

SWIB Board of Trustees Meeting of June 11, 2025

Table of Contents

Agenda	2
1. Annual Committee Assignments by Board Chair	6
2. Committee Reports - Open Session Items	8
3. Consent Agenda	9
4. Board Contact Log	18
5. Investment Performance and Market Updates	22
6. Investment Committee Open Session Business	56
7. Quarterly Investment Update, Q1 2025	126
Closed Session	
8. Announcement of Matters Taken Up in Closed Session	144
9. Reports to Be Filed	145
10. Future Items for Discussion	159
11. Adjourn	

Name of Meeting: Regular Meeting of the Board of Trustees

***Joint Educational Session of State of Wisconsin Investment Board
Board of Trustees and CFA Society Madison****

Date/Time: Tuesday, June 10, 2025 1:30 pm

Room: Via Teleconference

	<u>Session 1</u>	
	Topic	Speaker
1:30 pm	Introductions	Clyde Tinnen, Chair Edwin Denson, ED/CIO
1:30 pm	Knowledge Sharing and Collective Learning	Sebastien Page, Head of Global Multi-Asset and CIO, T. Rowe Price
2:30 pm	U.S. Economic Trends and the Consumer Outlook	David Mericle, Chief U.S. Economist, Goldman Sachs
3:30 pm	Opportunities and Challenges in Power Demand	Ravi Bellur, Founder and CIO, Ripple Effect Asset Management Kris Moldovan, Executive Vice President & CFO, Vistra
4:30 pm	Closing Remarks	Clyde Tinnen

Motion to Recess

**The Joint Educational Session is open to the public. Members of the public planning to attend this meeting should contact SWIB at (608) 261-9341 or email Dawn.Tuescher@swib.state.wi.us for information on how to register.*

Name of Meeting: Regular Meeting of the Board of Trustees
Date/Time: Wednesday, June 11, 2025 9:00 am
Room: 1st Floor Conference Room
Address: 4703 Madison Yards Way, Madison, WI 53705
Virtual: [Join the meeting now](#) ; 608-267-3179, code 50456212#

OPEN SESSION	
1.	Annual Committee Assignments by Board Chair
2.	Committee Reports – Open Session Items <ul style="list-style-type: none"> A. Strategic Planning and Corporate Governance Committee B. Audit and Finance Committee
3.	Consent Agenda <ul style="list-style-type: none"> A. Open Session Minutes of March 19, 2025 B. Recommended Actions from Committee Agendas – Open Session Items
4.	Board Contact Log
5.	Investment Performance and Market Updates <ul style="list-style-type: none"> A. Board Investment Performance Report, Q1 2025 B. Callan Quarterly Report
6.	Investment Committee Open Session Business <ul style="list-style-type: none"> A. Amendments to WRS Investment Committee Investment Guidelines B. Approved Open Session Investment Committee Meeting Minutes for February 25, April 1, and April 22, 2025 C. Final Open Session Investment Committee Agenda for May 27, 2025 and Draft Open Session Agendas for June 24 and July 29, 2025
7.	Quarterly Investment Update, Q1 2025
CLOSED SESSION*	

* The motion to go into closed session at this meeting is made pursuant to: (i) Sections 19.36(5) and 19.85(1)(e) of the Wisconsin Statutes to consider confidential and proprietary strategies for the investment of public funds relating to specific proprietary investment strategies of internal WRS portfolios, asset allocation, and risk management and/or for any comments or discussion on prior closed session minutes that discuss the same; (ii) Section 19.85(1)(c) of the Wisconsin Statutes to discuss the compensation and performance evaluation data of specific SWIB employees, including SWIB's executive director/chief investment officer and SWIB's board of trustees, and/or for any comments or discussion on prior closed session minutes that discuss the same; and (iii) Section 19.85(1)(g) of the Wisconsin Statutes to confer with SWIB's chief legal counsel to receive advice concerning legal strategy for ongoing and potential litigation, and/or for any comments or discussion on prior closed session minutes that discuss the same. The Board may convene in additional closed sessions or announce additional closed session items at the meeting in accordance with the procedure outlined in the Attorney General's Opinion reported at 66 OAG 106 (1977). Whenever a closed session is held, the Board will subsequently reconvene in open session to cover remaining agenda items.

RECONVENE IN OPEN SESSION	
8.	Announcement of Matters Taken Up in Closed Session
9.	In the Absence of Questions, the Following Reports will be Filed Without Comment (For informational purposes): <ul style="list-style-type: none"> A. Quarterly Charges to Funds Reports, Q1 2025 B. Private Markets and Funds Alpha Commitments, Q1 2025
10.	Future Items for Discussion
11.	Motion to Recess // Lunch Break
<p><i>NOTES: Items may be taken in order other than listed.</i></p> <p><i>Estimated times are for planning purposes only. Agenda items will last until discussion is concluded.</i></p> <p><i>The meeting site is physical accessible. Upon prior request, reasonable accommodations will be provided.</i></p>	

*For further details on virtual format of meeting, please contact Dawn Tuescher (608-261-9341 or dawn.tuescher@swib.state.wi.us).

Name of Meeting: Regular Meeting of the Board of Trustees

***Joint Educational Session of State of Wisconsin Investment Board
Board of Trustees and CFA Society Madison****

Date/Time: Wednesday, June 11, 2025 1:30 pm

Room: Via Teleconference

	<u>Session 2</u>	
	Topic	Speaker
1:30 pm	Introductions	Clyde Tinnen, Chair
1:30 pm	Geopolitics: Emerging Trends and Hot Spots	Willis Sparks, Director of Global Macro, Eurasia Group
2:30 pm	The Disruptive Economics of Artificial Intelligence	Avi Goldfarb, Professor, University of Toronto, Rotman School of Management
3:30 pm	Challenges and Trends in Commercial Real Estate	Spencer Levy, Global Client Strategist and Senior Economic Advisor, CBRE

Adjourn – Trustee Tinnen

**The Joint Educational Session is open to the public. Members of the public planning to attend this meeting should contact SWIB at (608) 261-9341 or email Dawn.Tuescher@swib.state.wi.us for information on how to register.*

Board Meeting

Tab 1 – Annual Committee Assignments by Board Chair

June 11, 2025

Pursuant to each Committee Charter, the Board Chair shall appoint members of each Committee and appoint members to serve as Committee chair, vice chair and secretary for terms not to exceed one year. These appointments shall be in effect until February 28, 2026.

Audit and Finance Committee

Tom Merfeld, Chair
John Voelker, Vice Chair & Secretary
Barb Bolens
Robert Scott

State Controller, ex-officio
State Auditor, ex-officio

Benchmark and Performance Committee

John Voelker, Chair
Jeff DeAngelis, Vice Chair & Secretary
Esther Ancel
J. Michael Collins

Compensation Committee

Jeff DeAngelis, Chair
Barb Bolens, Vice Chair & Secretary
Tom Merfeld
Clyde Tinnen

Strategic Planning and Corporate Governance Committee

Clyde Tinnen, Chair
Esther Ancel, Vice Chair & Secretary
Kathy Blumenfeld
J. Michael Collins
Robert Scott

Board Meeting

Tab 2 - Committee Reports – Open Session Items

- A. Strategic Planning and Corporate Governance Committee – Trustee Tinnen
- B. Audit and Finance Committee – Trustee Merfeld

Reports

Board Meeting

Tab 3 – Consent Agenda

- A. Open Session Minutes of March 19, 2025
- B. Recommended Actions from Committee Agendas –
Open Session Items

Summary: Any Trustee may request to move a consent agenda item to the regular agenda for further discussion.

Review and Action

Proposed Motion: Move to approve the consent agenda, as presented.

Regular Meeting of the Board of Trustees

Wednesday, June 11, 2025

STATE OF WISCONSIN INVESTMENT BOARD

CONSENT AGENDA – OPEN SESSION ITEMS

Proposed Motions:

1. Move to approve the Open Session Minutes of March 19, 2025, as presented.
2. Move to approve the preliminary FY 2026 State Operating Budget of \$104.8 million, as recommended by the Audit and Finance Committee.

STATE OF WISCONSIN INVESTMENT BOARD
Board Meeting – Open Session

Wednesday, March 19, 2025

Office of the Investment Board
4703 Madison Yards Way, Madison, WI

Board Members Present: Clyde Tinnen, Chair
Esther Ancel, Trustee
Barb Bolens, Trustee
Kathy Blumenfeld, Trustee
Tom Merfeld, Trustee
Dave Schalow, Trustee
Robert Scott, Trustee
John Voelker, Trustee

Staff/Others Present: Nathan Ballard, Senior Legal Counsel
Eric Barber, Chief Legal Counsel
Brandon Brickner, Head of Internal Audit
Sara Chandler, Chief of Staff & Strategy
Hassan Chehime, Head of Risk Management
Edwin Denson, Executive Director/Chief Investment Officer
Anne-Marie Fink, Private Markets & Funds Alpha CIO
Greg Fletcher, Performance Director
Shannon Gannon, Communications Director
Jameson Greenfield, Chief Financial Officer
Dan Gyorog, Internal Auditor
Vince Janecky, Internal Auditor Data Analyst
Rochelle Klaskin, Deputy Executive Director/Chief Operating Officer
Jon Loboda, Performance Measurement Operations Manager
Todd Mattina, Head Economist, Asset & Risk Allocation CIO
Frank Mazzucco, Senior Legal Counsel
Matt Terpstra, Internal Auditor
Dawn Tuescher, Executive Administrative Assistant
Ivan “Butch” Cliff, Callan Associates
Sam Rebenstorf, Legislative Audit Bureau
Chloe Zhang, Legislative Audit Bureau
Cyril Espanol, With Intelligence
Judith Stadler, Public Attendee
Bob Schaefer, Public Attendee
Anne Steinberg, Public Attendee
Peter Knotek, Public Attendee
Nate Weinstein, Public Attendee
Andrew, Public Attendee

(Some individuals may have attended only portions of the meeting.)

Trustee Tinnen, Chair of the Board of Trustees, declared a quorum was present and called the Board of Trustees meeting to order at 9:00 a.m. on March 19, 2025.

Trustee Tinnen began the meeting by noting that this will be Trustee Schalow's final Board meeting. Trustee Tinnen thanked Trustee Schalow for his six years as a Trustee, including over three years as Chair of the Benchmark and Performance Committee. Trustee Schalow expressed that he was honored and thankful to have the opportunity to serve the Wisconsin Retirement System ("WRS") beneficiaries and to work with his fellow Trustees and SWIB staff.

1. Committee Reports – Open Session Items

A. Audit and Finance Committee

Trustee Merfeld, Chair of the Audit and Finance Committee, reported that in open session, the Committee: (i) approved prior meeting minutes; (ii) reviewed and recommended that the Board approve changes to the Audit and Finance Committee Charter and reviewed and approved changes to the Internal Audit Division Charter; (iii) reviewed the Open Audit Issues Report as of February 28, 2025; (iv) approved Draft Audit Reports for McLagan, Transition Management, Follow-up, and Limited Scope Performance Review; (v) reviewed the 2025 Internal Audit Plan Status and 2025 Internal Audit Goals; (vi) received a compliance overview; and (vii) reviewed the Quarterly Cost of Management Update for Q4, 2024 and recommended to the Board that it approve amendments to the Calendar Year 2025 Total Cost of Management Plan to reflect the actual amount of incentive compensation paid, in the aggregate, to all SWIB staff.

B. Compensation and Workforce Development Committee

Trustee Tinnen, Vice Chair & Secretary of the Compensation and Workforce Development Committee, reported that in open session, the Committee: (i) approved prior meeting minutes; (ii) considered changes to the Compensation and Workforce Development Committee Charter and recommended that the Board approve the same; (iii) received a presentation on the proposed 2025 ISS Strategic Results Scorecard and recommended that the Board approve the same; (iv) heard a 2024 Incentive Compensation Program Review; and (v) considered the recommended incentive compensation awards for performance year 2024 in aggregate for those employees not specifically discussed in Executive Closed Session and recommended that the Board approve the same.

C. Strategic Planning and Corporate Governance Committee

Trustee Tinnen, Chair of the Strategic Planning and Corporate Governance Committee, reported that in its open session meeting the Committee: (i) approved prior meeting minutes; (ii) heard a Real Estate Strategy Report and Market Outlook presentation from staff and StepStone, SWIB's real estate strategy consultant; (iii) received a Corporate Governance Program Update; (iv) heard a preview of the upcoming June Investment Forum; and (v) received an Innovation and Projects Update.

2. Consent Agenda

Eric Barber, Chief Legal Counsel, distributed a proposed consent agenda. Trustee Tinnen asked whether there were any motions listed on the consent agenda that should be removed for further discussion and individual action. Hearing none, he referred to the following items on the consent agenda:

- Move to approve the Open Session Minutes of December 11, 2024, as presented.

- Move to approve the changes to the Compensation and Workforce Development Committee Charter, as recommended by the Compensation and Workforce Development Committee and as presented in the Committee's meeting materials.
- Move to approve the 2025 Strategic Results Scorecard, as recommended by the Compensation and Workforce Development Committee and as presented in the Committee's meeting materials.
- Move to approve, as recommended by the Compensation and Workforce Development Committee and as presented in the Committee's meeting materials, the incentive compensation awards for performance year 2024 for all SWIB employees in the aggregate of \$13,895,022, as recommended and allocated by the Executive Director/Chief Investment Officer, but excluding the specific awards to (i) the Executive Director/Chief Investment Officer, recommended by the Compensation and Workforce Development Committee; (ii) the Head of Internal Audit, recommended by the Audit and Finance Committee; and (iii) the Deputy Executive Director/Chief Operating Officer, Asset Class CIOs, Strategy Heads, Senior Portfolio Managers of Investment Management Staff, Chief of Staff and Strategy, Chief Technology Officer, Chief Legal Counsel, Chief Financial Officer, Head of Risk Management, and Head of Human Resources.
- Move to approve the changes to the Audit and Finance Committee Charter, as recommended by the Audit and Finance Committee and as presented in the Committee's meeting materials.
- Move to approve amendments to the CY2025 Total Cost of Management Plan to reflect the actual amount of incentive compensation paid in the aggregate to all SWIB staff, as recommended by the Compensation and Workforce Development and Audit & Finance Committees, respectively, and set forth in the Committees' meeting materials.

Motion: A motion was made by Trustee Bolens and seconded by Trustee Scott to approve the consent agenda, as presented. The motion passed unanimously.

3. Board Contact Log

Trustee Tinnen noted that the Board Contact Log was included on pages 17-19 in the meeting materials. He acknowledged that the Board Contact Log and its process was established in September 2023 and that the log has been provided in the Board materials since that time. Trustee Tinnen described how the log summarizes the submissions received by the Board from the public. Further, he discussed the process that had been place since September 2023, which includes that all submissions received are fully distributed to the Trustees by email for review at least a week in advance of each Board meeting. He reminded Trustees that if they wished to discuss any of the communications or submissions received at a subsequent Board meeting to contact himself or Mr. Barber.

4. Election of Secretary and Assistant Secretary

Trustee Tinnen stated that, in accordance with Board procedures, the Board elects a Secretary and Assistant Secretary annually. Duties of the Secretary include signing the minutes of the Board meetings. Duties of the Assistant Secretary include certifying to the validity of copies of statutes and SWIB documents when requested by counterparties. Typically, the Board selects a Trustee as Secretary and the Chief Legal Counsel as Assistant Secretary.

Motion: A motion was made by Trustee Tinnen and seconded by Trustee Blumenfeld to elect Trustee Merfeld as Secretary and Mr. Barber as Assistant Secretary for 2025.

5. Annual Committee Assignments by Board Chair

Trustee Tinnen stated that, pursuant to each Committee Charter, the Board Chair appoints members of each Committee and appoints members to serve as Committee chair, vice chair, and secretary for terms not to exceed one year. He reviewed the appointments currently in effect, included on page 22 of the meeting materials and noted that the appointments will be revisited upon the appointment of the trustee that will replace Trustee Schalow.

6. Proposed 2026 Board Meeting Dates

Mr. Barber shared tentative dates for the 2026 Board and Committee meetings, including a potential alternative date for the December meetings, and asked that the Trustees advise whether they are aware of any conflicts as soon as possible.

7. Investment Performance and Market Updates

A. Board Investment Performance Report, Q4 2024

Greg Fletcher, Performance Director, presented the Investment Performance Report, as of December 31, 2024, included on pages 26-41 of the meeting materials. Mr. Fletcher reported that: (i) the Core Trust Fund (“CTF”) returned -1.43% net of all fees and expenses in Q4 2024, resulting in excess performance of 3 basis points (bps) for the quarter; (ii) the CTF returned 8.55% net of all fees and expenses for the one-year period, resulting in an excess return of 111 bps; (iii) the CTF five-year return net of all fees and expenses of 7.24% outperformed the Policy Benchmark by 70 bps on an annualized basis; and (iv) the CTF net of external manager fee return outperformed the 60/40 Reference Portfolio return by 28.5% (cumulative) over the past twenty years, which equates to an excess value add of \$15.7 billion over the same period.

Mr. Fletcher highlighted: (i) the CTF net of all fees and expenses return outperformed its benchmark for the year-to-date, one-, three-, and five-year time periods; (ii) the CTF net of external manager fee return outperformed its benchmark for the ten-, fifteen-, and twenty-year time periods; (iii) the CTF gross of fee return outperformed its benchmark for the thirty-year time period; (iv) the Variable Trust Fund (“VTF”) net of all fees and expenses return outperformed for the year-to-date and one-year time periods and underperformed for the three- and five-year periods; (v) the VTF net of external manager fee return met its benchmark for the ten-year period and outperformed its benchmark for the fifteen- and twenty-year time periods; and (vi) the VTF gross of fee return outperformed its benchmark for the thirty-year time period. Mr. Fletcher then noted that SWIB’s investment management has added more than \$4.1 billion above benchmark returns to the WRS over the last five years.

Mr. Fletcher reviewed the overall assets under management (“AUM”) of SWIB, noting that the gross market value of assets increased by \$7.7 billion over the past year. He then referenced that the percentage of WRS assets that are actively managed has declined, driven by a variety of factors, and the percentage of WRS assets that are internally managed remained consistent. Next, Mr. Fletcher: (i) provided a breakdown of CTF asset class exposures, noting that the portfolio remains well diversified and all asset classes are within asset allocation target ranges; (ii) reviewed the asset class performance for the CTF over various time periods and discussed the performance of the alpha pool overlay; (iii) reviewed VTF performance and asset class exposures, noting that asset class exposures were within target ranges; and (iv) presented return information for the Separately Managed Funds.

Finally, Mr. Fletcher reviewed the Leverage Performance, included on page 43 of the meeting materials.

He noted that policy leverage contributed 21 bps to CTF absolute performance year-to-date and remained a positive contributor over the one- and five-year periods, but was negative over the three-year period, driven by the unique market decline of 2022.

B. 2024 Callan Report

Ivan “Butch” Cliff, Executive Vice President and Director of Research, Callan Associates, presented on SWIB’s performance relative to its peer group, included on pages 45-62 in the meeting materials.

Mr. Cliff reviewed SWIB’s gross cumulative returns relative to the policy target. He noted that SWIB’s absolute gross returns of 7.46% annualized over the past five years represents gross excess returns of 87 bps annualized, resulting in a cumulative gross excess return of 5.71% over SWIB’s target policy return for the five-year period. Mr. Cliff pointed to SWIB’s highly controlled tracking error relative to target as evidence of strong risk controls and noted the consistency with which SWIB’s quarterly returns exceeded target policy returns, especially in the trailing one-year period where gross outperformance was 125 bps with positive outperformance in each quarter. When looking at a ten-year period, Mr. Cliff again identified consistency and risk control, pointing to an annualized 10-year gross excess return of 61 basis points, resulting in a cumulative gross excess return of 11.55%.

Mr. Cliff concluded by reviewing a comparison of SWIB’s risk and asset allocation versus the policy target and peers. He noted that SWIB’s use of financial leverage enables the use of more risk reducing/diversifying assets without sacrificing growth assets, allowing for a more diversified and risk-balanced portfolio than most peers. Mr. Cliff noted that’s risk/reward tradeoff (Sharpe Ratio) is reasonably competitive, even with more risk than the peer median. He concluded by commending SWIB for consistently low tracking error and its top-decile excess return. SWIB’s excess return ratio (excess return *divided by* tracking error) is above 1, placing it as one of the top excess return ratios in the Callan peer group.

8. Committee Open Session Business

A. Approved Open Session Investment Committee Minutes

Mr. Barber stated that the approved open session minutes of the November 26, 2024, December 19, 2024, and January 28, 2025 Investment Committee meetings were included on pages 74-90 of the meeting materials for the Board’s review and noted that staff had previously reviewed the agendas for these meetings with the Board.

B. Agendas for Upcoming Meetings

Mr. Barber also stated that the final open session agenda for the February 25, 2025 Investment Committee meeting and the draft open session agendas for the April 1 and April 22, 2025 meetings were included on pages 91-96 of the meeting materials for the Board’s review.

C. Draft Open Session Enterprise Risk and Compliance Committee Minutes

Mr. Barber noted the draft open session minutes of the November 19, 2024 Enterprise Risk and Compliance Committee meeting were included on pages 97-99 of the meeting materials for the Board’s review.

9. Quarterly Investment Update, Q4 2024

Todd Mattina, Head Economist and Asset & Risk Allocation CIO, presented the Performance Trends & Outlook, included on pages 101-107 of the meeting materials. Mr. Mattina began with a review of the CTF five-year rolling annualized net of external manager fee return compared to the CTF twenty-year net of fee return and the actuarial target rate of return. He noted that despite volatility over the last few years, the five-year rolling return continues to outperform the actuarial target as well as the policy benchmark.

Mr. Mattina then provided a brief commentary on the CTF five-year return estimate, which projected a five-year annualized return of 5.5% using NEPC's assumptions for 2025. He also discussed the five-year forward estimate and highlighted the potential negative impact to the five-year annualized return as the 2020 and 2021 performance years, which had meaningfully positive performance of 15.2% and 16.9%, respectively, fall out of the five-year performance time period and are replaced with the NEPC 10-year expected return assumption of 6.5%. Mr. Mattina noted that the average return required to avoid any negative dividend adjustment in 2027 was a 10.1% average return for 2025 and 2026.

Mr. Mattina then presented the Economic Update, included on pages 109-127 of the meeting materials. He identified inflation, economic growth, and asset class valuations as the key drivers of long-term WRS financial stability. Mr. Mattina noted that the long-term inflation trend is an important determinant of long-term payroll contributions, interest rates, and investment returns. He highlighted that long-term consumer inflation expectations have recently ticked materially higher in polling.. He discussed that long-term economic growth mainly reflects the trend in labor productivity and working age population growth. Mr. Mattina commented that productivity has trended lower for decades and that working age population growth is also expected to continue decline. In discussing asset class valuations, Mr. Mattina observed that public equities in developed markets, especially large cap U.S. equities, are richly valued, indicating a lower expected return looking forward based on historical patterns. Historically, starting yield for treasury returns is a large driver of subsequent ten-year realized returns. Mr. Mattina pointed to a sharp increase in government bond yields since 2021 as an indicator that long-term fixed income return expectations have also risen.

10. Motion to Convene in Closed Session

Motion: A motion to convene in closed session pursuant to: (i) Sections 19.36(5) and 19.85(1)(e) of the Wisconsin Statutes to consider confidential and proprietary strategies for the investment of public funds relating to specific proprietary investment strategies of internal WRS portfolios, asset allocation, and risk management and/or for any comments or discussion on prior closed session minutes that discuss the same; (ii) Section 19.85(1)(c) of the Wisconsin Statutes to discuss the compensation and performance evaluation data of specific SWIB employees, including SWIB's executive director/chief investment officer and SWIB's board of trustees, and/or for any comments or discussion on prior closed session minutes that discuss the same; and (iii) Section 19.85(1)(g) of the Wisconsin Statutes to confer with SWIB's chief legal counsel to receive advice concerning legal strategy for ongoing and potential litigation and/or for any comments or discussion on prior closed session minutes that discuss the same, was made by Trustee Tinnen and seconded by Trustee Merfeld.

The Chair called for a roll call vote.

Ancel–Aye Blumenfeld–Aye Bolens–Aye Merfeld–Aye

Schalow–Aye Scott–Aye Tinnen–Aye Voelker–Aye

There being nine ayes and no nays, the Chair declared the motion passed. The Board convened in closed session at 11:30 a.m. and reconvened in open session at 1:54 p.m.

11. Announcement of Board Actions Relating to Items Taken up in Closed Session

Trustee Tinnen announced that while in closed session, the Board: (i) received a risk management update; (ii) received an operational risk overview; and (iii) discussed Investment Committee closed session business. While in executive closed session, the Board received executive closed session Committee reports and approved the Closed Session and Executive Closed Session Consent Agenda, including prior meeting Closed and Executive Closed Session Minutes from the meeting on December 11, 2024.

12. Reports Filed Without Comment

In the absence of questions, the following reports, included on pages 204-28 of the meeting materials, were filed without comment: (i) Quarterly Charges to Funds Report, Q4 2024; and (ii) Private Markets and Funds Alpha Commitments, Q4 2024.

13. Future Items for Discussion

Mr. Barber noted that the Annual Agenda Plan was included on pages 220-223 in the meeting materials for the Board's information.

14. Adjournment

Motion: A motion to adjourn was made by Trustee Schalow and seconded by Trustee Scott. The motion passed unanimously, and the meeting was adjourned at 11:55 a.m.

Date of Board Approval:

Signed:

Thomas J. Merfeld, Board Secretary

Board Meeting

Tab 4 – Board Contact Log

Board Contact Log – June 2025 Board Meeting

DATE OF INBOUND COMMUNICATION	DATE COMMUNICATED TO THE BOARD	COMMUNICATION SOURCE	TOPIC
April 25, 2025	June 2, 2025	Barb Coyle	Divestment of Tesla shares
May 8, 2025	June 2, 2025	Kathleen Erdman	Fossil fuel divestment and systematic climate risks
May 11, 2025	June 2, 2025	Martha J. Einerson	Leigh County Controller's article on divesting Telsa shares
May 14, 2025	June 2, 2025	Keith Kohlmann	Invest in renewable energy
May 14, 2025	June 2, 2025	Judith B. Brey	Fossil fuel divestment, invest in Wisconsin renewable energy
May 14, 2025	June 2, 2025	Nick Westgate	Invest in Wisconsin renewable energy
May 14, 2025	June 2, 2025	Elizabeth Laswell	Invest in renewable energy
May 14, 2025	June 2, 2025	Robert Mincberg	Invest in power grid upgrades, renewable energy, and shift away from oil and gas
May 14, 2025	June 2, 2025	Sharon Byers	Invest in renewable energy
May 14, 2025	June 2, 2025	Donell Kerns	Fossil fuel divestment and systemic climate risks
May 14, 2025	June 2, 2025	Patricia	Invest in renewable energy
May 14, 2025	June 2, 2025	Judith Stadler	Use investments in clean energy to power AI data centers
May 14, 2025	June 2, 2025	Richard Spindler	Divestment from fossil fuels into renewable energy
May 14, 2025	June 2, 2025	Brian Bushnell	Divestment from fossil fuels into renewable energy

Board Contact Log – June 2025 Board Meeting

DATE OF INBOUND COMMUNICATION	DATE COMMUNICATED TO THE BOARD	COMMUNICATION SOURCE	TOPIC
May 14, 2025	June 2, 2025	Esty Dinur	Invest in renewable energy
May 14, 2025	June 2, 2025	Russell Novkov	Invest in renewable energy
May 15, 2025	June 2, 2025	Warren Enström	Divestment from fossil fuels into Wisconsin renewable energy
May 17, 2025	June 2, 2025	Jim Winkle	Invest in renewable energy
May 17, 2025	June 2, 2025	Sally Ann Bowers	June Investment Forum and encouraging investment in renewable energy
May 18, 2025	June 2, 2025	Lewis Kuhlman	Praising investment in Wisconsin and urging more investment in Wisconsin renewable energy
May 18, 2025	June 2, 2025	Karen Parrillo	Invest in Wisconsin renewable energy
May 19, 2025	June 2, 2025	Janet Davis	Divestment from fossil fuels into renewable energy
May 19, 2025	June 2, 2025	Anne Steinberg	Lack of communication, LAB recommendations and divestment from fossil fuels
May 19, 2025	June 2, 2025	George Perkins	Divestment from fossil fuels into renewable energy
May 20, 2025	June 2, 2025	Ann Brummitt	Divestment from fossil fuels into renewable energy and investment transparency
May 22, 2025	June 2, 2025	Jordan Ash	Divestment of Quantam Capital funds
May 22, 2025	June 2, 2025	Anne Steinberg	Invest in Wisconsin renewable energy and upgrade power grid

Board Contact Log – June 2025 Board Meeting

DATE OF INBOUND COMMUNICATION	DATE COMMUNICATED TO THE BOARD	COMMUNICATION SOURCE	TOPIC
May 23, 2025	June 2, 2025	Mary K Canales	Invest in Wisconsin renewable energy
May 23, 2025	June 2, 2025	Seth T. Jenson	Divestment from fossil fuels into renewable energy

Board Meeting

Tab 5 – Investment Performance and Market Updates

- A. Board Investment Performance Report, Q1 2025
- B. Callan Quarterly Report



Investment Performance Report

as of March 31, 2025

Executive Summary

March 31, 2025

- The Core Trust Fund returned 1.59% net of all fees and expenses in Q1, resulting in excess performance of +38 bps. For one year, the Core Trust Fund has returned 6.56% net of all fees and expenses, resulting in an excess return of +88 bps.
- The Core Trust Fund five-year net of all fees and expenses return of 10.24% outperforms the Policy Benchmark by +105 bps on an annualized basis.
- The Core Trust Fund net of external manager fee return outperformed the 60/40 Reference Portfolio return by 34.0% (cumulative) over a 20-year period, which equates to an excess value add of \$17.2 billion over the same period.

WRS Performance

as of March 31, 2025

Fund	Net of All Fees and Expenses Return %			
	Calendar – YTD	1 Year	3 Year	5 Year
Core Trust Fund	1.59	6.56	3.47	10.24
Core Trust Fund Benchmark	1.21	5.68	2.82	9.18
Excess	+0.38	+0.88	+0.66	+1.05
Net Excess Value Add (\$M)	+\$487.7	+\$1,111.3	+\$2,371.8	+\$5,710.9
Variable Trust Fund	(1.70)	7.38	7.34	16.13
Variable Trust Fund Benchmark	(1.82)	7.13	7.35	16.20
Excess	+0.12	+0.25	(0.01)	(0.07)
Net Excess Value Add (\$M)	+\$16.7	+\$27.5	+\$3.4	(\$20.8)

SWIB's investment management has added more than \$5.7 billion above benchmark returns over the last five years to the WRS.

(Annualized Return shown for all periods greater than 1 yr)

Fund	Net of External Manager Fee Return %			Gross of Fee Return %
	10 Year	15 Year	20 Year	30 Year
Core Trust Fund	7.37	7.84	7.06	8.17
Core Trust Fund Benchmark	6.83	7.32	6.65	7.66
Excess	+0.54	+0.52	+0.40	+0.50
Variable Trust Fund	9.95	10.63	8.68	9.09
Variable Trust Fund Benchmark	9.91	10.54	8.64	8.79
Excess	+0.03	+0.09	+0.03	+0.30

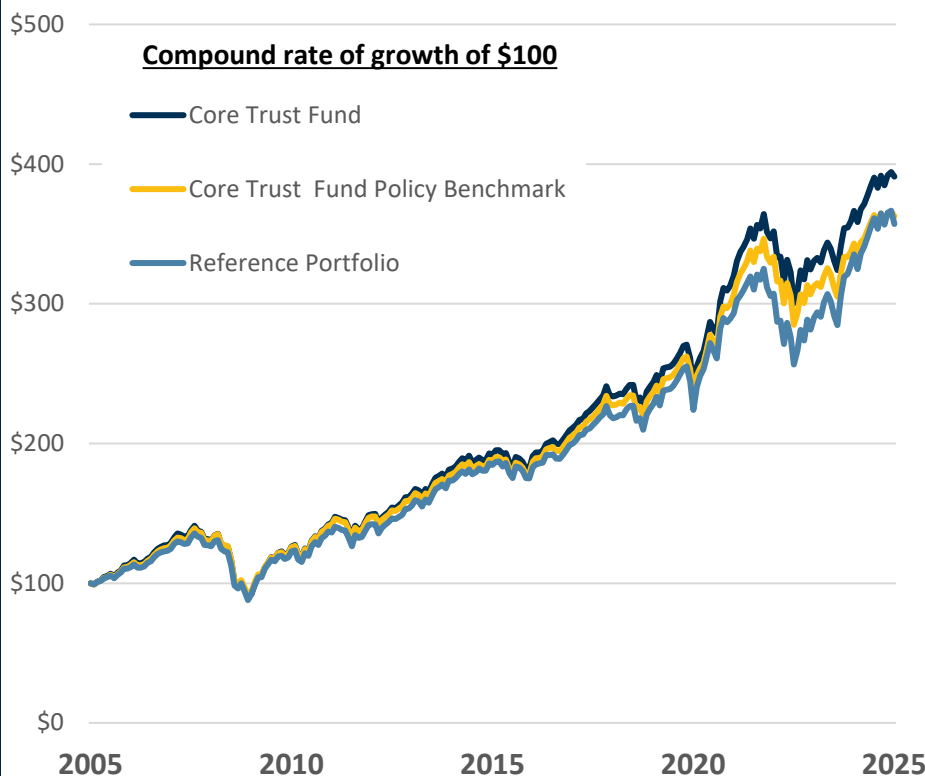
(Annualized Return shown for all periods greater than 1 yr)

Excess returns may contain rounding differences

CTF NoF Performance vs. 60/40 Reference Portfolio

20-year cumulative return¹: April 1, 2005, to March 31, 2025

Indexed Benefit of CTF's Asset Allocation & Active Management Over Time



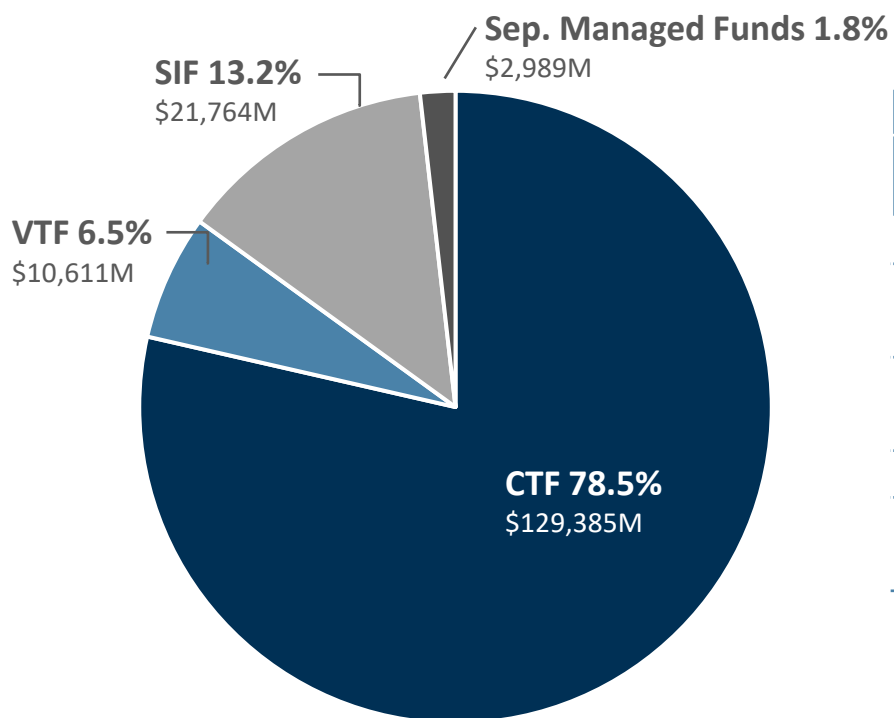
Net of External Manager Fee Return & EVA			
Portfolio / Benchmark	Annualized Return	Cumulative Return	Cumulative \$ Excess Value Added
Reference Portfolio ² (60% equity/40% bonds)	6.6%	257.1%	= Passive Market Return
Benefit of CTF Asset Allocation			
CTF Policy Benchmark	6.7%	262.7%	+\$5.4B
Benefit of CTF Active Management			
CTF	7.1%	291.1%	+\$11.9B
CTF Excess Return vs. Reference Portfolio	+0.5% pts	+34.0% pts	+\$17.2B

¹ Core Trust Fund beginning market value, as of April 1, 2005, was \$63.1B and ending market value, as of March 31, 2025, was \$129.4B

² Reference Portfolio is composed of 60% MSCI World and 40% Bloomberg US Gov't / Credit (rebalanced monthly)

Total Assets Under Management (AUM)

as of March 31, 2025



Gross Market Value of Assets (\$millions)			
By Fund	3/31/2024	3/31/2025	1 Year Change
Total WRS	136,372	139,996	+3,624
Core Trust Fund	125,964	129,385	+3,421
Variable Trust Fund	10,408	10,611	+203
State Investment Fund (SIF) ¹	20,430	21,764	+1,334
Separately Managed Funds	2,846	2,989	+144
Total SWIB AUM	\$159,648	\$164,749	+\$5,102

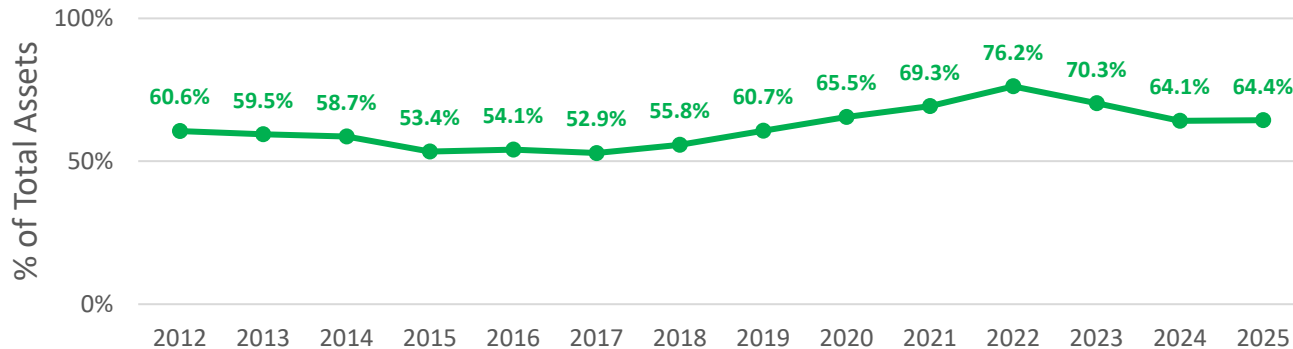
¹ Excludes cash invested in SIF held on behalf of CTF and VTF

Refer to the disclosure section for additional details

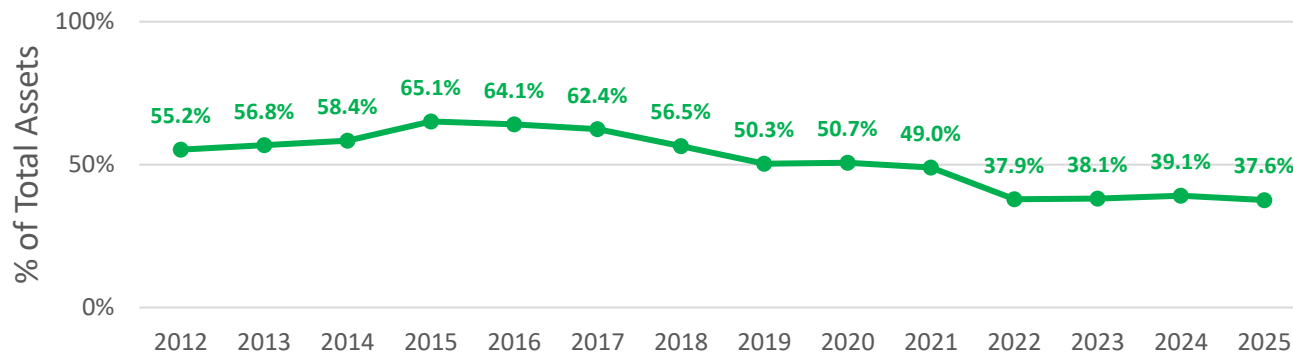
WRS Assets as of March 31, 2025

Breakdown of Active vs. Passive and Internal vs. External

Actively Managed Assets



Internally Managed Assets



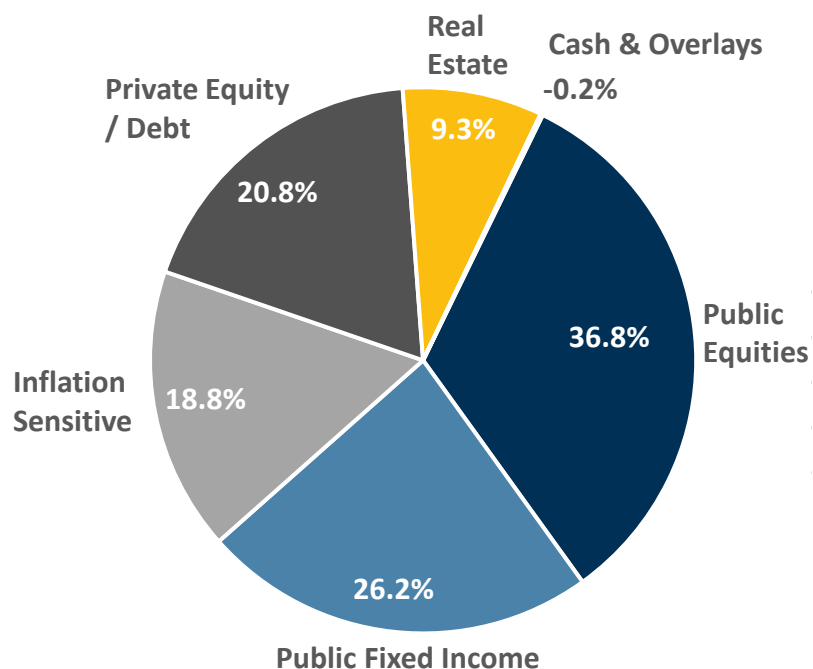
**45% of Total SWIB Assets
(including SIF) are
internally managed**

Note: Market Value Classifications have been revised for all periods.
See the disclosure section for a description of the measurement changes.

