate the mandate(s) assigned to a Manager in accordance with this section and transfer those assets to other manager(s) on the Premier List.

Investment Staff and Consultant shall provide notice to the Board via the Investment Committee when it is judged unlikely that a Manager will achieve the System's performance objectives for its mandate(s). The Board shall then require further action which may include, but not be limited to, special reporting, onsite diligence, or termination. Investment Staff shall notify the Custodian of potential action prior to termination of any live mandate(s), and upon termination shall notify the Custodian as soon as possible to eliminate the Manager's authority to trade the account(s) as appropriate.

Managers are expected to maintain a robust compliance system that tests compliance with the Guidelines on a daily basis, and ideally to do so on a pre-trade basis to ensure that they are in accordance with the Guidelines at all times. However, in the event of a violation of any Guideline(s), Managers must notify Investment Staff within one business day of detection of the violation and must provide a written plan for curing that violation or request an exception specific to the violation, subject to approval by the CIO.

To the extent the criteria above are not met, Managers may be removed from the Premier List and the associated mandate(s) terminated. Notice shall be given pursuant to any agreements between the Manager and the System.

In rare cases where it would be imprudent to delay termination of a Manager's mandate(s) pending formal approval, the Board delegates to the Executive Director the authority to terminate a Manager's mandate(s) and/or initiate redemption from a Fund in which the System is invested. Such termination(s) or withdrawal(s) must be based on recommendation by both the CIO and Investment Consultant, supported by proper documentation and, at the discretion of the Executive Director, reviewed by Investment Counsel and/or General Counsel.

If a Manager is terminated in accordance with this section, the Executive Director is authorized to act on the following, as appropriate, based on recommendation by the Investment Staff and Consultant:

- Transfer assets from the terminating Manager to another Premier List Manager under contract with the System; or
- Transfer authority to manage the assets to another Premier List Manager under contract pending selection of the replacement Manager.

If necessary, the Executive Director is authorized to negotiate a contract with the Manager receiving the assets to reflect the revised scope of their responsibility and related fees in regard to the assets. In determining the proper course of action, consideration will be given to the actual asset and sub-asset allocations relative to target allocations, impending portfolio structure changes, and Investment Manager exposure. If any such action affects Board-approved asset and sub-asset allocation targets, the Board will ratify this action or otherwise direct Investment Staff at the next scheduled Board meeting.

If the Executive Director terminates a Manager's mandate(s) or initiates a redemption process under these circumstances, the Executive Director will immediately notify the Board regarding such action and provide a full report on the matter at the next scheduled Board meeting.

XI. TRANSITION MANAGEMENT

One or more Transition Managers (TMs) may be retained by COAERS to assist in the transfer of assets from one mandate to another. In this capacity TMs may serve as a liaison between the Investment Staff, the Custodian, the Manager distributing assets, and the Manager receiving assets. A key role of TMs is to facilitate clear communication between all parties, work to minimize market impact, trading costs, and opportunity cost. Transitions may occur either within an asset class or between asset classes.

The Executive Director and CIO, with advice from the Investment Consultant, will determine the most efficient and prudent manner to perform the transition, including determining whether to use a Transition Manager, the legacy Manager(s), or the target Manager(s) to effect the contemplated asset restructuring. If the use of TMs is deemed appropriate, Investment Staff will select a Transition Manager from the Board's pre-approved list of TMs after review of pre-trade analysis submitted by the TMs, as well as each Transition Manager's expertise for the asset class(es) to be transitioned.

The Executive Director is authorized to engage a Transition Manager on the Board's pre-approved list of Transition Managers under the terms of a master agreement executed with each such Transition Manager. Such agreements shall require that TMs:

- be a registered investment advisor under the Investment Advisers Act of 1940 as amended (unless properly exempted from registration by the SEC) or

-
- otherwise regulated by an appropriate governmental regulatory oversight organization (unless exempt from such registration requirement),
- act as a fiduciary to the System and not delegate such fiduciary responsibility, and
 - provide agency-only execution services.

