

SWIB Investment Committee
WISCONSIN RETIREMENT SYSTEM
INVESTMENT GUIDELINES

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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 Compliance Division or legal requirements or review operational readiness with the Operations Division prior to the trading of the instruments and securities authorized herein.

II. LEVERAGE USE POLICY

Introduction

The funds managed by SWIB can have exposure to leverage through different structures and vehicles. Leverage is an exposure to an asset class that is not fully collateralized by cash assets or an exposure to an asset acquired that has not been fully funded. There are two types of leverage, financial leverage and economic leverage:

- Financial leverage is an exposure to an asset class that is not fully collateralized by cash, with the remaining unfunded exposure not collateralized by another asset. An example of financial leverage is buying a future on an equity index that is only partially collateralized with cash assets.
- Economic leverage is an exposure that is partially collateralized by cash and partially collateralized by an alternative asset to cash but fully collateralized. An example of economic leverage is buying

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 Various Funds Investment Policy and Guidelines.

a future on an equity index and partially collateralizing the exposure with cash and collateralizing the remaining exposure with assets such as bonds so that the exposure is fully collateralized.

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.

Both financial and economic leverage, however, require liquid assets to pay down the levered obligation. This type of risk is called liquidity risk. Liquidity risk is managed by monitoring the level of liquidity required in various market scenarios and ensuring that an adequate quantity of liquid assets is available to meet commitments in times of market stress.

The total amount of financial 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 financial leverage is called the "Policy Portfolio." The total amount of economic leverage is limited by the Board-approved active risk target and range.

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 Managing Director of Asset and Risk Allocation (ARA), and the Chief Investment Officer (CIO). Leverage use exposure risk metrics are reported at least quarterly to the Investment Committee. Leverage will be reviewed by the Investment Committee with an eye to diversifying counterparties, maturities and sources. Leverage will also be periodically reported by the CIO to the Board. The balancing of these dimensions can vary through time as market conditions vary, especially with respect to liquidity.

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 exchanged 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, the CIO and the ARA Division. The Investment Committee will monitor derivatives use exposures and risk metrics on a quarterly basis or more frequently as needed.

Derivatives Guidelines Applicable to all WRS Internal Portfolios:

1. Exchange-traded derivatives must be traded on a recognized exchange approved by the Investment Committee. Such exchanges are listed on *Appendix 1*. As additional exchanges are approved *Appendix 1* shall be updated without amendment to these IC Guidelines. For clarity, exchange-traded funds (ETFs), exchange-traded notes (ETNs), or exchange-traded vehicles (ETVs) shall not be deemed exchange-traded derivatives.
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 "AAAm" 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.

For clarity, this Item 2 does not apply to ETFs, ETNs, and ETVs, 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.

- 3. 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. The aggregate notional value of put options sold and not covered by portfolio cash is limited to 10% of the market value of the portfolio. The aggregate notional value of call options sold and not covered by the underlying security positions is limited to 10% of the market value of the portfolio.
- 4. 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.
- 5. Guideline limits and soft parameters for each portfolio will be applied to the aggregate exposures which includes both physical and synthetic securities.
- 6. New derivatives strategies will be reviewed and approved by the Investment Committee before their implementation or use.

7. SWIB shall not enter into new derivatives agreements with new counterparties until the CIO has approved the agreement. Each managing director, head or portfolio manager in the relevant division shall submit to the 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. The 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 managing director, head or portfolio manager in the relevant division ("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 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 Executive Director (only for mandatory rebalancing), CIO, Managing Director, ARA and each managing director or head of each major asset class. The 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 Transition Management Plan to affect the rebalancing. The plan will include the total amount of each asset class to be bought and sold, the intended net market exposure, the specific vehicles, and the time frame of purchases and sales. The plan is based on best estimates of market close 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 Transition Management

Plan may be subsequently adjusted for additional purchases and/or sales to true up the net market exposure to the anticipated levels of the originally approved rebalancing without further approval by the rebalancing task force.