Core Trust Fund Assets Under Management

Breakdown by Asset Class as of March 31, 2025

**Total Exposure - % of Total
3/31/2025**



Total Exposure \$ & Adjusted AUM (\$millions)			
Total CTF by Asset Class	Total Exposure \$ 3/31/2024	Total Exposure \$ 3/31/2025	Year over Year Change
Public Equities	49,116	47,612	(1,504)
Public Fixed Income	31,725	33,905	+2,180
Inflation Sensitive	23,700	24,370	+670
Real Estate	11,682	12,002	+320
Private Equity / Debt	24,429	26,866	+2,437
Cash & Overlays	221	(199)	(420)
Total Exposure	\$140,874	\$144,556	+3,682
<i>Less: Policy Leverage</i>	<i>14,907</i>	<i>15,167</i>	<i>+260</i>
Total CTF AUM	\$125,968	\$129,389	+3,421

Total Exposure is composed of the gross market value of investments, plus beta exposure added or offset through derivative instruments

The Real Estate and Private Equity / Debt asset classes (30% of the Core Trust Fund) contain Illiquid Investments, as defined in "Report Disclosures: Glossary, Definitions & Data Sources", below.

Core Trust Fund Allocation

All exposures shown as of March 31, 2025

Allocation – Exposure Based

	(\$ millions)	As % of Total Fund			
Strategies	Total Exposure	Portfolio Exposure %	Benchmark Target %	Target Range %	Notes
Public Equities	47,612	36.8	36.6	30.6 – 42.6	Public & Private exposures include cash Cash / Overlays: Includes liquidity, overlay cash, cash used to fund synthetic beta related to Alpha Pool.
Global Developed	38,837	30.0	29.8		
US Small Cap	2,635	2.0	2.1		
International Small Cap	2,392	1.8	1.9		
Emerging Markets	3,748	2.9	2.9		
Public Fixed Income	33,905	26.2	26.4	20.4 – 32.4	Benchmark Target weights are adjusted monthly to reflect the actual exposure to Private Equity/Debt and Real Estate. Offsetting adjustments are made to Public Equities and Public Fixed Income.
Investment Grade	20,274	15.7	15.8		
Non-Investment Grade	10,148	7.8	7.9		
Emerging Market Debt	3,483	2.7	2.6		
Inflation Sensitive	24,370	18.8	19.0	14.0 – 24.0	
Real Estate	12,002	9.3	9.3	4.0 – 12.0	Additional CTF leverage details available in disclosure section
Private Equity / Debt	26,866	20.8	20.8	12.0 – 28.0	
Cash / Overlays	(199)	(0.2)	0.0		
Leverage	(15,167)	(11.7)	(12.0)	(20.0) to (4.0)	
Total Fund – Total Exposure	\$144,556	111.7	112.0	104.0 – 120.0	
Total Fund – Market Value	\$129,389	100.0	100.0		

Asset \$ exposures and % weights may contain rounding differences

Core Trust Fund: Asset Class Returns

as of March 31, 2025

Asset Class Group: Public Equities	Performance Start Date	Total Exposure Value (\$millions)	Net of External Manager Fee Return %				
			Calendar YTD	1 Year	3 Year	5 Year	10 Year or ITD
Public Equities	12/31/2002	\$47,313	(1.55)	6.51	6.91	15.52	9.11
Benchmark			(1.79)	6.25	6.83	15.61	9.22
Excess			+0.23	+0.26	+0.08	(0.09)	(0.11)
Global Developed	2/28/2017	\$36,657	(1.61)	7.51	8.02	16.33	10.84
Benchmark			(1.69)	7.48	8.07	16.65	11.14
Excess			+0.09	+0.03	(0.05)	(0.32)	(0.29)
Global Equities w/EM	5/31/2021	\$2,119	(0.18)	9.98	7.85		7.68
Benchmark			(1.23)	7.55	7.35		6.12
Excess			+1.05	+2.43	+0.50		+1.56
US Small Cap	2/28/2017	\$2,635	(7.12)	0.19	3.56	15.52	7.93
Benchmark			(7.75)	(2.19)	2.53	14.62	6.92
Excess			+0.62	+2.38	+1.03	+0.89	+1.01
International Small Cap	1/31/2020	\$2,371	2.68	2.79	1.64	11.35	4.31
Benchmark			0.73	2.18	1.20	10.23	3.86
Excess			+1.96	+0.61	+0.44	+1.11	+0.45
Emerging Market ex China	3/31/2022	\$2,769	(2.14)	(2.55)	0.45		0.45
Benchmark			(1.71)	(2.07)	0.83		0.83
Excess			(0.43)	(0.48)	(0.38)		(0.38)
Emerging Market China	3/31/2022	\$582	10.24	30.81	0.99		0.99
Benchmark			9.22	33.24	1.69		1.69
Excess			+1.02	(2.43)	(0.69)		(0.69)

Core Trust Fund: Asset Class Returns

as of March 31, 2025

Asset Class Group: Public Fixed Income & Inflation Sensitive	Performance Start Date	Total Exposure Value (\$millions)	Net of External Manager Fee Return %				
			Calendar YTD	1 Year	3 Year	5 Year	10 Year or ITD
Public Fixed Income	12/31/2003	\$33,713	2.29	5.99	1.91	1.69	2.45
Benchmark			2.31	5.37	2.06	0.93	2.25
Excess			(0.02)	+0.62	(0.14)	+0.76	+0.20
Investment Grade US Credit	2/28/2022	\$8,178	2.52	5.43	1.32		0.55
Benchmark			2.36	4.87	1.13		0.27
Excess			+0.16	+0.57	+0.19		+0.29
US Treasuries	2/28/2022	\$7,991	2.89	4.43	(0.30)		(1.30)
Benchmark			2.92	4.51	(0.05)		(1.07)
Excess			(0.03)	(0.09)	(0.25)		(0.24)
US Long Treasuries	9/30/2022	\$1,186	4.74	1.52			0.34
Benchmark			4.67	1.26			0.15
Excess			+0.06	+0.26			+0.19
MBS	4/30/2020	\$2,730	3.23	7.15	1.91		(0.04)
Benchmark			3.06	5.39	0.55		(0.83)
Excess			+0.18	+1.76	+1.36		+0.79

(periods greater than 1 yr show annualized return, since inception returns shown for strategies with less than 10-year history)

Excess returns may contain rounding differences
Refer to the disclosure section for additional details

Core Trust Fund: Asset Class Returns

as of March 31, 2025

Asset Class Group: Public Fixed Income & Inflation Sensitive	Performance Start Date	Total Exposure Value (\$millions)	Net of External Manager Fee Return %				
			Calendar YTD	1 Year	3 Year	5 Year	10 Year or ITD
High Yield	7/31/2019	\$6,759	0.86	7.22	2.46	6.21	3.81
Benchmark			1.17	6.78	4.54	6.62	4.15
Excess			(0.32)	+0.45	(2.08)	(0.41)	(0.34)
Leveraged Loans	3/31/2023	\$3,383	0.09	6.98			9.81
Benchmark			0.45	7.06			9.58
Excess			(0.36)	(0.08)			+0.23
Emerging Market Debt - USD	6/30/2005	\$1,740	2.45	7.34	4.03	5.46	3.43
Benchmark			2.24	6.75	3.41	3.49	3.16
Excess			+0.21	+0.59	+0.62	+1.96	+0.28
Emerging Market Debt - Local	7/31/2017	\$1,737	4.55	4.47	3.27	3.01	0.31
Benchmark			4.31	4.03	2.71	2.30	0.43
Excess			+0.24	+0.45	+0.56	+0.71	(0.13)
Inflation Sensitive	12/31/2003	\$24,367	4.13	6.15	0.09	2.40	2.32
Benchmark			4.17	6.17	0.06	2.36	2.25
Excess			(0.03)	(0.01)	+0.03	+0.04	+0.07

(periods greater than 1 yr show annualized return, since inception returns shown for strategies with less than 10-year history)

Excess returns may contain rounding differences
Refer to the disclosure section for additional details

Core Trust Fund: Asset Class Returns

as of March 31, 2025

Asset Class Group: Private Markets & Other Strategies	Performance Start Date	Total Exposure Value (\$millions)	Net of External Manager Fee Return %				
			Calendar YTD	1 Year	3 Year	5 Year	10 Year or ITD
Real Estate	12/31/2003	\$12,002	0.72	0.86	(0.27)	4.23	6.58
Benchmark			0.96	(2.27)	(3.14)	1.99	4.92
Excess			(0.24)	+3.12	+2.87	+2.24	+1.66
Private Equity / Debt	11/30/2006	\$26,866	2.89	8.03	4.92	14.79	13.73
Benchmark			2.58	7.97	3.89	12.77	11.61
Excess			+0.31	+0.06	+1.03	+2.02	+2.12
<i>Other strategies:</i>							
Alpha Pool Overlay	1/31/2011	\$13,997	2.71	4.50	2.68	5.98	2.40
Benchmark (set to zero as of 1/1/2019)		(at 1/1/22 = \$6,336)	0.00	0.00	0.00	0.00	0.55
Excess			+2.71	+4.50	+2.68	+5.98	+1.86

(periods greater than 1 yr show annualized return, since inception returns shown for strategies with less than 10-year history)

Excess returns may contain rounding differences
Refer to the disclosure section for additional details

Core Trust Fund: Asset Class Returns

Net of External Mgr Fee - Excess Returns as of March 31, 2025



Excess Return - % points

¹ Either 10-year annualized return or Since Inception (ITD) annualized return is used if there is insufficient return history

Excess returns may contain rounding differences
Refer to the disclosure section for additional details

Core Trust Fund: Alpha Pool Overlay

as of March 31, 2025

Alpha Pool Return	Performance Start Date	Market Value (\$ millions)	Net of External Manager Fee Return %				
			Calendar YTD	1 Year	3 Year	5 Year	10 Year
Total Alpha Pool Composite	1/31/2011	\$13,997	2.71	4.50	2.68	5.98	2.40

- Prior to 2022, Hedge Fund sub strategy assets composed > 90% of the Alpha Pool Composite
- Each sub strategy in the composite incurs the cost of implementation expense (assessed on a pro rata basis using AUM). Hence, each sub strategy is assigned a Zero Benchmark.

Alpha Pool: Key Sub Strategies	Inclusion Date	Market Value (\$ millions)	Calendar YTD NoF Return %	1 Year NoF Return %
Hedge Funds	1/31/2011	\$9,214 (66%)	1.42	5.41
Multi Strat	2/1/2022	\$2,580 (18%)	1.44	1.72

Alpha Pool Overlay Return (Alpha Pool + Beta Return)	Calendar YTD	1 Year	3 Year	5 Year	10 Year
CTF Policy Benchmark (Beta)	1.21	5.68	2.82	9.18	6.83
Alpha Pool Overlay Return (Alpha Pool + Beta)	3.92	10.18	5.50	15.16	9.23

(Annualized Return shown for all periods greater than 1 yr)

Excess returns may contain rounding differences
Refer to the disclosure section for additional details

Variable Trust Fund

as of March 31, 2025

Performance

Fund	Performance Start Date	Market Value (\$ millions)	Net of External Manager Fee Return %				
			Calendar YTD	1 Year	3 Year	5 Year	10 Year
Variable Trust Fund	6/30/77	\$10,611	(1.69)	7.43	7.40	16.19	9.95
Variable Trust Fund Benchmark			(1.82)	7.13	7.35	16.20	9.91
Excess			+0.12	+0.30	+0.05	(0.01)	+0.03

(Annualized Return shown for all periods greater than 1 yr)

Portfolio Allocation

By Portfolio	(\$ millions)	As % of Total Fund		
	Total Exposure	Portfolio Exposure	Exposure Target	Target Range
Public Equities	10,592	99.8	100.0	
US Equities	7,433	70.1	70.0	65.0 – 75.0%
International Equities	3,159	29.8	30.0	25.0 – 35.0%
Cash & Overlays	19	0.2	0.0	
Total Fund	\$10,611	100.0	100.0	

- *Asset class exposures are within the Target Range*

Excess returns may contain rounding differences
Refer to the disclosure section for additional details

Separately Managed Funds

as of March 31, 2025

Fund	Performance Start Date	Market Value (\$ millions)	Net of External Manager Fee Return %				
			Calendar YTD	1 Year	3 Year	5 Year	10 Year or ITD
State Investment Fund (SIF)	6/30/1975	\$22,640	1.09	5.08	4.39	2.66	1.91
SIF Benchmark			1.06	4.90	4.30	2.59	1.86
Excess			+0.03	+0.18	+0.09	+0.06	+0.05
State Life Insurance Fund	10/31/1994	\$96	3.32	3.19	(1.73)	(1.47)	1.65
No Benchmark							
Historical Society Endowment Fund	12/31/1993	\$28	(3.19)	6.67	6.56	14.05	9.64
Historical Society Endowment Benchmark			(2.90)	6.70	6.49	13.56	9.39
Excess			(0.29)	(0.03)	+0.06	+0.49	+0.25
Injured Patients & Families Comp. Fund	10/31/1993	\$1,536	1.72	5.33	1.89	2.94	3.50
IP&FC Benchmark			1.80	5.08	1.72	2.32	3.07
Excess			(0.08)	+0.25	+0.17	+0.62	+0.43
UW System Long Term Fund	3/31/2018	\$589	0.78	5.77	3.34	9.53	6.95
UW System Benchmark			0.65	5.61	3.23	9.37	6.76
Excess			+0.12	+0.16	+0.12	+0.16	+0.19
UW Cash Management Fund	4/30/2022	\$740	1.37	6.04			4.77
UW Cash Management Benchmark			1.43	6.05			4.81
Excess			(0.06)	(0.01)			(0.05)

(periods greater than 1 yr show annualized return, since inception returns shown for strategies with less than 10-year history)

Excess returns may contain rounding differences
Refer to the disclosure section for additional details

Leverage Performance

As of March 31, 2025

CTF Policy Leverage Performance

as of March 31, 2025

Core Trust Fund	Net of All Fees and Expenses Return %			
	Calendar YTD	1 Year	3 Year	5 Year
Unlevered Returns (as estimated):				
Portfolio ¹	1.59	6.53	3.81	9.70
CTF Benchmark Return ¹	1.20	5.64	3.15	8.64
Excess Return	+0.39	+0.89	+0.66	+1.05
Portfolio Return (Unlevered)	1.59	6.53	3.81	9.70
Absolute Return from Leverage ^{1,2}	0.00	0.03	(0.33)	0.54
Implementation (+) or (-)	0.00	0.00	0.00	0.00
Levered Returns (as reported):				
Portfolio	1.59	6.56	3.47	10.24
CTF Benchmark	1.21	5.68	2.82	9.18
Excess	+0.38	+0.88	+0.66	+1.05

(Annualized Return shown for all periods greater than 1 yr)

Leverage notes:

¹ The Unlevered Portfolio Return, Unlevered CTF Benchmark Return, Absolute Return from Leverage and Implementation (+) or (-) are estimated

² Policy leverage was first introduced into the CTF and the benchmark at the end of April 2012

- Policy leverage at SWIB is implemented passively. Therefore, it generally does not contribute to active risk or excess returns¹
- Policy leverage amplifies absolute returns (whether positive or negative), which is an important component in SWIB's strategy to meet the 6.8% actuarial target over the long-term
- The CTF benchmark return is levered to create an apples-to-apples comparison for evaluating relative performance of the CTF (i.e., excess return)

Excess returns may contain rounding differences
Refer to the disclosure section for additional details

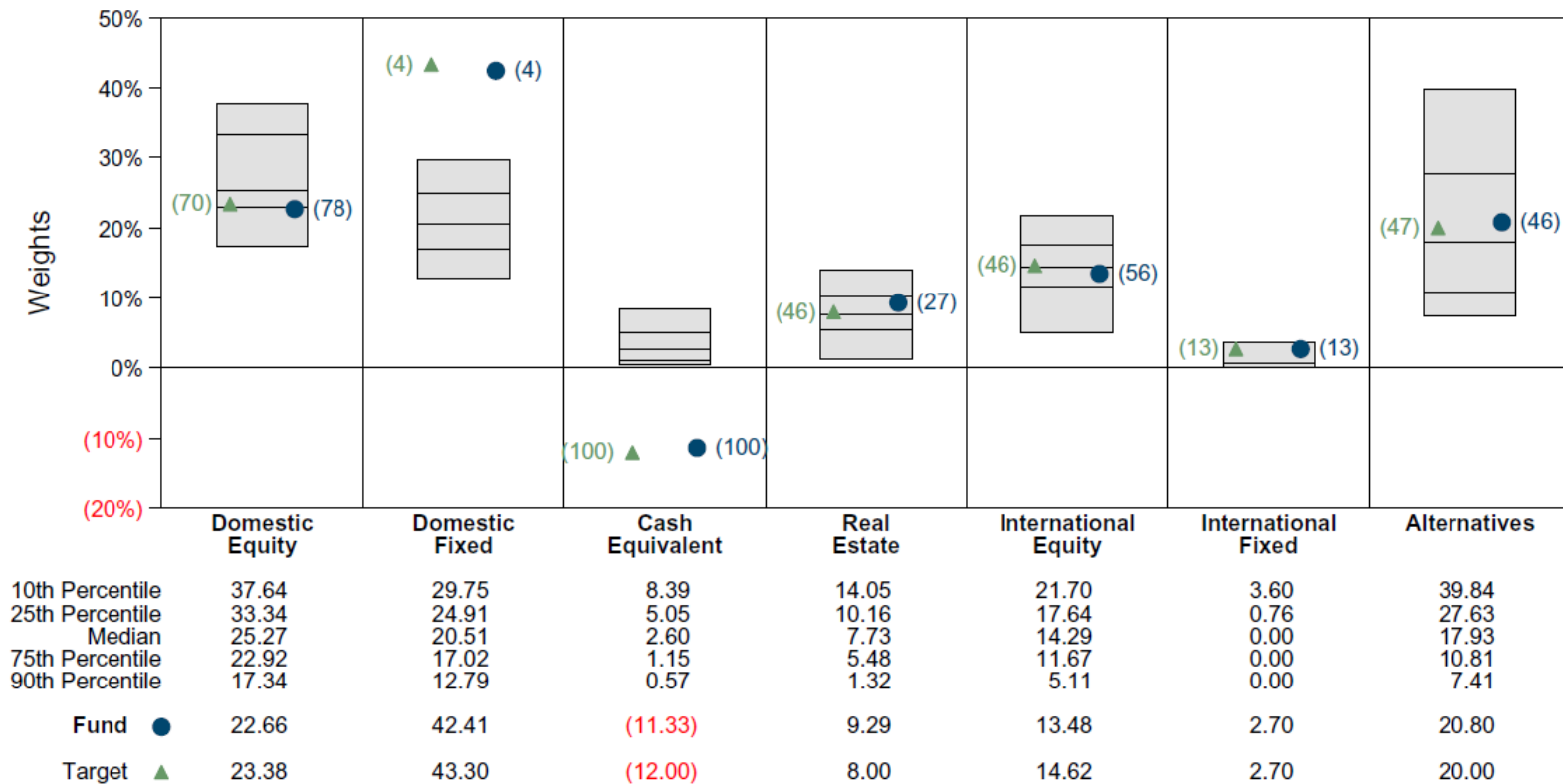
Callan Quarterly Report Summary

1st Quarter 2025

Callan Peer Rank Update (3.31.2025)

CTF Asset Allocation Comparison to Peer Group

Asset Class Weights vs Callan Public Fund Spons- V Lg DB (>10B)

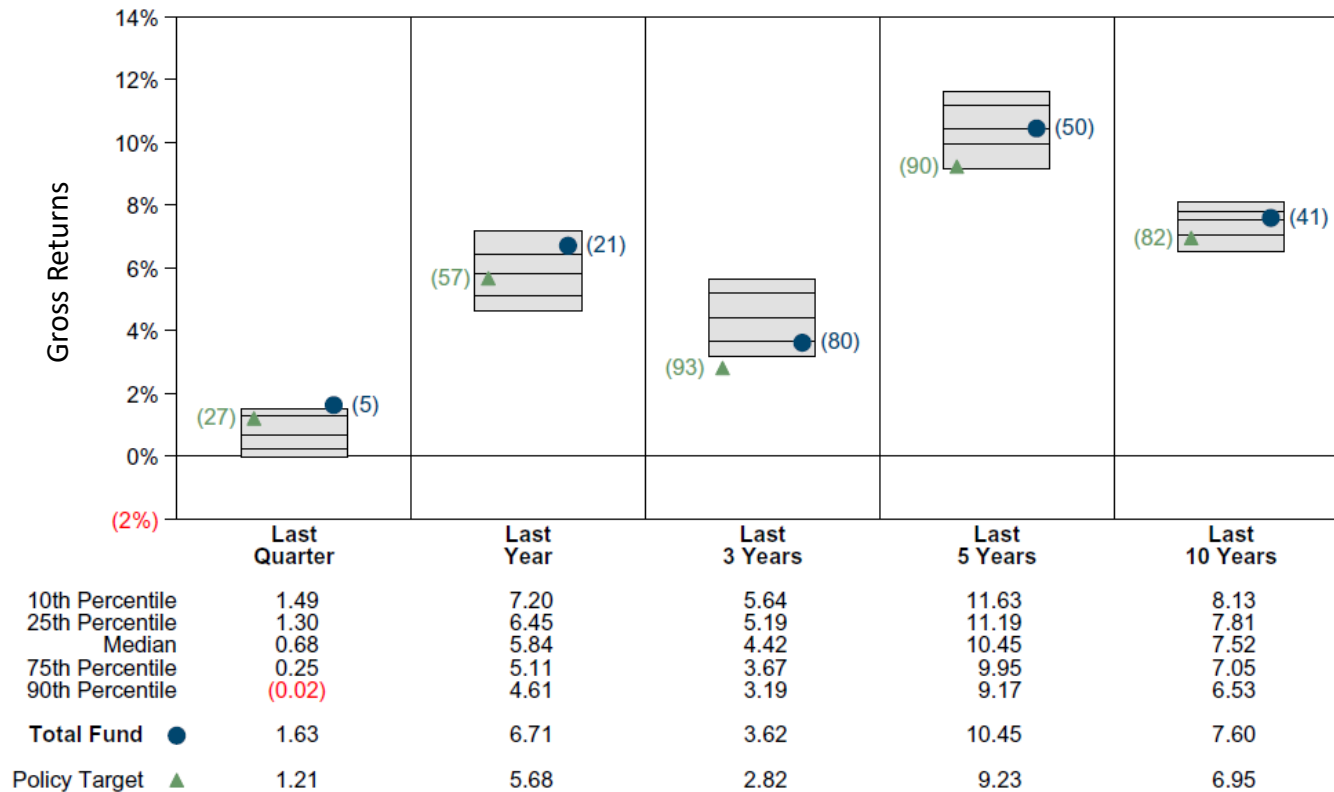


- SWIB's use of financial leverage (policy target of 12%) enables more risk reducing / diversifying assets without sacrificing growth assets.

Callan Peer Rank Update (3.31.2025)

CTF Performance vs. Peer Group Universe

Callan Public Fund Spons- V Lg DB (>10B)

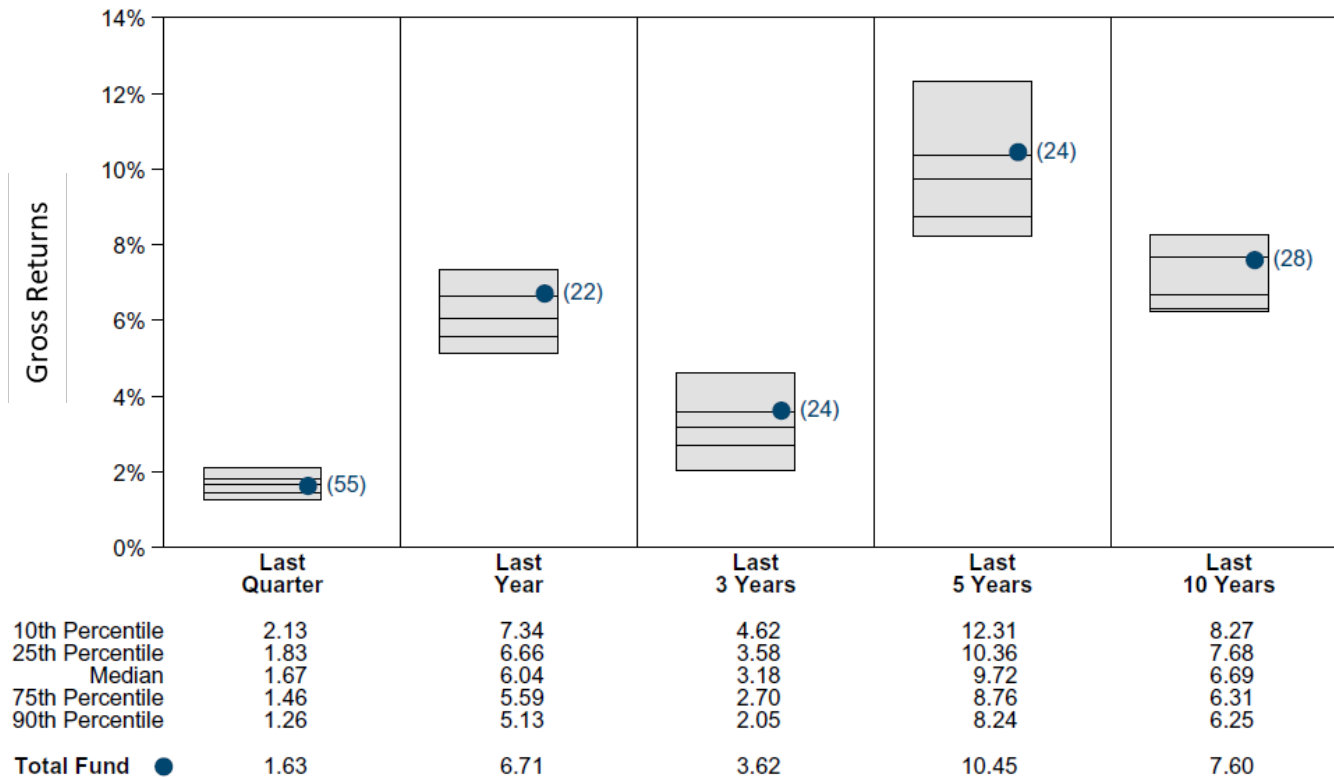


- CTF return exceeds Policy Target over all periods.
- The 1-year return is in the 1st quartile, and longer term 5- and 10-year periods produced median and 2nd quartile results, respectively.

Callan Peer Rank Update (3.31.2025)

CTF Performance on Asset Allocation Adjusted Basis vs. Peer Group

Asset Allocation Adjusted Ranking

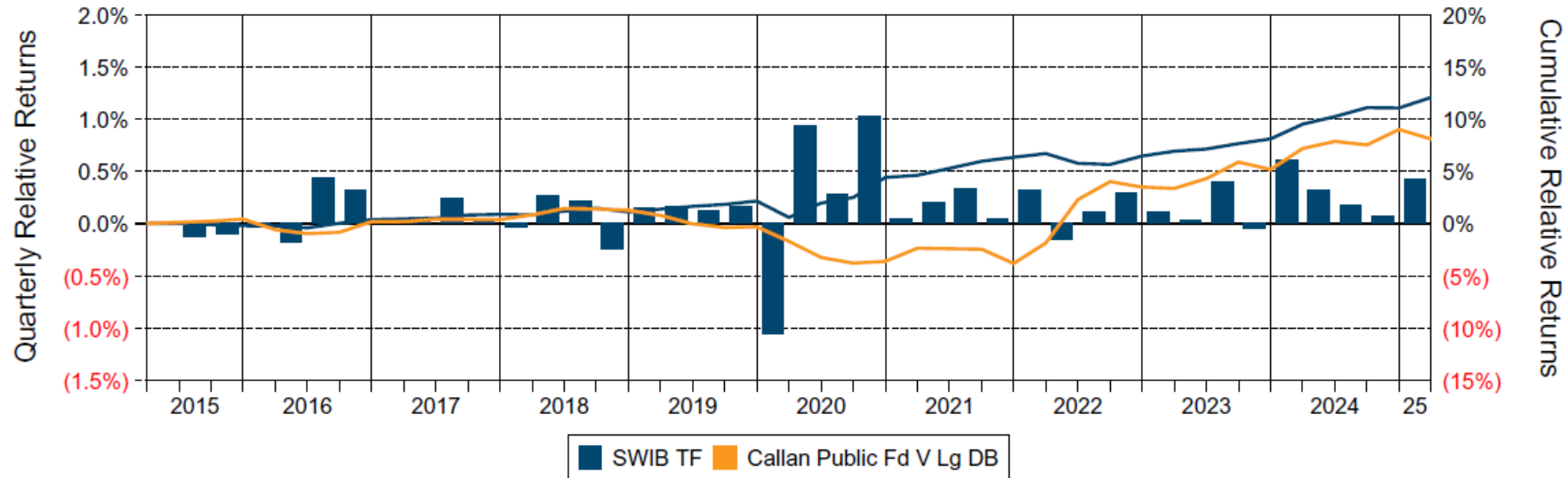


- Peer universe returns are adjusted to match the CTF risk-balanced allocation.
- CTF Fund achieved 1st quartile results over 1-, 3-, and 5-year periods. 2nd quartile result for the 10-year period.

Callan Peer Rank Update (3.31.2025)

10 Year Return Consistency vs. > \$10B Peer Group (Gross Returns)

Cumulative and Quarterly Relative Returns vs Target



- The CTF exhibits low tracking error relative to its peers and produces stable, ascending cumulative performance over 10 years.
- CTF Qtrly relative returns vs. Policy Benchmark are generally positive over the 10-year period.

Report Disclosures

Glossary, Definitions & Data Sources

Report Disclosures

Key Terms and Portfolio Return Information

Term	Description / Definitions
Gross of Fee Return (“GoF Return”)	The total investment fund, composite or investment portfolio return that reflects a reduction for: (i) transaction expenses, (ii) cost of implementing leverage expense (if applicable) (iii) all fees and expenses attributable to externally managed, pooled funds where expenses are included in the fund Net Asset Value (“NAV”). GoF Return is used by SWIB for long-term history (> 20 years), internal analytics and to fulfill consultant data submissions where GoF returns are requested. SWIB’s primary reported return types are NoF Return and NoA Return.
Net of External Manager Fee Return (“NoF Return”)	The GoF return plus additional deductions for external management fees, performance fees and any identifiable carried interest incurred in investment portfolios. SWIB has account records to support NoF return history over approximately 20 years.
Net of All Fees and Expenses Return (“NoA Return”)	The NoF return plus additional deductions for administrative expenses, categorized by SWIB as either Direct or Indirect expenses, that are permitted to be charged directly to the Trust Funds under statutory authority. The recording of official, NoA return at the portfolio or account level began in 2017.
Annualized Return Calculation	<p>SWIB reports containing portfolio and benchmark return calculations for time periods greater than 1 year generally utilize a geometric averaging calculation. Returns shown for periods of less than 1 year are not presented utilizing the annualization calculation method. In this instance, compound returns are reported for the specified calendar period (e.g., month to date, quarter to date or year to date).</p> <p>Annualized Return = $((1 + r^1) \times (1 + r^2) \times (1 + r^3) \dots)^{\text{calendar units} / \text{time interval measured}} - 1$; $r^{(n)}$ = series of holding period returns and calendar units are often expressed as days, months or years</p>
Cumulative Return Calculation	<p>SWIB uses the cumulative return calculation (“cumulative basis”) to reflect the aggregate amount an investment has gained or lost over time for portfolios and benchmarks. This measurement shares aspects of the annualized return calculation, however, it excludes the geometric averaging.</p> <p>Cumulative Return = $((1 + r^1) \times (1 + r^2) \times (1 + r^3) \dots) - 1$; $r^{(n)}$ = series of holding period returns</p>
Compound rate of growth of \$100	<p>The cumulative and compounded rate of growth of portfolio and benchmark returns may also be presented on an indexed basis over time (measurement may be calculated using any return type).</p> <p>Compound rate of growth of \$100 = $(\\$100 \times (1 + r^1) \times (1 + r^2) \times (1 + r^3) \dots)$; $r^{(n)}$ = series of holding period returns</p>

Report Disclosures

Key Terms and Portfolio Return Information

Term	Description / Definitions
Excess Return % ("Excess")	Portfolio return or security level return minus the benchmark return. Portfolio or Composite Returns are generally compared against benchmarks with a similar level of risk. It is widely used as a measure of the value added by the portfolio or investment manager or the manager's ability to outperform the market.
Net Excess Value Add \$ ("NEVA")	NEVA calculates the portfolio's performance NoA return in total dollars relative to a benchmark. NEVA is a measure used to assess the value-add dollars that a particular investment strategy or team generated over specified time periods. NEVA is also used to monitor the return objectives set forth in the annual Active Risk Budget which is prepared for the Core Trust Fund ("CTF") and Variable Trust Fund ("VTF") managed by SWIB.
Net of External Manager Fee Excess Value Add \$	A fund's Excess Value Add \$ may be calculated using NoF returns. The CTF Fund long-term performance comparisons vs. the 60/40 Reference Portfolio and Policy Benchmark are measured over 20-year time intervals. NoF return historical records date back to 1998.
SWIB Inception To Date Reporting	The Quarterly Performance Summary discloses a reporting period described as 10 years or ITD . The return disclosed in this reporting field yields either 10-year annualized returns for funds or portfolios with at least 10 years of return history or the data field may revert to the return since inception for portfolios with less than 10 years of history. The quarterly report provides a performance start date for those portfolios with the abbreviated return history.
Performance Start Date	The date denotes the initial period of a portfolio or composites' return data series that is stored and calculated by the SWIB Performance Measurement Service Agent.
Time-weighted Rate of Return	A method of calculating period-by-period returns that reflects the change in value and negates the effects of external cash flows. This methodology is applied to portfolios that are processed with daily frequency and where daily valuation updates of the underlying instruments are available.
Modified Dietz Total Rate of Return	A measurement that evaluates a portfolio's return based on a weighted calculation of its cash flow. The method considers the timing of cash flows and assumes a constant rate of return over the specified time period. This methodology is applied to portfolios and composites that are processed with monthly frequency (and where only monthly valuation updates are available).