TMs are specifically authorized to utilize derivatives to manage exposures and risks efficiently in any transition.

Following the completion of each transition event, Investment Staff will report to the Board on the results of the selection process as well as the estimated and actual costs of the transition. The Transition Manager will provide a detailed post-trade analysis to Investment Staff., which Investment Staff will summarize for the Board as needed. On a periodic and as-needed basis, Investment Staff and Investment Consultant will provide analysis and a written opinion to the Board as to the status of the Board's pre-approved list of Transition Managers, the qualifications and performance of its members, and other relevant information.

XII. PROXY VOTING

Active voting of proxies is an important part of the investment program and a key fiduciary responsibility of the System. For separately managed accounts, proxy voting is generally delegated to Managers and will be authorized via the Manager's contract to represent COAERS prudently on issues of corporate governance regarding the portfolio. Records of proxy votes will be maintained by the Managers and submitted to Investment Staff and/or external service providers on request or at specified intervals. However, should the Board decide that the interests of the Fund are best suited by voting according to a different set of rules, it may revoke this delegation at its discretion.

Investment Staff will monitor the proxy voting practices of the Managers. External service providers may be retained by the Board to assist Investment Staff in its monitoring efforts. This monitoring will be coordinated with each Manager to reasonably assure the Investment Staff that Managers are fulfilling their fiduciary responsibilities with respect to proxy voting. Investment Staff will provide a proxy voting summary report for separately managed accounts to the Executive Director, on an annual basis as soon as practical after fiscal year-end. At a minimum, the summary report will contain, for each applicable Manager, the number of ballots cast, the number of issues voted upon, and percent of issues voted with management, against management and designated as abstaining.

Appendix I: Summary of Specific Manager Guidelines

For the purposes of performance evaluation, current COAERS Investment Managers are assigned benchmark indices and peer universes. They are also given tracking error budgets to achieve target levels excess return above the assigned benchmark net of fees. These guidelines are to be described in the relevant Premier List document that is reviewed by the Board at least annually.

Managers are permitted to deviate from the Guidelines of the IPS and this Policy only if the Board approves the deviation in writing. Below is a current listing of such approvals:

1607 Capital Partners – International Equity

In that 1607 invests in listed closed-end funds which are typically diversified equity portfolios, the portfolio concentration limits for individual holdings shall be 20% at both cost and market. Index exchange-traded funds (ETFs) used for the purpose of achieving international equity market exposure (limited to country, region, or overall index trackers) as part of the initial funding of the account or subsequent additions to the account shall not be subject to portfolio concentration limitations.

Additionally, due to the need to own such funds at times when opportunities within the closed-end fund universe are limited, the portfolio concentration limit for individual ETFs shall be 10% at cost. In extreme cases where the manager feels the necessity to have more than 10% in any single ETF, approval by Staff (as delegated by the Board) would be required. If aggregate ETF exposure reaches greater than 30% of the market value of the portfolio, 1607 will provide timely written notification to COAERS.

Furthermore, in recognition that some of the closed-end funds in which 1607 invests may employ leverage in their process, the 5% cash limitation is raised to 10%.

Finally, in recognition that the market capitalization of the underlying holdings of closed-end funds may not be timely available to 1607, requirements relating to market capitalizations shall be modified to require monthly estimates of capitalization ranges.

Mellon – Dynamic US Equity (DUSE) and Dynamic Equity ex-US (DEXUS)

These strategies are authorized to invest in futures and other derivative instruments to carry out the strategy as described in the relevant fund documents.

Appendix II: Onsite Diligence

Onsite diligence is considered a key part of the System's investment decision making process to ensure that proper initial and ongoing due diligence is conducted with respect to investment related service providers and to fulfill the fiduciary responsibilities of the System's fiduciaries. The purpose of onsite diligence is to provide a means for these fiduciaries to assess the current state of the process, personnel, operations and facilities of both retained and prospective investment service providers including, but not limited to, investment managers, custodians, and investment consultants.