5. 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 at the date of purchase. The term of options used for this purpose may not exceed one year.
6. 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.
7. In connection with any rebalancing, the following procedures will be followed with respect to the following asset classes:
 - a. The Multi-Asset Strategy Class will rebalance 50% to Public Equities and 50% to Public Fixed Income. Accordingly, in connection with any rebalancing, for any percentage increase of assets in Multi-Asset, there will be a corresponding 50% reduction to Public Equities and a corresponding 50% reduction to Public Fixed Income, and vice versa if the Multi-Asset assets decrease. The rebalancing does not have to be proportional through the sub-asset classes.
 - b. 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.
 - c. 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. WRS General and Portfolio Guidelines – Internal Management

Each internal portfolio is assigned compulsory investment guidelines. 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 Compliance Officer, CIO, and the Managing Director or Head of the asset class in which the deviation occurred. Upon receiving notice of a deviation or potential deviation, the CIO and relevant Managing Director will either take action to correct the deviation or obtain a waiver approved by the CIO and Executive Director. If the CIO or Executive Director are not available, then the waiver may be granted by the

Managing Director of any asset class (other than the asset class to which the portfolio is requesting the waiver) and the Assistant Director. 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. 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).
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 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 "developed" or "emerging" are investments in the debt of countries (or of companies incorporated or organized in countries) included in the Citigroup World Government Bond Index or the JP Morgan Emerging Markets Diversified Index, respectively.
6. All portfolios are measured against benchmarks approved by the Board. Current benchmarks 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 ARA Division will monitor the risk exposures of all WRS portfolios. The Managing Director, ARA will have the authority to recommend modifications to portfolio exposures to manage risk exposures. With the CIO's concurrence, the manager of a portfolio will make changes as recommended by the Managing Director, ARA. In addition to such

recommendations, drawdown control procedures for all active internal WRS portfolios will be implemented and monitored by the ARA 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 strategies 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.

A. U.S. Equity Portfolios

The U.S. Equity Portfolios are invested primarily in publicly traded equity securities that are registered with the Securities and Exchange Commission, including common stocks, preferred stocks, ETFs, American Depository Receipts (ADRs), American Depository Shares (ADSs), convertible bonds, securities issued in initial public offerings, and when-issued securities. The U.S. Equity Portfolios may also be invested in equity securities that are publicly traded on stock exchanges in other developed countries.

1. When aggregated with other SWIB portfolios, no more than 20% of outstanding shares of any single issuer, excluding shares held in commingled funds and ETFs, may be owned.
2. When aggregated with other SWIB portfolios, no single issuer’s equity securities may represent more than 3%, excluding shares held in commingled funds and ETFs, of the total market value of all SWIB equity portfolios.
3. When aggregated with other SWIB portfolios, securities subject to restrictions on trading pursuant to Rule 144 under the Securities Act of 1933 shall not constitute more than 1% of the market value of all SWIB equity portfolios.
4. Up to 10% of each portfolio’s market value may be invested in international and emerging markets companies through common stocks, ADRs, ADSs, or country-specific ETFs. All international and emerging markets stock transactions must be done on an exchange located in a developed country.
5. Portfolios may use exchange-traded futures contracts or ETF’s to equitize cash and receivables.
6. Portfolios 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 a portfolio may not exceed 50% of a portfolio’s market value.

7. Except as provided in 4 above, securities must be issued by an entity that is incorporated in the United States; provided that investment is also permitted if the issuer is incorporated in a tax haven outside the United States if 1) the company's headquarters are located in the U.S. or 2) the headquarters are located in Belize, Bahamas, Bermuda, British Virgin Islands, Cayman Islands, Channel Islands, Cook Islands, Isle of Man, Marshall Islands, Panama, Liberia or Netherland Antilles and the primary exchange for the issuer's securities is located in the U.S.