Report Disclosures

Key Terms and Portfolio Return Information

Term	Description / Definitions
Policy Benchmark	The Fund level Benchmark as approved by the Benchmark Committee. The Benchmark is composed of multiple indices that reflect the Fund's exposure to a diverse set of investment strategies. (can also referred to as "Policy Target" as implemented through SWIB's Asset Allocation plan).
Reference Portfolio	Hypothetical global portfolio comprised of 60% MSCI World Net (using a SWIB custom net variant as of 2010) and 40% Bloomberg Barclays Government Credit Index. The return is presented on a gross of fee basis and assumes no contributions or withdrawals.
Zero or No Benchmark (for Official Measurement purposes)	<p>Zero Benchmark: This designation applies to the CTF Alpha Pool Overlay. Since 1/1/2019, the benchmark associated with the Alpha Pool Overlay has been set to zero. The Cost of Implementation (which includes an estimate of financing costs) is directly allocated to the underlying strategies that make up the Alpha Pool Overlay and the effect of the cost allocation will usually result in a deduction from the strategy's return.</p> <p>No Benchmark: In certain instances, a benchmark is not assigned for the purpose of measuring excess performance. For example, SWIB's client, the State Life Insurance Fund ("SLIF"), has no assigned benchmark for its investment mandate due to the limitations placed on SWIB's investment activities by the SLIF. The SLIF portfolio invests in fixed income securities that approximate the expected life of the Fund's insurance contracts, and SWIB is directed to hold all securities to maturity other than in extraordinary circumstances.</p>
Reported Net Benchmark Returns	<p>The SWIB Benchmark and Performance Committee and its designated benchmark consultant follow the parameters set forth in the SWIB Benchmarking Philosophy. Under the Philosophy, selected benchmarks should exhibit the characteristics described in the <i>Benchmark Qualities</i> criteria to ensure portfolio and benchmark attributes are closely aligned.</p> <p>Net Total Return Benchmarks: benchmark type commonly used for most publicly-traded portfolio strategies. The benchmark returns reflect the price performance, plus the net amount of all special and regular dividends after applying an assumed foreign tax withholding rate (as determined by the benchmark data provider.)</p> <p>SWIB Custom Net Benchmark for non-U.S. Public Equity Strategies: SWIB's custodian bank customizes SWIB's non-U.S. equity benchmarks to reflect the actual, historical reinvestment of withholding tax rates rather than index provider's assumption for varying countries.</p> <p>Net of External Manager Fee-based Benchmarks: benchmark type most frequently used to gain better alignment when the measured SWIB portfolio return is inclusive of external management fees, performance fees and carried interest charges (e.g., private market investments.)</p>

Report Disclosures

Key Terms and Portfolio Return Information

Term	Description / Definitions
Custom Weighted Calculated Benchmarks	<p>SWIB managed funds and / or portfolios may require the construction of custom benchmarks that are created through applying static or asset weighted calculations to achieve a blended benchmark that is representative of the investment strategy. When available or feasible, SWIB will request its third-party benchmark data provider(s) to blend benchmarks as a part of the market data service. If this option is not available, SWIB will calculate the benchmark using market data inputs.</p> <p>In certain cases, SWIB may customize a benchmark to more accurately reflect the SWIB managed Fund's tax status and actual tax rate experience in non-U.S jurisdictions with investment portfolio with-holding taxes applicable to dividends and capital gains. This type of custom benchmark is designated as "SWIB Custom Net".</p>
Gross Market Value	The price at which the fund investor can buy or sell the underlying investment instruments held in the portfolio at a given time multiplied by the quantity held, plus any accrued income. The Gross Market Value of a portfolio is the market value of the portfolio or composite without any deduction for SWIB expenses.
Illiquid Investments	Those investments that may be difficult to sell or be sold quickly because of a lack of market or ready or willing investors.
Total Exposure	For SWIB managed funds governed by the Wisconsin Retirement System ("WRS") Investment Policy, this measure reflects the total value of the fund's exposure to investable markets by asset class and sub asset class. Total Exposure is inclusive of those instruments utilized under the WRS Leverage Use Policy to achieve the asset exposures approved under the asset allocation strategy and active risk target.
Internally Managed Portfolios	Portfolios managed by SWIB investment professionals. Each internal portfolio is assigned compulsory investment guidelines and is also assigned "soft risk parameters." Soft risk parameters refer to desired characteristics and/or risk exposures.
Externally Managed Portfolios	Portfolios managed by third-party investment managers hired by SWIB. External active and passive managers operate under contractual investment guidelines approved by SWIB's Investment Committee or by SWIB's investment management staff, as designated in the Investment Committee Charter.
Active Management	Actively managed portfolios have the objective of out-performing their respective benchmarks (or generating alpha) by using investment insights or quantitative tools to deploy buy, hold, and sell decisions. This style of management will result in portfolio positioning decisions that will add active risk and generate higher tracking error. Actively managed portfolios are governed through investment guidelines and soft risk parameters.
Passive Management	Passively managed portfolios have the objective of closely tracking the returns and risk of their respective benchmarks. This style of management usually involves mirroring the benchmark security holdings (or constituents) to closely replicate the benchmark risk and return.

Report Disclosures

Key Terms and Portfolio Return Information

Term	Description / Definitions
Note on report data sources and processing	<p><u>Return Calculation Processing</u> Bank of New York (BNY), an independent 3rd party, provides services related to custodial records, accounting and performance return calculations for SWIB managed funds. BNY also serves as the source for certain standard, market-based benchmarks and static weight blended benchmarks.</p>
	<p><u>Return Calculations Prepared on a Notional or Unlevered Basis (CTF only)</u> SWIB uses leverage to help achieve the CTF's diversification objectives. A description of the Leverage Use Policy is contained in the WRS Investment Committee Investment Guidelines. For those accounts and composites deploying leverage, the calculation of notional or unlevered returns (using gross asset exposure) is required to achieve a comparable return vs. market indices. BNY performed the unlevered return calculation from 7/1/2017 – 9/30/2024. Beginning 10/1/2024, this calculation was processed using the SWIB IBOR. Consistent with Leverage Use Policy guidelines, this calculation is processed inside the reported composites that contain US Large Cap Equity, US Small Cap Equity, MSCI World x US Equity, US TIPS and US Treasury exposures.</p>
	<p><u>State Investment Fund ("SIF") Commingled Fund Processing</u> The SIF pools the cash of the State of Wisconsin and its agencies, WRS, and various local government units (Local Government Investment Pool) into a commingled fund with the investment objectives of safety of principal and liquidity while earning a competitive money market rate of return. For purposes of calculating earnings to each participant, all investments are valued at amortized cost. SIF returns are calculated using the monthly net earnings distributed to all commingled fund participants. SIF returns are presented net of all allocated SWIB administrative costs and State Controller's Office costs that are allocated to the participants of the Local Government Investment Pool.</p>
	<p><u>Benchmark Market Data and Selection Process</u> The data source for this information is provided by multiple investment industry market data vendors and analytics firms depending on the investment strategy. The SWIB Benchmark and Performance Committee governs the benchmark selection process. An independent consultant (selected by the Board of Trustees or "Board") makes recommendations to initially select or change benchmarks.</p>
	<p><u>Peer Rank Return Comparison Data</u> This information is provided and processed by industry consultants that consume return information for SWIB managed funds and then provide investor universe return comparisons and analytics using proprietary databases. When consultant info is included in the Quarterly Performance Summary the preparer of the work is identified.</p>
	<p><u>SWIB Annual Reports: Additional WRS disclosures can be found in the Annual Reports, available at https://www.swib.state.wi.us/list-of-investments.</u></p>

Report Disclosures

Key Terms and Portfolio Return Information

Term	Description / Definitions
(continued) Note on report data sources and processing	<p>On 1/1/2024, the BNY ABOR processing platform became the primary source for CTF and VTF return calculations and market value amounts contained in this report. Beginning 10/1/2024, returns and market values for the SIF and the SWIB-managed Separately Managed Funds were processed using the SWIB IBOR.</p> <p>This report contains unlevered return calculations that are processed using Total Exposure (Notional-based) Assets for accounts with substantial derivative positions that generate leverage for the CTF. The objective of this calculation is to generate meaningful returns that compare to the account or composite's benchmark. The following composites are presented on an unlevered basis:</p> <p>CTF – Public Equities (pg. 9) CTF – Global Developed (pg. 9) CTF – Public Fixed Income (pg. 10) CTF – US Treasuries (pg. 10) CTF – Inflation Sensitive (pg. 11)</p>

Leverage Disclosures

Calculation formulas to estimate impact

Report Disclosures

Notes on CTF Leverage Analysis

Term	Description / Definitions
Portfolio Return (Unlevered)	<p>This is an estimated-only CTF return because SWIB does not implement a CTF unlevered portfolio to calculate actual performance against. Leverage is used to expand the CTF's entire asset base. All definitions that include (unlevered) are ESTIMATES only for this reason.</p> <p>It is estimated by:</p> <ol style="list-style-type: none"> 1) <u>Excess Return (Levered)</u> is first subtracted from the <u>Portfolio Return (Levered)</u>¹; 2) The result of Step 1 is then divided by the <u>Policy Leverage Factor</u>; then 3) <u>Excess Return (Levered)</u> is added back to the result of Step 2 and that number is then adjusted to account for the cost of financing (i.e., the expense of acquiring leverage, which would not be applicable to an unlevered portfolio). $\text{Portfolio Return (Unlevered)} = \left(\frac{\text{Portfolio Return (Levered)} - \text{Excess Return (Levered)}}{\text{Policy Leverage Factor}} \right) + \text{Excess Return (Levered)} - \text{cost of implementation}$ <p>¹ Note, because <u>Excess Return (Levered)</u> is the difference between two similarly "levered" portfolios (Portfolio Return (Levered) and Benchmark Return (Levered)), it represents outperformance that is not attributable to leverage. Accordingly, it is subtracted first as it would be inaccurate to reduce such amount by the Policy Leverage Factor for purposes of this calculation.</p> <p><u>Policy Leverage Factor</u> is the amount of the approved Policy Leverage during any given period, time weighted for multi-year periods. Policy Leverage was first introduced into the CTF Portfolio and Benchmark at the end of April 2012 and was raised from 10% to 15%, effective Calendar Year 2021.</p>
CTF Benchmark Return (Unlevered)	<p>Estimated by the <u>Benchmark Return (Levered)</u> divided by the <u>Policy Leverage Factor</u> for the period.</p>

Report Disclosures

Notes on CTF Leverage Analysis

Term	Description / Definitions
Excess Return (Unlevered)	<p>The Excess Return (Unlevered) is the excess return that it is estimated SWIB would have achieved if it did not implement leverage for the CTF.</p> <p>Estimated as <u>Portfolio Return (Unlevered)</u> minus <u>Benchmark Return (Unlevered)</u>.</p> <p>Can also be estimated by taking the actual <u>Excess Return (Levered)</u> minus <u>Implementation (+) or (-)</u> (see below for definition).</p>
Absolute Return from Leverage	<p>Estimated by the <u>Portfolio Return (Levered)</u> minus <u>Portfolio Return (Unlevered)</u> minus <u>Implementation (+) or (-)</u>.</p>
Implementation (+) or (-)	<p>The relative cost of financing (i.e., the actual cost of financing minus the CTF benchmark cost of financing). The CTF benchmark cost of financing is the CTF cash benchmark, previously LIBOR plus 30 bps and now BSBY plus 30 bps. Implementation (+) or (-) can also result from outperformance or underperformance relative to how efficiently SWIB replicates the index in connection with policy leverage (this is called basis risk).</p> <p>Can either be positive or negative. When the leverage implementation is achieved at a cost saving compared to the CTF cash benchmark (i.e., less than the CTF cash benchmark), it is positive (+); but when it is achieved with additional cost compared to the CTF cash benchmark (i.e., more than the CTF cash benchmark), it is negative (-). Cost savings can generate minor excess returns for the CTF. Basis risk can also generate minor contributions to or detractions from relative performance with respect to policy leverage.</p>
Portfolio Return (Levered)	<p>Actual performance of the CTF Portfolio for the period presented, from all strategies including Policy Leverage.</p>
CTF Benchmark Return (Levered)	<p>Actual performance of the CTF Benchmark for the period, taking into account the use of Policy Leverage.</p>
Excess Return (Levered)	<p>Actual excess return of the CTF. Portfolio Return (Levered) minus Benchmark Return (Levered).</p>

Board Meeting

Tab 6 – Investment Committee Open Session Business

- A. Amendments to WRS Investment Committee Investment Guidelines
- B. Approved Open Session Investment Committee Meeting Minutes for February 25, April 1, and April 22, 2025
- C. Final Open Session Investment Committee Agenda for May 27, 2025, and Draft Open Session Agendas for June 24 and July 29, 2025

SWIB Investment Committee
**WISCONSIN RETIREMENT SYSTEM
INVESTMENT GUIDELINES**

Revised as of

~~November 26, 2024~~

April 22, 2025

Table of Contents

I. INTRODUCTION	3
II. LEVERAGE USE POLICY	3
III. DERIVATIVES USE POLICY	6
IV. REBALANCING PROCEDURES	8
V. DRAWDOWN PROCEDURES	9
VI. WRS GENERAL AND PORTFOLIO GUIDELINES – INTERNAL MANAGEMENT	10
A. SMALL CAP PORTFOLIO	12
B. ARA PASSIVE INTERNAL PORTFOLIOS	13
C. ARA PASSIVE EXTERNAL MANAGERS	14
D. INVESTMENT GRADE CREDIT PORTFOLIO	15
E. EXPOSURE MANAGEMENT PORTFOLIOS	17
F. MULTI-STRAT PORTFOLIO	17
G. LONG TREASURY PORTFOLIO	18
H. MORTGAGE-BACKED SECURITIES PORTFOLIO	19
I. HIGH-YIELD BOND PORTFOLIO	20
J. LEVERAGED LOAN PORTFOLIO	22
K. TBA STRATEGY PORTFOLIO	23
L. SHORT TERM CREDIT PORTFOLIO	24
M. GENERAL GUIDELINES SPECIFIC FOR PRIVATE MARKETS AND FUNDS ALPHA PORTFOLIOS	26
N. PRIVATE DEBT PORTFOLIO	27
O. VENTURE CAPITAL PORTFOLIO	28
P. PRIVATE EQUITY PORTFOLIO	30
Q. REAL ESTATE EQUITY PORTFOLIO GUIDELINES	31
R. CURRENT RETURN PORTFOLIO	32
S. HEDGE FUND PORTFOLIO	33
T. BETA ONE PORTFOLIO	35
U. PRIVATE MARKETS AND FUNDS ALPHA OVERAGE PORTFOLIOS	37
VII. EXTERNAL MANAGEMENT	38
APPENDIX 1 - APPROVED EXCHANGES	39
APPENDIX 2 - SOFT RISK PARAMETERS	40
APPENDIX 3 – CTF AND VTF BENCHMARKS	45

I. INTRODUCTION

The SWIB Board of Trustees (the “Board”) has delegated to the investment staff of SWIB standing authority to manage the assets of the Core Retirement Trust Fund (the “Core Fund”) and the Variable Retirement Trust Fund (the “Variable Fund”), which together make up the Wisconsin Retirement System (the “WRS”), pursuant to the Board’s WRS Investment Policy and to section 25.15(2) of the Wisconsin Statutes and section IB 2.02 of the Wisconsin Administrative Code. The Investment Committee was created to provide oversight of WRS¹ investments within the parameters established by the Board and pursuant to the Investment Committee’s Charter approved by the Board. To properly and prudently execute its delegated authority and oversight functions, the Investment Committee has established guiding policies, guidelines and procedures, which are set forth in this document, the Investment Committee Investment Guidelines (these “IC Guidelines”). These IC Guidelines articulate the policies and guidelines that are employed in the day-to-day management of the WRS assets by SWIB’s staff. This document will be reviewed periodically and updated as necessary by the Investment Committee to reflect changes in investment strategies and to reflect best industry practices for prudent investors. Notwithstanding the delegation of authority by the Board to the Investment Committee for the establishment, approval, and amendment of the policies, guidelines and procedures included in these IC Guidelines, the Board reserves all rights to modify and amend these IC Guidelines at any time in its discretion. Any changes to these IC Guidelines will be periodically reported to the Board. In addition to these IC Guidelines, SWIB staff may also have to comply with Risk, Compliance Division or legal requirements, and review operational readiness with Operations staff prior to the trading of the instruments and securities authorized herein.

II. LEVERAGE USE POLICY

Introduction

Leverage is an exposure to an asset that is not fully collateralized by cash assets or an exposure to an asset acquired that has not been fully funded. Leverage by itself does not necessarily create additional market risk or variation in market returns. Leverage may result in greater diversification and lower market risk than an unlevered portfolio under normal market conditions. The funds managed by SWIB can have exposure to leverage through different structures, instruments and vehicles.

SWIB uses leverage in two primary ways. The first is to express the overall policy asset allocation, which includes leverage (“Policy Leverage”). Generally, Policy Leverage is implemented passively. The total amount of Policy Leverage is approved by the Board through the WRS asset allocation process. The Board-approved asset allocation targets for each asset class together with the approved Policy Leverage is called the “Policy Portfolio.” The second use of leverage is to fund the alpha pool (“Alpha Pool Leverage”), which overlays alpha-producing strategies on the overall Core Fund Policy Portfolio. Those alpha strategies are funded with additional leverage but

¹ The Investment Committee also has oversight of the State Investment Fund and other funds managed by SWIB as described in the Board’s SIF and Separately Managed Funds Investment Policy and Guidelines.

are not part of the Policy Portfolio. The total amount of Alpha Pool Leverage is limited by the Board-approved active risk target and range.

Certain internal active portfolios are also authorized to use portfolio-specific leverage. The Core Fund may provide limited unallocated cash to such internal active portfolios, and to other portfolios, to fund short-term financing needs, and charge a market-based funding rate to the applicable portfolio. Active internal and external portfolios may also fund portfolio leverage by financing assets within the portfolio.

Use of leverage introduces distinct liquidity risk that can vary based on leverage sources and margin requirements. Often, leverage requires liquid assets to satisfy margin obligations. Liquidity risk is managed by monitoring the level of liquidity required in various market scenarios and ensuring that an adequate reserve of liquid assets is available to meet commitments in times of market stress. Having a variety of leverage sources diversifies the refinancing risk and mitigates cost under varied market scenarios.

Alpha Pool and Policy Leverage can be generated through several different mechanisms. These mechanisms may be utilized in different proportions given market conditions and asset allocations. Each of these mechanisms have unique counterparty dynamics and risks, all of which are addressed by SWIB's counterparty risk framework.

Derivative instruments. Leverage can be gained by replacing a physical instrument with a derivative instrument such as a futures contract, a swap contract, or a forward contract. Most of the proceeds generated from the sale of the physical instrument can then be used to finance further investment. The cost of the leverage is imbedded in the price of the derivative instrument. Use of derivative instruments provides the ability to source large scale leverage across many different asset classes in a standardized format. There is a risk of tracking error, or basis risk, between the physical instrument and the derivative instrument that could result in the returns of the two instruments diverging.

Securities Lending Cash Collateral. Through the course of securities lending, cash collateral may be received from borrowers. This cash may be used to finance leverage needs without creating basis risk. The available cash fluctuates day to day and is governed by the borrowing demand of and choice of collateral posted by market participants.

Repurchase Agreements (Repo). Repo is another way to gain leverage from physical instruments, like securities lending, without using derivative instruments. While securities lending relies on borrowing demand for the physical instrument, repo can generate leverage from physical instruments that do not have borrow demand, and also creates zero basis risk. The repo and the underlying asset management may be executed internally, externally or a mix of the two. An agency repo model can be used to facilitate operational scale, collateral efficiency, and market access by partnering with an external agent.

Secured Borrow Agreements. Physical instruments can be pledged as collateral in a secured borrow agreement to gain financing from a bank or other financial institution, as and when needed. This form of financing creates zero basis risk and may have maturities

ranging from three to six months. The stability of the available capital can vary based on the financing bank's or financial institution's balance sheet constraints.

Unsecured Borrowing. Unsecured borrowing, such as the issuance of commercial paper, is another way to gain leverage without encumbering assets or requiring collateral. This form of borrowing can diversify the cash providers purchasing the debt providing SWIB with access to new borrowing sources.

New mechanisms may be added from time to time and included herein.

Leverage Use Philosophy

Leverage is used where it can improve investment portfolio efficiency in terms of return for risk versus alternative choices that do not use leverage. Leverage will also be used to improve portfolio diversification and reduce portfolio concentration.

Leverage Monitoring

Detailed reporting is regularly (i.e., daily, monthly and quarterly) produced by SWIB to provide feedback regarding leverage exposures for review by portfolio managers, the head of Asset and Risk Allocation (ARA), the Risk Management Division, and the Executive Director/Chief Investment Officer (ED/CIO). Leverage use risk metrics are reported at least quarterly to the Investment Committee. Leverage use is also periodically reported by the ED/CIO to the Board.

Policy and Alpha Pool Leverage Guidelines

1. Leverage ratios govern leverage derived from beta sources (i.e., from levered asset class exposures). Established leverage ratio ranges for each levered asset class are set forth below. Current Leverage Ratio is defined as the ratio of notional exposure to capital available in the portfolio (or total exposure to unencumbered exposure in the case of repo). If the Current Leverage Ratio for any levered asset class exceeds the Maximum Target Leverage Ratio, SWIB will, within 30 days (unless such time limit is waived with majority approval of the rebalancing task force), reduce exposure or add capital to bring the Current Leverage Ratio within the established range. A Current Leverage Ratio below the Minimum Target Leverage Ratio will be monitored as part of the overall optimization of capital and funding costs.

<i>Levered Asset Class</i>	Minimum Target Leverage Ratio	Target Leverage Ratio	Maximum Target Leverage Ratio
<i>US Large Cap Equity</i>	2.7	3.3	4.0
<i>US Small Cap Equity</i>	2.7	3.3	4.0
<i>MSCI World xUS Equity</i>	2.7	3.3	4.0
<i>US TIPS</i>	6.0	8.0	10.0
<i>US Treasuries</i>	8.0	10.0	12.0

III. DERIVATIVES USE POLICY

Introduction

A "derivative instrument" is an investment instrument which usually derives its value and marketability from an underlying instrument which represents direct ownership of an asset or a direct obligation of an issuer (e.g. a "spot" or cash market instrument). SWIB recognizes that derivatives provide a means through which SWIB can implement investment strategies in a more cost and time efficient manner than through the physical investment of the underlying securities. Additionally, derivatives can be used to facilitate SWIB's risk management activities including risk mitigation. Derivatives include such instruments as futures, swaps, options and currency forwards and may be exchange traded, traded over-the-counter (OTC) and/or cleared.

Derivatives Use Objectives

The overall strategic objective of SWIB's use of derivatives is to facilitate risk exposure management and to manage the cost of investing. Objectives for derivatives use include:

1. Constructing portfolios with risk and return characteristics that could not efficiently be created using underlying physical securities,
2. Changing systematic exposures without executing trades in the underlying physical securities,
3. Hedging or managing risks, and
4. Effecting varying active and passive investment strategies including, but not limited to: portable alpha, currency hedging, equitization, relative value trades, transition management, and rebalancings.

Derivatives Use Monitoring and Reporting

Derivatives use exposures will be monitored by portfolio managers that employ derivatives, and incorporated as part of the overall risk monitoring of the strategy by the ED/CIO and the Risk Management Division. The Investment Committee will ~~monitor derivatives use exposures and risk metrics on a quarterly basis or more frequently as needed~~ be notified of material risks identified.

Derivatives Guidelines Applicable to all WRS Internal Portfolios:

1. Exchange-traded derivatives must be traded on a recognized exchange approved by the Investment Committee, except for exchange-traded derivatives that are traded pursuant to Exchange for Related Position (EFRP) transactions, which are traded off-exchange and not subject to this requirement. Such approved exchanges are listed on *Appendix 1*. As additional exchanges are approved *Appendix 1* shall be updated without amendment to these IC Guidelines.
2. OTC derivatives may only be traded with counterparties with which SWIB has a current International Swap and Derivative Association (ISDA) agreement that includes a Credit Support Annex (CSA).

In addition:

- a) The counterparty, or its guarantor, must, on each date on which a transaction is entered into, have an actual credit rating of not less than: (1) "A2/P2" on short-term debt from S&P or Moody's; and/or (2) "Baa2/BBB" on long-term debt from S&P or Moody's.
- b) The collateral that SWIB holds under a CSA may be invested in the following:
 - i. Bank deposit accounts;
 - ii. Any money market fund having a rating of at least "Aaa" by Moody's or at least "AAA" by S&P;
 - iii. Overnight commercial paper having a rating of at least "P-1" by Moody's and "A-1" by S&P;
 - iv. Overnight repurchase agreements with U.S. government, agency or dollar cash collateral;
 - v. Overnight reverse repurchase agreements with U.S. government, agency or dollar cash collateral; and
 - vi. The State Investment Fund or similar short term investment funds.
3. For clarity, Items 1 and 2 do not apply to exchange-traded funds (ETFs), or to over-the-counter derivatives entered into on behalf of SWIB, or a title-holding entity that is wholly-owned by SWIB, by either an external manager or advisor in connection with a real estate separate account.
4. Investments may be made in exchange-traded notes (ETNs) which are traded on exchanges included on an approved-exchange list maintained by the Compliance Division. The Risk and Compliance Divisions shall be notified upon any investment in a new ETN.
5. Investments may be made in put option contracts and call option contracts on securities, futures or an index of a group of securities. Put and call options may be purchased or sold on investments that could be held in the portfolio if the options were exercised.
6. Currency exposure management is permitted (but not required) through the use of exchange-traded currency instruments, and through the use of spot and forward contracts in foreign currencies (including FX Swaps). Direct currency hedging is permitted to directly hedge currency exposure back to the U.S. dollar. Cross-currency exposure management to transfer out of an exposed currency and into a benchmark currency is permitted.
7. Guideline limits and soft parameters for each portfolio will be applied to the aggregate exposures which include both physical and synthetic securities.
8. New derivatives instruments will be reviewed and approved by the Investment Committee before their implementation or use.
9. SWIB shall not enter into new derivatives agreements with new counterparties until the ED/CIO has approved the agreement. Each relevant division head or portfolio manager

shall submit to the ED/CIO a written summary of any proposed addition of a relationship that may require evaluation of counterparty credit risks. Such relationship may involve (a) entering into a master netting or trading agreement with a new counterparty, which acts either as a principal or as an agent on behalf of multiple principals, or (b) hiring an external manager to implement a strategy that may require the manager to evaluate and monitor counterparty credit risks on SWIB's behalf (excluding external managers selected by Private Markets and Funds Alpha staff and ARA staff pursuant to their portfolio guidelines). The ED/CIO will review all proposals of such new relationships to determine that (i) the addition of the relationship is consistent with SWIB's investment goals and strategies, (ii) the appropriate loss and drawdown limits for the credit risk associated with the proposed counterparty relationship have been considered, and (iii) appropriate due diligence has been conducted. The relevant division head or portfolio manager ("Initial Division User") shall retain responsibility for monitoring any such approved relationship. If another division expects to use the derivatives agreement for trading strategies after its initial approval, the ED/CIO, Initial Division User and the new division lead shall agree on the strategy for monitoring for the counterparty.

IV. REBALANCING PROCEDURES

1. Mandatory rebalancing is triggered by the procedures in the Board's WRS Investment Policy and the procedures below, as applicable. The Core Fund and Variable Fund asset mixes will be reviewed at least monthly for potential rebalancing.
2. A rebalancing task force will consist of the ED/CIO and the heads of ARA, Global Public Markets Strategies (GPMS) and Private Markets & Funds Alpha (PMFA). The ED/CIO may call a meeting of the rebalancing task force to consider a discretionary rebalancing from time to time. In consultation with the rebalancing task force, and with a majority approval of the task force, a discretionary rebalancing may be initiated pursuant to the plan developed by the ARA Division.
3. Discretionary rebalancing may be used to bring public market asset classes partially or fully back to their strategic target weights, to reduce or use active risk, to otherwise minimize asset allocation drift, or to intentionally overweight or underweight an asset or sub-asset class.
4. In connection with any rebalancing, the ARA Division will develop and implement a plan (a "Rebalancing Plan") to affect the rebalancing. The Rebalancing Plan will include the total amount of each asset class to be bought and sold, the intended market exposures, and the time frame of purchases and sales. The Rebalancing Plan is based on best estimates of market prices, private market valuations, and benefits cash flows for when the rebalance will take effect. To the extent that the market prices are different at the time of a rebalancing from the anticipated market prices, valuations or cash flows, the Rebalancing Plan may be subsequently adjusted for additional purchases and/or sales to true up the market exposures to the anticipated levels of the originally approved rebalancing without further approval by the rebalancing task force.

5. The ARA Division, under the supervision of the head of ARA, has the discretion to approve intra-month allocation adjustments of unallocated fund-level cash to passive portfolios and to manage asset class mis-alignments. Such adjustments may be, for example, to allocate unallocated fund-level cash arising from a distribution, to raise liquidity to fund private markets capital calls, to adjust for benchmark weight changes, or to otherwise make adjustments during the month as conditions may arise to return the asset allocation to its intended allocation targets consistent with most recently approved Rebalancing Plan. The manner in which intra-month allocation adjustments of unallocated fund-level cash are allocated or cash deficits are funded depends on the source of such unallocated cash or cash deficit and shall follow Guideline 8 below, as applicable. Only passive portfolios may be utilized for allocations or deallocations. Once unallocated fund level cash is allocated to a passive portfolio, investment of such cash shall be made in accordance with the underlying passive portfolio's guidelines. Aggregate daily portfolio allocations or deallocations shall not exceed \$250 million unless approved by the ED/CIO.
6. Exchange-traded and OTC options or other derivatives may be purchased or sold in conjunction with managing asset class exposure and rebalancing. The aggregate notional value of the options will be limited to 2% of the market value of the ~~trust fund~~ [Core Fund](#) at the date of purchase. The term of options used for this purpose may not exceed one year.
7. Cleared derivatives traded on a swap execution facility (SEF) may only be traded on or pursuant to the rules of the SEFs of which SWIB is a member or participant.
8. In connection with any rebalancing, the following procedures will be followed with respect to the following asset classes:
 - a. The Real Estate Asset Class will rebalance 50% to Public Equities and 50% to Public Fixed Income. Accordingly, in connection with any rebalancing, for any percentage increase in Real Estate there will be a corresponding 50% reduction to Public Equities and a corresponding 50% reduction to Public Fixed Income, and vice versa if the Real Estate assets decrease. The rebalancing does not have to be proportional through the sub-asset classes.
 - b. The Private Equity Asset Class will rebalance on a 1 for 1 basis to Public Equities. Accordingly, in connection with any rebalancing, for any percentage increase in Private Equity there will be a corresponding 1% reduction to Public Equities. The rebalancing does not have to be proportional through the sub-asset classes.

V. DRAWDOWN PROCEDURES

1. On an annual basis, the Investment Committee shall approve the active risk budget for the next calendar year and the relative drawdown limits per strategy (based on percentage of assets under management (AUM)) for the Core Fund. The relative drawdowns are measured against the benchmark for each strategy on a monthly basis by the Risk Management Division. Relative drawdown limits are intended to protect the Core Fund from large relative drawdowns. Given the active risk that each strategy is

expected to take and achieve, the Investment Committee acknowledges that (1) the relative drawdown limits may be reached in any given market environment, and (2) the probability of reaching the drawdown limits is not remote for the levels of active risk approved in the active risk budget.

2. If and when 60% of the relative drawdown limit is reached during the calendar year for any given strategy, the division head, the strategy head, the head of Risk Management, and the ED/CIO will all meet to discuss the relative drawdown limit, attribution, and outlook for the calendar year. The meeting will be documented by email confirmation sent to the Chief Legal Counsel and the head of Compliance.
3. If and when 90% of the relative drawdown limit is reached during the calendar year for any given strategy, the division head, strategy head, the head of Risk Management, and the ED/CIO will all meet to create a plan to address the drawdown for the strategy. The plan may require the strategy to reduce risk, stay the course until a given set of market conditions exist, make certain trades, and/or provide timing for implementation of the plan. A copy of the plan will be presented to the Investment Committee, generally at the next scheduled meeting.

VI. WRS GENERAL AND PORTFOLIO GUIDELINES – INTERNAL MANAGEMENT

Each internal portfolio is assigned compulsory investment guidelines. Portfolio managers are generally not allowed to deviate from compulsory guidelines. If a deviation from compulsory guidelines occurs or is expected to occur, the staff member who becomes aware of it must immediately notify the head of the Compliance and Risk Management divisions, ED/CIO, and the division head of the asset class in which the deviation occurred. Upon receiving notice of a deviation or potential deviation, the ED/CIO and relevant division head will either take action to correct the deviation or obtain a waiver approved by the ED/CIO. If the ED/CIO is not available, then the waiver may be granted by any division head (other than the division head of the portfolio that is requesting the waiver) and the Deputy Executive Director, in consultation with the head of Risk Management. All waivers will be reported to the Investment Committee and documented in the Investment Committee's meeting minutes.

All internal portfolios are also assigned "soft risk parameters." Soft risk parameters refer to desired characteristics and/or risk exposures. Portfolio managers are allowed, however, to deviate from soft parameters in pursuit of excess return or efficiency, subject to Investment Committee inquiry, discussion and concurrence of the continued exposure. Soft risk parameters for each portfolio are detailed in *Appendix 2*.

The following general compulsory guidelines ("General Guidelines") are applicable to all internally managed portfolios. Individual portfolio guidelines appear subsequently.

1. All portfolios must be managed in accordance with the fiduciary standards set forth in section 25.15(2) of the Wisconsin Statutes.
2. Credit quality rating requirements refer to an entire rating level, e.g., "A or better" includes "A-" and better ratings. The lower of split ratings is used. Investment grade

securities are those rated “BBB-” or better (or the equivalent rating agency rating). Portfolios may invest in unrated securities, provided that the unrated securities have been assigned an internal SWIB rating by portfolio management staff using similar rating methodologies as the rating agencies.²

3. Fixed income securities backed by the full faith and credit of the U.S. government will be classified as U.S. government securities for purposes of these guidelines.
4. Any sovereign debt obligation (or the issuer in the event the obligation is unrated) in which SWIB invests must be rated “B3/B-” or above, unless otherwise approved in advance by the Investment Committee based on its guidelines for individual business case determinations.
5. Public equity investments in markets designated as “developed” or “emerging” are investments in entities that are incorporated or organized in countries included in the MSCI World Index or the MSCI Emerging Market Index, respectively. Public fixed income investments in markets designated as “emerging” are investments in the debt of countries (or of companies incorporated or organized in countries) included in the JP Morgan Emerging Markets Diversified Index. Public fixed income investments in the debt of countries (or of companies incorporated or organized in countries) not included in the JP Morgan Emerging Markets Diversified Index will be designated as “developed.”
6. The Board approves the benchmarks for the Core Fund and Variable Fund, which are listed in *Appendix 3*. When new benchmarks are approved by the Board or modified by the Board, *Appendix 3* shall be updated without amendment to these IC Guidelines.
7. The Risk Management Division will monitor the risk exposures of all WRS portfolios. The head of Risk Management may recommend modifications to portfolio exposures to manage risk exposures. With the ED/CIO’s concurrence, the manager of a portfolio will make changes as recommended by the head of Risk Management. In addition to such recommendations, drawdown control procedures for all active internal WRS portfolios will be implemented and monitored by the Risk Management Division and adhered to by the portfolios.
8. Portfolios may utilize cash instruments or derivatives in their investment strategy. All investments used will be subjected to the risk analysis and monitoring processes at the portfolio, asset class and fund levels. New derivative and investment instruments will be reviewed with and approved by the Investment Committee prior to implementation.
9. Exposure limits and credit quality exposure limits are to be applied at the time of purchase. Unless otherwise indicated, “value” shall mean market value including un-invested cash.
10. Covered Agency Transactions as defined in FINRA Rule 4210³ may be traded only with a counterparty with which SWIB has a current Master Securities Forward Transaction

² Using ratings models that are reviewed by Risk and Compliance staff.

³ “Covered Agency Transactions” include certain to-be-announced (TBA) transactions, specified pooled transactions and collateralized mortgage obligations (CMOs).

Agreement (MSFTA), and the settlement of any such transaction shall not be more than 90 days from the date of the trade.

- a. The counterparty, or its guarantor, must, on each date on which a transaction is initiated, have a credit rating of not less than “Baa2/BBB” on long-term debt from S&P or Moody’s.
- b. If the counterparty is not rated, then its parent must have such a rating and must guarantee the obligations of the counterparty.
- c. If a counterparty or its parent is downgraded to a credit rating below “Baa2/BBB” after the initiation of a trade, then trades may be initiated with that same counterparty only to reduce the existing exposure to that downgraded counterparty.

11. Internally managed portfolios, including separately managed funds, are prohibited from investing in commercial paper or other securities issued by SWIB.

A. Small Cap Portfolio

The Small Cap Portfolio is invested primarily in publicly traded equity securities that are registered with the Securities and Exchange Commission, including common stocks, preferred stocks, ETFs, American Depositary Receipts (ADRs), American Depositary Shares (ADSs), convertible bonds, securities issued in initial public offerings, and when-issued securities. The Small Cap Portfolio may also be invested in equity securities that are publicly traded on stock exchanges in other developed countries, or that are issued through private placements.

1. No more than 5% (long or short) of outstanding shares of any single issuer, excluding shares held in commingled funds and ETFs, may be held.
2. No single issuer’s equity securities may represent (long or short) more than the greater of (a) 7% of the total market value of the Small Cap Portfolio, or (b) 5% over the percentage of such issuer’s equity securities in the portfolio’s benchmark. Shares held in commingled funds and ETFs are excluded from this guideline.
3. Up to 10% of the portfolio’s market value may be invested in international and emerging markets companies through common stocks, ADRs, ADSs, or country-specific ETFs.
4. The portfolio may use exchange-traded futures contracts or ETFs to equitize cash and receivables.
5. The portfolio may sell short any securities that may be purchased under applicable guidelines and may then use the proceeds from the short sale to purchase additional approved securities. The total value of the short sales in the portfolio may not exceed 50% of the portfolio’s net market value.
6. The portfolio’s aggregate ex-ante tracking error will not exceed 8.75% as measured by SWIB’s standard model used at any given time by SWIB’s Risk Management Division. If market conditions (compared to active management actions) cause the portfolio’s ex-ante tracking error to exceed this limit, then the portfolio will not be deemed to be out of compliance with these guidelines and this guideline will not be deemed to be violated;

except that, if the portfolio's ex-ante tracking error exceeds 8.75% then the portfolio may not trade or take any other action which is predicted to increase the ex-ante tracking error of the portfolio.

7. Except as provided in 3 above, securities must be issued by an entity (a) that is incorporated in the United States or (b) incorporated outside the United States if (1) the company's headquarters are located in the U.S. or (2) the primary exchange for the issuer's securities is located in the U.S. The issuers in (b) shall not count toward the 10% limit in 3 above.
8. The aggregate notional value of long or short puts and calls is limited to 5% of the market value of the portfolio.
9. Gross exposure for the portfolio shall not exceed 205% of the portfolio's market value, and net exposure for the portfolio shall not exceed 105% of the portfolio's market value, in each case unless approved by the ED/CIO.