A primary goal of these visits is to provide valuable due diligence information and insights, which are often best gathered by an onsite examination of the offices of Managers, Custodians, and other service providers. While meetings conducted in the System's offices may provide some level of information regarding current or prospective investment service providers, full due diligence is best achieved by conducting onsite diligence to verify information received and to inform the investment process further. Though onsite diligence is best conducted in person and at the location of the vendor, virtual diligence may be substituted as necessary during times of emergency such as pandemics or other extenuating circumstances.

Common examples of areas of onsite appraisal would include consistency of investment philosophy, management's ongoing commitment to the business, staffing levels and turnover, technology infrastructure, and the suitability of facilities. Communications with principals and staff may also seek to determine the degree of consistency of between what has been stated in any representations made to the System's representatives and what the diligence may reveal, including compliance with Investment Policy.

Routine onsite diligence will be conducted with each retained service provider every five years, or more frequently if necessary. These visits will be planned at the convenience of the diligence team. Onsite diligence will be conducted to allow the team to review the firm's office procedures and practices. It is to be understood by all involved parties that these visits are for the purpose of conducting formal due diligence rather than providing a venue for receiving marketing presentations.

Other basis for onsite diligence would include diligence on a prospective service provider and to assess concerns and/or problems with performance, staffing, or other significant issues. Onsite diligence may also be conducted when traveling, for any reason, when nearby a service provider's office(s).

Common areas of inquiry during onsite diligence would include:

- visit with all persons involved with the COAERS portfolio
- visit with all firm principals in the office at time of diligence
- visit with custodian bank liaison
- evaluate the firm's current client roster
- meet trading staff and review trading process
- attend a meeting of the firm's investment committee
- review current issues in markets and their impact on the COAERS portfolio

-
- discuss other products available through the firm
 - examine the firm's other lines of business

The Chief Investment Officer and the Investment Consultant should be included on all onsite diligence to provide continuity. Investment Staff shall prepare a written report summarizing the diligence findings for review at future Investment Committee meetings and for future reference. The Executive Director may participate in any diligence at his or her discretion, and Trustees will generally not participate in such diligence. No decision-making authority is vested with the onsite diligence team. Funding for upcoming onsite diligence will be considered by the Board during the annual investment budget process, and onsite diligence shall be conducted in accordance with the System's Code of Ethics.

Appendix III: Reporting Requirements for Investment Managers

Annual Reporting Requirements

Each Manager who complies with the CFA Institute Trade Management Guidelines and CFA Institute Soft Dollar Standards will annually provide COAERS attestation of compliance and all required disclosures. If a Manager determines that it is no longer in compliance with either the CFA Institute Trade Management Guidelines or the CFA Institute Soft Dollar Standards, the Manager shall promptly notify COAERS and, without waiting for annual reporting deadlines, promptly provide COAERS with disclosures ~~for Managers who do not claim compliance~~ as described in the following paragraph.

Each Manager who does not claim compliance with the CFA Institute Trade Management Guidelines and the CFA Institute Soft Dollar Standards shall annually disclose to COAERS the areas of non-compliance in particular noting and detailing the extent to which any area of non-compliance impacts trading for the investment product in which COAERS is invested.

Each Manager shall:

- provide information and documentation on specific broker transactions as requested.
- keep accurate records of proxy voting of and provide such information upon request.
- report annually to the Board in writing as to actions taken regarding proxy voting issues in cases where the Manager votes in opposition to company management.
- furnish the System and the Investment Consultant a current copy of the approved Manager's SEC ADV Form annually when filed, and thereafter as and when amended.
- furnish documentation of the Manager's valuation methodology.
- furnish audited financial statements at least annually.
- report in writing any information required under the Board Approved Policy C-3 "Code of Ethics" Section VI.C.