B. Global Equity Portfolios

The Global Equity Portfolios are invested primarily in publicly traded equity securities, including common stocks, preferred stocks, ADRs, ADSs, ETFs, convertible bonds, securities issued in initial public offerings, and when-issued securities, in each case that are issued and traded in U.S. and non-U.S. developed markets.

1. Investments in companies whose headquarters and/or primary exchange are located in emerging market countries shall not exceed 5% of a portfolio's market value.
2. When aggregated with other SWIB portfolios, no more than 10% of outstanding shares of a single issuer, excluding shares held in commingled funds and ETFs, may be owned.
3. When aggregated with other SWIB portfolios, no single issuer's equity securities may represent more than 3%, excluding shares held in commingled funds and ETFs, of the total market value of all SWIB equity portfolios.
4. When aggregated with other SWIB portfolios, securities subject to restrictions on trading pursuant to Rule 144 of the Securities Act of 1933 shall not constitute more than 1% of the market value of all SWIB equity portfolios.
5. 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.
6. Portfolios may use exchange-traded futures contracts or ETF's to equitize cash and receivables.
7. Portfolios 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 a portfolio may not exceed 50% of a portfolio's market value.

C. Passive Portfolios

The objective of the passive portfolios is to closely track the returns and risk of their respective benchmarks.

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. Activity or retention of non-benchmark securities will only occur after the portfolio is entitled to receive the security and if the portfolio manager deems it beneficial to performance and not significantly detrimental to tracking error.
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 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; or to replicate beta for the alpha-beta overlay or other investment strategies. Passive portfolios used to achieve policy fund level leverage shall be monitored by the ARA Division so that the aggregated levels of policy fund financial leverage do not exceed any Trustee-approved limits.

D. Government/Credit Portfolio

The Government/Credit Portfolio is primarily invested in publicly traded and Rule 144A, U.S. dollar denominated fixed income instruments, primarily of investment grade, including government, agency, corporate, and Yankee securities.

1. The portfolio shall maintain an average quality rating of A or better.
2. Effective duration of the portfolio shall remain within 15% of the assigned benchmark's duration.
3. Non-investment grade securities shall not exceed 15% of the portfolio's market value.
4. With the exception of U.S. government and agency securities, issuer concentrations are restricted to 5% (investment grade) and 3% (non-investment grade) of the market value of the portfolio.
5. Securities sold to SWIB under Rule 144A under the Securities Act of 1933 may not exceed 20% of the portfolio's market value.

6. Financial futures, options, and swaps are permitted for the purposes of adjusting durations, taking or modifying credit positions, or investing anticipated cash flows, subject to the following guidelines:
 - (a) Derivatives may be used to replicate a position that would be taken through the purchase or sale of a permitted bond.
 - (b) Eligible contracts are:
 - (1) 2-Year U.S. Treasury Futures
 - (2) 5-Year U.S. Treasury Futures
 - (3) 10-Year U.S. Treasury Futures
 - (4) 30-Year U.S. Treasury Bond Futures
 - (c) Each contract must be specific to an explicitly documented transaction. Contracts must be closed when any hedged positions are closed.

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 portfolio's option adjusted duration should be +/- 15% of the benchmark duration.

F. Global Bond Portfolio

The Global Bond Portfolio is primarily invested in publicly traded and Rule 144A fixed income obligations of governments, government-related entities, and corporations around the world, primarily in developed markets, including the United States.

1. Overall portfolio quality must be maintained at an average rating of "A" or better.
2. Effective duration of the portfolio shall remain within 20% of the assigned benchmark's duration.
3. Corporate securities may not exceed 20% of the portfolio's market value and must be rated at least "B-" and above.
4. Corporate securities rated "BB+" or lower but no lower than "B-" may not exceed 5% of the portfolio's market value.
5. No single corporate issuer shall represent more than 5% of the portfolio's market value.