B. ARA Passive Internal Portfolios

This guideline section pertains to all internally managed passive investment strategies, unless otherwise separately discussed in other sections. This includes, but is not limited to: passive physical equities, passive U.S. TIPS, passive U.S. Treasuries, synthetic liquidity, synthetic leverage, and overlay strategies. The objective of the passive portfolios is to closely track the returns and risk of their respective benchmarks. ~~Passive portfolios may also be used for strategies that are intended to provide liquidity or leverage as part of their prime directive.~~

1. The universe for inclusion in the portfolio shall be the full respective benchmark for each portfolio. Non-benchmark securities may be held from time-to time as a result of corporate actions, purchases or sales in advance of expected changes to the benchmark in order to optimize trading costs or to provide synthetic/derivative exposure to the underlying benchmark. ~~Activity or retention~~Retention of physical non-benchmark securities will only occur ~~after the portfolio is entitled to receive the security and~~ if the portfolio manager deems it beneficial to fund (Core Fund/Variable Fund) performance and not significantly detrimental to tracking error. Portfolios that provide liquidity or leverage ~~will~~may hold primarily non-benchmark securities in the form of derivatives that replicate the underlying target beta exposure.
2. Securities offered or sold to U.S. investors pursuant to Regulation D or Rule 144A under the Securities Act of 1933 may be purchased if they are publicly traded on a stock exchange in a developed country.
3. Portfolios may use physical securities or synthetic instruments, including exchange-traded futures contracts, ETFs, swaps, or other Investment Committee-reviewed derivative instruments to equitize cash and receivables, to achieve policy fund level leverage within Trustee-approved limits; for liquidity purposes; to replicate beta for the alpha-beta overlay; or for other passive investment strategies. Passive portfolios used to achieve policy fund level leverage shall be monitored by the ARA Division so that the Policy Leverage does not exceed Board-approved limits.

4. Portfolios may sell short from time to time as a result of corporate actions, benchmark changes or other similar events. Short positions are also permitted to more closely, more efficiently and/or more cost effectively track the returns and risk of their respective benchmarks if the portfolio manager deems it beneficial to Core Fund/Variable Fund performance and not significantly detrimental to tracking error. Short positions ~~may not~~are intended to be used ~~to intentionally take~~opportunistically to enhance efficient beta management (e.g., transitions or rebalancing), but not solely to increase active risk. The portfolios may short any securities that may be purchased under Guidelines #1-3 and may then use the proceeds from the short sale to purchase additional approved securities.

C. ARA Passive External Managers

The ARA Passive External Managers will be comprised primarily of direct or commingled passive investments in strategies of external managers that are intended to generate a beta or SWIB policy benchmark return.

1. Investments in ARA Passive External Managers will be comprised of the following investment vehicles:
 - a. *Separately Managed Accounts* (“SMAs”): SWIB intends for its portfolio to be comprised primarily of direct investments in various strategies via SMAs, the assets of which would reside at SWIB’s custodial bank.
 - b. *Commingled Investments or Fund Investments*: Investments can be made in commingled funds or in a Fund-of-One structure where SWIB is the sole investor, the assets of which may not reside at SWIB’s custodial bank.
2. Investment Strategies and Broad Guidelines for ARA External Managers:
 - a. *Equities* –Strategies will be invested in traditional long only portfolios and other public equity securities approaches across various geographies and market cap weights. Derivatives may be used and will be set forth in the individual manager guidelines.
 - b. *Fixed Income* –Strategies will primarily be invested in traditional long only portfolios across the credit quality spectrum, varying geographies, including emerging and frontier market debt, high yield and structured securities. Derivatives may be used and will be set forth in the individual manager guidelines.
 - c. *Levered Strategies* – Strategies that are designed to provide fund-level leverage will be subject to both the external manager guidelines in this section, as well as the applicable Leverage Use Policy guidelines in Section II above. The individual managers will also be subject to any additional guidelines outlined in the investment management agreement with respect to strategy and/or leverage management tool.

3. Approvals: ARA Passive External Manager allocations are subject to the following approvals:

Investment	Head of ARA	ED/CIO
New Manager Relationship	Up to \$1.75 billion	More than \$1.75 billion
Additional Allocations to Existing Manager	Up to \$2 billion	More than \$2 billion
Includes all ARA investments aggregated with the Manager, regardless of vehicle, strategy or portfolio, but excludes allocations to existing strategies managed by existing Managers as part of routine rebalancing activity.		

4. Other guideline limitations notwithstanding, the head of ARA or other staff authorized by the head of ARA may modify, amend or waive terms of ARA Passive External Manager investment management agreements and generally take any and all other actions that are necessary and reasonable to protect, maintain, or enhance the value of SWIB's position in the investments.
5. All redemptions, terminations or reductions of capital will be at the discretion of the head of ARA for rebalancing, liquidity management, leverage management and/or policy benchmark exposure consideration.

D. Investment Grade Credit Portfolio

The Investment Grade Credit Portfolio is primarily invested in publicly traded and Rule 144A investment grade corporate bonds or other fixed income instruments, primarily in the United States and other developed markets. Subject to the limitations set forth below, the portfolio may also invest in bank loans, convertible, and equity securities.

1. Maximum single issuer concentration is limited to 8% of the portfolio's market value on a net basis for developed markets investment grade issuers and 3% for all other issuers, in each case, excluding Treasuries, Treasury futures and ETFs.
2. Positions may be purchased long and sold short, and the use of leverage will be incorporated in ex-ante risk assessments and active risk/tracking error contributions. The portfolio may take short exposure by shorting individual securities, including cash bonds and equity securities, utilizing single name CDS and CDX index securities, and shorting ETFs that have been approved by Compliance and included on an approved ETF trading list (including put or call options thereon).
3. Derivatives use is permitted as allowed by the Derivatives Use Policy for the purposes of credit, duration, yield curve exposure, and volatility management. Derivatives use is permitted through the use of (a) exchange-traded and over-the-counter interest rate

instruments, including forwards, futures and options, (b) interest rate swaps and swaptions, (c) total return swaps (TRS) with index or underlying basket of permitted instruments, (d) options on permitted ETFs and indices, (e) other volatility derivatives (including options), (f) credit index swaps (e.g., CDX) and single-name CDS, including options on these instruments, and (g) options on equity securities, indices and ETFs for purposes of tail hedging.

4. Effective duration of the portfolio shall remain within two years of the assigned benchmark's duration.
5. Emerging market (EM) debt investment is limited to securities rated "B-" or above and:
 - a. EM sovereign debt must be of countries in the JP Morgan Emerging Market Bond Index GlobalDiversified ("JP Morgan EM Bond Index").
 - b. EM corporate debt must be denominated in U.S. Dollars.
 - c. Gross EM debt shall not exceed 15% of the portfolio's market value on a long or short basis (i.e., long % + short %). EM FX forwards used to hedge currency risk will not be counted against the EM debt exposure threshold.
6. Further limits:
 - a. Non-investment grade securities shall not exceed 20% of the portfolio's market value on a gross basis.
 - b. Exposure to bank loans, including CLOs, shall not exceed 15% of the portfolio's market value on a net basis.
 - c. Exposure to convertible securities shall not exceed 10% of the portfolio's market value on a net basis.
 - d. Equity exposure shall not exceed 2% of the portfolio's market value on a net basis.
7. Ex-ante tracking error shall not exceed 2.5% as measured by SWIB's standard model used at any given time by SWIB's Risk Management Division. If market conditions (compared to active management actions) cause the portfolio's ex-ante tracking error to exceed this limit, then the portfolio will not be deemed to be out of compliance with these guidelines and this guideline will not be deemed to be violated; except that, if the portfolio's ex-ante tracking error exceeds 2.5% then the portfolio may not trade or take any other action which is predicted to increase the ex-ante tracking error of the portfolio.
8. Gross exposure for the portfolio shall not exceed 300% of the portfolio's market value, and net exposure for the portfolio shall not exceed 200% of the portfolio's market value, in each case unless approved by the ED/CIO.

~~E. U.S. TIPS Index Portfolio~~

~~The U.S. TIPS Index Portfolio is invested in U.S. Treasury Inflation Protected Securities (TIPS).~~

- ~~1. Individual securities must be U.S. TIPS which are included in the Barclays U.S. TIPS benchmark.~~

~~2. The portfolios option adjusted duration should be +/- 1 year of the benchmark duration.~~

F.E. Exposure Management Portfolios

Portfolios may be established at the asset class level for multi-asset, public equity and public fixed income asset classes to provide for adjustment and management of the Core Fund and Variable Fund exposures and to utilize or adjust active risk of the Core Fund and Variable Fund. In determining portfolio investments, exposures held in both internally and externally managed portfolios will be considered. These portfolios may also be used to express investment strategies and ideas where the sizing of the investment requires it to be outside of an individual internal portfolio.

The head of ARA may approve strategies and/or investment ideas in the portfolios up to an ex-ante contribution to overall Core Fund active risk of 0.20% (excluding investments in PMFA overage portfolios), as measured by SWIB's standard model used at any given time by SWIB's Risk Management Division. If, at the time of investment, the portfolios' ex-ante contribution to active risk exceeds 0.20%, then the strategy and/or investment idea must be approved by the ED/CIO. Portfolio implementation, oversight and reporting to the Investment Committee will be the responsibility of the ARA Division. These portfolios may invest in any instrument approved for the relevant asset class portfolios described elsewhere in these guidelines. The portfolios may use derivative instruments. Portfolios will not have a separate benchmark or risk target, but will be included within the benchmark and risk parameters for the applicable aggregated asset class. The portfolios may include, for example, investments strategies to adjust aggregate equity beta, the allocations between specific sectors or sub-asset class exposures, currency exposures, volatility exposure, or credit exposure or duration.

G.F. Multi-Strat Portfolio

1. The Multi-Strat portfolio is authorized to invest in or short any instrument or derivative, subject to guidelines 5 and 6 below and the general guidelines contained herein.
2. Strategies may be managed either by internal investment staff or by an external manager.
3. Leverage and derivatives may be used to implement individual strategies and to adjust the market exposure of the Multi-Strat portfolio.
4. The Multi-Strat portfolio's aggregate ex-ante tracking error will not exceed 12% as measured by SWIB's standard model used at any given time by SWIB's Risk Management Division. If market conditions (compared to active management actions) cause the portfolio's ex-ante tracking error to exceed this limit, then the portfolio will not be deemed to be out of compliance with these guidelines and this guideline will not be deemed to be violated; except that, if the portfolio's ex-ante tracking error exceeds 12% then the portfolio may not trade or take any other action which is predicted to increase the ex-ante tracking error of the portfolio.
5. The ED/CIO and Head of Risk Management must be informed prior to the launch of a new strategy within the Multi-Strat portfolio. New strategies must be reported to the Investment Committee reasonably promptly following the launch.

6. ED/CIO approval, along with notice to the Head of Risk Management, is required prior to the Multi-Strat portfolio investing in an investment instrument or derivative that was previously approved by the Investment Committee for use by other asset class portfolios. Investment in such instruments must be reported reasonably promptly to the Investment Committee. Investment Committee review and approval is required prior to the Multi-Strat portfolio investing in any new investment instruments or derivatives not previously approved by the Investment Committee for any asset class portfolios.

H.G. Long Treasury Portfolio

The Long Treasury portfolio is a long duration, but not long-only, portfolio primarily invested in US Treasury securities, including nominal and inflation-indexed Treasuries and Treasury strips, and other US Government issued debt such as Agency debentures (which include debt, or bonds, issued by a US federal agency or a government-sponsored enterprise (GSE)). It may also invest in other fixed income securities, certain ETFs, and certain derivatives, as outlined below.

1. Securities other than nominal US Treasury securities including principal and interest strips, US Treasury Futures, and ETFs investing primarily in nominal US Treasury securities, but otherwise permitted in these portfolio guidelines, may not exceed 25%, in the aggregate, of the portfolio's market value.
2. Effective duration of the portfolio shall remain within five years of the assigned benchmark's duration.
3. The portfolio may invest long or short in ETFs that invest primarily in US Treasury securities and that have been approved by Compliance and included on an approved trading list (including put or call options thereon).
4. The portfolio's aggregate ex-ante tracking error will not exceed 3% as measured by SWIB's standard model used at any given time by SWIB's Risk Management Division. If market conditions (compared to active management actions) cause the portfolio's ex-ante tracking error to exceed this limit, then the portfolio will not be deemed to be out of compliance with these guidelines and this guideline will not be deemed to be violated; except that, if the portfolio's ex-ante tracking error exceeds 3% then the portfolio may not trade or take any other action which is predicted to increase the ex-ante tracking error of the portfolio.
5. Except for US Treasury securities, exchange-traded interest rate futures, and ETFs, no single issue may exceed 8% of the portfolio's market value.
6. The portfolio may use repurchase agreements and reverse repurchase agreements for cash management.
7. Derivatives use is permitted as allowed by the Derivatives Use Policy for the purposes of duration, interest rate, yield curve, and volatility management. Derivatives use is permitted through the use of (a) exchange-traded and over-the-counter interest rate instruments, including forwards, futures, and options, (b) interest rate swaps and swaptions, (c) total return swaps (TRS) with index or underlying basket of permitted

instruments, (d) options on permitted ETFs and indices, and (e) other volatility derivatives (including options).

8. All instruments permitted in these guidelines may be traded long or short. Gross exposure for the portfolio shall not exceed 300% of the portfolio's market value, and net exposure for the portfolio shall not exceed 200% of the portfolio's market value, in each case unless approved by the ED/CIO.

H. Mortgage-Backed Securities Portfolio

The Mortgage-Backed Securities (MBS) portfolio is primarily invested in Agency-issued mortgage-related securities, including MBS pools, collateralized mortgage obligations (CMOs), credit risk transfer (CRT) securities, as well as other securities in the structured products sector such as TBA MBS, commercial mortgage-backed (CMBS), asset-backed (ABS), and private label mortgage-related securities. It may also invest in other fixed income securities, certain ETFs, and certain derivatives as outlined below.

1. Securities other than agency-issued mortgage-related securities (e.g., pools, CMOs, CRTs), mortgage TBAs, and mortgage ETFs, but otherwise permitted in these portfolio guidelines and with effective duration of greater than one year, may not exceed 25%, in the aggregate, of the portfolio's market value.
2. Effective duration of the portfolio shall remain within two years of the assigned benchmark's duration.
3. Private label MBS may not exceed 10% of the portfolio's market value. Private label mortgage securities backed by borrower collateral other than prime may not exceed 5% of the portfolio's market value.
4. The portfolio may invest long or short in ETFs that invest primarily in U.S. MBS and that have been approved by Compliance and included on an approved trading list (including put or call options thereon).
5. The portfolio's aggregate ex-ante tracking error will not exceed 5% as measured by SWIB's standard model used at any given time by SWIB's Risk Management Division. If market conditions (compared to active management actions) cause the portfolio's ex-ante tracking error to exceed this limit, then the portfolio will not be deemed to be out of compliance with these guidelines and this guideline will not be deemed to be violated; except that, if the portfolio's ex-ante tracking error exceeds 5% then the portfolio may not trade or take any other action which is predicted to increase the ex-ante tracking error of the portfolio.
6. Except for TBA MBS, US Treasuries and ETFs, no single issue may exceed 5% of the portfolio's market value. No single BBB-rated issue may exceed 2% of the portfolio's market value. The average rating of securities covered by these limits will be "Baa2/BBB" or better. No single issue rated below investment grade may exceed 1% of the portfolio's market value. Each tranche of a securitized product is considered a separate issue. Total exposure to issues rated below investment grade may not exceed 20% of the portfolio's market value, in the aggregate.

7. Fixed income securities with an effective duration of one year or less will have an average credit rating of “A” or better. The portfolio may also use repurchase agreements and reverse repurchase agreements for cash management.
8. Derivatives use is permitted as allowed by the Derivatives Use Policy for the purposes of duration, interest rate, yield curve, mortgage and structured products credit, prepayment and volatility management. Derivatives use is permitted through the use of (a) exchange-traded interest rate instruments, including forwards, futures and options, (b) interest rate swaps and swaptions, (c) total return swaps (TRS) with index or underlying basket of permitted instruments, (d) options on permitted ETFs and indices, (e) other volatility derivatives (including options), (f) MBS options, (g) credit index swaps (e.g., CMBX, CDX and similar instruments) and options, and (h) options on equity indices and ETFs for purposes of tail hedging.
9. All instruments permitted in these guidelines may be traded long or short. Excluding the TBA Strategy, gross exposure for the portfolio shall not exceed 300% of the portfolio’s market value, and net exposure for the portfolio shall not exceed 200% of the portfolio’s market value, in each case unless approved by the ED/CIO.
10. CLOs collateralized by corporate bank loans may not exceed 15% of the portfolio’s market value.

4.1. High-Yield Bond Portfolio

The High-Yield Bond Portfolio is eligible to invest in any instruments included in the assigned benchmark — primarily U.S. dollar denominated publicly-traded and Rule 144A high-yield corporate bonds or other fixed income instruments rated between BB+/Ba1 and B-/B3. Subject to the limitations set forth below, the portfolio may also invest in non-U.S. dollar denominated bonds of issuers located outside of the United States, as well as convertible, preferred securities and equity securities.

1. The portfolio shall maintain at minimum a weighted average rating of B-. Subject to the forgoing, the portfolio may hold fixed income instruments rated below B-/B3.
2. Effective duration of the portfolio shall remain within +/- five years of the assigned benchmark’s effective duration.
3. Positions may be purchased long and sold short, and the use of leverage will be incorporated in ex-ante risk assessments and active risk/tracking error contributions. The portfolio may take short exposure by shorting individual securities, cash bonds, buying single name CDS, shorting the CDX index, shorting high-yield and equity ETFs that have been approved by Compliance and included on an approved ETF trading list (including put or call options thereon), as well as shorting the underlying equity of a leveraged issuer.
4. Instruments not included in the benchmark, but otherwise permitted in these portfolio guidelines, may not exceed 25% of the portfolio’s market value on a long or short basis (i.e., long % + short %). For the avoidance of doubt, any instrument that is subsequently removed from the portfolio’s benchmark due solely to the instrument’s maturity falling

below the benchmark's stated thresholds shall not be deemed to be out of benchmark for purposes of the 25% limitation described in this Guideline #4.

5. Maximum single issuer active concentration is limited to 5%, excluding Treasuries, Treasury futures and holdings of ETFs, of the portfolio's market value on a net basis.
6. Gross exposure to non-U.S. Dollar denominated instruments shall not exceed 10% of the portfolio's market value on a long or short basis (i.e., long % + short %).
7. Gross exposure to emerging market corporate debt is limited to (a) securities that are rated "B-/B3" or above and (b) issuers incorporated or organized in countries included in the JP Morgan Emerging Markets Diversified Index, and in aggregate shall not exceed 5% of the portfolio's market value on a net basis.
8. Exposure to any single industry sector shall remain within 20% of the assigned benchmark's industry sector weighting on a net basis.
9. Exposure to high-yield bank loans shall not exceed 10% of the portfolio's market value on a net basis.
10. Ex-ante tracking error shall not exceed 5% as measured by SWIB's standard model used at any given time by SWIB's Risk Management Division. If market conditions (compared to active management actions) cause the portfolio's ex-ante tracking error to exceed this limit, then the portfolio will not be deemed to be out of compliance with these guidelines and this guideline will not be deemed to be violated; except that, if the portfolio's ex-ante tracking error exceeds 5% then the portfolio may not trade or take any other action which is predicted to increase the ex-ante tracking error of the portfolio.
11. Derivatives use is permitted as allowed by the Derivatives Use Policy for the purposes of duration, yield curve exposure, and volatility management. Derivatives use is permitted through the use of (a) exchange-traded and over-the-counter interest rate instruments, including forwards, futures and options, (b) interest rate swaps and swaptions, (c) total return swaps (TRS) with index or underlying basket of permitted instruments, (d) options on permitted ETFs and indices, (e) other volatility derivatives (including options), (f) credit index swaps (e.g., CDX) and single-name CDS, including options on these instruments, and (g) options on equity securities, indices and ETFs for purposes of tail hedging.
12. Gross exposure for the portfolio shall not exceed 300% of the portfolio's market value, and net exposure for the portfolio shall not exceed 200% of the portfolio's market value, in each case unless approved by the ED/CIO.
13. The portfolio may invest in debt instruments and loans and may include senior financing, subordinated or mezzanine financing, and "bridge" financing. Debt instruments and loans may be syndicated or privately issued credit. Debt instruments and loans may be of public or private company issuers. Strategies may include, without limitation, specialty and alternative credit opportunities, distressed and opportunistic strategies, or dislocated credit opportunities. Debt instruments and loans may include credit opportunities

alongside SWIB external managers. In the aggregate, exposure to special or alternative opportunity financings described in this guideline shall not exceed 5% of the portfolio.

K.J. Leveraged Loan Portfolio

The Leveraged Loan Portfolio is eligible to invest in any instruments included in the assigned benchmark — primarily U.S. dollar denominated publicly-traded and senior secured syndicated leveraged loans. Subject to the limitations set forth below, the portfolio may also invest in non-U.S. dollar denominated loans and/or bonds of issuers located outside of the United States, as well as collateralized loan obligations (CLOs), derivatives, convertible, preferred securities and equity securities.

1. No less than 75% of the portfolio's market value can be invested in single-name first-lien bank loans, total return swaps on ~~leveraged~~first-lien bank loans and first-lien bank loan indices, and/or ETFs with a diversified portfolio of first-lien bank loans, in aggregate.
2. The portfolio shall maintain at minimum a weighted average rating of B. Subject to the foregoing, the portfolio may hold fixed income instruments rated below B-/B3 as well as unrated securities, provided the unrated securities have been assigned an internal SWIB rating by portfolio management staff using similar rating methodologies as the rating agencies.
3. Positions may be purchased long and sold short, and the use of leverage will be incorporated in ex-ante risk assessments and active risk/tracking error contributions. The portfolio may take short exposure by shorting individual securities, including cash bonds and equity securities, utilizing single name CDS and CDX index securities, and shorting ETFs that have been approved by Compliance and included on an approved ETF trading list (including put or call options thereon).
4. ~~Instruments~~Excluding U.S. Treasuries, total return swaps and CDS on first-lien loans, and Compliance-approved ETFs with a diversified portfolio of first-lien bank loans, investments in instruments not included in the ~~benchmark~~broad Morningstar LSTA US Leveraged Loan index, but otherwise permitted in these portfolio guidelines, may not exceed ~~50~~25% of the portfolio's market value on a long or short basis (i.e., long % + short %).
5. Maximum single issuer active concentration is limited to 5%, excluding Treasuries, Treasury futures and holdings of ETFs, of the portfolio's market value on a net basis.
6. Gross exposure to non-U.S. Dollar denominated instruments shall not exceed 10% in the aggregate of the portfolio's market value on a long or short basis (i.e., long % + short %).
7. Aggregate exposure to second-lien loan instruments is limited to 15% of the portfolio's market value on a long or short basis (i.e., long % + short %), and maximum exposure to a single second-lien loan instrument is limited to 2.5% of the portfolio's market value on a long or short basis (i.e., long % + short %).
8. Ex-ante tracking error shall not exceed 5% as measured by SWIB's standard model used at any given time by SWIB's Risk Management Division. If market conditions (compared

to active management actions) cause the portfolio's ex-ante tracking error to exceed this limit, then the portfolio will not be deemed to be out of compliance with these guidelines and this guideline will not be deemed to be violated; except that, if the portfolio's ex-ante tracking error exceeds 5% then the portfolio may not trade or take any other action which is predicted to increase the ex-ante tracking error of the portfolio.

9. Derivatives use is permitted as allowed by the Derivatives Use Policy for the purposes of duration, yield curve exposure, and volatility management. Derivatives use is permitted through the use of (a) exchange-traded and over-the-counter interest rate instruments, including forwards, futures and options, (b) interest rate swaps and swaptions, (c) total return swaps (TRS) with index or underlying basket of permitted instruments, (d) options on permitted ETFs and indices, (e) other volatility derivatives (including options), (f) credit index swaps (e.g., CDX) and single-name CDS, including options on these instruments and (g) options on equity securities, indices and ETFs for purposes of tail hedging.
10. Gross exposure for the portfolio shall not exceed 300% of the portfolio's market value, and net exposure for the portfolio shall not exceed 200% of the portfolio's market value, in each case unless approved by the ED/CIO.
11. Leveraged loans may include senior financing, subordinated or mezzanine financing, and "bridge" financing. Loans may be syndicated or private credit loans. Loans may be of public or private company issuers. Strategies may include, without limitation, specialty and alternative credit opportunities, distressed and opportunistic strategies, or dislocated credit opportunities. Loans may include credit opportunities alongside SWIB external managers. In the aggregate, exposure to special or alternative opportunity financings described in this guideline shall not exceed 5% of the portfolio.

L.K. TBA Strategy Portfolio

The TBA Strategy portfolio is invested primarily in Agency TBA mortgages, as well as Agency MBS pools. It may also invest in ABS, CMBS and other fixed income securities and certain derivatives as outlined below.

1. The portfolio's aggregate ex-ante tracking error will not exceed 25% as measured by SWIB's standard model used at any given time by SWIB's Risk Management Division. If market conditions (compared to active management actions) cause the portfolio's ex-ante tracking error to exceed this limit, then the portfolio will not be deemed to be out of compliance with these guidelines and this guideline will not be deemed to be violated; except that, if the portfolio's ex-ante tracking error exceeds 25% then the portfolio may not trade or take any other action which is predicted to increase the ex-ante tracking error of the portfolio.
2. Derivatives use is permitted as allowed by the Derivatives Use Policy for the purposes of yield curve, mortgage, credit, and volatility management. Derivatives use is permitted through the use of (a) exchange-traded interest rate instruments, including forwards,

futures, and options, (b) interest rate swaps and swaptions, (c) volatility derivatives (including options), (d) CDX, and (e) MBS options.

3. The portfolio may invest long and short in any permitted security as described herein.
4. In the event of an Agency MBS trade failure, the head of strategy or designee will promptly notify Risk Management and Compliance.
5. Except for TBA and Agency pass-through MBS, and US Treasuries, no single issue may exceed 8% of the portfolio's market value. Other fixed income securities are allowed with an effective duration of five years or less and must be investment grade. The average rating of these securities will be "A" or better. Each tranche of a securitized product is considered a separate issue. The portfolio may also use repurchase agreements and reverse repurchase agreements for cash management.
6. Effective duration of the portfolio, determined on the gross value of the portfolio, shall be within 0.5 years of the portfolio's benchmark.
7. Gross notional exposure of the portfolio shall not exceed \$20 Billion and net notional exposure of the portfolio shall not exceed \$4 Billion, in each case without the approval of the ED/CIO.

M.L. Short Term Credit Portfolio

The Short-Term Credit Portfolio is an investment vehicle of cash and short-term investments of the WRS. Its investment objectives are: 1) Safety of principal; 2) Return Objective; and 3) Liquidity.

Portfolio Allocation

(Percent of Portfolio at Par Value)

Treasuries, Agencies, and FDIC Insured Bank Deposits	0-100%
Repurchase Agreements	0-100%
Commercial Paper	0-100%
Corporate Notes	0-100%
Certificates of Deposit/Time Deposits	0-50%
Bankers' Acceptances	0-50%
Yankee/Euro Certificates of Deposit/Time Deposits (U.S. Dollars)	0-50%

Maturity Guidelines

(Maximum)

Consistent with the portfolio purpose and objectives, the portfolio weighted average maturity will not exceed one year (the weighted average maturity of floating rate securities is based on interest rate reset dates).

Repurchase Agreements	1 year
Reverse Repurchase Agreements	1 year
U.S. Treasuries and Agencies	5 years
Commercial Paper/Bankers' Acceptances	1 year
Corporate Notes – Fixed Rate	3.1 years
Corporate Notes – Floating Rate	5.1 years
Certificates of Deposit/Time Deposits	5 years
Yankee/Euro Certificates of Deposit/Time Deposits	5 years

Issuer Exposure

(Percent of Portfolio at Par Value)

The maximum exposure for each issuer/guarantor/counterparty shall be in the aggregate as follows:

U.S. Treasury Bills and U.S. Agency Discount Notes	No limit
Repurchase Agreements (Gov't/Agency Collateral)	25%
Repurchase Agreements (Other Collateral)	5%
Commercial Paper and Corporate Notes	5%
Certificates of Deposit/Time Deposits	5%
Bankers' Acceptances	5%
Yankee/Euro Certificates of Deposit/Time Deposits (U.S. Dollars)	5%
Wisconsin CD Program – individual bank (unless a higher limit from another category applies.)	\$20MM or 3% of bank assets, whichever is less
Bank Deposits	Up to the amount guaranteed by the FDIC or the amount allowable for a bank instrument, whichever is higher

CREDIT QUALITY

The minimum rating of an issuer/counterparty shall be the lowest in the event of a split rating and shall be as follows:

U.S. Treasury Bills and U.S. Agency Discount Notes	No minimum
--	------------

Repurchase Agreements	BBB
Commercial Paper	A-2/P-2
Unrated Wisconsin Company Commercial Paper (maximum maturity of 90 days and percentage of the portfolio in unrated CP cannot exceed 15%)	Unrated
Corporate Notes, Bankers' Acceptances, Certificates of Deposit/ Time Deposit, Bank Deposits and Yankee/Euro Certificates of Deposit/Time Deposits (U.S. Dollars) greater than 1 year	A
Corporate Notes, Bankers' Acceptances, Certificates of Deposit/ Time Deposit, Bank Deposits and Yankee/Euro Certificates of Deposits (U.S. Dollars) less than 1 year (the percentage of the portfolio in BBB cannot exceed 15%).	BBB
Wisconsin CD Program – individual bank	Unrated

N.M. General Guidelines specific for Private Markets and Funds Alpha Portfolios

1. The portfolio manager shall be responsible for notifying the ED/CIO of any referrals or significant contacts by or on behalf of SWIB Trustees regarding consideration of an investment opportunity.
2. The Private Markets & Funds Alpha (PMFA) staff shall report to the Trustees all portfolio commitments to non-public investments.
3. Each portfolio manager shall obtain written confirmation from legal counsel (which may be external legal counsel) that documentation has been satisfactorily completed prior to closing of any investment in his or her portfolio that involves negotiated SWIB documentation.
4. Each portfolio manager shall submit to the head of PMFA a written summary of any proposed investment. The head of PMFA will review all such investments to determine that a) the investment falls within the portfolio's investment guidelines, including limits on invested capital, b) the investment is consistent with the portfolio's established strategy, and c) the appropriate due diligence standards are being applied. No such investment may be closed without approval of the head of PMFA or ED/CIO depending upon the nature and amount of the investment as required in the relevant portfolio guidelines. The portfolio manager shall retain responsibility for each investment decision. External managers with delegated investment discretion operate under separate authority. For purposes of this paragraph, "investments" does not include the individual

properties within a Real Estate Equity Portfolio separate account tranche, but does include the tranche that holds such properties.

5. Dollar limitations for commitments to funds or other investments do not apply to incidental and customary contractual reinvestment, indemnity, reserve or similar obligations incorporated into the terms of an investment, provided such obligations are not expected to be material.
6. Private equity and venture capital investments in markets designated as “developed” or “emerging” are investments in countries included in the MSCI World Index or the MSCI Emerging Market Index, respectively. Real estate investments in markets designated as “developed” or “emerging” are investments in properties in countries included in the EPRA/NAREIT Developed Index and the EPRA/NAREIT Emerging Market Index, respectively.
7. Funds or commingled investments shall be considered U.S., non-U.S., “developed” or “emerging” based on their primary strategy and not on a look-through basis to the underlying investments.
8. Exposure limits and credit quality exposure limits are to be applied at the time of purchase. The term “exposure” is defined as the net asset value (which includes co-investments) plus unfunded commitments. “Allocations” are calculated as the current net asset value of any existing investment(s) plus the intended subscription.
9. SWIB staff may determine to engage a consultant to review prospective investments, perform operational due diligence on prospective investments, or otherwise assist staff in the evaluation of investment opportunities and/or managers.

Q.N. Private Debt Portfolio

The overall objective of the Private Debt Portfolio (the “Private Debt Portfolio” includes both the Wisconsin Private Debt Portfolio and the Non-Wisconsin Private Debt Portfolio) is to invest funds of the Core Fund in debt instruments consistent with SWIB’s fiduciary responsibilities that are primarily private loans negotiated by SWIB directly or as part of an investor group that includes banks or other institutional investors. Instruments can be fixed or floating rate. The two portfolios are invested as follows:

- Wisconsin Private Debt Portfolio – This portfolio’s investments will consist of loans or fixed income securities issued by companies or entities that are headquartered in Wisconsin, have existing operations in Wisconsin, or intend to apply the proceeds to new business operations in Wisconsin which contribute to the Wisconsin economy.
- Non-Wisconsin Private Debt Portfolio – This portfolio can invest in loans or fixed income securities issued by companies or entities located in or doing business in the United States.

The Private Debt Portfolio may also include securities sold to SWIB pursuant to Rule 144A or in the public fixed income markets. Investments may be made in fixed income instruments and in instruments with both fixed income and equity features.

1. Investments may carry a rating from a national rating agency, the National Association of Insurance Commissioners (NAIC) or SWIB. Notwithstanding the provisions of the General Guidelines above, the head of Private Debt may make investments that carry a “BBB” or better rating from a national rating agency or the NAIC, provided that if the investment carries only a SWIB rating, it shall be approved by the head of PMFA, regardless of size.
2. Investments may be made in below investment grade instruments provided that such investments do not in the aggregate constitute more than 25% of the Private Debt Portfolio’s par value. Any investment below investment grade requires approval from the head of PMFA.
3. The Private Debt Portfolio’s aggregate issuer limits shall be scaled by quality and a purchase may not cause the Private Debt Portfolio’s exposure to a borrower or issuer to exceed the following limits (at par value):

Rating	Maximum Position
U.S. Gov’t/Agency	No Limit
“AA” or higher	\$100 MILLION
“A”	\$75 MILLION
“BBB”	\$50 MILLION
“BB” or less	\$25 MILLION

4. The Private Debt Portfolio shall maintain at minimum a weighted average rating of “BBB”, where “AAA”=4, “AA”=3, “A”=2, “BBB”=1, and “BB” or less =0.
5. Other guideline limitations notwithstanding, the head of Private Debt or other staff authorized by the head of PMFA may modify or waive terms of investments in the portfolio and generally take any and all other actions that are necessary and reasonable to protect, maintain or enhance the value of SWIB’s position in the investments.

P.O. Venture Capital Portfolio

The SWIB Venture Capital Portfolio (the “Venture Capital Portfolio” includes both the Wisconsin Venture Capital Portfolio and the Non-Wisconsin Venture Capital Portfolio) consists of venture capital or venture capital-related investments and invests as follows:

- The Non-Wisconsin Venture Capital Portfolio shall make venture capital investments on a global basis in limited partnership or other fund vehicles, strategic partnerships, or in co-investments in venture-backed companies or publicly traded companies that were venture backed.
- The Wisconsin Venture Capital Portfolio shall make venture capital investments in limited partnership or other fund vehicles or strategic partnerships that are either located in Wisconsin and/or which target Wisconsin as a primary market or as co-investments in venture-backed companies or publicly traded companies that were venture backed that are located or have operations in Wisconsin.

1. Any other guidelines notwithstanding, the Venture Capital Portfolio commitments are subject to the following approvals:

Approval By:	Head of PMFA	ED/CIO
• Venture Capital Funds	Up to \$65 million	More than \$65 million
• Venture Capital Co-Investments (excluding funds of one)	Up to \$25 million	More than \$25 million
SWIB ownership equal to or greater than 50% of an individual fund (excluding funds of one and a fund/vehicle through which a co-investment is made)	ED/CIO, provided that notice shall be given to the ED/CIO if ownership of an individual fund (excluding funds of one and a fund/vehicle through which a co-investment is made) is equal to or greater than 33 1/3%	

2. No more than 45% of the Venture Capital Portfolio's exposure may be invested outside of the U.S., without the approval of the ED/CIO. No more than 20% of the Venture Capital Portfolio's exposure may be invested in emerging markets. No more than 5% of the Venture Capital Portfolio's exposure may be invested in co-investments located in emerging markets.
3. Venture capital investments may be made through funds, strategic partnerships, or co-investments. Venture capital co-investments (excluding funds of one) must be made in one of the following ways:
 - (1) alongside a fund with the same sponsor or manager as a fund in which SWIB is or has been an investor,
 - (2) alongside a fund with the same sponsor or manager as a fund on which SWIB is conducting due diligence and is actively evaluating for a prospective commitment, or
 - (3) as approved by the ED/CIO.
4. From time to time, SWIB may consider formation of fund investments where it may participate both as a general partner and as limited partner.
5. Co-investments in the Venture Capital Portfolio may not make up more than 15% of the Venture Capital Portfolio's exposure.
6. Neither the aggregate exposure to any fund manager or sponsor, nor the aggregate amount of investments in any company, may exceed 20% of the Venture Capital Portfolio's exposure without approval of the ED/CIO.

7. No single co-investment (excluding funds of one) shall exceed 10% of the Venture Capital Portfolio's exposure.
8. The Venture Capital Portfolio may make co-investments in public company securities through private placements, including PIPEs, or other offerings. Co-investments in public company securities shall not exceed 10% of the Venture Capital Portfolio's exposure. For purposes of this guideline, public company securities received via a distribution are not counted and are expected to be sold as soon as reasonably practicable.
9. Subject to the approval thresholds and the restrictions above, the head of Venture Capital or other staff authorized by the head of PMFA may modify or waive terms of investments in the portfolio and generally take any and all other actions that are necessary and reasonable to protect, maintain or enhance the value of SWIB's position in the investments.

Q.P. Private Equity Portfolio

The Private Equity Portfolio consists of private equity or private equity-related investments, made on a global basis, in limited partnership or other fund vehicles, strategic partnerships, and co-investments in operating or holding companies.

1. Any other guidelines notwithstanding, all portfolio commitments are subject to the following approvals:

	Head of PMFA	ED/CIO
• Funds or Strategic Partnerships	\$250 million or less	Over \$250 million
• Co-Investments	\$75 million or less	Over \$75 million
SWIB ownership equal to or greater than 50% of an individual fund (excluding funds of one and a fund/vehicle through which a co-investment is made)	ED/CIO, provided that notice shall be given to the ED/CIO if ownership of an individual fund (excluding funds of one and a fund/vehicle through which a co-investment is made) is equal to or greater than 33 1/3%	

2. The Private Equity Portfolio shall not include investments in venture capital funds.
3. Investments may be made through funds, strategic partnerships, or co-investments. Co-investments must be made in one of the following ways:
 - (1) alongside a fund with the same sponsor or manager as a fund in which SWIB is or has been an investor,
 - (2) alongside a fund with the same sponsor or manager as a fund on which SWIB is conducting due diligence and is actively evaluating for a prospective commitment, or
 - (3) as approved by the ED/CIO.