All portions of Annual Reporting are to be combined and submitted as an attachment to the 4th quarter reporting materials.

Quarterly Reporting Requirements

Quarterly Reporting Requirements for Managers with live mandates have both general (applicable to all managers) and specific (applicable only to managers described herein) requirements. Specific reporting requirements are dependent on investment vehicle, investment strategy and asset class.

General Quarterly Reporting Requirements (All Managers):

1. Current Market Values & Investment Performance: Provide Portfolio returns and composite performance. Disclose the highest performing and the lowest performing account for all time periods. If there is a dispersion of returns among the accounts, what is the source of dispersion? How is dispersion controlled among accounts? Use tables *Market Value and Asset Growth Summary*, and *Total Fund Rates of Return*, to provide this information.

2. **Market Environment:** In this section, include information on the market environment, market analysis, sector analysis or other items deemed appropriate regarding your strategy. It is not necessary for the Manager to compare its strategy of management to others unless it impacts the investment strategy. Focus this section on the market environment applicable to the Portfolio. Provide a brief discussion of market liquidity for the portfolio during the quarter, including a basis point estimate of the cost to liquidate 10% of the portfolio.

3. **Investment Process:** Please detail any changes to the investment process (i.e., change(s) in geographic focus, addition/removal of investment factors, benchmark changes, etc.)

2.4. **Stewardship:** Please detail any changes to the stewardship process or philosophy (i.e., change(s) to proxy voting guidelines, compliance with sustainability reporting standards or organizations, etc.)

3.5. **Organizational Issues:** Discuss the progress and the changes of your firm over the last three years.

- Complete the *Organizational Issues* table.
- What are the major initiatives planned for the firm over the next 3, 5 & 10 years?
- List all personnel departures from the group responsible for the management and investment of the Portfolio and the responsibilities of each departing person.
- Discuss the growth in capabilities on a firm-wide basis as well as within the Product group. List new Products offered in the last 3 years and if the additional capabilities for these new Products were developed internally or purchased?
- How are the Portfolio management, administration, research, firm management and marketing efforts separated within the firm? Identify the key decision makers in each of the above areas. What percentage of the Manager's time is spent in each area (total must add to 100%).
- Has a cap been placed on assets under management in this product? Why or why not?
- The percentage of strategy assets and firm assets represented by the account.

64. **Reconciliation of Assets and Returns:** Provide a brief discussion of your process for reconciling portfolio assets with our Custodian and portfolio returns with our Investment Consultant.

75. **Regulatory Compliance Reporting:** combine with your quarterly report a copy of any regulatory or compliance-related reporting you have provided the System during the quarter.

86. **Most Favored Nation (MFN) Provision Certification:** If applicable, certify that more favorable pricing has not been given to a similar account as described by applicable policy documents.

97. List for each of the last quarter, the calendar year-to-date, and last year the total commissions generated in the Portfolio. For each full commission broker, separately list

the amount spent each year with that broker, the soft dollar total, and a description of benefits received for the commissions paid.

Specific Reporting Requirements:

By Investment Vehicle:

- **Separate Accounts:** On the first page of the report, the guidelines, objectives and other measurements from the Investment Policy and any pertinent items from the IMA will be listed. Verify compliance status on a point-by-point basis. The Manager may also summarize this section to explain the Manager's position on compliance. Sign and date this page. If the Manager recommends any change be made to the Guidelines, each suggested change and the rationale behind each change shall be listed.
- **Commingled Funds:** On the first page of the report, the guidelines, objectives, and other measurements from any pertinent items from the side letter agreement (if applicable) will be listed. Verify compliance status on a point-by-point basis. The Manager may also summarize this section to explain the Manager's position on compliance. Additionally, certify that the Manager is in compliance with governing fund documents. Sign and date this page. If the Manager recommends any change be made to the Guidelines, each suggested change and the rationale behind each change shall be listed.