6. Emerging market sovereign debt is limited to (a) securities that are rated “B-” or above and (b) debt of countries in the JP Morgan Emerging Market Bond Index Global Diversified (“JP Morgan EM Bond Index”). Emerging market corporate debt is limited to (a) securities that are rated “B-” or above and (b) issuers in the Bloomberg Barclays US Credit Index. Relative emerging market (“EM”) debt shall not exceed 10% of the portfolio’s market value (i.e. the EM debt weight that is included in the benchmark shall not be counted for this threshold).
7. Securities sold to SWIB under Rule 144A shall not exceed 20% of a portfolio’s market value.
8. Currency, interest rate, credit or return exposure management is permitted but not required. Exposure management is permitted only through the use of (a) exchange-traded interest rate and currency instruments, (b) spot and forward contracts in foreign currencies, (c) Over-the-counter and exchanged traded currency (“FX”) options limited to delta-adjusted notional value of +/- 5% versus the currency weight in the benchmark, (d) interest rate, credit default and total return swaps on securities approved herein in accordance with the General Guidelines above and (e) volatility derivatives limited to 3% gross notional exposure and 1% net notional exposure of the portfolio market value. Notwithstanding Guideline #6, underlying securities in traded credit default indices (“CDX”) may include (i) EM sovereign and EM corporate debt securities rated “B-” or below, (ii) EM debt of countries that are not included in the JP Morgan EM Bond Index , or (iii) EM corporate issuers that are not included in the Bloomberg Barclays US Credit Index; provided however, that at least 75% of the EM sovereign debt securities or EM corporate debt securities that underlie any such traded CDX are included in the indices listed in Guideline #6, as applicable, and are rated at least “B-” and above. Also, notwithstanding Guidelines #3-4, underlying securities in traded CDX may include corporate securities rated “B-” or below; provided however, that at least 75% of the corporate securities underlying the traded CDX are rated at least “B-” and above. Net CDX exposure shall be included in the threshold under Guideline #3.
9. The portfolio may take a position in currency of benchmark countries of up to +/- 10% versus the currency weight in the benchmark. Currencies of non-benchmark countries may be held through the use of forward contracts (including FX Swaps) provided that the notional value of any single non-benchmark currency shall not exceed 5% of the market value of the portfolio. The portfolio may be short a non-benchmark currency in an amount up to 5% of the market value of the portfolio. The aggregate exposure to emerging market currencies through a combination of owning emerging market debt and the net position in emerging market currencies separate from the underlying assets (measured using the notional value of currency forward) shall not exceed 10% of the portfolio’s value.

G. Currency Overlay

To separate the management of currency risk from the risk of asset allocation and security selection, a currency overlay may be established at the fund level for the Core Fund and/or the Variable Fund. The CIO, the Managing Director, ARA, and the internal Global Bond Portfolio Manager shall set the currency overlay strategy.

1. The amount of the overlay will be expressed in relation to the size of the aggregate non-U.S. market value of the internally managed Global Sector Portfolios and the internally managed MSCI World ex U.S. Index Portfolio. This amount is referred to as the “portfolio reference value.” For example, if the Global Sector Portfolios have a non-U.S. market value of \$1 billion and the MSCI World ex U.S. Index Portfolio has a market value of \$1 billion, then the portfolio reference value is \$2 billion.
2. Only the currencies in the MSCI All Country World Index (ACWI) may be used to implement the currency overlay.
3. Currencies may be bought or sold.
4. Positions in any individual non-U.S. currency may be taken equal to +/- 10% of the portfolio reference value for major currencies (Euro, UK Sterling and Japanese Yen) and +/- 5% for all other ACWI currencies. For example, if the portfolio reference value is \$2 billion, individual currency positions in major currencies could be taken of +/- \$200 million.
5. Up to 25% of the portfolio reference value may be hedged into U.S. dollars.
6. The risk of the currency overlay strategy in aggregate will be limited to 25% of the active risk objective for the total trust fund, which is set by the Board.
7. Limits shall be calculated using the notional value of the currency instruments (*i.e.*, forwards and futures) and the portfolio reference value at the time of purchase.