4. Neither the aggregate exposure (including co-investments) to any fund manager or sponsor, nor the aggregate amount of investments in any company, may exceed 10% of the total Private Equity Portfolio's exposure without approval of the ED/CIO.
5. No more than 45% of the Private Equity Portfolio's exposure may be invested outside of the U.S., without the approval of the ED/CIO. No more than 20% of the Private Equity Portfolio may be invested in emerging markets.
6. The Private Equity Portfolio may make co-investments in public company securities through private placements, including PIPEs, or other offerings. Co-investments in public company securities shall not exceed 2% of the Private Equity Portfolio's exposure. For purposes of this guideline, public company securities received via a distribution are not counted and are expected to be sold as soon as reasonably practicable.
7. Other guideline limitations notwithstanding, the head of Private Equity or other staff authorized by the head of PMFA may modify or waive terms of investments in the portfolio and generally take any and all other actions that are necessary and reasonable to protect, maintain or enhance the value of SWIB's position in the investments.

R.Q. Real Estate Equity Portfolio Guidelines

The Real Estate Equity Portfolio contains investments in a broad range of real estate and real estate-related assets, including equity and debt investments, either solely, or through investment vehicles and structures such as public or private Real Estate Investment Trusts (REITs), public or private real estate company securities, limited liability corporations, limited partnerships, joint ventures, separate accounts or co-investment vehicles. Investment guidelines and soft parameters for Real Estate shall be applied, on an invested basis, to the aggregate composition of the Real Estate Equity Portfolio (except that all REIT portfolios shall be included in the aggregate as Core holdings).

All portfolio commitments are subject to the following approvals:

	Head of PMFA	ED/CIO
Commingled Fund	\$250 million or less	Over \$250 million
Core - Separate Account*	\$300 million or less	Over \$300 million
Non-Core – Separate Account*	\$200 million or less	Over \$200 million

*With respect to a separate account tranche, approval is required for the tranche, and not for individual investments within the tranche.

1. Aggregate exposure (including co-investments) to any commingled fund manager or sponsor may not exceed 20% of the Real Estate Equity Portfolio's exposure without approval of the ED/CIO. This limit does not apply to real estate investments for which SWIB has sole discretion to select, retain, and terminate manager(s) and/or advisor(s) without cause.
2. Aggregate direct public REIT and real estate company stock holdings (excluding underlying commingled fund holdings and externally managed REIT Portfolios) may not exceed 15% of

the Real Estate Equity Portfolio's exposure and portfolio investments in any one public REIT or company may not exceed 3% of the Real Estate Equity Portfolio's exposure. SWIB's direct ownership position in any public REIT or company may not exceed 20% of outstanding voting equity, without ED/CIO approval. Any externally managed REIT portfolio(s) will be managed under separate authority, with guidelines set out in the management agreement(s) between SWIB and the selected manager(s).

3. No more than 45% of the Real Estate Equity Portfolio's exposure may be invested outside the U.S., without the approval of the ED/CIO. No more than 20% of the Real Estate Equity Portfolio's exposure may be invested in emerging markets, and no more than 10% of the Real Estate Equity Portfolio's exposure may be invested in separate accounts invested in emerging markets.
4. Other guideline limitations notwithstanding, the head of Real Estate or other staff authorized by the head of PMFA may: modify or waive terms of investments in the portfolio, including without limitation mortgages and leases on real estate in the portfolio; enter into new mortgages and leases; execute deeds and bills of sale; make expenditures for maintenance and improvements; grant easements; hire consultants, service providers, real estate advisors and property managers; and generally take any and all other actions that are necessary and reasonable to protect, maintain or enhance investment value of SWIB's position in the investments.
5. Prior to funding a direct investment (including a property within a separate account tranche) where real property is a material component, the property shall be evaluated for the presence of environmental and code compliance issues. If environmental issues that require action by governmental authorities exist, then funding shall not occur until an adequate remediation program is in place. If code compliance issues exist, then an adequate plan to bring the property into compliance shall be in place.
6. SWIB may not initiate improvement or development of real property owned or controlled by SWIB without making provisions for compliance with applicable Federal, state and local codes and ordinances.

S.R. Current Return Portfolio

The Current Return Portfolio consists of current return or certain equity-related investments, made on a global basis, in limited partnership or other fund vehicles, strategic partnerships, and co-investments in operating or holding companies. Investments may be made in debt instruments and in instruments with both current pay and equity features.

1. Any other guidelines notwithstanding, all portfolio commitments are subject to the following approvals:

	Head of PMFA	ED/CIO
• Funds or Strategic Partnerships	\$250 million or less	Over \$250 million
• Co-Investments	\$75 million or less	Over \$75 million

SWIB ownership equal to or greater than 50% of an individual fund (excluding funds of one and a fund/vehicle through which a co-investment is made)	ED/CIO, provided that notice shall be given to the ED/CIO if ownership of an individual fund (excluding funds of one and a fund/vehicle through which a co-investment is made) is equal to or greater than 33 1/3%
---	--

2. Investments may be made through funds, strategic partnerships, or co-investments. Co-investments must be made in one of the following ways:
 - (1) alongside a fund with the same sponsor or manager as a fund in which SWIB is or has been an investor;
 - (2) alongside a fund with the same sponsor or manager as a fund on which SWIB is conducting due diligence and is actively evaluating for a prospective commitment; or
 - (3) as approved by the ED/CIO.
3. Neither the aggregate exposure (including co-investments) to any fund manager or sponsor, nor the aggregate amount of investments in any company, may exceed 25% of the Current Return Portfolio's exposure without approval of the ED/CIO.
4. No more than 45% of the Current Return Portfolio's exposure may be invested outside of the U.S., without the approval of the ED/CIO. No more than 20% of the Current Return Portfolio may be invested in emerging markets.
5. The Current Return Portfolio may make co-investments in public company securities through private placements or other offerings. Co-investments in public company securities shall not exceed 2% of the Current Return Portfolio's exposure. For purposes of this guideline, public company securities received via a distribution are not counted and are expected to be sold as soon as reasonably practicable.
6. Other guideline limitations notwithstanding, the head of Private Equity or other staff authorized by the head of PMFA may modify or waive terms of investments in the portfolio and generally take any and all other actions that are necessary and reasonable to protect, maintain or enhance the value of SWIB's position in the investments.

T.S. Hedge Fund Portfolio

The Hedge Fund Portfolio ("HF Portfolio") will be comprised primarily of direct investments in hedge funds and is intended to generate a low-beta, alpha-oriented return stream.

1. The HF Portfolio will be comprised of the following investment vehicles:
 - a. *Direct Investments or Fund-of-Funds*: SWIB intends for its portfolio to be comprised primarily of direct investments in hedge funds rather than fund-of-funds vehicles that use an intermediary investment advisor(s) to select and allocate to hedge funds through a commingled fund. SWIB may make investments in fund-of-fund vehicles, as may be deemed appropriate by Funds Alpha staff and otherwise approved hereunder.

- b. *Hedge Funds or Separately Managed Accounts ("SMAs")*: Investments can be made in limited liability partnerships with other investors or, in some cases depending upon the manager and size of investment, in separately managed accounts. SWIB expects most investments will be in limited liability vehicles. SWIB may invest via SMAs if it is in the best interest of SWIB to do so.

2. Hedge Fund Investment Strategies:

- a. *Relative Value* – strategies that seek to take advantage of price differentials by buying and selling different yet related securities. Relative value strategies include, but are not limited to, fixed income arbitrage, insurance linked, quantitative strategies, merger arbitrage, convertible arbitrage, and volatility-related investments.
- b. *Credit* - long/short and event driven investment strategies to various fixed-income instruments including bank loans, corporate, government bonds, distressed debt, and securitized credit.
- c. *Equity Long/Short* – long and short investments in publicly traded stocks and related securities either on a discretionary or systematic basis.
- d. *Tactical Trading* – global investments in indexes, commodities, interest rates, and currencies and, in each case, their derivatives as a result of relative value or directional forecasts from a systematic or discretionary approach.
- e. *Multi-Strategy* – funds seek to maximize risk-adjusted returns by investing in a variety of underlying investment strategies. They often employ flexibility in terms of capital, aiming to allocate dynamically to the best opportunities and shifting resources to where they are most needed.
- f. *Specialty Finance* - broad collection of lending strategies which typically have private, customized structures with a front ended cash flow profile at the portfolio level, short duration, and asset backed collateral.
- g. *Special Opportunity Investments & Coinvests*– SWIB may invest a portion of its portfolio in special opportunity investments, which may include: interests in the equity or revenues of hedge fund managers, co-investments, or external manager “best ideas” opportunities.

The HF Portfolio has the following target weightings and ranges to the individual hedge fund strategies:

	<u>Target Allocation</u>	<u>Target Maximum</u>
Relative Value	20%	40%
Credit	10%	30%
Equity Long/Short	20%	30%

Tactical Trading	10%	30%
Multi-strategy	25%	50%
Specialty Finance	10%	15%
Special Opportunity Investments	<u>5%</u>	15%
	100%	

3. Approvals: HF Portfolio allocations are subject to the following approvals:

	Head of PMFA	ED/CIO
• Core	Up to \$300 million aggregated	More than \$300 million
• Special Opp/ Co-invest	Up to \$75 million aggregated	More than \$75 million
SWIB ownership equal to or greater than 50% of an individual fund, calculated at the master fund level (excluding funds of one and a fund/vehicle through which a co-investment is made)	ED/CIO, provided that notice shall be given to the ED/CIO if ownership of an individual fund (excluding funds of one and a fund/vehicle through which a co-investment is made) is equal to or greater than 33 1/3%	

4. The aggregate exposure to any hedge fund manager or sponsor (including co-investments) may not exceed 15% of the total HF Portfolio's exposure without approval of the ED/CIO.
5. Other guideline limitations notwithstanding, the head of Funds Alpha or other staff authorized by the head of PMFA may modify or waive terms of investments in the portfolio and generally take any and all other actions that are necessary and reasonable to protect, maintain, or enhance the value of SWIB's position in the investments.
6. All redemptions, terminations or reductions of capital will be at the discretion of the Funds Alpha Manager and the head of PMFA.

U.T. Beta One Portfolio

The Beta One Portfolio is comprised primarily of direct investments in strategies of external managers that are intended to generate both (1) the total return (or beta of one) of a SWIB policy benchmark and (2) an excess return (or alpha) over the benchmark through active security selection. Tracking error measures divergence around the given benchmark. In comparison, SWIB's external hedge fund portfolio is designed to deliver only an excess return or alpha. This section does not govern passive external managers which the Asset and Risk Allocation Division oversees and monitors.

1. Investments in Beta One External Managers will be comprised of the following investment vehicles:
 - a. *Separately Managed Accounts ("SMAs")*: in which external managers direct positioning but the assets reside at SWIB's custodial bank.
 - b. *Commingled Investments or Fund Investments*: in which SWIB has a percentage ownership in limited liability partnerships or other structures alongside other investors or in a fund-of-one structure where SWIB is the sole investor. Assets reside at the manager's custodial bank.
2. Investment Strategies and Broad Guidelines for Beta One External Managers:
 - a. *Equities* – strategies will be comprised of various fundamental, quantitative and other approaches intended to produce an active return above the respective benchmarks. Strategies will be invested in traditional long only portfolios, active extension formats (i.e. 130/30, 150/50) and other public equity securities approaches across various styles, geographies and market cap weights. A limited use of shorting (up to 80%) may be used in the active extension format in non-SMAs.
 - b. *Fixed Income* – strategies will be comprised of various fundamental, quantitative, and other approaches intended to produce an active return above the respective benchmarks. Strategies will primarily be invested in portfolios across the credit quality spectrum, across geographies, including emerging and frontier market debt, across structures (e.g., asset-backed securities, corporate debentures, etc.) Individual manager guidelines may allow shorting of cash bonds. Derivatives may be used (long or short) for both hedging and investment purposes and will be set forth in the individual manager guidelines.
 - c. Notwithstanding any shorting permitted in (a) above, pursuant to SWIB's policies, the investment guidelines for SMAs will prohibit the Beta One External Managers from shorting any equity securities and from purchasing equity securities in secondary offerings.
3. Any use of derivatives, leverage, and shorting allowed will be incorporated into the ex-ante risk assessments and active risk contributions.
4. Approvals: Beta One External Manager allocations are subject to the following approvals:

Investment	Head of PMFA	ED/CIO
Beta One Fixed Income	Up to \$1.8 billion	More than \$1.8 billion
Beta One Equity	Up to \$1 billion	More than \$1 billion
Includes all Funds Alpha investments aggregated with the Manager, regardless of vehicle, strategy or portfolio.		

5. Other guideline limitations notwithstanding, the head of Funds Alpha or other staff authorized by the head of PMFA may modify, amend or waive terms of Beta One Manager investment management agreements and generally take any and all other actions that are necessary and reasonable to protect, maintain, or enhance the value of SWIB's position in the investments.
6. All redemptions, terminations or reductions of capital will be at the discretion of the head of Funds Alpha and the head of PMFA in consultation with the head of ARA for policy benchmark exposure consideration.
7. Notwithstanding the above discretion regarding redemptions, terminations or reductions, if the Risk Management Division determines that certain risk attributes in the context of the total Core Fund or the aggregate Beta One Portfolio are undesirable for the Core Fund, Variable Fund or the aggregate portfolio, then the head of Risk Management may recommend redemptions, terminations or reductions to portfolio exposures. With the ED/CIO's concurrence, the head of Funds Alpha will make the changes as recommended by the head of Risk Management.

V.U. Private Markets and Funds Alpha Overage Portfolios

Portfolios may be established at the asset class level for private equity, co-investment, real estate, venture capital, hedge fund, and private debt asset classes to provide for (i) excess exposure to certain investment ideas where the sizing of the investment requires it to be held, in part, outside of an individual internal portfolio or (ii) hedging transactions using public or private securities. In each case, a primary investment must be made by the relevant private markets or hedge fund portfolio with the excess exposure or hedging transaction being allocated to an overage portfolio. The relevant PMFA strategy head will be responsible for portfolio oversight and monitoring of the investment, including the securities in the overage portfolio.

These portfolios may also be used to express investment strategies and ideas that do not fit clearly in any of the private markets or Funds Alpha portfolios but are attractive from a risk/return perspective. In such cases, no primary investment will be made in the existing private markets portfolios, and the ED/CIO will designate a portfolio manager that will be responsible for portfolio oversight and monitoring.

These portfolios may invest in (1) any instrument approved for the relevant private markets asset class portfolios described elsewhere in these guidelines, and (2) any other public or private securities or derivatives approved for trading by SWIB solely for hedging purposes. Each investment idea expressed in the portfolios shall be approved by the ED/CIO with the recommendation of the head of PMFA. The ARA Division is responsible for reporting on any approved investment to the Investment Committee on a monthly basis. Other governance, monitoring, compliance or reporting for the investment may also be specified in the approval. Portfolios will not have a separate benchmark or risk target, but will be included within the benchmark and soft risk parameters for the applicable aggregated asset class, portfolio, or Core Fund, as applicable and as approved at the time of the investment. If the investment will use active risk assigned to exposure management, it will be noted in the investment approval.

VII. EXTERNAL MANAGEMENT

Portfolios may be managed internally by SWIB investment professionals or externally by money management firms. In making the decision on how the portfolios will be managed, SWIB compares the resources, expertise, diversification benefits, and cost of internal management versus external management. If the decision is made to manage the portfolios externally, SWIB will determine whether a separate account or commingled fund best suits SWIB's needs.

External active and passive managers operate under contractual investment guidelines approved by SWIB's investment management staff.

APPENDIX 1 - APPROVED EXCHANGES

Approved Exchanges for Derivatives Trading as of March 29, 2022*

Australian Securities Exchange
BOX Options Exchange
CBOE Exchanges
Chicago Board of Trade
Chicago Mercantile Exchange
London Stock Exchange
Eurex Exchange
Euronext Exchanges
ICE Futures Exchanges
International Securities Exchange
Montreal Exchange
Nasdaq Exchanges
New York Mercantile Exchange
NYSE Exchanges
Osaka Exchange
TMX (Toronto Stock Exchange)
Tokyo Stock Exchange

*Approved exchanges shall include any and all exchanges that may be acquired by, merged with or otherwise reorganized with or into, or any subset of, any of the above-listed exchanges subsequent to the date above provided that such exchange continues to clear through a Qualifying Central Counterparty (QCCP). This list may be updated for such organizational or name changes from time to time by Legal & Compliance without any additional action of the Investment Committee, and all additions or changes shall be deemed Approved Exchanges for purposes of the WRS Investment Committee Investment Guidelines effective as of the date of such acquisition, merger or reorganization. On a quarterly basis, Compliance shall provide notice to the Investment Committee if there have been any such changes to the list.

The Multi-Strat and Exposure Management Portfolios are approved to trade on any of the above exchanges and any other exchange whose clearing house is a Qualifying Central Counterparty (QCCP) as defined by the Bank for International Settlement (BIS).

APPENDIX 2 - SOFT RISK PARAMETERS

SOFT RISK PARAMETERS – ASSET CLASS AND PORTFOLIO

PORTFOLIO ASSET CLASS CHARACTERISTIC	ASSET CLASS	DISCUSSION TRIGGER
Asset Class Exposure*	Core Fund	
	Global Equities	Target \pm 4.6%
	EM Equities	Target \pm 2.8%
	Small Cap	Target \pm 4.9%
	EAFE Small Cap	Target \pm 4.3%
	U.S. Inv Grade	Target \pm 4.8%
	High Yield and Levered Loans	Target \pm 5.1%
	EM Debt	Target \pm 5.6%
	Variable Fund	
	U.S. Equity	Target \pm 5.0%
	Int'l Equity	Target \pm 5.0%
*Post-Corridor Treatment		
Maximum Small Cap Exposure	CTF Domestic Public Equities	2.75x Benchmark
	VTF Domestic Public Equities	2.75x Benchmark
Ex Ante Tracking Error	Public Equities	0.75% - 2.25%
	Public Fixed	0.4% - 1.2%
	Core Fund	0.6% - 1.8%
	Variable Fund	0.3% - 0.9%
Counterparty Exposure (internal and external separate account portfolios)	WRS (Core and Variable Funds)	5 bp exposure (net of collateral, if any) to a single counterparty
Duration	Public Fixed	+/- 1 year of Benchmark

ACTIVE/INDEXED EQUITIES

Minimum Number of Holdings

Small Cap 100 Long

Ex Ante Tracking Error

Passives (Core Fund and Variable Fund Consolidation):

MSCI US 10 bp annualized
 MSCI ex US 20 bp annualized
 MSCI US Small Cap 30 bp annualized
 Small Cap 1.75% - 5.25%

Maximum EM Active Risk Exposure

Small Cap Emerging Markets Tracking Error Contribution of 20%

Maximum Convertible Bond Issues

Small Cap 0

Maximum Private Placements

Small Cap 0

Single Name Concentration

Small Cap Benchmark weight \pm 2%

Maximum ETF Exposure

Small Cap ~~+~~15% of portfolio value

Maximum Company Ownership
 (Excluding ETFs) (L/S)

Small Cap 3% of outstanding

Sum of Top Ten Holdings (L/S)
(Active Weight)

Small Cap ~~20~~10% of portfolio value

P/E Ratio

Small Cap 50%-150% of Benchmark

Maximum Sector Exposure

Small Cap Benchmark weight \pm 10%

Maximum Cash

Passives 1% in unequitized cash

Small Cap 5%

FIXED INCOME

Duration	IG Credit	+/- 1 year of assigned Benchmark
	MBS	+/- 1 year of assigned Benchmark
	Long Treasury	+/- 2 years of assigned Benchmark
	High Yield	+/- 2 years of assigned Benchmark
Maximum Corporate Industry Sector Exposure	IG Credit	Greater of 10% or 3 x Benchmark
Ex Ante Tracking Error	IG Credit	1.5%
	MBS	3.0%
	High Yield	3.0%
	Lev Loans	3.0%
	Long Treasury	1.5%
Maximum Equity Exposure	TBA Strategy	15%
	High Yield	5% of portfolio value
	Lev Loans	5% of portfolio value
Ex-Ante Beta to MBS Benchmark	TBA Strategy	+/-0.3⁴

MULTI-STRAT

Ex ante volatility (tracking error) range	Multi-Strat	3% to 8%, measured with a trailing two-year risk sampling period
Ex-Ante Equity Beta		
Ex-Ante Spread Beta	Multi-Strat	Range of -0.3 to +0.3 with a target of zero over a market cycle. This is measured ex ante with a trailing two-year risk sampling period
Ex-Ante Rates Beta		
Ex-Ante FX Carry Beta		

PRIVATE MARKETS & FUNDS ALPHA

Maximum Co-Investments	Private Equity	30% of core Private Equity Portfolio for Private Equity Co-Investments 30% of Current Return Portfolio for Current Return Co-Investments
------------------------	----------------	---

⁴ The Risk Management Division adjusts FactSet ex-ante beta soft risk parameter by a rolling 12-month average.

Maximum Co-Investments alongside funds with the same sponsor or manager as a fund on which SWIB was conducting due diligence and actively evaluating for a prospective commitment at the time of co-investment ⁵	Private Equity	5% of core Private Equity Portfolio for Private Equity Co-Investments
		5% of Current Return Portfolio for Current Return Co-Investments
	Venture Capital	5% of Venture Capital Portfolio for Venture Capital Co-Investments
Maximum Venture Capital Exposure	Venture Capital	25% of sum of Private Equity, Current Return, Private Debt and Venture Capital
Maximum Development Risk (Direct Holdings Only)	Real Estate	10%
Maximum Single Property Type Exposure - Quarterly	Real Estate	50%
Minimum Core Holdings (Including REIT portfolios)	Real Estate	50%
Maximum Value Holdings	Real Estate	30%
Maximum Opportunistic Holdings	Real Estate	30%
Maximum Core Portfolio Leverage	Real Estate	50%
Maximum Core Fund/Deal Leverage (Must be non-recourse to SWIB)	Real Estate	65%
Maximum Real Estate Equity Portfolio Leverage	Real Estate	60%
Maximum Holdings with Leverage > 80%	Real Estate	10%
Maximum Debt Holdings	Real Estate	25%
Ex ante volatility (tracking error) Range	Hedge Fund	2.5% to 6.5%, measured with a trailing two-year risk sampling period
	Beta One Equity	0.8% to 2.0%
	Beta One Fixed Income	0.8% to 2.0%
Equity Delta to the S&P 500 Range	Hedge Fund	-0.3 to +0.3 (target of zero) over a market cycle measured ex ante with a trailing two-year risk sampling period

⁵ If SWIB subsequently commits to a limited partnership or other fund vehicle of the sponsor or manager, then such co-investment shall no longer be included for purposes of calculating this soft parameter.

Target Beta Range	Beta One Equity	0.8 to 1.2 (target of 1.0) (CTF + VTF)
	Beta One Fixed Income	0.8 to 1.2 (target of 1.0)
Maximum one-year annual Conditional Value at Risk (CVaR)	Hedge Fund	7% based on trailing two-year risk sampling period
Maximum Hedge Fund Active Risk Contribution	Hedge Fund	6.0 bps of Core Fund active risk
Maximum General Partner/Investment Manager Portfolio Concentration	Hedge Fund	12%
	Beta One	25% (CTF+VTF)

APPENDIX 3 – CTF AND VTF BENCHMARKS
State of Wisconsin Investment Board
Target State Benchmarks ~~2024~~2025¹

Core Trust Fund Benchmark²		
	Current Benchmark	
Public Equity	40 38% MSCI ACWI Investable Market Index (IMI) with a 50% weight to the ex China large cap + China All Shares	<ul style="list-style-type: none"> - Current and previous benchmark asset classes are weighted by asset class strategic target weights - Current Benchmark updated 4/30/2012 to include Cash, which reflects leverage
Public Fixed Income	<u>Special Weight</u>	
Inflation Sensitive	27% Fixed Blend of Eight Components ³	
Private Equity/Debt	19% Bloomberg U.S. Treasury Inflation-Linked Bond Index	
Real Estate	18 20% Roll-Up of Five Components ⁴	
Cash	8% NCREIF Open End Diversified Core Equity (ODCE) (-12%) Bloomberg Short Term Bank <u>3</u> <u>Month T-Bill</u> Yield Index (BSBY) + 30 50bps	
Total	100%	

Variable Trust Fund Benchmark			
	Current Benchmark		
Domestic Equities	70% MSCI USA Investable Market Index		
International Equities	30% MSCI All Country World Index (ACWI) ex US Custom Net Index		
Total	100%		

Note: Roll-Up refers to the market-weighted aggregation of benchmark components or indices, based on SWIB's actual market exposures.

¹ Reflects target weights under the ~~2024~~2025 Asset Allocation implementation plan ~~forecasted for~~as of 12/31/2024.

² The major asset class weights are established through the annual asset allocation exercise. Private Equity/Debt weights float between ~~40~~12% and ~~26~~28% and Real Estate weights float between 4% and 12%. The Private Equity/Debt excess weights are taken from Public Equities and the Real Estate excess weights are taken 50% from Public Equities and 50% from Public Fixed Income.

³ Public Fixed Income Benchmark: Fixed Blend of Eight Components
24.00% Bloomberg U.S. Treasury Index
24.00% Bloomberg U.S. Credit Index
20.00% ICE BofA BB-B US High Yield Index
10.00% Morningstar LSTA U.S. Leveraged Loan 100 Index
8.00% Bloomberg Mortgage-Backed Securities Index
5.00% JPM EMBI Global Diversified
5.00% JPM GBI-EM Diversified
4.00% Bloomberg U.S. Treasury Long Index

⁴ Private Equity/Debt Benchmark: Roll-Up of Five Components
Component One: State Street Private Equity Index (SSPEI) – All Regions
Component Two: SSPEI Venture Capital – U.S. Region
Component Three: Private Equity Legacy (SW050300) Actual Portfolio Returns
Component Four: Bloomberg Duration-Adjusted Baa Corporate plus 20 basis points
Component Five: SSPEI Private Debt – All Regions

Effective 1/1/2010, the tax treatment of the MSCI benchmark updated to a custom net-of-tax benchmark based on SWIB-specific tax treatment.

STATE OF WISCONSIN INVESTMENT BOARD
Investment Committee Meeting–Open Session

Tuesday, February 25, 2025

Offices of the Investment Board
4703 Madison Yards Way, Madison, Wisconsin

Committee Members Present: Edwin Denson, Executive Director/Chief Investment Officer (Chair)
Anne-Marie Fink, Private Markets & Funds Alpha–Chief Investment Officer
Todd Mattina, Head Economist & Asset and Risk Allocation
Chief Investment Officer
Stefano Cavaglia, Senior Portfolio Manager–Asset & Risk Allocation
Derek Drummond, Head of Funds Alpha
Diane Linn, Senior Portfolio Manager–Multi-Asset Strategies
Chase Nicholson, Senior Portfolio Manager–Multi-Asset Strategies
Jason Rector, Portfolio Manager–Funds Alpha
Mike Shearer, Head of Fixed Income Strategies
Nick Stanton, Head of Multi-Asset Strategies
Ivy Zhang, Senior Portfolio Manager–Asset & Risk Allocation

Eric Barber, Chief Legal Counsel (non-voting)
Hassan Chehime, Head of Risk Management (non-voting)
Rochelle Klaskin, Deputy Executive Director/Chief Operating Officer (non-voting)

Also in Attendance: Clyde Tinnen, Trustee
John Voelker, Trustee
Nathan Ballard, Senior Legal Counsel
Chelsey Barczak, GPMS Business Director
Zach Berghouse, Internal Auditor
Kevin Blank, Analyst–Funds Alpha
Brandon Brickner, Head of Internal Audit
Rosa Brown, Quantitative Analyst–Asset & Risk Allocation
Kate Burkart-Paulson, Senior Legal Counsel
John Burkhartzmeyer, Senior Trader
Sara Chandler, Chief of Staff & Strategy
Tunc Dayioglu, Senior Portfolio Manager–Funds Alpha
Trey Edgerle, Compliance Analyst
Greg Fletcher, Performance Director
Tom Freeman, Director of Quantamental Research
Megan Gall, Investment Operations Analyst
Shannon Gannon, Communications Director
Max Garcia, Analyst–Funds Alpha
Chase Gendron, Investment Operations Analyst
Jameson Greenfield, Chief Financial Officer
Thomas Gregg, Investment Operations Analyst
Zonglin Han, Quantitative Analyst–Asset & Risk Allocation
Alex Hansen, Investment Operations Analyst

Brian Heimsoth, Senior Portfolio Manager–Asset & Risk Allocation
 Vince Janecky, Internal Auditor Data Analyst
 Phil Johnson, Senior Portfolio Manager–Non-Investment Grade Fixed Income
 Ryan Johnston, Senior Analyst–Funds Alpha
 Salah Khalaf, Portfolio Manager–Private Markets & Funds Alpha
 Jason Kowalke, Investment Operations Analyst
 Dylan Krivoshein, Investment Operations Analyst
 Jason Krueger, Compliance Analyst
 Alex Kubiak, Investment Operations Analyst
 Katie Kuryla, Senior Paralegal/Records Specialist
 Lisa Lange, Director of Compliance & Senior Legal Counsel
 Shan Lo, Senior Portfolio Manager–Multi-Asset Strategies
 Jon Loboda, Performance Measurement Operations Manager
 Jeff Lucas, Senior Portfolio Manager–Investment Grade Fixed Income
 Bill Luetzow, Legal Counsel
 Michael Mandarino, Senior Analyst–Non-Investment Grade Fixed Income
 Matt Marek, Senior Analyst–Asset & Risk Allocation
 Ed Martinez, PMFA Business Director
 Frank Mazzucco, Senior Legal Counsel
 Jason Mirr, Senior Portfolio Manager–U.S. Small Cap Strategy
 Joy Mukherjee, Senior Portfolio Manager–U.S. Small Cap Strategy
 Scott Nichols, Head of Trading
 Sarah Noronha, Senior Portfolio Manager–U.S. Small Cap Strategy
 Matt Notzon, Performance Analyst
 Anand Rakesh, Director of Risk Analytics & Financial Engineering Systems
 Zhihui Redlin, Legal Counsel
 Robby Richlen, Analyst–Funds Alpha
 Tom Robinson, Head of Corporate Governance
 Andrea Ruiz, Senior Portfolio Manager–Liquidity, Inflation & Rates Mgmt.
 Cora Shi, Senior Analyst–Asset & Risk Allocation
 Sam Shibilski, Investment Operations Analyst
 Gabriel Souza, Investment Operations Analyst
 Mark Taylor, Senior Portfolio Manager–Fixed Income Strategies
 Rob Thornton, ARA Business Director
 Dawn Tuescher, Executive Administrative Assistant
 Sarah Zhao, Investment Operations Analyst
 Doston Bradley, Cerberus Capital Management
 Joe Nankof, NEPC
 (Some individuals may have attended only portions of the meeting.)

OPEN SESSION

With a quorum present, Edwin Denson, Chair of the Investment Committee, called the meeting to order at 1:00 p.m.

1. Approval of the Minutes

Mr. Denson asked if there were any comments on either the open or closed session minutes of the January 28, 2025 Investment Committee (“IC”) meeting. Hearing no comments, Mr. Denson stated that the Committee could approve both the open and closed session minutes in open session.

Motion: A motion was made by Mr. Mattina and seconded by Mr. Shearer to approve both the open session and the closed session minutes of January 28, 2025, as presented. The motion passed unanimously.

2. Global Public Markets Strategies Division Update

Nick Stanton, Head of Multi-Asset Strategies, reported on performance from the Global Public Markets Strategies division in the *Global Public Markets Strategies Quarterly Update, Q4 2024*, included on pages 10-12 in the meeting materials. He highlighted that all seven division strategies generated positive relative returns in 2024, and reviewed performance of division strategies over the three- and five-year periods, as set forth in the meeting materials.

3. Q4 2024 Quarterly Updates

A. Small Cap Strategy

Joy Mukherjee, Senior Portfolio Manager–U.S. Small Cap Strategy, referred to the *U.S. Small Cap Strategy Review*, included on pages 13-21 in the meeting materials. He noted that the portfolio outperformed its benchmark by 47 basis points (“bps”) in the fourth quarter and by 429 bps in 2024, and that absolute and relative performance over the three- and five-year periods were all positive. Mr. Mukherjee then **(a)** discussed trends related to small cap market performance, noting that small cap names underperformed large cap names in 2024, driven largely by strong performance from the “Magnificent 7” stocks in the first half of the year, but that the portfolio had positive alpha generation every quarter of 2024, **(b)** commented that certain so-called “meme stocks” performed well in the fourth quarter due to lower interest rate expectations and retail investor enthusiasm, **(c)** provided sector commentary, stating that financials and energy were the top-performing sectors for the portfolio in the quarter, while professional services within the industrials sector as well as the healthcare sector detracted, and **(d)** confirmed that the portfolio remained in compliance with its guidelines.

B. LIRM

Andrea Ruiz, Senior Portfolio Manager–Liquidity, Inflation & Rates Mgmt., presented the *Investment Strategies: Liquidity, Inflation and Rates Management* (“LIRM”) quarterly update, included on pages 22-28 in the meeting materials. With respect to the market, she noted that **(a)** both money market fund net assets and U.S. Treasury bill supply increased during the fourth quarter, **(b)** the overnight reverse repurchase agreement balance remains low, but could be affected by federal debt ceiling pressures, **(c)** the Secured Overnight Financing Rate (“SOFR”) spreads spiked at the end of September, and **(d)** market participants continued to adjust expectations regarding the number and extent of interest rate cuts by the Federal Reserve. Ms. Ruiz then reviewed performance for the State Investment

Fund (“SIF”), noting that the SIF returned positive absolute and relative performance for the one-, three- and five-year periods, and confirmed that the portfolio remained in compliance with its guidelines.

C. Multi-Strat

Chase Nicholson, Senior Portfolio Manager–Multi-Asset Strategies, presented the *Multi-Strat Portfolio Review*, included on pages 29-33 in the meeting materials. He reported that the multi-strat portfolio outperformed its benchmark by 62 bps in the fourth quarter, with systematic strategies and fundamental arbitrage as the primary contributors, and that the portfolio returned positive absolute and relative performance for the one-, three- and five-year periods. Mr. Nicholson then **(a)** reviewed cross-sectional equity factor performance for the year, highlighting that momentum performed well while value and quality lagged, and **(b)** confirmed that the portfolio remained in compliance with its guidelines.

D. Fixed Income Strategies

Mike Shearer, Head of Fixed Income Strategies, presented the *Fixed Income Strategies Review*, included on pages 34-49 in the meeting materials. He highlighted that all five fixed income portfolios generated positive relative performance in 2024 and reviewed the overall positioning of the strategies with respect to active duration, beta risk and tracking error. Mr. Shearer also noted that the to-be-announced (“TBA”) strategy portfolio transitioned at the beginning of the year and was officially launched on February 1, 2025.

Mr. Shearer then provided a fixed income market review, stating that **(a)** Federal Reserve commentary, as well as inflation and employment data, has led market participants to expect only two interest rate cuts in 2025, **(b)** U.S. Treasury yields rose significantly higher during the fourth quarter, **(c)** spreads across investment grade credit, high yield, BB/B, and loans tightened during the quarter, while U.S. mortgage-backed securities (“MBS”) spreads generally remained stable, **(d)** the energy sector has performed well in the current environment, while the healthcare and high-yield real estate sectors have struggled, and **(e)** higher-tier consumer credit remains strong, with potential weakness among lower-tier borrowers.

Lastly, he confirmed that the portfolios were in compliance with their guidelines in Q4 2024, with the exception of the leveraged loans portfolio, which was out of compliance with the investment guideline limiting investments in non-benchmark instruments. Mr. Shearer noted that a waiver of the guideline had been granted, the portfolio is now in compliance, and updated monitoring procedures are in place.

4. Convene in Closed Session

Motion: A motion to go into closed session as authorized pursuant to sections 19.85(1)(e) and 19.36(5) of the Wisconsin Statutes to consider confidential strategies for the investment of public funds, including **(a)** the review of active risk profiles and positioning of portfolio investments and the Core and Variable Trust Funds, and **(b)** the review of specific proprietary investment strategies and investment instruments related to LIRM, multi-strat, fixed income strategies, small cap equities, and exposure management, was made by Mr. Stanton and seconded by Ms. Linn.

Mr. Denson called for a roll call vote.

Denson-Aye	Fink-Aye	Mattina-Aye	Cavaglia-Aye
Drummond-Aye	Linn-Aye	Nicholson-Aye	Shearer-Aye
Stanton-Aye	Zhang-Aye		

There being ten ayes and no nays, Mr. Denson declared the motion passed. The Committee convened in closed session at 1:20 p.m. and reconvened in open session at 2:27 p.m.

5. Announcement of Committee Actions Relating to Items Taken Up in Closed Session

Mr. Denson announced that, while in closed session, the Committee **(i)** reviewed active risk profiles and positioning of portfolio investments and the Core and Variable Trust Funds, and **(ii)** reviewed specific proprietary investment strategies and investment instruments related to LIRM, multi-strat, fixed income strategies, small cap equities, and exposure management.

6. QIR Certification

Lisa Lange, Director of Compliance and Senior Legal Counsel, presented a proposal that the Committee appoint **(a)** Christian Comito as a Qualified Independent Representative (“QIR”) for Fixed Income Total Return Swaps (U.S.) (CFTC), and **(b)** Jeff Lucas as a QIR for Single Name Credit Default Swaps (SEC), as set forth on pages 164-176 in the meeting materials. Ms. Lange noted that the appointments would be for all approved counterparties with whom SWIB has a master netting agreement for such instruments and that signed Internal QIR Certificates and Agreements for Mr. Comito and Mr. Lucas documenting their relevant knowledge and experience were included in the meeting materials for the Committee’s review. She also explained that Mr. Comito and Mr. Lucas would be subject to quarterly and annual certifications regarding their QIR status as a condition of their employment.

Motion: A motion was made by Mr. Drummond and seconded by Mr. Nicholson to approve that **(1)** Christian Comito meets all of the QIR Criteria with respect to Fixed Income Total Return Swaps (U.S.) (CFTC), and **(2)** Jeff Lucas meets all of the QIR Criteria with respect to Single Name Credit Default Swaps (SEC), for all approved counterparties with whom SWIB has a master netting agreement for such instruments, from time to time, and each is approved to act and is hereby appointed as a QIR with respect to such instruments and counterparties. The motion passed unanimously.

7. Soft Risk Parameters

Hassan Chehime, Head of Risk Management, noted that the report *Soft Risk Parameters—Asset Class and Portfolio*, as of January 31, 2025, was included on pages 177-178 in the meeting materials for the Committee’s review. Mr. Chehime indicated that there was one new discussion trigger this month relating to the TBA strategy portfolio’s ex-ante beta to MBS benchmark, which risk began monitoring prior to the portfolio’s official launch on February 1, 2025. He confirmed that no discussion triggers had been dropped this month.

8. Future Meeting Topics

Mr. Denson noted that draft agendas for the April 1, 2025 and April 22, 2025 Committee meetings were included on pages 179-182 in the meeting materials for the Committee's review.