By Asset Class:

- **Equity Strategies:**
 1. **Portfolio Appraisal:** Provide an asset statement to include the following for each security: Name, Number of Shares, Current Market Value Per Share, Total Market Value for Security, % of Total Market Value, Gain/Loss for each Security, Categorize by Sector, Totals.
 2. **Transactions (active strategies only):** List all purchases and sales for the period. Show the sales price per share, total proceeds from sale, and gain/loss for each transaction. If a security was held in the portfolio for less than 30 days, explain the rationale for both the purchase and sale of the security.
 3. **Brokerage:** broker used, and commission charged per share for both purchases and sales. Total by brokerage firms all transactions traded with each firm.
 4. **Proxy Voting:** domestic equity managers shall report and list, on a quarterly basis, the proxy votes by security that your firm voted against management.
- **Real Estate Strategies:** Portfolio Appraisal: include the following information: a full portfolio appraisal, a summary of any transactions, a summary of all valuation changes, and a summary of fund income.
- **Multi Asset Strategies:** Include the following information: a full portfolio net asset value, a summary of the net asset value changes, a description of whether there have

been any impairments in liquidity necessary to meet participant redemptions during the quarter (if such an impairment occurs).

Tables:

Organizational Issues

Assets Under Management (firm-wide)	
Assets Under Management (in this Product)	
Number of Accounts in this Product	
Accounts Gained in Last Quarter (firm-wide)	
Accounts Gained in Last Quarter (in this Product)	
Accounts Lost in Last Quarter (firm-wide)	
Accounts Lost in Last Quarter (in this Product)	

Market Value and Asset Growth Summary for Periods Ended MM/DD/YYYY

	Calendar Year-to-Date	1 Year	3 Year	Inception-to-Date
Beginning Market Value				
Contributions				
Withdrawals				
Manager Fee Paid				
Return on Investment				
Ending Market Value				

Present the portfolio balance as reconciled with the Custodian's data. Complete market value reconciliation with the Custodian in writing and an explanation must be provided if your market value does not match.

Total Fund Rates of Return for Periods Ended MM/DD/YYYY

	Current Quarter	Calendar YTD	1 Year	3 Years	5 Years	10 Years	Since Inception
Rate of Return Gross of Fees							
Rate of Return Net of Fees							
Benchmark Return							
Value added/detracted vs. Return net of Fees*							
Composite Performance							
Highest returning account within composite							

Lowest returning account within composite							
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The Value-Added column above may be footnoted to explain your rationale to value added/lost to the benchmark.

Appendix IV: Policies Regarding Third Party Marketing; Political Contributions; Improper Influence; Placement Agents and Finders

1. Scope.

This Appendix applies to all COAERS investment transactions in which a Placement Agent or third-party marketer or revenue sharing agreement or Finder is or may be involved, including new agreements (inclusive of follow-on and co-investments), extension of existing agreements, increase in funding or capital commitment to an existing relationship or Investment Manager, or an amendment that increases management fees or compensation under an Investment Management Agreement.

This Appendix IV also applies to attempts to influence COAERS investment decisions through contacts with Trustees, or contacts with, or a political contribution made for the benefit of, one or more Texas Elected Officials, and also applies to contacts with persons employed by any such Texas Elected Official.

If any provision of this Appendix conflicts with a provision of another policy adopted by the Board, the stricter provision shall apply.

In addition to all other requirements of this Appendix, all persons, firms, corporations and legal entities contacting any member of the Board or any office or employee of the System for the purpose of soliciting business with, or providing any service or Product to, the System, shall fully comply with Chapter 176, Tex. Loc. Gov't Code. Links to Chapter 176, Tex. Loc. Gov't Code and a copy of the Vendor Conflict of Interest Questionnaire can be found at <http://www.coaers.org/disclosure.html>.

2. Purpose.

The purpose of this Appendix is to safeguard the integrity of all COAERS investment transactions and conformity with the highest fiduciary, ethical, and legal standards by all parties involved. All investment decisions made by the Board and the Staff must be based solely on the merits in conformity with fiduciary standards and applicable law. All recommendations made regarding any Fund, Manager Party or investment, and all recommendations by the Investment Consultant, Investment Managers, and advisers, must be based solely on the merits after the necessary due diligence. All investment decisions and recommendations must be free of impropriety or improper influence and the appearance of either.

3. Philosophy.

The Board requires the Staff to obtain full disclosure regarding all known or suspected matters having the potential to harm COAERS's reputation or the integrity of COAERS's investment processes, or that could constitute unethical or unlawful conduct during the investment due diligence process.

4. Required disclosures.

At a minimum, all external Fund, Manager Party(s) and Investment Managers shall provide detailed written responses to the questionnaire attached to this Appendix as Exhibit "A" as early as reasonably possible in the due diligence process for a COAERS investment transaction. The Board may revise this Appendix or Exhibit "A" from time to time as it deems to be in the best interest of COAERS and consistent with the purpose and intent of this Appendix.

In addition, all Investment Managers, and all Funds and Manager Parties negotiating or dealing with COAERS regarding proposed investment services, shall provide a detailed description of the services to be performed by the Placement Agent and how the Placement Agent is used (e.g., with all prospects, or only with a subset of prospects). The System shall obtain a copy or summary of the terms of an agreement to compensate a Placement Agent for the due diligence file. The System shall provide all prospective Investment Managers with a copy of this Appendix upon commencement of due diligence.

5. Contractual representations warranties and covenants.

Each Investment Manager shall represent and warrant to COAERS in the executed Investment Management Agreement that its responses in Exhibit "A" to this Appendix IV and to all questions or enquiries presented by the System, and in any supplemental responses are true, correct, and complete in all material respects, and shall also covenant to update any such information within 10 business days of any change in the information in the responses.

In addition, each Placement Agent shall fully disclose the terms of its arrangement with a Fund, or Manager Party, or Investment Manager for payment of a Placement Fee and any political contributions by the Placement Agent to any Texas Elected Officials and shall certify as to the matters addressed in this Appendix, as applicable, to COAERS in a writing executed by an authorized officer that the disclosures required by this policy are true and complete in all material respects.

Each Investment Management Agreement shall provide COAERS with the option to receive a reimbursement of management or advisory fees equal to the amount of Placement Fees to be paid to any and all Placement Agents, and, in addition and not in the alternative, the right to terminate the Investment Management Agreement or withdraw without penalty from the investment vehicle or vehicles if any certificates or contractual representations, warranties or covenants relating to this Appendix have been breached.

6. Prohibitions.

No COAERS investment may be made if the Board, in consultation with legal counsel, determines that a disclosed contact with a COAERS Board member or Texas Elected Official, or a contribution to a Texas Elected Official, has created an unacceptable risk to the integrity and reputation of the COAERS investment program or has been made in violation of a COAERS policy or applicable law. A contact-based referral, without more, by a Trustee of either an investment opportunity or a prospective Investment Manager or Fund contact to the Executive Director or Chief Investment Officer does not constitute such a risk or a violation of this Appendix.

7. Reporting.

The System staff shall compile all responses to the questionnaire and report the results to the Board at least annually. Reports shall include the amounts and recipients of any political contribution or Placement Fee and the relationship of the recipients to the Placement Agent or Texas Elected Official, as applicable.

8. Definitions applicable to this Policy.

Affiliate – means a person or entity controlled by or under common control with another person or entity.

Fund or Manager Party – includes, (a) as to a private investment fund, a fund sponsor, the general partner, managing member, or its equivalent with respect to a fund, fund sponsor, or fund management firm, (b) as to an external, separate account investment manager, the asset management entity and the parent of such asset management entity, and (c) as to (a) and (b), any Affiliate, principal, owner, officer, shareholder, director, managing member, or employee having authority to act on behalf of such fund or firm.