9. Adjournment

Motion: A motion to adjourn the meeting was made by Mr. Stanton and seconded by Mr. Shearer. The motion passed unanimously, and the meeting adjourned at 2:30 p.m.

Date of Committee Approval: 04/01/25

Signed: /s/ Eric Barber
Eric Barber, Secretary
Investment Committee

STATE OF WISCONSIN INVESTMENT BOARD
Investment Committee Meeting–Open Session

Tuesday, April 1, 2025

Offices of the Investment Board
4703 Madison Yards Way, Madison, Wisconsin

Committee Members Present: Edwin Denson, Executive Director/Chief Investment Officer (Chair)
Anne-Marie Fink, Private Markets & Funds Alpha–Chief Investment Officer
Todd Mattina, Head Economist & Asset and Risk Allocation
Chief Investment Officer
Stefano Cavaglia, Senior Portfolio Manager–Asset & Risk Allocation
Derek Drummond, Head of Funds Alpha
Diane Linn, Senior Portfolio Manager–Multi-Asset Strategies
Lin Maung, Senior Portfolio Manager–Private Equity
Chase Nicholson, Senior Portfolio Manager–Multi-Asset Strategies
Jason Rector, Senior Portfolio Manager–Funds Alpha
Mike Shearer, Head of Fixed Income Strategies
Nick Stanton, Head of Multi-Asset Strategies
Ivy Zhang, Senior Portfolio Manager–Asset & Risk Allocation

Eric Barber, Chief Legal Counsel (non-voting)
Hassan Chehime, Head of Risk Management (non-voting)
Rochelle Klaskin, Deputy Executive Director/Chief Operating Officer (non-voting)

Also in Attendance: J. Michael Collins, Trustee
Tom Merfeld, Trustee
Nathan Ballard, Senior Legal Counsel
Kevin Blank, Senior Analyst–Funds Alpha
Brandon Brickner, Head of Internal Audit
Rosa Brown, Quantitative Analyst–Asset & Risk Allocation
Kate Burkart-Paulson, Senior Legal Counsel
John Burkhartzmeyer, Senior Trader
Sara Chandler, Chief of Staff & Strategy
Bridget Chen, Portfolio Manager–MBS
Christian Comito, Senior Portfolio Manager–MBS
Eric Cullison, Public Markets Operations Director
Tunc Dayioglu, Senior Portfolio Manager–Funds Alpha
Kliton Duri, Senior Portfolio Manager–High Yield and Leveraged Loans
Trey Edgerle, Compliance Analyst
Greg Fletcher, Performance Director
Tom Freeman, Director of Quantamental Research
Scott Freundlich, Portfolio Manager–High Yield and Leveraged Loans
Shannon Gannon, Communications Director
Max Garcia, Analyst–Funds Alpha
Chase Gendron, Investment Operations Analyst
Thomas Gregg, PMFA Operations Manager

Dan Gyorog, Internal Auditor
 Brian Heimsoth, Senior Portfolio Manager–Asset & Risk Allocation
 Phil Johnson, Senior Portfolio Manager–High Yield and Leveraged
 Loans
 Ryan Johnston, Senior Analyst–Funds Alpha
 Salah Khalaf, Senior Portfolio Engineer–Private Markets & Funds Alpha
 Jason Kowalke, PMFA Operations Manager
 Dylan Krivoshein, Investment Operations Analyst
 Jason Krueger, Compliance Analyst
 Alex Kubiak, Investment Operations Analyst
 Katie Kuryla, Senior Paralegal/Records Specialist
 Shan Lo, Senior Portfolio Manager–Multi-Asset Strategies
 Jon Loboda, Performance Measurement Operations Manager
 Jeff Lucas, Senior Portfolio Manager–Investment Grade Credit, Rates
 and Macro
 Bill Luetzow, Legal Counsel
 Michael Mandarino, Senior Analyst–High Yield and Leveraged Loans
 Matt Marek, Senior Analyst–Asset & Risk Allocation
 Ed Martinez, PMFA Business Director
 Frank Mazzucco, Senior Legal Counsel
 David Meyer, Senior Trader
 Nick Mokha, Portfolio Manager–High Yield and Leveraged Loans
 Joy Mukherjee, Senior Portfolio Manager–U.S. Small Cap Strategy
 Sunil Nair, Operational, Financing & Counterparty Risk Director
 Scott Nichols, Head of Trading
 Sarah Noronha, Senior Portfolio Manager–U.S. Small Cap Strategy
 Matt Notzon, Performance Analyst
 Hunter Olson, Analyst–High Yield and Leveraged Loans
 Scott Parrish, Head of Private Equity
 Jeanne Peltier, Head of Human Resources
 Chris Prestigiacomo, Head of Private Debt & Venture Capital
 Anand Rakesh, Director of Risk Analytics & Financial Engineering
 Systems
 Zhihui Redlin, Legal Counsel
 Robby Richlen, Analyst–Funds Alpha
 Tom Robinson, Head of Corporate Governance
 Joe Roth, Transition Management and Portfolio Support Manager
 Edouard Senechal, Senior Portfolio Manager–Asset & Risk Allocation
 Gabriel Souza, Investment Operations Analyst
 Mark Taylor, Senior Portfolio Manager–Quantitative Research
 Matt Terpstra, Internal Auditor
 Leif Thybony, Senior Portfolio Manager–High Yield and Leveraged
 Loans
 Dawn Tuescher, Executive Administrative Assistant
 Ping Wong, Portfolio Manager–Liquidity, Inflation & Rates Mgmt.
 Jeff Yoder, Talent Acquisition Manager
 Sarah Zhao, Investment Operations Analyst
 Doston Bradley, Cerberus Capital Management
 (Some individuals may have attended only portions of the meeting.)

OPEN SESSION

With a quorum present, Edwin Denson, Chair of the Investment Committee, called the meeting to order at 1:03 p.m.

1. Approval of the Minutes

Mr. Denson asked if there were any comments on either the open or closed session minutes of the February 25, 2025 Investment Committee (“Committee”) meeting. Hearing no comments, Mr. Denson stated that the Committee could approve both the open and closed session minutes in open session.

Motion: A motion was made by Mr. Shearer and seconded by Mr. Mattina to approve both the open session and the closed session minutes of February 25, 2025, as presented. The motion passed unanimously.

2. June Investment Forum Preview

Kevin Blank, Senior Analyst–Funds Alpha, provided an update on the June Investment Forum, which will be held virtually with sessions during the afternoons of June 10-11, 2025. Mr. Blank reported that session topics may include a real estate market outlook, updates on the consumer economy, opportunities and challenges in power demand, adoption and applications of artificial intelligence (“AI”), geopolitical risk and capital markets, and knowledge sharing and collective learning in investment organizations.

3. Transition Update (Q4 2024)

Joe Roth, Transition Management and Portfolio Support Manager, presented the *Transition Management Summary, Q4 2024*, included on page 11 in the meeting materials. Mr. Roth noted that there were two transition events during the quarter, which liquidated small cap portfolio assets from externally managed and internally managed accounts to effectuate a rebalance to passive management. He commented that both transitions, one of which was managed by BlackRock and the other by the internal trading team, cost less than expected.

4. Convene in Closed Session

Motion: A motion to go into closed session as authorized pursuant to sections 19.85(1)(e) and 19.36(5) of the Wisconsin Statutes to consider confidential strategies for the investment of public funds, including **(a)** the review of active risk profiles and positioning of portfolio investments and the Core and Variable Trust Funds, **(b)** the review of specific proprietary investment strategies and investment instruments related to global public market strategies, private markets and funds alpha, and exposure management, and **(c)** the review of broker information, was made by Mr. Mattina and seconded by Mr. Nicholson.

Mr. Denson called for a roll call vote.

Denson-Aye	Fink-Aye	Mattina-Aye	Cavaglia-Aye
Drummond-Aye	Linn-Aye	Maung-Aye	Nicholson-Aye
Rector-Aye	Shearer-Aye	Stanton-Aye	Zhang-Aye

There being twelve ayes and no nays, Mr. Denson declared the motion passed. The Committee convened in closed session at 1:05 p.m. and reconvened in open session at 3:47 p.m.

5. Announcement of Committee Actions Relating to Items Taken Up in Closed Session

Mr. Denson announced that, while in closed session, the Committee **(i)** reviewed active risk profiles and positioning of portfolio investments and the Core and Variable Trust Funds, **(ii)** reviewed specific proprietary investment strategies and investment instruments related to global public market strategies, private markets and funds alpha, and exposure management, and **(iii)** reviewed broker information.

6. Research Task Force Report

Stefano Cavaglia, Senior Portfolio Manager–Asset & Risk Allocation, presented the *Research Task Force Update*, included on pages 151-161 in the meeting materials. He discussed recent Research Task Force initiatives, including **(a)** sponsoring seminars relating to overall economic conditions following the imposition of tariffs and equity market volatility, as well as risk and uncertainty, **(b)** exploring hosting speakers on broad trends such as geopolitical events, risk budgeting, balance sheet and debt management, hedge fund capital and risk allocation strategies, and AI, **(c)** promoting knowledge-sharing and educational programs, including participation in sessions related to SWIB’s membership in the International Centre for Pension Management and a forum for quantitative research in finance, and **(d)** supporting the planning of the 2025 June Investment Forum.

7. Quarterly Performance Review (Q4 2024)

Mr. Denson noted that the *Investment Performance Report*, as of December 31, 2024, was included on pages 162-208 in the meeting materials for the Committee’s information.

8. QIR Annual Certification Report

Mr. Denson stated that the QIR Annual Certification Report for 2024 was included on page 209 in the meeting materials for the Committee’s information.

9. Soft Risk Parameters

Hassan Chehime, Head of Risk Management, noted that the report *Soft Risk Parameters–Asset Class and Portfolio*, as of February 28, 2025, was included on pages 210-211 in the meeting materials for the Committee’s review. Mr. Chehime noted that there was one new discussion trigger this month relating to the small cap portfolio’s ex ante tracking error and that no discussion triggers had been dropped.

10. Future Meeting Topics

Mr. Denson noted that draft agendas for the April 22, 2025 and May 27, 2025 Committee meetings were included on pages 212-215 in the meeting materials for the Committee’s review.

11. Adjournment

Motion: A motion to adjourn the meeting was made by Mr. Rector and seconded by Mr. Shearer. The motion passed unanimously, and the meeting adjourned at 3:53 p.m.

Date of Committee Approval: 04/22/25

Signed: /s/ Eric Barber
Eric Barber, Secretary
Investment Committee

STATE OF WISCONSIN INVESTMENT BOARD
Investment Committee Meeting–Open Session

Tuesday, April 22, 2025

Offices of the Investment Board
4703 Madison Yards Way, Madison, Wisconsin

Committee Members Present: Edwin Denson, Executive Director/Chief Investment Officer (Chair)
Anne-Marie Fink, Private Markets & Funds Alpha–Chief Investment Officer
Todd Mattina, Head Economist & Asset and Risk Allocation Chief Investment Officer
Stefano Cavaglia, Senior Portfolio Manager–Asset & Risk Allocation
Derek Drummond, Head of Funds Alpha
Diane Linn, Senior Portfolio Manager–Multi-Asset Strategies
Lin Maung, Senior Portfolio Manager–Private Equity
Chase Nicholson, Senior Portfolio Manager–Multi-Asset Strategies
Jason Rector, Senior Portfolio Manager–Funds Alpha
Mike Shearer, Head of Fixed Income Strategies
Nick Stanton, Head of Multi-Asset Strategies
Ivy Zhang, Senior Portfolio Manager–Asset & Risk Allocation

Eric Barber, Chief Legal Counsel (non-voting)
Hassan Chehime, Head of Risk Management (non-voting)
Rochelle Klaskin, Deputy Executive Director/Chief Operating Officer (non-voting)

Also in Attendance: J. Michael Collins, Trustee
Clyde Tinnen, Trustee
John Voelker, Trustee
Nathan Ballard, Senior Legal Counsel
Chris Benish, Senior Portfolio Manager–Asset & Risk Allocation
Rosa Brown, Quantitative Analyst–Asset & Risk Allocation
Kate Burkart-Paulson, Senior Legal Counsel
John Burkhartzmeyer, Senior Trader
Sara Chandler, Chief of Staff & Strategy
Jack Drew, Trader
Kliton Duri, Senior Portfolio Manager–High Yield and Leveraged Loans
Trey Edgerle, Compliance Analyst
Greg Fletcher, Performance Director
Tom Freeman, Director of Quantamental Research
Scott Freundlich, Portfolio Manager–High Yield and Leveraged Loans
Shannon Gannon, Communications Director
Jameson Greenfield, Chief Financial Officer
Thomas Gregg, PMFA Operations Manager
Dan Gyorog, Internal Auditor
Alex Hansen, Investment Operations Analyst
Brian Heimsoth, Senior Portfolio Manager–Asset & Risk Allocation
Hillary Holstein, Portfolio Manager–Asset & Risk Allocation

Vince Janecky, Internal Auditor Data Analyst
 Phil Johnson, Senior Portfolio Manager–High Yield and Leveraged
 Loans
 Ryan Johnston, Senior Analyst–Funds Alpha
 Salah Khalaf, Senior Portfolio Engineer–Private Markets & Funds Alpha
 Jason Kowalke, PMFA Operations Manager
 Jason Krueger, Compliance Analyst
 Alex Kubiak, Investment Operations Analyst
 Katie Kuryla, Senior Paralegal/Records Specialist
 Lisa Lange, Director of Compliance & Senior Legal Counsel
 Shan Lo, Senior Portfolio Manager–Multi-Asset Strategies
 Tony Lubarsky, Investment Operations Analyst
 Bill Luetzow, Legal Counsel
 Michael Mandarino, Senior Analyst–High Yield and Leveraged Loans
 Matt Marek, Senior Analyst–Asset & Risk Allocation
 Ed Martinez, PMFA Business Director
 Frank Mazzucco, Senior Legal Counsel
 David Meyer, Senior Trader
 Nick Mokha, Portfolio Manager–High Yield and Leveraged Loans
 Sunil Nair, Operational, Financing & Counterparty Risk Director
 Scott Nichols, Head of Trading
 Matt Notzon, Performance Analyst
 Scott Parrish, Head of Private Equity
 Chris Prestigiacomo, Head of Private Debt & Venture Capital
 Cefe Quesada, Chief Technology Officer
 Anand Rakesh, Director of Risk Analytics & Financial Engineering
 Systems
 Zhihui Redlin, Legal Counsel
 Robby Richlen, Analyst–Funds Alpha
 Jason Rothenberg, Head of Real Estate
 Andrea Ruiz, Senior Portfolio Manager–Liquidity, Inflation & Rates
 Mgmt.
 Gabriel Souza, Investment Operations Analyst
 Mark Taylor, Senior Portfolio Manager–Quantitative Research
 Matt Terpstra, Internal Auditor
 Rob Thornton, ARA Business Director
 Leif Thybony, Senior Portfolio Manager–High Yield and Leveraged
 Loans
 Dawn Tuescher, Executive Administrative Assistant
 Sarah Zhao, Investment Operations Analyst
 Audrey Woller, Legislative Audit Bureau
 (Some individuals may have attended only portions of the meeting.)

OPEN SESSION

With a quorum present, Edwin Denson, Chair of the Investment Committee, called the meeting to order at 1:00 p.m.

1. Approval of the Minutes

Mr. Denson asked if there were any comments on either the open or closed session minutes of the April 1, 2025 Investment Committee (“Committee”) meeting. Hearing no comments, Mr. Denson stated that the Committee could approve both the open and closed session minutes in open session.

Motion: A motion was made by Ms. Fink and seconded by Mr. Mattina to approve both the open session and the closed session minutes of April 1, 2025, as presented. The motion passed unanimously.

2. Amendments to Investment Committee WRS Investment Guidelines

Lisa Lange, Director of Compliance and Senior Legal Counsel, discussed the proposed amendments to the *SWIB Investment Committee Wisconsin Retirement System Investment Guidelines*, included on pages 9-53 in the meeting materials. She reported that the proposed changes to (a) update the derivatives use policy to clarify that exposure monitoring is incorporated as part of overall risk monitoring for the strategy and that the Committee will be notified of any material risks identified, (b) clarify that the rebalancing procedures’ options limitation is calculated with respect to the Core Trust Fund’s (“CTF”) market value, (c) prohibit all internally managed portfolios, including separately managed funds, from investing in commercial paper or other securities issued by SWIB, (d) clarify the guidelines of the Asset & Risk Allocation (“ARA”) division’s passive internal portfolios to align with the current operation of the portfolios and make additional clarifying, non-substantive revisions, including with respect to non-benchmark securities and shorting, (e) provide that the approval thresholds for aggregate ARA investments with individual passive external managers do not include allocations to existing strategies managed by existing managers as part of routine rebalancing activity, (f) remove U.S. Treasury inflation-protected securities (“TIPS”) index portfolio guidelines, which are already covered by the ARA guidelines, and (g) change the high yield bond portfolio’s 5% maximum single issuer concentration limit from absolute to active weight.

Ms. Lange then discussed the proposed changes to the leveraged loan portfolio guidelines, including (i) clarifying that at least 75% of the portfolio’s market value must be invested in single-name first lien bank loans and exchange-traded funds (“ETFs”) with a diversified portfolio of first-lien bank loans, in addition to total return swaps on first-lien bank loans and first-lien bank loan indices, (ii) revising the limitation on out-of-benchmark investment instruments from 50% of the benchmark (i.e., Morningstar LSTA U.S. Leveraged Loan 100 index) to 25% of the broader Morningstar LSTA U.S. Leveraged Loan Index, and excluding U.S. Treasuries, total return swaps and credit default swaps on first-lien loans, and approved ETFs with a diversified portfolio of first-lien bank loans, and (iii) changing the portfolio’s 5% maximum single issuer concentration limit from absolute to active weight. Ms. Lange and Mike Shearer, Head of Fixed Income Strategies, then led the Committee’s discussion regarding the proposed out-of-benchmark guideline and the Compliance team’s role in approving the excluded ETFs. Following the discussion, the Committee recommended revising the out-of-benchmark guideline to refer to “Compliance-approved ETFs.”

Lastly, Ms. Lange reviewed the proposed changes to the soft risk parameters (a) for the small cap portfolio, to clarify that maximum ETF exposure is 15% of portfolio value and to provide that the sum of the top ten holdings discussion trigger is active weight and limited to 10% of

portfolio value, and **(b)** for the to-be-announced (“TBA”) strategy portfolio, to remove the ex-ante beta to mortgage-backed securities (“MBS”) benchmark discussion trigger.

Motion: A motion was made by Ms. Linn and seconded by Mr. Shearer to approve the proposed amendments to the *SWIB Investment Committee WRS Investment Guidelines*, as presented in the Committee materials and as modified to refer to “Compliance-approved ETFs” in the leveraged loan portfolio’s out-of-benchmark guideline. The motion passed unanimously.

3. Private Markets & Funds Alpha Division Update

Anne-Marie Fink, Private Markets & Funds Alpha–Chief Investment Officer, presented the *Private Markets & Funds Alpha Division Update*. She commented that investment teams were busy traveling to annual general meetings and conferences and noted that, because benchmark data for the private equity, current return and venture capital portfolios was not yet available as of the meeting date, performance updates would be provided at the next Committee meeting.

4. Q1 2025 Quarterly Updates

A. Private Debt

Chris Prestigiaco, Head of Private Debt & Venture Capital, presented the *Private Debt Portfolio Investment Committee Quarterly Report*, included on pages 54-65 in the meeting materials. He provided a private debt market update, noting that **(a)** fundraising totaled approximately \$200 billion in 2024, trailing 2023 levels, **(b)** the number of funds raised declined year-over-year, while average fund size remained stable, **(c)** investors continue to prefer more established managers, which received the significant majority of fund commitments, **(d)** direct lending remains the preferred sub-strategy within private debt, with direct lending fundraising increasing approximately 40% year-over-year, **(e)** investment activity out of direct lending-focused funds has been slow in 2025, with loan volume and deal count lagging 2024 levels, due in part to slower than anticipated private equity buyout activity amid political and economic uncertainty, and **(f)** overall leveraged buyout debt multiples increased slightly year-over-year but remain below long-term historical averages, while default rates remain low due in part to loan modifications.

Mr. Prestigiaco then reviewed the portfolio’s **(i)** characteristics, noting that the portfolio remained stable with overall market value, average life and duration decreasing modestly from the prior quarter and average coupon increasing slightly, **(ii)** current below investment grade (“BIG”) holdings, which held steady at 6% as the BIG pipeline slowed, **(iii)** sector mix, which remained slightly underweight industrial relative to the benchmark, and **(iv)** loans within and outside Wisconsin, noting that there were several Wisconsin opportunities under review.

With respect to performance, Mr. Prestigiaco stated that the portfolio outperformed its benchmark over the one- and three-year time periods but underperformed for the five-year period, with one loan creating an outsized negative performance impact across all periods. He then reported that there were no problem credits or workouts in the portfolio, confirmed

that the portfolio remained in compliance with its guidelines, and discussed the pipeline under review.

B. Real Estate

Jason Rothenberg, Head of Real Estate, presented the *Quarterly Activity Report – Real Estate*, included on pages 66-78 in the meeting materials. He provided a real estate market overview, noting that **(a)** macroeconomic uncertainty, including government-related leasing and the imposition of tariffs, will continue to impact the overall real estate market, particularly the industrial and retail sectors, **(b)** transaction activity has declined from the 2022 peak, due in part to bid-ask spreads between buyers and sellers, **(c)** federal government workforce job cuts are anticipated to have disproportionately adverse consequences for certain geographic markets, and **(d)** domestic migration has normalized since the pandemic, with international immigration increasingly impacting population growth across regions.

Mr. Rothenberg then reviewed the real estate portfolio, noting that the portfolio's market value of approximately \$11.9 billion, representing just over 9% of the CTF, remained relatively flat. With respect to the portfolio's performance, he highlighted outperformance relative to the benchmark over all time periods shown and noted that the absolute return over the one-year period was now positive. He then **(a)** discussed performance by sub-strategy, noting that contributors for the one-year period include the industrial and specialty strategies, as well as the portfolio's underweight to office, **(b)** reviewed the two commitments made in the first quarter and the pipeline under review, and **(c)** confirmed that the portfolio remained in compliance with its investment guidelines. Lastly, Mr. Rothenberg answered questions regarding the potential impact of proposed federal initiatives on data center investments.

C. Private Equity & Current Return

Scott Parrish, Head of Private Equity, presented the *Quarterly Activity Report – Private Equity*, included on pages 79-96 in the meeting materials. He provided a private equity market update for Q1 2025, noting that **(a)** U.S. private equity fundraising dollars decreased year-over-year, even as the number of funds increased, due to a challenging fundraising environment and longer fundraising periods, **(b)** U.S. private equity deal volume and value, as well as exit volume and value, all increased year-over-year but remained below historical levels on an annualized basis, **(c)** U.S. enterprise value-to-EBITDA entry multiples and leverage multiples decreased slightly year-over-year for transactions funded by broadly syndicated loans, **(d)** sponsors have accumulated more than \$1 trillion in dry powder, and **(e)** the number of portfolio company exits was split evenly between corporate acquisitions and sponsor-to-sponsor transactions, with minimal overall IPO activity bolstered by one significant public listing.

Mr. Parrish then reported that, as of March 31, 2025, the market value of the private equity and current return portfolios, excluding the venture capital and private debt portfolios, was approximately \$23.3 billion and made up 18% of the CTF. He commented that capital calls continued to exceed distributions year-to-date, with distributions expected to remain scarce as macroeconomic headwinds have dampened optimism for exit activity.

With respect to performance, Mr. Parrish noted that absolute and relative performance for the private equity and current return portfolios for Q1 2025 would be provided at the May Committee meeting after managers' year-end statements are finalized and the relevant

benchmarks are reported. He then **(a)** discussed the portfolios’ sub-asset class diversification, made up of approximately 83% commingled funds and 17% co-investments, and **(b)** commented that public company exposure had declined to an all-time low. Lastly, Mr. Parrish reviewed the commitments made in Q1 2025, discussed the portfolio pipeline for the second quarter, and confirmed that the portfolio remained in compliance with all investment guidelines.

D. Funds Alpha

Derek Drummond, Head of Funds Alpha, presented the *Funds Alpha Q1 2025 Update*, included on pages 97-103 in the meeting materials. He highlighted that the hedge funds and beta one portfolios all generated positive excess value added (“EVA”) year-to-date. With respect to first quarter performance, he commented that **(a)** beta one equity portfolio alpha was driven by quantitative and defensively positioned strategies, while momentum and growth strategies detracted, **(b)** beta one fixed income portfolio outperformance for the quarter was driven by U.S. credit managers that were positioned defensively, and **(c)** the hedge funds portfolio’s positive performance was primarily due to quantitative and macro sub-strategies.

Mr. Drummond then provided an update on the market environment and portfolio positioning, noting that **(i)** hedge fund managers are positioned for more volatility across macro and single-name securities, and have low net exposure, **(ii)** U.S. fixed income managers have maintained their risk-off positioning, while emerging market debt idiosyncratic risk remains elevated, **(iii)** tracking error for the beta one equity portfolio has increased following the addition of a new manager and increased capital efficiency, **(iv)** equity markets experienced significant stress in the first quarter, which then spread to currencies, rates and spreads in April, and **(v)** the broad imposition of tariffs has created significant market uncertainty, as even safe-haven trades are being reevaluated. Lastly, he reviewed manager positioning and factor exposures in the beta one portfolios, commenting that the historical quality bias has declined in the beta one equity portfolio, and confirmed that all portfolios were in compliance with their guidelines for Q1 2025.

5. Convene in Closed Session

Motion: A motion to go into closed session as authorized pursuant to sections 19.85(1)(e) and 19.36(5) of the Wisconsin Statutes to consider confidential strategies for the investment of public funds, including **(a)** the review of active risk profiles and positioning of portfolio investments and the Core and Variable Trust Funds, and **(b)** the review of specific proprietary investment strategies and investment instruments related to private debt, venture capital, real estate, private equity, funds alpha, and exposure management, was made by Mr. Mattina and seconded by Ms. Linn.

Mr. Denson called for a roll call vote.

Denson-Aye	Fink-Aye	Mattina-Aye	Cavaglia-Aye
Drummond-Aye	Linn-Aye	Maung-Aye	Nicholson-Aye
Rector-Aye	Shearer-Aye	Stanton-Aye	Zhang-Aye

There being twelve ayes and no nays, Mr. Denson declared the motion passed. The Committee convened in closed session at 1:50 p.m. and reconvened in open session at 2:52 p.m.

6. Announcement of Committee Actions Relating to Items Taken Up in Closed Session

Mr. Denson announced that, while in closed session, the Committee **(i)** reviewed active risk profiles and positioning of portfolio investments and the Core and Variable Trust Funds, **(ii)** reviewed specific proprietary investment strategies and investment instruments related to private debt, venture capital, real estate, private equity, funds alpha, and exposure management, and **(iii)** discussed the impact of recent events on portfolio positioning.

7. Soft Risk Parameters

Hassan Chehime, Head of Risk Management, noted that the report *Soft Risk Parameters—Asset Class and Portfolio*, as of March 31, 2025, was included on pages 192-193 in the meeting materials for the Committee’s review. Mr. Chehime noted that there were no new discussion triggers this month and that one discussion trigger had been dropped relating to the small cap portfolio’s ex ante tracking error.

8. Future Meeting Topics

Mr. Denson noted that draft agendas for the May 27, 2025 and June 24, 2025 Committee meetings were included on pages 194-197 in the meeting materials for the Committee’s review.

9. Adjournment

Motion: A motion to adjourn the meeting was made by Mr. Stanton and seconded by Mr. Shearer. The motion passed unanimously, and the meeting adjourned at 2:53 p.m.

Date of Committee Approval: 05/27/25

Signed: /s/ Eric Barber
Eric Barber, Secretary
Investment Committee

AGENDA / NOTICE

Name of Meeting: Staff Investment Committee Meeting
Date/Time: Tuesday, May 27, 2025 1:00 pm
Room: 7th Floor Conference Room - 7022
Address: 4703 Madison Yards Way, Madison, WI 53705

Est. Time Minutes	Action Item	Topic	Presenter
		OPEN SESSION	
	Motion	1. Approval of the Minutes – Open Session A. April 22, 2025	
5		2. Global Public Market Strategies Division Update	Mike Shearer Nick Stanton
20		3. Q1 2025 Quarterly Updates A. Fixed Income B. Small Cap C. LIRM D. Multi-Strat	Mike Shearer Joy Mukherjee Andrea Ruiz Chase Nicholson
	Motion	CLOSED SESSION*	
	Motion	RECONVENE IN OPEN SESSION	
		4. Announcement of Committee Actions Relating to Items Taken Up in Closed Session	
5		5. Private Markets & Funds Alpha Division Performance Update	Anne-Marie Fink
		6. Soft Risk Parameters (No presentation unless requested)	
		7. Future Meeting Topics	
	Motion	8. Motion to Adjourn	

* A motion to go into closed session at this meeting is authorized pursuant to sections 19.85(1)(e) and 19.36(5) of the Wisconsin Statutes (a) to consider confidential strategies for the investment of public funds, including (i) the review of active risk profiles and positioning of portfolio investments and the Core and Variable Trust Funds, (ii) the review of specific proprietary investment strategies and investment instruments related to LIRM, multi-strat, fixed income strategies, small cap equities, private markets & funds alpha, and exposure management, and (iii) discussion of the impact of recent events on portfolio positioning, and (b) to discuss and approve prior closed session minutes that discuss the same. The Committee may convene in additional closed sessions or announce additional closed session items at the meeting in accordance with the procedure outlined in the Attorney General's Opinion reported at 66 OAG 106 (1977). Whenever a closed session is held, the committee will subsequently reconvene in open session to cover remaining agenda items.

	<p><i>NOTES: Items may be taken in order other than listed.</i></p> <p><i>The meeting site is physically accessible. Upon prior request, reasonable accommodations will be provided.</i></p>	
<p><u>Future Meetings</u></p> <p>6/24/25 – June Committee Mtg. 7/29/25 – July Committee Mtg. 8/26/25 – August Committee Mtg. 9/23/25 – September Committee Mtg. 10/28/25 – October Committee Mtg. 11/25/25 – November Committee Mtg. 12/18/25 – December Committee Mtg.</p>	<p><u>Voting Committee Members:</u></p> <p>Edwin Denson (Chair), Executive Director/Chief Investment Officer Anne-Marie Fink, Private Markets & Funds Alpha–CIO Todd Mattina, Head Economist, Asset & Risk Allocation–CIO Stefano Cavaglia, Senior Portfolio Manager–Asset & Risk Allocation Derek Drummond, Head of Funds Alpha Diane Linn, Senior Portfolio Manager–Multi-Asset Strategies Lin Maung, Senior Portfolio Manager–Private Equity Chase Nicholson, Senior Portfolio Manager–Multi-Asset Strategies Jason Rector, Senior Portfolio Manager–Funds Alpha Mike Shearer, Head of Fixed Income Strategies Nick Stanton, Head of Multi-Asset Strategies Ivy Zhang, Senior Portfolio Manager–Asset & Risk Allocation</p> <p><u>Non-voting Committee Members:</u></p> <p>Rochelle Klaskin, Deputy Executive Director/Chief Operating Officer Eric Barber (Secretary), Chief Legal Counsel Hassan Chehime, Head of Risk Management</p>	

AGENDA / NOTICE

Name of Meeting: Staff Investment Committee Meeting
Date/Time: Tuesday, June 24, 2025 1:00 pm
Room: 7th Floor Conference Room - 7022
Address: 4703 Madison Yards Way, Madison, WI 53705

Est. Time Minutes	Action Item	Topic	Presenter
		OPEN SESSION	
	Motion	1. Approval of the Minutes – Open Session A. May 27, 2025	
10	Motion	2. Amendments to Investment Committee WRS Investment Guidelines	Lisa Lange
5		3. Transition Update (Q1 2025)	Joe Roth
	Motion	CLOSED SESSION*	
	Motion	RECONVENE IN OPEN SESSION	
		4. Announcement of Committee Actions Relating to Items Taken Up in Closed Session	
5		5. Research Task Force Report	Stefano Cavaglia
		6. Quarterly Performance Review (Q1 2025) (No presentation unless requested)	
		7. Soft Risk Parameters (No presentation unless requested)	
		8. Future Meeting Topics	
	Motion	9. Motion to Adjourn	

* A motion to go into closed session at this meeting is authorized pursuant to sections 19.85(1)(e) and 19.36(5) of the Wisconsin Statutes (a) to consider confidential strategies for the investment of public funds, including (i) the review of active risk profiles and positioning of portfolio investments and the Core and Variable Trust Funds, (ii) the review of specific proprietary investment strategies and investment instruments related to asset and risk allocation and exposure management, (iii) the review of broker information, and (iv) discussion of the impact of recent events on portfolio positioning, and (b) to discuss and approve prior closed session minutes that discuss the same. The Committee may convene in additional closed sessions or announce additional closed session items at the meeting in accordance with the procedure outlined in the Attorney General's Opinion reported at 66 OAG 106 (1977). Whenever a closed session is held, the committee will subsequently reconvene in open session to cover remaining agenda items.

		<p><i>NOTES: Items may be taken in order other than listed.</i></p> <p><i>The meeting site is physically accessible. Upon prior request, reasonable accommodations will be provided.</i></p>	
<p><u>Future Meetings</u></p> <p>7/29/25 – July Committee Mtg. 8/26/25 – August Committee Mtg. 9/23/25 – September Committee Mtg. 10/28/25 – October Committee Mtg. 11/25/25 – November Committee Mtg. 12/18/25 – December Committee Mtg.</p>		<p><u>Voting Committee Members:</u></p> <p>Edwin Denson (Chair), Executive Director/Chief Investment Officer Anne-Marie Fink, Private Markets & Funds Alpha–CIO Todd Mattina, Head Economist, Asset & Risk Allocation–CIO Stefano Cavaglia, Senior Portfolio Manager–Asset & Risk Allocation Derek Drummond, Head of Funds Alpha Diane Linn, Senior Portfolio Manager–Multi-Asset Strategies Lin Maung, Senior Portfolio Manager–Private Equity Chase Nicholson, Senior Portfolio Manager–Multi-Asset Strategies Jason Rector, Senior Portfolio Manager–Funds Alpha Mike Shearer, Head of Fixed Income Strategies Nick Stanton, Head of Multi-Asset Strategies Ivy Zhang, Senior Portfolio Manager–Asset & Risk Allocation</p> <p><u>Non-voting Committee Members:</u></p> <p>Rochelle Klaskin, Deputy Executive Director/Chief Operating Officer Eric Barber (Secretary), Chief Legal Counsel Hassan Chehime, Head of Risk Management</p>	

AGENDA / NOTICE

Name of Meeting: Staff Investment Committee Meeting
Date/Time: Tuesday, July 29, 2025 1:00 pm
Room: 7th Floor Conference Room - 7022
Address: 4703 Madison Yards Way, Madison, WI 53705

Est. Time Minutes	Action Item	Topic	Presenter
		OPEN SESSION	
	Motion	1. Approval of the Minutes – Open Session A. June 24, 2025	
5		2. June Investment Forum Debrief	Kevin Blank
5		3. October Board Workshop Preview	Todd Mattina
5		4. Private Markets & Funds Alpha Division Update	Anne-Marie Fink
45		5. Q2 2025 Quarterly Updates A. Private Debt B. Real Estate C. Private Equity & Current Return D. Funds Alpha	Chris Prestigiacomo Jason Rothenberg Scott Parrish Derek Drummond
	Motion	CLOSED SESSION*	
	Motion	RECONVENE IN OPEN SESSION	
		6. Announcement of Committee Actions Relating to Items Taken Up in Closed Session	
		7. Soft Risk Parameters (No presentation unless requested)	
		8. Future Meeting Topics	
	Motion	9. Motion to Adjourn	

* A motion to go into closed session at this meeting is authorized pursuant to sections 19.85(1)(e) and 19.36(5) of the Wisconsin Statutes (a) to consider confidential strategies for the investment of public funds, including (i) the review of active risk profiles and positioning of portfolio investments and the Core and Variable Trust Funds, (ii) the review of specific proprietary investment strategies and investment instruments related to private debt, venture capital, real estate, private equity, funds alpha, and exposure management, and (iii) discussion of the impact of recent events on portfolio positioning, and (b) to discuss and approve prior closed session minutes that discuss the same. The Committee may convene in additional closed sessions or announce additional closed session items at the meeting in accordance with the procedure outlined in the Attorney General's Opinion reported at 66 OAG 106 (1977). Whenever a closed session is held, the committee will subsequently reconvene in open session to cover remaining agenda items.

NOTES: Items may be taken in order other than listed.

The meeting site is physically accessible. Upon prior request, reasonable accommodations will be provided.

Future Meetings

8/26/25 – August Committee Mtg.
 9/23/25 – September Committee Mtg.
 10/28/25 – October Committee Mtg.
 11/25/25 – November Committee Mtg.
 12/18/25 – December Committee Mtg.