Placement Agent – includes any third party, whether or not affiliated with a Fund or Manager Party, that is a party to an agreement or arrangement (whether oral or written) with a Fund or Manager Party for the direct or indirect payment of a Placement Fee or revenue sharing arrangement in connection with a COAERS investment. Any other person or entity who claims a Placement Fee or who by agreement with a Placement Agent will share in a Placement Agent's Placement Fee is deemed to be a Placement Agent whether or not the person or entity is an Affiliate, principal, owner, officer, shareholder, director, managing member, or employee of a Placement Agent. A "finder" is a Placement Agent.

Placement Fee – includes any compensation or payment, directly or indirectly, of a commission, finder's fee, or any other consideration or benefit to be paid to a Placement Agent.

Relative – means a spouse (including an ex-spouse), parent, child (including adopted), sibling, niece, nephew, aunt, or uncle.

Texas Elected Official – includes a member of United States Congress or Senate that is elected from the State of Texas, the City of Austin or the County of Travis, including but not limited to the governor, lieutenant governor, comptroller of public accounts, attorney general, and any member of the Texas Legislature, the mayor, member of the city council, county judge or county commissioner and also includes a campaign fund or political action committee, or PAC for an elected official, and a Relative of a Texas elected official.

COAERS Person – means any person listed on Exhibit No. 1 attached to Exhibit “A” to Appendix IV to this Policy or to any other due diligence document, and includes without limitation any current or former COAERS board member, the Executive Director, the Chief Financial Officer, the Chief Investment Officer, the General Counsel, or any Investment Consultant or actuary, any other outside counsel engaged by COAERS, and any Relative of a COAERS Person, whether or not listed on an Exhibit A, COAERS Persons. The Executive Director shall cause a current list of COAERS Persons to be kept on file with the System and shall cause the current list to be provided to persons required to complete the Questionnaire.

Appendix IV: Exhibit "A" -- Questionnaire

Third Party Marketing; Political Contributions; Improper Influence; Placement Agents and Finders *Capitalized terms are defined in main text of policy.*

- A) Contacts with State or City Officials; Political Contributions.** Has any person lobbied, communicated with, or made political contributions during the past three years on behalf of the Fund or Manager Party to a Texas Elected Official in connection with a prospective investment transaction with a Texas state or City of Austin affiliated investment entity, including COAERS?
- 1) If the answer is "yes," please provide a complete list of the name(s) of the entities and individual(s) involved, the approximate dates of the contributions, the amounts of the contributions, a summary of the contacts or communications, and the nature of the discussion in regard to the investment with any Texas state investment entity, including COAERS.
- B) Contacts with COAERS Board Members.** Has any person lobbied or otherwise communicated on behalf of the Fund or Manager Party with a current or former member of the COAERS Board of Trustees during the past two years for the purpose of asking the current or former member to seek to influence a decision by the COAERS investment staff or a COAERS advisor or Investment Consultant to recommend that COAERS invest?
- 1) If the answer is "yes," please provide a complete listing of the name(s) of the entities and individual(s) involved, the approximate dates of the contacts or communications, and the nature of the discussion in regard to this investment.
- C) Placement Agents and Placement Fees.** Is or was the Fund or Manager Party a party to any agreement or arrangement (whether oral or written) to pay a Placement Fee to or for the benefit of any Placement Agent in connection with COAERS's prospective investment in a fund or engagement of an external manager?
- 1) If the answer to C) is "yes," please provide a copy of the written agreement or agreements creating the obligation to pay a Placement Fee. If the agreement is not written, please provide a written summary of the agreement. Additionally, please state the amount of the Placement Fee (or the formula for its determination if the amount is not yet determined) and the date of its payment or anticipated payment.
 - 2) If the answer is "yes," please list the name(s) of the person or entity. If the party to the agreement is an entity, please also list the names of the principal owners, officers, directors, or managing members of the Placement Agent and provide a resume for each such person.
 - 3) If the answer is "yes," state whether the Placement Agent, or any of its Affiliates, is registered as a lobbyist with any state government or the federal government and identify the registrants and the applicable jurisdictions where registered.
 - 4) Will or did any COAERS Person or any Relative of a COAERS Person receive, has any such person received, or might any such person receive, any compensation or payment, directly or indirectly, of a commission, finder's fee, or any other consideration or benefit to be paid to a Placement Agent (a "Placement Fee") in connection with COAERS's investment? If the answer is "yes," please list the name or names of the COAERS Person or Relative of a COAERS Person and provide details about the terms of the Placement Fee.
 - 5) Will or did any Texas Elected Official or a Relative of a Texas Elected Official receive a Placement Fee in connection with COAERS's investment? If the answer is "yes," please list the name or names of the official and provide details about the terms of the Placement Fee, including the amounts and timing of payments.
 - 6) Did (or will) any third-party person or entity who is not employed or otherwise affiliated with a Placement Agent, including a current or former COAERS Person, either (a) recommend the