Voting Committee Members:

Edwin Denson (Chair), Executive Director/Chief Investment Officer
Anne-Marie Fink, Private Markets & Funds Alpha–CIO
Todd Mattina, Head Economist, Asset & Risk Allocation–CIO
Stefano Cavaglia, Senior Portfolio Manager–Asset & Risk Allocation
Derek Drummond, Head of Funds Alpha
Diane Linn, Senior Portfolio Manager–Multi-Asset Strategies
Lin Maung, Senior Portfolio Manager–Private Equity
Chase Nicholson, Senior Portfolio Manager–Multi-Asset Strategies
Jason Rector, Senior Portfolio Manager–Funds Alpha
Mike Shearer, Head of Fixed Income Strategies
Nick Stanton, Head of Multi-Asset Strategies
Ivy Zhang, Senior Portfolio Manager–Asset & Risk Allocation

Non-voting Committee Members:

Rochelle Klaskin, Deputy Executive Director/Chief Operating Officer
Eric Barber (Secretary), Chief Legal Counsel
Hassan Chehime, Head of Risk Management

Board Meeting

Tab 7 – Quarterly Investment Update, Q1 2025



Quarterly Investment Update

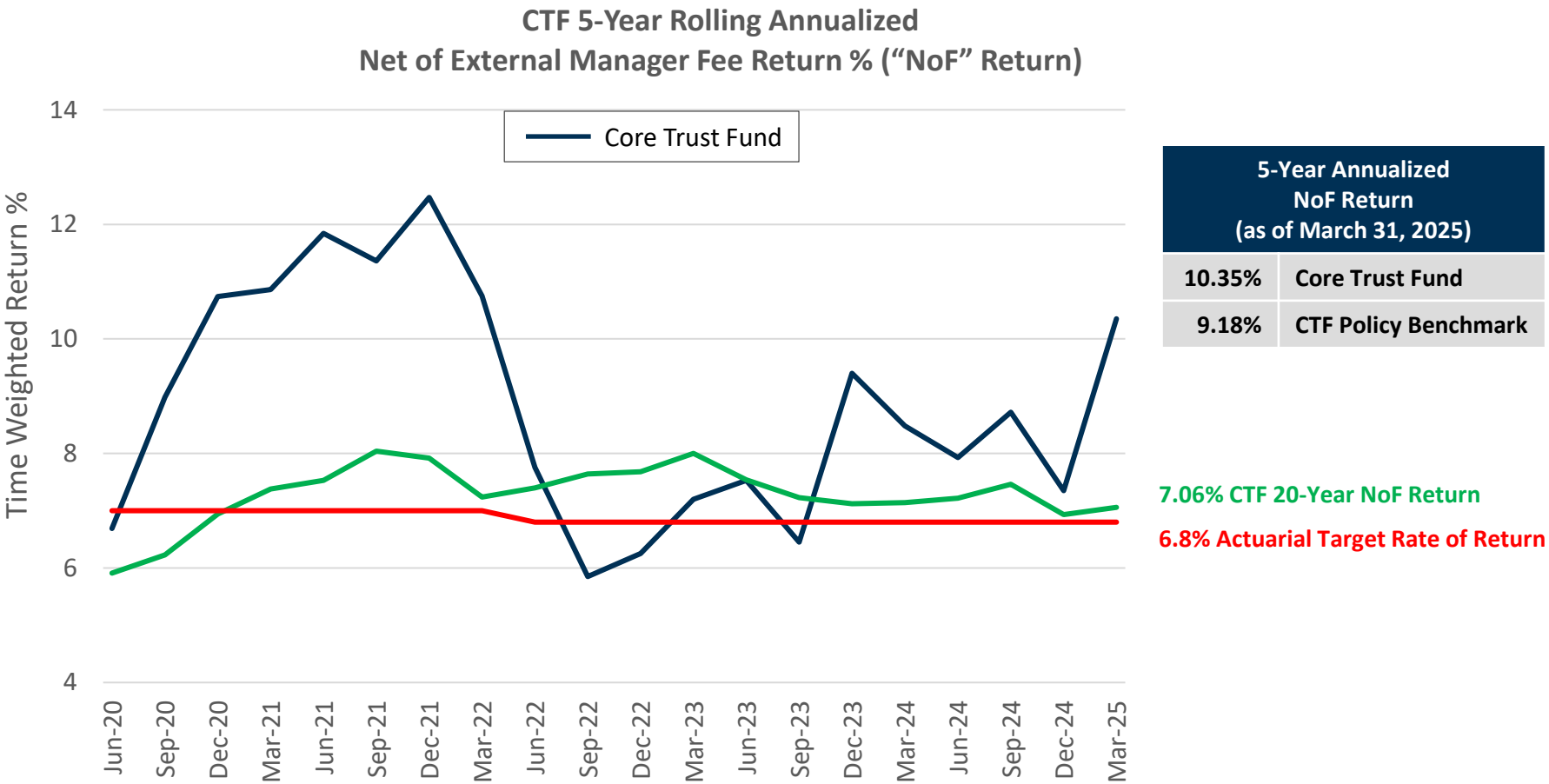
Board Meeting

June 11, 2025

Performance Trends & Outlook

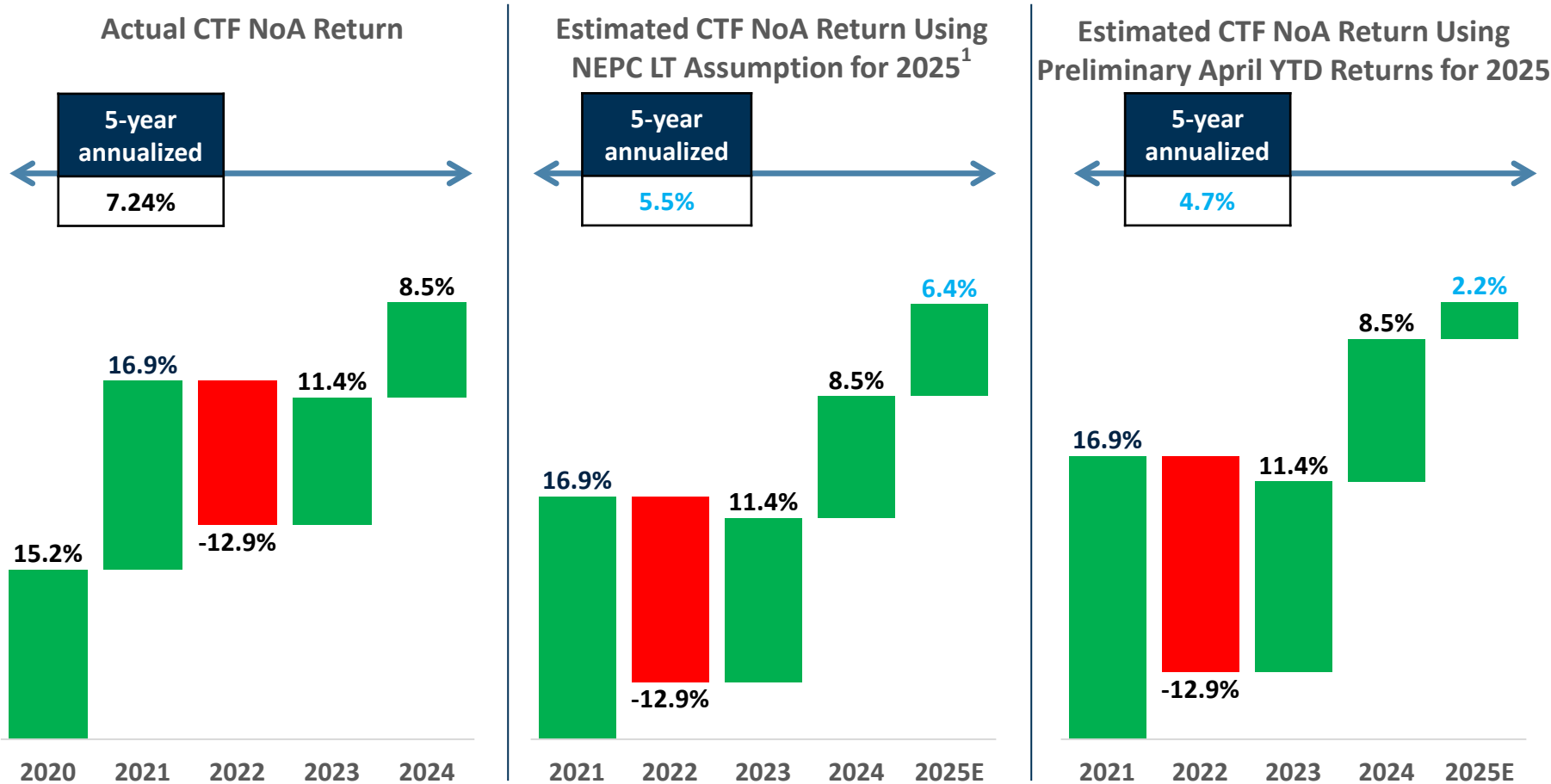
CTF 5-Year Rolling Net of Fees (NoF) Return Trend

Quarter-end Results Through March 31, 2025



CTF 5-Year Net of All (NoA) Return Estimate

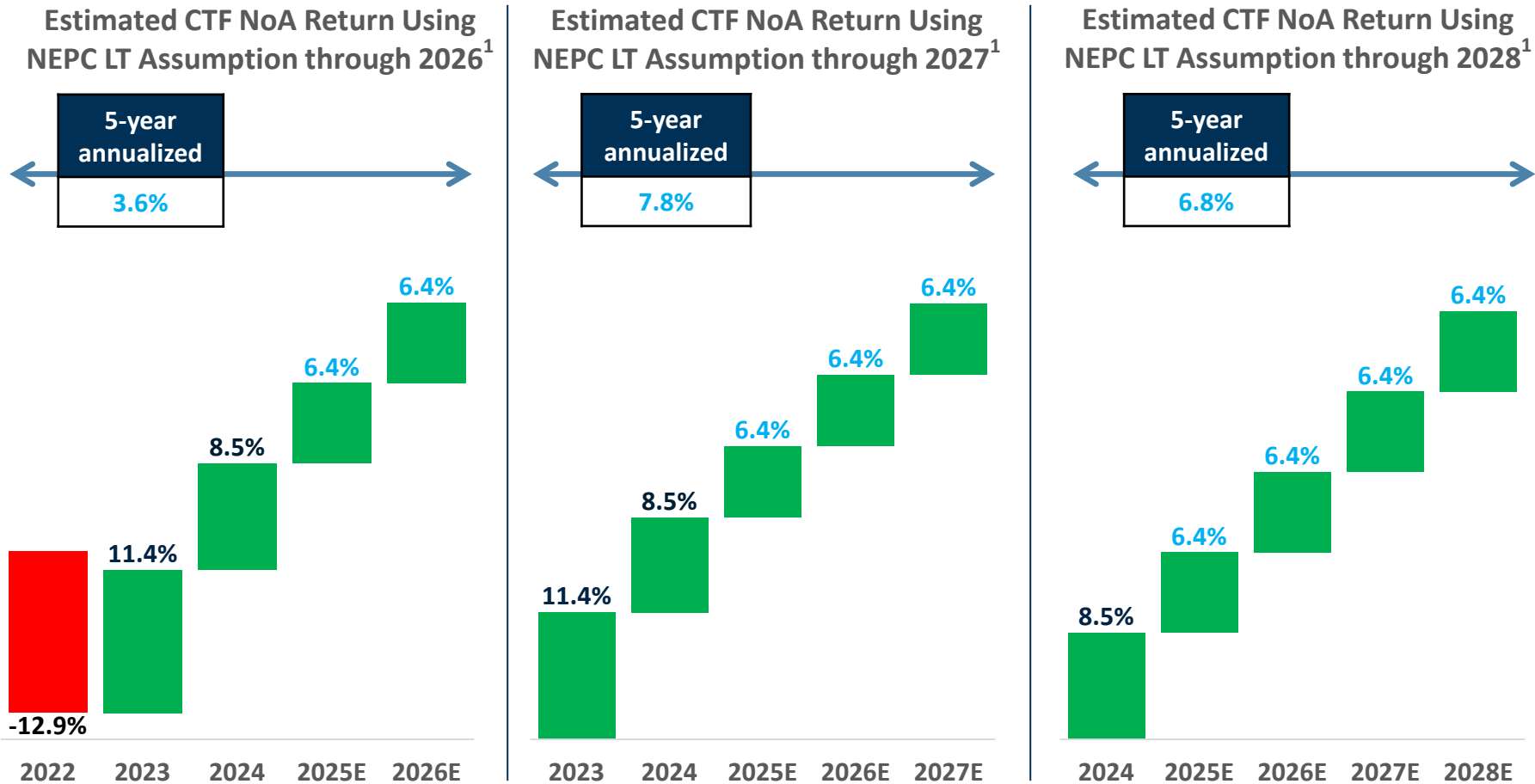
Calendar year and 5-year annualized returns



¹ 6.4% is NEPC's 10-year expected return for SWIB's 2025 policy portfolio and is used to estimate future year performance through 2028. SWIB's asset allocation process balances risk and expected return to set its asset allocation. The 10-year expected return does not always equal or exceed the WRS assumed rate of return, currently 6.8%. SWIB's actual results may be more or less than the NEPC 10-year expected return.

CTF 5-Year NoA Return Forward Estimate

Calendar year and 5-year annualized returns

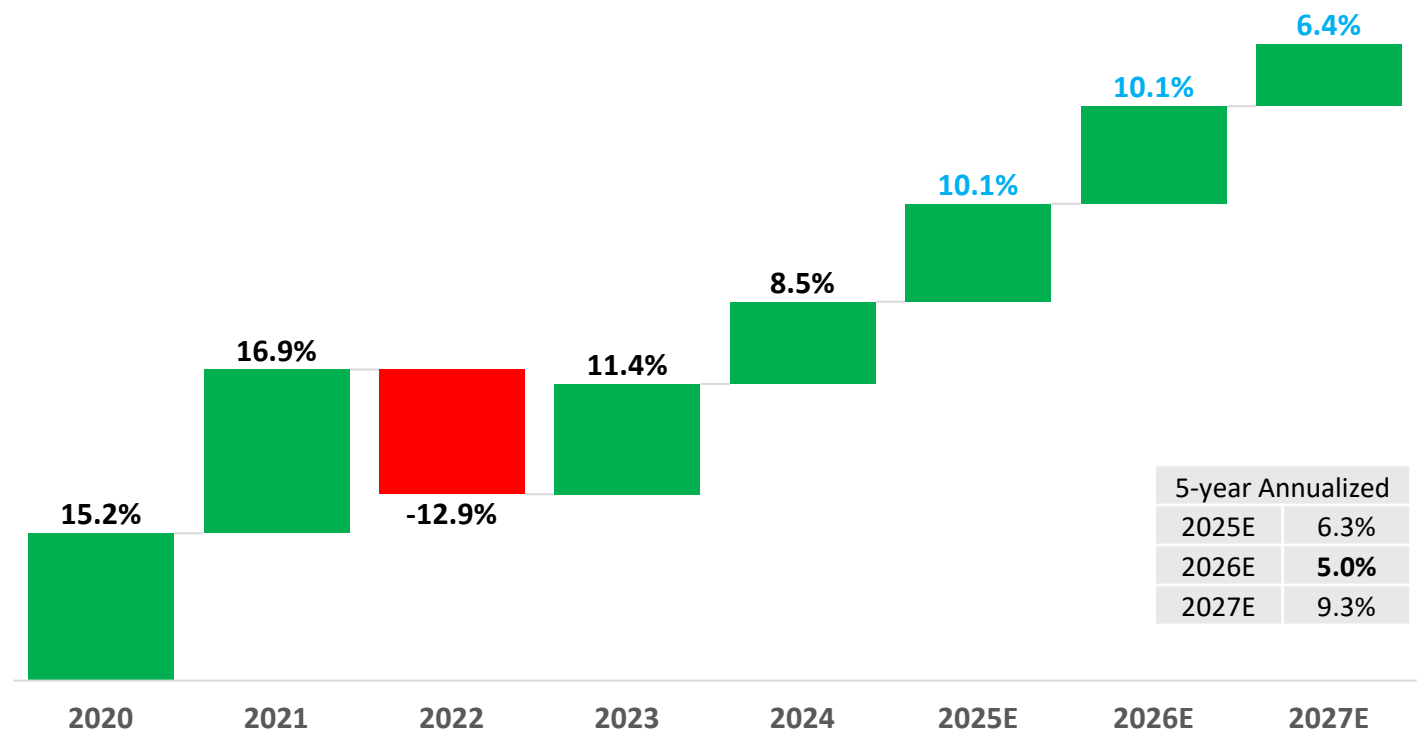


¹ 6.4% is NEPC's 10-year expected return for SWIB's 2025 policy portfolio and is used to estimate future year performance through 2028. SWIB's asset allocation process balances risk and expected return to set its asset allocation. The 10-year expected return does not always equal or exceed the WRS assumed rate of return, currently 6.8%. SWIB's actual results may be more or less than the NEPC 10-year expected return.

Average Return Required for No Dividend Cut

Calendar year and 5-year annualized returns

A 10.1% average return for 2025-2026 avoids a negative CTF dividend adjustment¹



¹ Based on SWIB calculations, calendar year returns of 10.1% in 2025E to 2026E would maintain the 5-year annualized return at 5% or higher to avoid a negative dividend adjustment. The ETF Effective Rate is assumed to be the same as the 5-year annualized CTF NOA Return. NEPC 10-year expected return assumption is used to estimate 2027.

CTF Policy Benchmark & Other Indices

April 30, 2025: Total Rate of Return %, Annualized					
Index Name (Gross Return Basis, unless noted)	YTD	1yr	5yr	10yr	10yr volatility
CTF Policy Benchmark (Net)	1.8	8.8	8.0	6.7	8.7
MSCI USA	(5.0)	12.3	15.6	12.2	15.6
MSCI USA Small Cap	(10.0)	2.2	12.2	7.8	20.0
MSCI World ex US Equities (Net)	11.0	13.1	11.6	5.5	15.2
MSCI World ex US Equities (Net) (Local)	2.6	6.3	12.2	6.3	12.3
MSCI EAFE Small Cap	9.9	13.0	9.4	5.9	16.7
MSCI Emerging Markets ex China	2.2	4.0	11.1		
MSCI China	10.2	26.5	(0.5)	0.7	24.6
MSCI ACWI	(0.3)	12.3	13.6	9.2	14.8
MSCI ACWI (Local)	(2.4)	10.6	13.9	9.7	13.7
Bloomberg US Gov't / Credit	3.1	7.7	(0.7)	1.7	5.2
ICE BOFA High Yield BB/B	1.2	7.8	5.7	20.8	7.3
Bloomberg U.S. TIPs	4.3	8.1	1.8	2.5	5.0

Source: Factset, SWIB

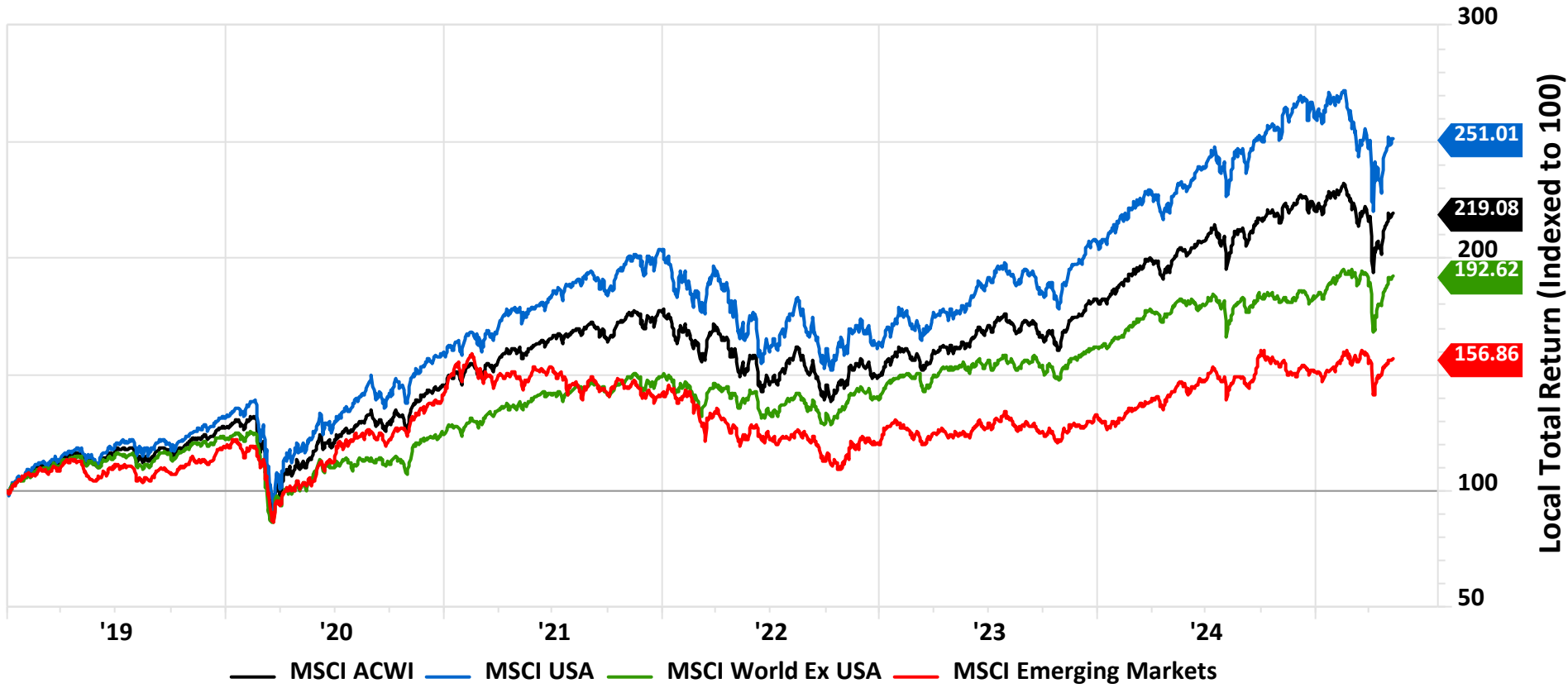
Asset Class Review

Global Equities - Performance

Both DM and EM equities were volatile in the last few weeks

05/12/2025

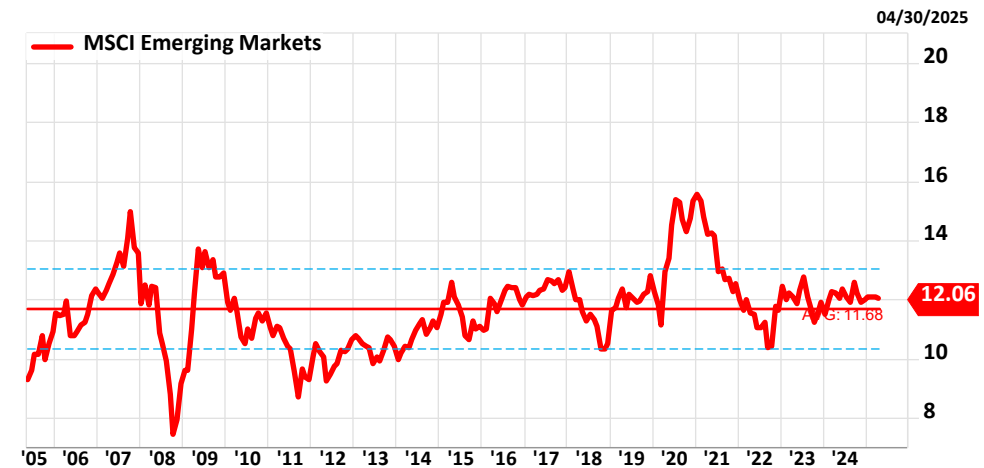
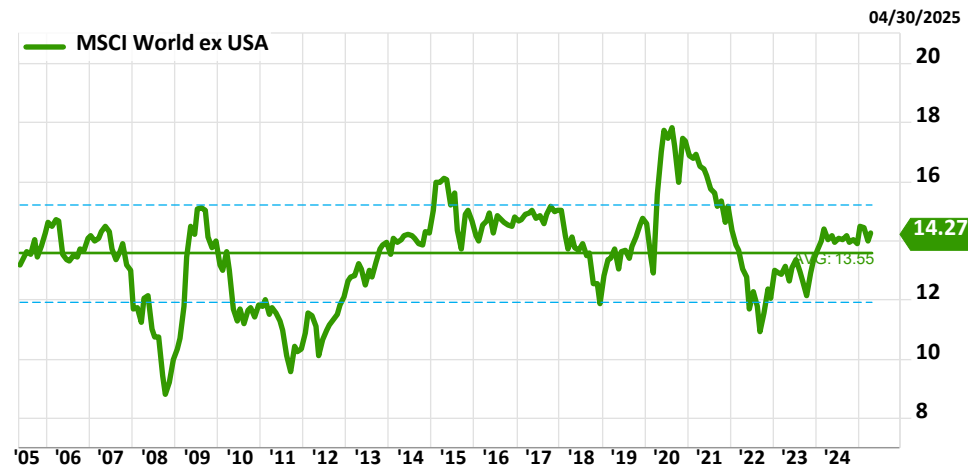
Local Equity Performance



Source: FactSet

Global Equities - Valuation

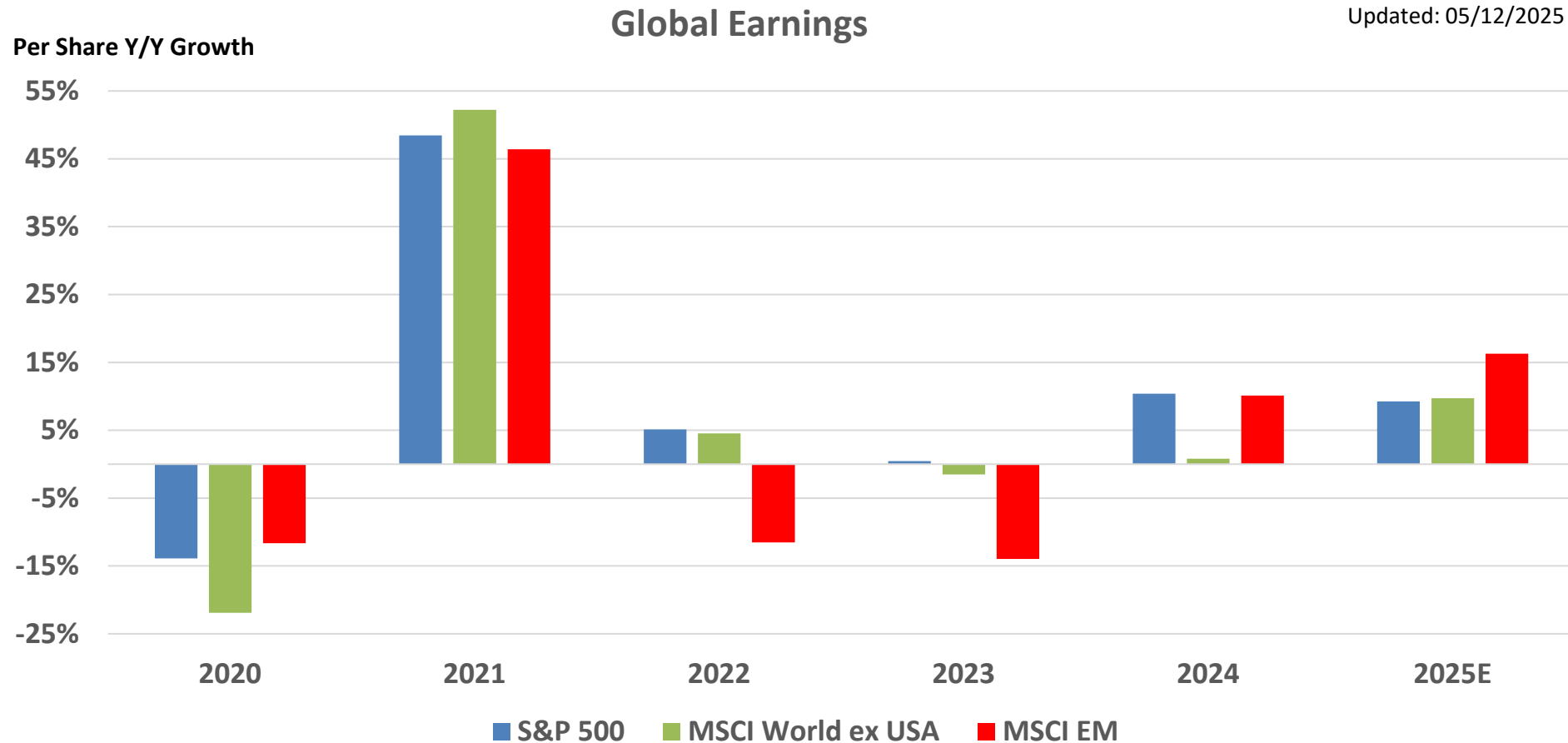
US P/E ratio is above one standard deviation of its 20-year average



Source: FactSet Market Aggregates - Next Twelve-Month P/E Ratio, monthly, 20-year Average with 1 Std. Dev. Bands

Earnings Growth

Rebound in Developed ex US profits expected for 2025



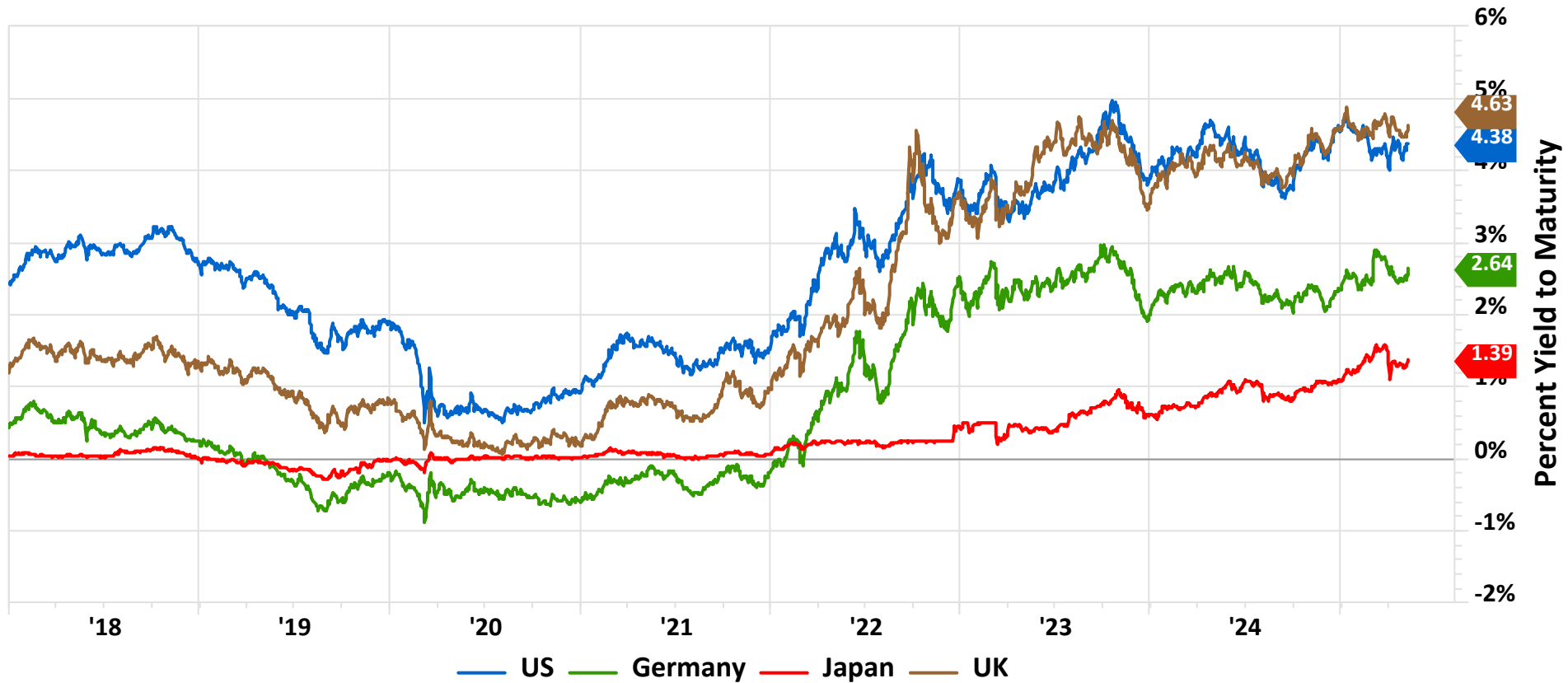
Source: Analyst Consensus; FactSet

Global Bonds

DM yields have increased in recent weeks

05/12/2025

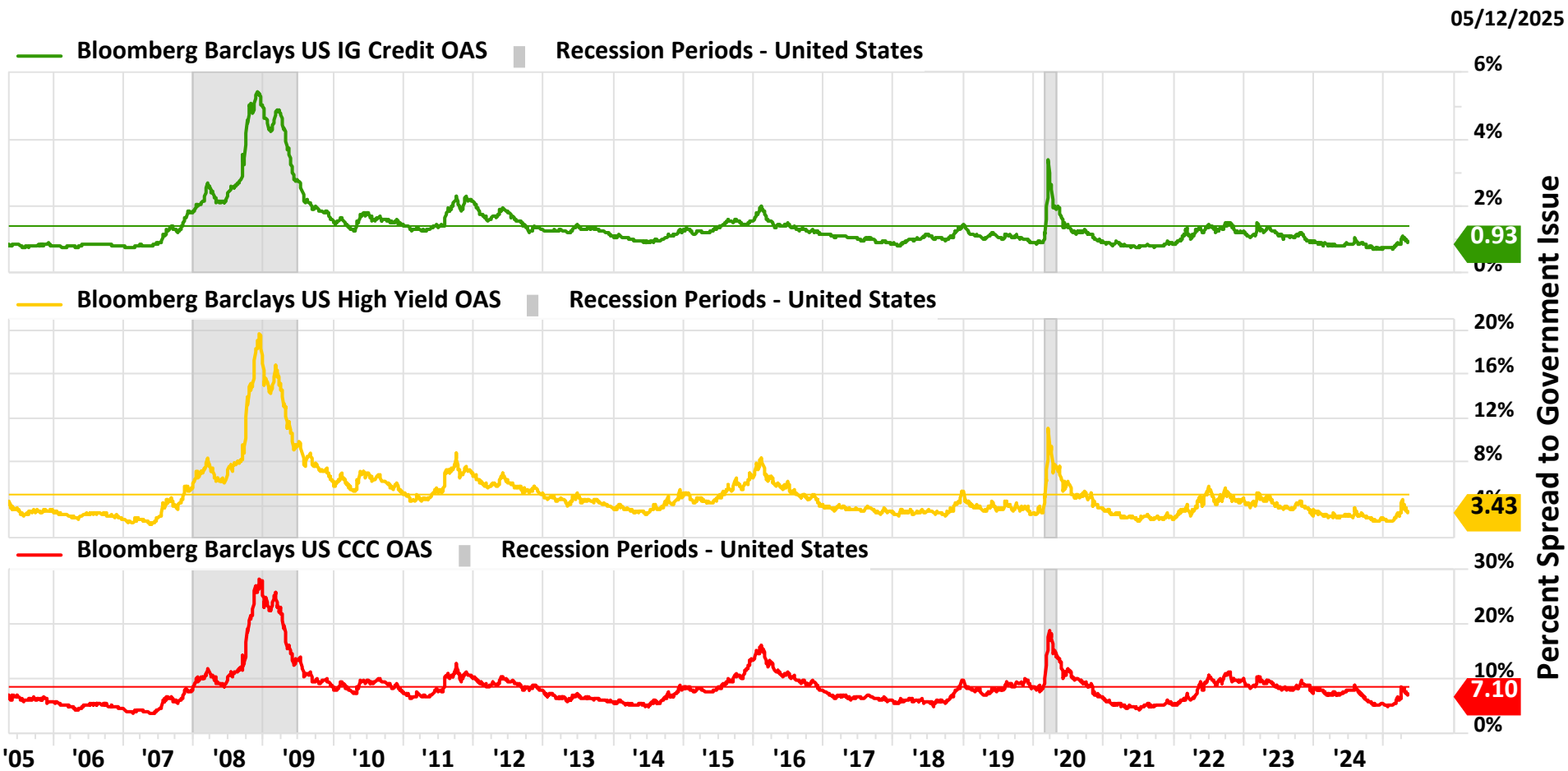
10-Year Government Bond Yields



Source: FactSet

Credit Sectors

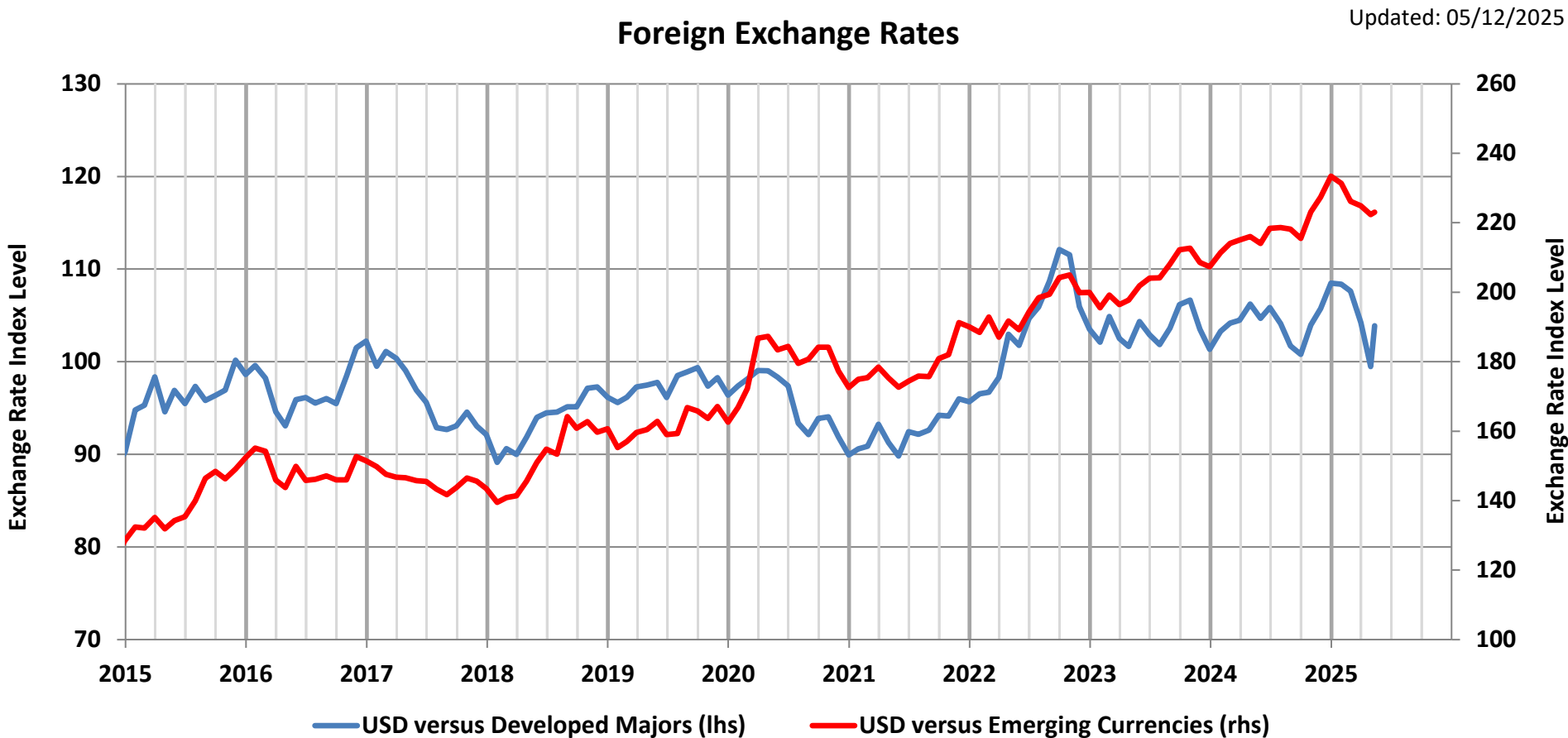
Spread levels are below the long run averages



Source: FactSet

Currency Performance

US Dollar has weakened to start 2025



Source: Bloomberg, DXY Index, JPM Emerging Markets Currency Index (Inverted)

U.S. Inflation

Inflation expectations have fallen to start Q2

As of: 05/12/2025

US 5 Year Breakeven Inflation



Source: Bloomberg

Appendix

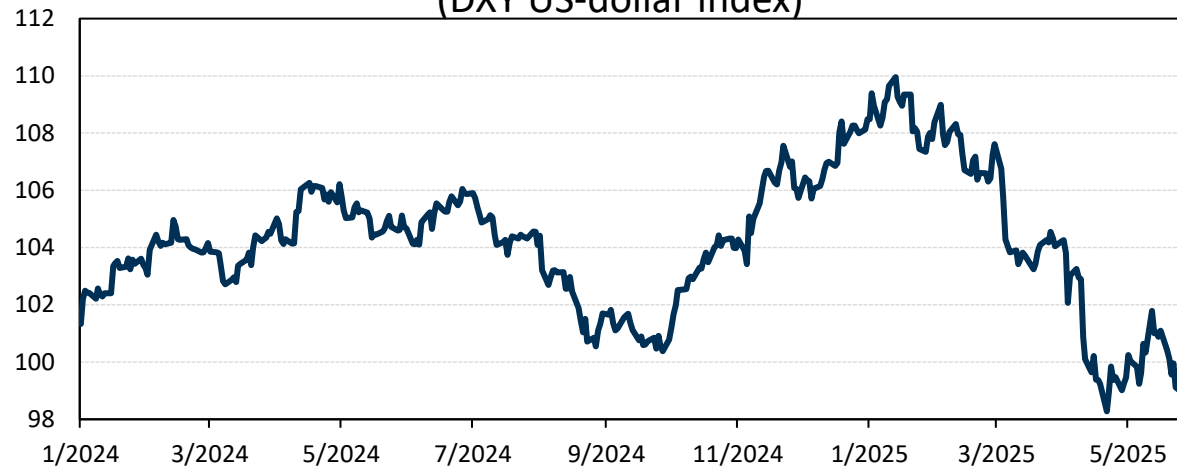
US Equities
(S&P500 index)



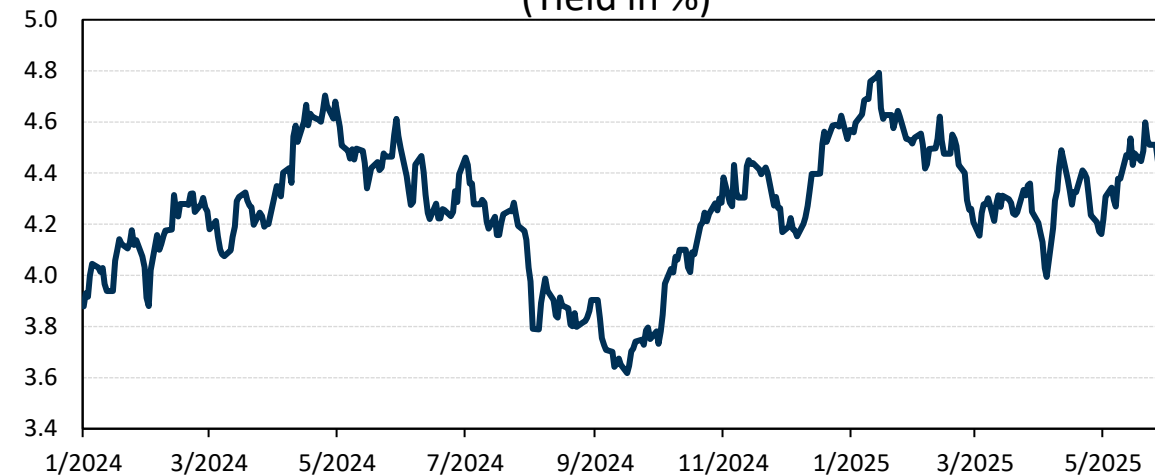
High Yield (HY) Corporate Bond Spread
(Markit CDX North America High Yield Spread in basis points)



US Dollar Relative to Major Developed Market Currencies
(DXY US-dollar index)



10-year US Treasury Note
(Yield in %)



Sources: Market data provided via Bloomberg as of mid-day on May 30, 2025 .

Board Meeting

Tab 8 – Announcement of Matters Taken Up in Closed Session

Board Meeting

Tab 9 – In the Absence of Questions, the Following Reports will be filed without comment (for informational purposes):

- A. Quarterly Charges to Funds Reports, Q1 2025
- B. Private Markets and Funds Alpha Commitments, Q1 2025

May 14, 2025

Senator Howard Marklein, Co-Chair
Joint Committee on Finance
P.O. Box 7882
Madison, WI 53707

Representative Mark Born, Co-Chair
Joint Committee on Finance
P.O. Box 8952
Madison, WI 53708

Senator Eric Wimberger, Co-Chair
Joint Legislative Audit Committee
P.O. Box 7882
Madison, WI 53707

Representative Robert Wittke, Co-Chair
Joint Legislative Audit Committee
P.O. Box 8953
Madison, WI 53708

Secretary Kathy Blumenfeld
Department of Administration
101 East Wilson Street
P.O. Box 7864
Madison, WI 53707

Dear Senator Marklein, Senator Wimberger, Representative Born, Representative Wittke and Secretary Blumenfeld:

State statutes require the State of Wisconsin Investment Board (SWIB) to report all expenses charged to the trust funds under management and the number of full-time equivalent positions created or abolished during the quarter¹. The information contained in this report is for the quarter ended March 31, 2025.

Total Cost of Management Summary	2Q 2024	3Q 2024	4Q 2024	1Q 2025	Trailing 4 Qtr Total	% of Total
Internal Operating Expenses						
Operating Budget Expenses	\$ 53,105,483	\$ 20,205,307	\$ 17,503,147	\$ 17,170,058	\$ 107,983,995	68.4%
Custodial, Investment Operations & Banking	2,351,406	2,153,795	2,278,712	926,620	7,710,533	4.9%
Legal	82,559	251,976	634,388	408,550	1,377,473	0.9%
Investment Research & Consulting	8,818,009	8,176,891	10,165,448	9,515,341	36,675,689	23.2%
Total Internal Operating Expenses	\$ 64,357,457	\$ 30,787,969	\$ 30,581,695	\$ 28,020,569	\$ 153,747,690	97.3%
Total Securities Lending Agent Expenses	\$ 942,792	\$ 848,703	\$ 1,005,967	\$ 1,430,511	\$ 4,227,973	2.7%
Total SWIB Operating Costs	\$ 65,300,249	\$ 31,636,672	\$ 31,587,662	\$ 29,451,080	\$ 157,975,663	100.0%
Supplemental Info - External Investment Management Fees						
Real Estate	\$ 21,501,161	\$ 21,408,439	\$ 24,130,057	\$ 21,589,301	\$ 88,628,958	9.9%
Private Equity ¹	58,799,138	49,781,071	58,061,425	47,392,129	214,033,763	24.0%
Venture Capital ¹	9,827,891	8,997,014	9,291,005	8,226,788	36,342,698	4.1%
Current Return ¹	7,725,862	7,815,311	9,603,396	6,792,512	31,937,081	3.6%
Hedge Funds	72,599,021	58,200,199	126,855,977	99,493,495	357,148,692	40.1%
Beta One & Other - External Funds ²	35,822,481	(2,602,707)	45,589,576	84,364,922	163,174,271	18.3%
Total External Investment Management Fees	\$ 206,275,554	\$ 143,599,327	\$ 273,531,436	\$ 267,859,146	\$ 891,265,463	100.0%
Grand Total Cost of Management	\$ 271,575,803	\$ 175,235,999	\$ 305,119,098	\$ 297,310,226	\$ 1,049,241,126	

¹Beginning 3Q 2024, Private Equity & Venture Capital external fund fees are broken out in greater detail and reflected retroactively for the prior quarters presented.

²Beginning 3Q 2024, Beta One & Other separately managed fund fees and commingled fees have been combined to align with other SWIB external reporting.

¹Wisconsin Statutes Section 25.17 (13m): Investment-related costs and expenses charged to the WRS Trust Funds, State Investment Fund, State Life Insurance Fund, Historical Society Endowment Fund, Injured Patients and Families Compensation Fund and UW Trust Fund. Investment transaction expenses, such as trading commissions and interest expense, are included in investment returns, and therefore not included in this report.

SWIB operating costs are charged to the trust funds under management. Externally managed fund fees for commingled assets are netted against investment returns generated by SWIB's external fund holdings. It is important to consider costs in the context of value-added investment returns. For example, during the five years ended December 31, 2024, after consideration of all expenses, costs, and fees, SWIB generated approximately \$4.1 billion in additional profits beyond what would have been generated by the benchmark portfolio SWIB is measured against. These profits all go directly into the Wisconsin Retirement System for the benefit of its beneficiaries.

Attachment A provides a breakdown of the amount and percentage of assets managed under each type of dedicated and commingled account or partnership, and the change in the amount and percentage from the prior calendar quarter. As of March 31, 2025, SWIB's total authorized full-time equivalent positions are 298 as shown in the table below.

Assets Under Management & Positions		
	12/31/2024	3/31/2025
Internal Management	46.1%	45.2%
External Management	53.9%	54.8%
Total SWIB Positions	298	298

In addition, Attachment B provides details of the services provided to SWIB and their associated quarterly costs. For definitions of the expense categories presented in the Total Cost of Management Summary table, please refer to Attachment C.

As new investment strategies are implemented and markets continue to evolve, SWIB will continue evaluating the most efficient means to manage the trust fund assets. Please contact us if you have any questions or comments about this report.

Sincerely,



Edwin Denson
Executive Director/Chief Investment Officer

Attachments

cc: Members, Joint Committee on Finance
Members, Joint Committee on Audit
Robert Lang, Legislative Fiscal Bureau
Joe Chrisman, Legislative Audit Bureau

Total Assets Under Management		6/30/2024		9/30/2024		12/31/2024		3/31/2025	
Wisconsin Retirement System (WRS)		Amount (in millions) %		Amount (in millions) %		Amount (in millions) %		Amount (in millions) %	
Internally Managed Assets		\$51,414	37.5%	\$56,273	39.4%	\$54,585	39.1%	\$52,649	37.6%
Externally Managed Dedicated Assets		35,951	26.2%	36,150	25.3%	35,109	25.2%	35,484	25.4%
Externally Managed Commingled Assets		49,644	36.2%	50,245	35.2%	49,765	35.7%	51,832	37.0%
1. Passive Index		761	0.6%	699	0.5%	517	0.4%	522	0.4%
2. Limited Partnerships		35,214	25.7%	36,048	25.3%	36,387	26.1%	37,430	26.7%
3. Active Managed Commingled		13,669	10.0%	13,498	9.5%	12,861	9.2%	13,879	9.9%
Total WRS Assets		\$137,009	100.0%	\$142,669	100.0%	\$139,460	100.0%	\$139,964	100.0%
Other Funds									
State Investment Fund - Internally Managed		\$20,327		\$20,735		\$20,383		\$21,764	
Separately Managed Funds - Internally Managed		93		98		92		94	
Separately Managed Funds - Externally Managed		2,770		2,908		2,856		2,895	
Total Other Funds		\$23,190		\$23,742		\$23,331		\$24,753	
Total Assets Under Management		\$160,199		\$166,410		\$162,791		\$164,718	
Supplemental AUM Breakout									
Total Internal Assets Under Management		\$71,834	44.8%	\$77,107	46.3%	\$75,060	46.1%	\$74,507	45.2%
Total External Asset Under Management		\$88,365	55.2%	\$89,304	53.7%	\$87,731	53.9%	\$90,211	54.8%

STATE OF WISCONSIN INVESTMENT BOARD
Expenses for All Funds Under Management
Quarter Ending March 31, 2025

<u>EXPENSE CATEGORY</u>	<u>SERVICE PROVIDED</u>	<u>EXPENSES</u>
<u>Internal Expenses¹</u>		
Staff Compensation	Staff Compensation	\$ 10,321,026
Fringe Benefits	Fringe Benefits	3,114,749
Staff Travel	Staff Travel	323,173
<u>Supplies, Services & Facilities</u>		
Abovethelaw.com	Supplies, Services, and Facilities	\$ 200
Advanced Systems Concepts	Supplies, Services, and Facilities	10,406
AE Business Solutions	Supplies, Services, and Facilities	16,021
Amazon.com	Supplies, Services, and Facilities	1,152
American Registry for Internet Numbers	Supplies, Services, and Facilities	263
AT&T Landline	Supplies, Services, and Facilities	1,559
Atlassian.com	Supplies, Services, and Facilities	4,224
Bloomberg BusinessWeek	Supplies, Services, and Facilities	792
Bloomberg Finance LP	Supplies, Services, and Facilities	170
Bull Market	Supplies, Services, and Facilities	140
Capital Data Inc.	Supplies, Services, and Facilities	129,450
Carahsoft Technology Corp	Supplies, Services, and Facilities	32,635
CDS MY Block 1 Office, LLC	Supplies, Services, and Facilities	1,198,806
CDW-G	Supplies, Services, and Facilities	3,575
Centurylink	Supplies, Services, and Facilities	37
CFA Institute	Supplies, Services, and Facilities	820
Charter Communications (Spectrum Business)	Supplies, Services, and Facilities	4,606
Ciphereus LLC	Supplies, Services, and Facilities	3,000
Complex Security Solutions Inc.	Supplies, Services, and Facilities	802
Compliance Science, Inc.	Supplies, Services, and Facilities	53,510
Crain's Chicago Business	Supplies, Services, and Facilities	199
Creative Business Interiors	Supplies, Services, and Facilities	260
Deft	Supplies, Services, and Facilities	10,028
Dell Marketing LP	Supplies, Services, and Facilities	19,271
Department of Administration	Supplies, Services, and Facilities	137,724
Department of Financial Institutions	Supplies, Services, and Facilities	140
Depreciation Expense	Supplies, Services, and Facilities	927,760
Diligent Corporation	Supplies, Services, and Facilities	2,178
Disa Global Solutions, Inc	Supplies, Services, and Facilities	1,551
DWD	Supplies, Services, and Facilities	2,378
EasyKeys	Supplies, Services, and Facilities	42
Employee Trust Funds Dept of (ETF)	Supplies, Services, and Facilities	56,038
Fed Ex	Supplies, Services, and Facilities	947
GoDaddy.com	Supplies, Services, and Facilities	700
Goinhouse.com	Supplies, Services, and Facilities	250
Gordon Flesch	Supplies, Services, and Facilities	15,973
Harvard Business Review	Supplies, Services, and Facilities	120
Hooper Service	Supplies, Services, and Facilities	591
IKM Building Solutions, Inc.	Supplies, Services, and Facilities	7,372
Info-Tech Research Group	Supplies, Services, and Facilities	27,114
Institutional Investor	Supplies, Services, and Facilities	1,806
International Centre for Pension Management	Supplies, Services, and Facilities	22,457
Keystone Peer Review Organization Inc	Supplies, Services, and Facilities	902
Legislative Audit Bureau	Supplies, Services, and Facilities	63,250
LinkedIn	Supplies, Services, and Facilities	17,205
Litera Corp	Supplies, Services, and Facilities	483
Madison Gas and Electric Company	Supplies, Services, and Facilities	40,376
Mathworks	Supplies, Services, and Facilities	26,504
Metropolitan Unified Fiber Network Consortium	Supplies, Services, and Facilities	9,744
Milwaukee Business Journal	Supplies, Services, and Facilities	135
Milwaukee Journal Sentinel	Supplies, Services, and Facilities	200
MRA The Management Association Inc	Supplies, Services, and Facilities	2,500
mxtoolbox.com	Supplies, Services, and Facilities	297
National Association of Corporate Directors	Supplies, Services, and Facilities	12,825
New York Times	Supplies, Services, and Facilities	974
Newton Software	Supplies, Services, and Facilities	3,870
n-Tier Financial Services, LLC	Supplies, Services, and Facilities	12,450
Packerland Rent-A-Mat, Inc.	Supplies, Services, and Facilities	606
Pensions & Investments Magazine	Supplies, Services, and Facilities	350
Podcamp Media, LLC	Supplies, Services, and Facilities	20,000
Prosymmetry, LLC	Supplies, Services, and Facilities	10,008

<u>EXPENSE CATEGORY</u>	<u>SERVICE PROVIDED</u>	<u>EXPENSES</u>
Quartet	Supplies, Services, and Facilities	90
Red Flag Reporting	Supplies, Services, and Facilities	690
Security Onion Solutions	Supplies, Services, and Facilities	5,905
Shred-it	Supplies, Services, and Facilities	432
Sigma Computing, Inc	Supplies, Services, and Facilities	34,960
Software House Intl	Supplies, Services, and Facilities	419,869
Staples Advantage	Supplies, Services, and Facilities	1,263
Target	Supplies, Services, and Facilities	62
The Associated Press	Supplies, Services, and Facilities	33
The Economist	Supplies, Services, and Facilities	458
The Kroner Center for Financial Research	Supplies, Services, and Facilities	10,000
Thomson Reuters (Baseline and FC) - CH25	Supplies, Services, and Facilities	12,128
Uline	Supplies, Services, and Facilities	297
UW System Administration	Supplies, Services, and Facilities	900
Verizon Wireless	Supplies, Services, and Facilities	2,353
Wisconsin Independent Network	Supplies, Services, and Facilities	1,800
Wisconsin State Journal	Supplies, Services, and Facilities	124
Total Supplies, Services & Facilities		\$ 3,411,111
Total Internal Expenses		\$ 17,170,058
<u>Custodial, Investment Operations and Banking Fees</u>		
Albourne America LLC	Investment Operating Services	\$ 187,500
BNY Asset Servicing - Custody	Master Custody Services	869,915
BNY Asset Servicing - Investment Operations	Investment Operating Services	(352,040)
S&P Global Limited (Markit Group Limited)	Investment Consulting Services	203,331
Markit NA	Investment Data Management Software	17,914
Total Custodial, Investment Operations and Banking Fees		\$ 926,620
<u>Legal Fees</u>		
DLA Piper LLP (US)	Legal Work for Investment Strategies	\$ 23,033
Godfrey & Kahn SC	Legal Work for Investment Strategies	1,624
Legal Services Expense Accrual	Legal Work for Investment Strategies	181,597
Michael Jaffe	Legal Work for Investment Strategies	22,426
Pillsbury Winthrop Shaw Pittman LLP	Legal Work for Investment Strategies	3,003
Quarles & Brady	Legal Work for Investment Strategies	83,864
Reinhart Boerner Van Deuren SC	Legal Work for Investment Strategies	212
Sidley Austin LLP (International)	Legal Work for Investment Strategies	5,128
Winston & Strawn LLP	Legal Work for Investment Strategies	87,665
Total Legal Fees		\$ 408,550
<u>Investment Counsel</u>		
12358433 Canada Inc.	Investment Consulting	\$ 46,710
20-20 Investment Association	Investment Membership	20,000
22V Research LLC	Research and Data Services	5,000
3x108 Fintech Consulting Limited	Investment Consulting	23,076
AE Business Solutions	Investment Consulting Services	54,740
Aksia LLC	Hedge Fund Investment Consulting	349,625
Alex Solutions	Research and Data Services	44,500
Apex Systems, LLC	Investment Consulting Services	72,791
Australian Super	Investment Research	5,000
Backstop Solutions Group	Investment Software	48,474
Barra LLC	Research and Data Services	36,089
Barrons	Investment Research	105
BCA Research Inc	Global & Domestic Fixed Income Strategy Research	29,500
Blackrock Financial Management Inc	Risk Services	109,284
Bloomberg Finance LP	Market, Company, Industry & Benchmark Information	1,400,688
BNY Asset Servicing - Eagle/Pace	Investment Consulting Services	(38,333)
Bonfire Interactive LTD	Strategic Sourcing Software	20,000
Bridge Consulting Partners Ltd	Investment Consulting Services	80,520
Callan Associates Inc	Investment Consulting & Performance Benchmarking	6,250
Canoe Software Inc.	Investment Software	16,450
Capital Economics LTD	Market Research	15,500
Carahsoft Technology Corp	Investment Consulting Services	18,151
CBJL Incorporated	Investment Consulting Services	101,680
CBOE Global Markets, Inc.	Research and Data Services	1,770
CEM Benchmarking Inc	Investment Cost Analysis	26,875
CFRA Research	Investment Research Services	20,669
Charles River System Inc	Portfolio Management Trading Software & Services	445,757
Citrini Research	Investment Research	1,250
CLO Research Group	Investment Research	1,875
CoStar Portfolio Strategy	Real Estate Consulting & Research Services	23,042
Credit Benchmark, LTD	Benchmark Service	52,500

<u>EXPENSE CATEGORY</u>	<u>SERVICE PROVIDED</u>	<u>EXPENSES</u>
Dacheng Xiu	Investment Research	62,475
Deloitte Consulting LLP	Information Technology Consulting Services	442,602
DiatomC LLC	Investment Consulting	96,720
DTCC – EPN	Trade Settlement Service	1,200
DTCC ITP LLC	Trade Settlement Service	2,047
EFront Financial Solutions Inc	Private Markets Portfolio Management Services	223,559
Elevation LLC	Research and Data Services	12,500
Elgin White	Investment Consulting	48,000
Eliassen Group	Information Technology Consulting Services	26,000
EquiLend Holdings LLC	Investment Data	31,867
Ernst & Young LLP	Tax Compliance Services & Investment Consulting	67,700
FactSet Research Systems Inc	Financial & Economic Database	1,024,024
FBN Securities, Inc.	Investment Research	9,000
Finarch LLC	Investment Consulting	50,856
FIS Data Systems Inc.	Research and Data Services	45,956
Fitch Solutions Inc	Credit Rating Services	67,200
FTSE International Inc	Real Time Index Data	16,101
Funston Advisory Services LLC	Consulting Services	18,400
Gallagher	Insurance and Risk Management Services	15,875
Gcon4 Group	Integration Software	3,999
Global Peer Financing Association	Investment Consulting	2,500
Green Street Advisor	Real Estate Analytics	53,571
Haver Analytics	Global Macroeconomic Research	24,593
Ice Data LP	Fixed Income Indices	192,646
Institutional Investor	Investment Data and Research Services	19,500
Institutional Limited Partners Association ILPA	Private Equity Research	7,500
Institutional Shareholder Services Inc	Proxy Voting Analysis	84,412
International Swaps and Derivatives Assn	Derivative Industry Research	11,458
Intex Solutions, Inc.	Research and Data Services	30,600
Investment Research Expense Accrual	Investment Research	212,500
IPC Systems Inc	Trading Telecommunication System	10,500
JP Morgan	Public Market Management Fee	15,000
JPSB Consulting Limited	Investment Consulting	92,480
Keystone Consulting Inc	Investment Information Technology Consulting Services	79,040
Knowledge Services	Recruitment and Staffing Services	24,197
Kreischer Miller LLP	Investment Consulting	2,500
Law360 Legal News and Data	Investment Research	993
London Stock Exchange	London Stock Exchange Data	52,857
Makor Securities London LTD	Investment Research	6,000
Manalo Advisors Limited	Research and Data Services	3,750
Markit Group Limited	Investment Consulting Services	9,300
Markit NA	Investment Data Management Software	26,804
Markit-EDM Limited	Investment Consulting	210,929
McLagan Partners Inc	Investment Compensation Data and Analysis	27,500
MNI Market News	Research and Data Services	5,171
Moody's Analytics	Economic, Currency & Bond Analysis	95,610
MSCI Inc - Risk Metrics Solutions	Research and Data Services	295,576
MSCI, Inc	Research and Data Services	160,061
My Data Outlet International, LLC	Research and Data Services	52,000
NAIOP Commercial Real Estate Development Association	Investment Consulting Services	300
NEPC LLC	Investment Consulting Services	80,000
NYSE Market Inc	New York Stock Exchange Data	5,404
OptionMetrics	Investment Data Service	43,350
Options Price Reporting Authority	Quote System for Options Market	1,670
Oxford Economics USA INC	Research and Data Service	17,939
Pac-invest	Research and Data Services	14,343
PEI Media Inc	Private Equity Real Estate News	11,875
Pension Real Estate Association	Real Estate Investment Research	330
Pitchbook Data Inc	Research and Data Services	20,833
PivotalPath Inc.	Investment Research	17,500
PremiaLab	Investment Research	4,583
Prequin Limited	Investment Research	24,665
Preyer	Investment Consulting Services	168,750
Quantum Research Consulting LLC	Investment Consulting	6,940
RavenPack International S.L.U.	Research and Data Services	21,250
RCM Technologies	Investment Consulting	21,712
Refinitiv	Investment Research	319,220
Reorg Research Limited	Research and Data Services	45,000
RIMES Technologies Corporation	Research and Data Service	51,622
S&P Global Market Intelligence	Industry & Corporate Research	157,295
SailPoint Technologies, Inc.	Information Security Software	42,151
Seaport Global Securities LLC	Research and Data Services	3,120
SEI Investments	Research and Data Services	22,736

<u>EXPENSE CATEGORY</u>	<u>SERVICE PROVIDED</u>	<u>EXPENSES</u>
Sharp Decisions Inc	Investment Information Technology Consulting Services	126,363
Simcorp USA, Inc.	Investment System	976,214
Smartkarma Innovations Pte Ltd	Research and Data Services	4,950
Snowflake Inc	Research and Data Services	40,000
Software House Intl	Investment Software	11,053
State Street	Investment Consulting	25,000
StepStone Group	Private Equity Consulting Services	1,410
StepStone Group Real Estate	Real Estate Consulting Services	62,500
SWIFT SC	Research and Data Services	173
SystemsAccountants	Investment Information Technology Consulting Services	90,240
TechVest Global Solutions Inc.	Information Technology Consulting Services	123,341
The Financial Times Limited	Investment Research	460
The Institute for Quantitative Research in Finance	Research and Data Services	6,500
The Nasdaq Stock Market, LLC	Research & Data Services	3,275
Toronto Stock Exchange	Market Data	13,688
TradeWeb	On-Line Fixed Income Trading Services	11,184
Trepp, LLC	Investment Research	55,800
UFP Research SA	Investment Research	12,500
Unit4 Business Software Inc	Financial & Administration Services System	84,991
Unquote	Research and Data Services	3,283
Variyas Global Solutions, Inc.	Information Technology Consulting Services	39,706
Verity LLC	Research Management System	49,876
Verus Advisory Inc	Benchmarking Consulting Services	2,500
Virtu ITG Analytics LLC	Trading Transaction Cost Analysis	27,000
Wall Street Journal	Investment Research & Information	57
Wisconsin Technology Council	Investment Research Sponsorship	7,500
Wolters Kluwer Law & Business	GDP Forecasting Services	3,709
Wolverine Execution Services LLC	Options Trading Platform	1,395
Workday Implementation Capitalized Expenses	Financial & Administration Services System	(545,014)
Workday, Inc.	Financial & Administration Services System	15,296
WorldBridge Partners Inc	Recruitment Consulting	42,640
Total Investment Counsel		\$ 9,515,341
<u>Securities Lending Agent Fees</u>		
BNY Mellon Asset Servicing & eSecLending	Securities Lending Agent Fees	\$ 1,430,511
Total Securities Lending Agent Fees		\$ 1,430,511
Total Quarterly Charges to Funds		\$ 29,451,080

¹All costs reported are on an accrual basis except for internal operating costs which are on a cash basis of accounting. Negative expense amounts are due to accrual adjustments and/or other miscellaneous adjustments.

Explanation of Expenses

Internal Operating Expenses

Internal operating expenses consist primarily of staff compensation and fringe benefits. SWIB employs a staff of professional investment and support staff to manage trust fund assets. Other internal operating expenses consist of office equipment, supplies, business travel, information technology equipment and services, and general services.

Custodial & Banking Fees

Wisconsin Certificate of Deposit Program: Under a contract with SWIB, Bankers' Bank administers the program under which the State Investment Fund (SIF) purchases certificates of deposit from Wisconsin-based banks and thrifts. Most administrative costs are paid by the participating banks. SWIB's expenses help underwrite other administrative costs, such as insurance that SWIB requires to be purchased. There are currently no investments in Bankers' Bank certificates of deposit and no fees were incurred.

BNY: Provides master custodial and administrative services (safekeeping of assets, income collection, valuations and accounting) for public and private domestic and foreign securities in the Wisconsin Retirement System (WRS), the SIF, and the other separately managed trust funds. In addition, SWIB receives performance measurement and analytical services through its contract with BNY, which serves as the official book of record for SWIB's accounting and performance measurement functions. BNY provides data and analytical tools used by SWIB for compliance and risk management. These include global collateral management, data management, and hosting services. Fees for these services are established by contract.

US Bank: The State of Wisconsin contracted with US Bank to be the state's working bank. The fees paid to US Bank by the SIF reflect bank service charges that are not directly applicable to the fund participants.

Legal Fees, Services, and Expenses

Under authority delegated by the Attorney General, pursuant to s. 25.18 (1) (a) Statutes, SWIB may employ legal counsel for any matters arising out of the scope of its investment authority. This includes legal services relating to bankruptcies, class actions, private markets transactions, fiduciary advice, securities law, investment litigation, and other similar matters.

Investment Counsel

Current law gives SWIB the authority to employ investment counsel in any matters arising out of the scope of its investment authority. Investment research and services provided include global market, industry, economic and company information, financial and performance analytics, news information, pricing and exchange data, credit ratings, financial modeling, economic forecasting, trading services, and a variety of Board consultations. These services enable SWIB to perform due diligence on current and future holdings and assist in monitoring investments.

Securities Lending Agent Fees

Securities lending programs generally earn income through the reinvestment of cash collateral posted by borrowers and through the collection of fees for loans where non-cash collateral is posted. SWIB's securities lending income is shared with the agent to pay the costs associated with the administration of the program. Securities lending agent fees are reported as expenses.

External Investment Management Fees

Some external asset managers have been granted delegated authority to determine investment strategy and purchase securities in SWIB's name in accordance with approved investment guidelines. These investment vehicles are known as separately managed accounts (SMAs). Fees for managing SMAs are typically assessed as a percentage of the market value of assets under management and in some cases, fees are based on investment performance. These costs are actual expenses to SWIB that are, in accordance with accounting guidelines generally accepted in the U.S., recognized as expenses on the WRS Statement of Changes in Net Investment Position.

SWIB also invests in separate legal entities managed by external investment managers to gain exposure to select strategies including Public Markets, Private Markets¹, and Hedge Funds. These investment vehicles are known as "commingled" accounts. In exchange for their investment management services, the external managers charge a fee within the entity they manage. These fees generally do not require SWIB to remit payment. Fees are typically assessed as a percentage of the market value of assets under management, commitments, and in some cases are based on investment performance. While the fees charged to these external vehicles do not meet the statutory definition of a cost or expense to SWIB, they are included in SWIB's total cost of management reporting as a supplemental reporting item that falls outside the statutory requirements of this report.

¹ Beginning in 2023, External Investment Management Fees for private markets, encompassing Private Equity, Venture Capital, Current Return and Real Estate asset classes, are reported on a net of fee basis rather than gross. Net fees reflect fee offsets, waivers, and deferrals.

Private Equity Commitments*

January 2025 – March 2025

<i>Investment</i>	<i>Commitment (millions)</i>
Adelis Equity Partners IV (add-on)	€5.0
Denali Growth II	\$75.0
GTCR Strategic Growth II	\$75.0
Hg Saturn 4	\$100.0
Platinum Credit I	\$75.0
Turn/River Capital VI	\$130.0
Financials Co-Investment	£25.0
Financials Co-Investment	\$25.0
Consumer Co-Investment	\$35.0
Consumer Co-Investment	\$45.0
Healthcare Co-Investment (add-on)	\$12.5
Healthcare Co-Investment (add-on)	\$0.4

*Includes Current Return Portfolio and Co-Investments.

Private Debt Investments/Commitments

January 1, 2025 to March 31, 2025 (First Quarter)

<i>Investment</i>	<i>Investment/Commitment</i>
Total	\$0

Real Estate Commitments

January 2025 – March 2025

<i>Investment</i>	<i>Commitment (millions)</i>
Digital Realty DC Partners NA	\$150
FPA Core Plus Fund VI	50
Total	\$200

Funds Alpha Commitments*

January 1 – March 31, 2025

Manager	Commitment (Millions)
Ripple Effect	\$ 1
Mesarete	\$ 40
Taula	\$ 85
Artisan Partners EMLO	\$ 150
FW Global Opportunities Onshore	\$ 117
FW Global Opportunities Offshore	\$ 62
CC&L CTF	\$ 700
CC&L VTF	\$ 200
Total	\$ 1,355

**Includes Hedge Funds and Beta One*

Board Meeting

Tab 10 – Future Items for Discussion

2025 Board Meeting and Agenda Plan

March 2025	
Audit & Finance	<p>Open Session</p> <ul style="list-style-type: none"> • Annual Charters Review • Open Audit Issues Report(s) • Approval of Draft Audit Report(s) • 2025 Internal Audit Plan Status • 2025 Internal Audit Goals • Compliance Overview • Financial Reporting • Administrative Reports <p>Executive Closed Session</p> <ul style="list-style-type: none"> • Evaluation of Head of Internal Audit • Head of Internal Audit Compensation Recommendation
Compensation & Workforce Development	<p>Open Session</p> <ul style="list-style-type: none"> • Annual Committee Charter Review • Comprehensive RPM Review Timeline • Strategic Results Scorecard Approval • Incentive Compensation Program Review and Division Scorecards Results • Incentive Compensation Award Recommendations • Talent Acquisition Update <p>Executive Closed Session</p> <ul style="list-style-type: none"> • Incentive Compensation Award Recommendations for Specific Individuals • Long Term Incentive Plan Awards • Deputy Executive Director/Chief Operating Officer Incentive Compensation Award Recommendation • ED/CIO Evaluation and Compensation
SPCG	<p>Open Session</p> <ul style="list-style-type: none"> • Real Estate Strategy Report and Market Outlook • Corporate Governance Program Update • June Investment Forum Preview • Innovation and Projects Update <p>Executive Closed Session</p> <ul style="list-style-type: none"> • ED/CIO Goals Review
Board Meeting	<p>Open Session</p> <ul style="list-style-type: none"> • Committee Reports • Election of Secretary and Assistant Secretary • Annual Committee Assignments • Proposed Meeting Dates for Next Year • Investment Performance and Market Updates; Callan Annual Report • Committee Open Session Business • Quarterly Investment Update • Q4 Direct Charges to Funds / PMFA Commitments / Board Contact Log <p>Closed Session</p> <ul style="list-style-type: none"> • Risk Management Update • Committee Closed Session Business • Operational, Financing & Counterparty Risk Overview <p>Executive Closed Session</p> <ul style="list-style-type: none"> • Incentive Compensation Award Recommendations for Specific Individuals

2025 Board Meeting and Agenda Plan

June 2025	
Audit & Finance	Open Session <ul style="list-style-type: none"> • WRS Audited Financial Statements • Open Audit Issues Report(s) • Approval of Draft Audit Report(s) • Annual Affirmations and Disclosures • 2025 Internal Audit Plan Status • Five-Year Audit Summary • Financial Reporting • Administrative Reports Executive Closed Session <ul style="list-style-type: none"> • LAB Review of Statements of Economic Interest
SPCG	Open Session <ul style="list-style-type: none"> • Hedge Fund Strategy Report and Market Outlook Executive Closed Session <ul style="list-style-type: none"> • ED/CIO Goals Review
INVESTMENT FORUM	
Board Meeting	Open Session <ul style="list-style-type: none"> • Committee Reports • Investment Performance and Market Updates; Callan Quarterly Report • Committee Open Session Business • Quarterly Investment Update • Q1 Direct Charges to Funds / PMFA Commitments / Board Contact Log Closed Session <ul style="list-style-type: none"> • Risk Management Update • Committee Closed Session Business
INVESTMENT FORUM	

2025 Board Meeting and Agenda Plan

September 2025	
Audit & Finance	Open Session <ul style="list-style-type: none"> • Open Audit Issues Report(s) • Approval of Draft Audit Report(s) • 2025 Internal Audit Plan Status • 2026 Internal Audit Plan Preview • Financial Reporting • Administrative Reports
Compensation & Workforce Development	Open Session <ul style="list-style-type: none"> • Comprehensive RPM Review Preview • Talent Acquisition and Employee Engagement Update
SPCG	Open Session <ul style="list-style-type: none"> • Private Equity Strategy Report and Market Outlook • Annual Corporate Governance Policy Review and Corporate Governance 2025 Proxy Voting Review • Trustee Manual Review/Policies Update • October Workshop Preview • Innovation and Projects Update Closed Session <ul style="list-style-type: none"> • Co-Investment and Venture Capital Strategy Report and Market Outlook • Board/Staff Consultant Annual Reporting Executive Closed Session <ul style="list-style-type: none"> • Targeted Strategic Planning • ED/CIO Goals Review
Board Meeting	Open Session <ul style="list-style-type: none"> • Committee Reports • Investment Forum Recap • Fiduciary & Public Records Training • Investment Performance and Market Updates; Callan Quarterly Report • Committee Open Session Business • Quarterly Investment Update • Q2 Direct Charges to Funds / PMFA Commitments / Board Contact Log Closed Session <ul style="list-style-type: none"> • Risk Management Update • Committee Closed Session Business • Board Self-Evaluation with Governance Consultant

OCTOBER BOARD WORKSHOP
<ul style="list-style-type: none"> • Outside Speakers • Asset Allocation review

2025 Board Meeting and Agenda Plan

December 2025	
Audit & Finance	Open Session <ul style="list-style-type: none"> SIF Audited Financial Statements Open Audit Issues Report(s) Approval of Draft Audit Report(s) 2025 Internal Audit Plan Status Proposed 2026 Internal Audit Plan Financial Reporting, including Budget and Position Request Administrative Reports Executive Closed Session <ul style="list-style-type: none"> LAB Review of Statements of Economic Interests
Benchmark & Performance	Open Session <ul style="list-style-type: none"> Annual Committee Charter, Policies, and Benchmarking Philosophy Review
Compensation & Workforce Development	Open Session <ul style="list-style-type: none"> Compensation Philosophy Review Compensation Consultant Report Incentive Compensation Plan Changes for Next Performance Year (if any) Incentive Compensation Projections Comprehensive RPM Review Talent Acquisition Update and People Metrics Executive Closed Session <ul style="list-style-type: none"> Succession Planning
SPCG	Open Session <ul style="list-style-type: none"> Annual Committee Charter Review Beta One Strategy Report and Market Outlook Executive Closed Session <ul style="list-style-type: none"> Targeted Strategic Planning ED/CIO Goals Review
Board Meeting	Open Session <ul style="list-style-type: none"> Committee Reports Investment Performance and Market Updates; Callan Quarterly Report Annual Presentation on Cost Benchmarking Asset Allocation Recommendation Quarterly Investment Update Committee Open Session Business Q3 Direct Charges to Funds / PMFA Commitments / Board Contact Log Closed Session <ul style="list-style-type: none"> Asset Allocation Implementation Discussion Risk Management Update Committee Closed Session Business Annual Review of Expected Tail Loss Analysis