Placement Agent or (b) receive a share of a Placement fee or any other economic benefit in connection with COAERS's investment, whether directly or indirectly through a Placement Agent engaged by you?

- 7) If the answer to 6) is "yes," please list the name of the person or entity, the relationship of the person or entity to the Placement Agent and your firm and provide a description of the arrangement and the reason for the payment.
- 8) State whether the Placement Agent or any of its Affiliates is registered with the Securities and Exchange Commission or the Financial Industry Regulatory Association, or a similar agency outside the United States. Provide details about registration or explain why registration is not required.

The undersigned certifies, represents and warrants on behalf of the Fund or Manager Party that, to the best of its knowledge after due inquiry, (a) the foregoing responses to this questionnaire are true and correct and do not omit any statement or fact necessary to make any statement made not misleading in any material respect, and (b) no prior statements or representations, if any, whether oral or written, made on behalf of the Fund or Manager Party relating to the subject matter of this questionnaire in connection with COAERS's due diligence inquiries and a prospective investment management agreement or subscription to the fund, as the case may be, including any side letter agreements, were untrue or misleading in any material respect when they were made.

[Signature block for Fund or Manager Party]

Attachment: Exhibit No. 1, COAERS Persons

10. Receive update on Chief Investment Officer position

Presented by Christopher Hanson

AGENDA ITEM 10:
Receive update on Chief Investment Officer position

AGENDA ITEM OBJECTIVE

This agenda item provides the Committee with an update from the Executive Director on efforts to fill the Chief Investment Officer position.

RECOMMENDATION FOR COMMITTEE ACTION

For informational purposes only; no action required.

BACKGROUND

In September 2021, COAERS launched its search for a new Chief Investment Officer to replace outgoing CIO David Veal, who stepped down from the position last summer to assume the CIO role at Texas ERS. In July, the System named Mr. David Stafford as Interim Chief Investment Officer of the retirement system while COAERS conducts its search.

**11. Receive key meeting takeaways and
call for future agenda items**

Presented by Committee Chair Benson

AGENDA ITEM 11:

Review key meeting takeaways and call for future agenda items

AGENDA ITEM OBJECTIVE

This standing agenda item provides Trustees the opportunity to review the key takeaways from the meeting.

RELEVANCE TO STRATEGIC PLAN

This agenda item meets **COAERS Strategic Plan Goal 4: Identify and implement leading practices in board governance, pension administration, and investment management**. It is an industry best practice to review key meeting takeaways to summarize what was accomplished at the meeting as well as ensure Staff has clear direction on further work and future agenda items.

RECOMMENDATION FOR COMMITTEE ACTION

Trustees will review key meeting takeaways and delineate next steps.