H. 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.

Each strategy and/or investment idea expressed in the portfolios shall be approved by the CIO, Managing Director, ARA, and the Head of Multi-Asset Strategy. The Managing Directors of Public Fixed Income and Public Equities shall serve as back up signatories to approve any investment strategy if the Managing Director, ARA or the Head of Multi-Asset Strategy are not available.

Portfolio oversight will be the responsibility of the ARA Division, and the Investment Committee will monitor each investment in the portfolios. The Investment Committee shall establish procedures to monitor these portfolios. 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.

I. Multi-Asset Strategies Portfolios

The Multi-Asset Strategies portfolios are authorized to invest in or short any instrument and derivative, subject to the general and derivative guidelines contained in these IC Guidelines and the following restrictions:

1. The maximum amount to be allocated to Multi-Asset Strategies, expressed as a percentage of the total Core Fund, shall be approved by the Board.
2. The maximum active risk objective of an individual Multi-Asset Portfolio at time of implementation will be targeted at no more than 6% of the active risk objective for the total Core Fund, which is set by the Board.
3. The strategies within a Multi-Asset Portfolio may be managed either by internal investment staff or by an external manager. The SWIB individual(s) proposing a strategy will manage and monitor the strategy and ensure that all reporting requirements are satisfied.
4. Leverage and derivatives may be used to implement individual strategies and to adjust the market exposure of a Multi-Asset Portfolio, subject to the active risk target limit stated in guideline 2 above.
5. To-be-announced mortgage-backed securities (TBA MBS) may be traded only with a counterparty with which SWIB has a current Master Securities Forward Transaction Agreement (MSFTA).
 - 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.
6. The settlement of any forward TBA contract shall not be more than 90 days from the date of the trade.

Global Securities Portfolio:

1. Any physical and derivative instrument is permitted subject to the Multi-Asset Strategies Portfolios Guidelines contained in these IC Guidelines. Shorting is permitted. Up to 50% of the portfolio market exposure can be created synthetically to fund long/short ideas.
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 contributions.
3. The Global Securities Portfolio (GSP's) ex-ante tracking error limit will not exceed 6% as measured by SWIB's standard model used at any given time by SWIB's ARA Division. If market conditions (compared to active management actions) cause the portfolio's ex-ante tracking error to exceed this limit, then the GSP 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 GSP's ex-ante tracking error exceeds 6% then the portfolio may not trade or take any other action which is predicted to increase the ex-ante tracking error of the portfolio.

Alpha Portfolio:

1. Any physical and derivative instrument is permitted subject to the Multi-Asset Strategies Portfolios Guidelines contained in these IC Guidelines. Shorting is permitted.
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 contributions.
3. The Alpha Portfolio's ex-ante tracking error limit will not exceed 10% as measured by SWIB's standard model used at any given time by SWIB's ARA Division. If market conditions (compared to active management actions) cause the portfolio's ex-ante tracking error to exceed this limit, then the Alpha 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 Alpha Portfolio's ex-ante tracking error exceeds 10% then the portfolio may not trade or take any other action which is predicted to increase the ex-ante tracking error of the portfolio.

J. General Guidelines specific for Private Market and Hedge Fund Portfolios

1. The portfolio manager shall be responsible for notifying the Executive Director and including in the portfolio strategy reports to the Trustees disclosure of any referrals or significant contacts (other than status requests) 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. Funds or commingled investment pools authorized to invest more than 50% of their capital outside the U.S. shall be considered non-U.S. investments.

4. 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.

5. Each portfolio manager shall submit to the Managing Director – PMFA a written summary of any proposed investment. The Managing Director will review all such investments to determine that a) the investment falls within the portfolio’s investment guidelines, including limits on invested capital, b) that the investment is consistent with the portfolio’s established strategy, and c) that the appropriate due diligence standards are being applied. No such investment may be closed without approval of the Managing Director – PMFA, CIO and/or Executive Director 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.

6. 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 amount to more than 10% of the base commitment.

7. Private 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. 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.

K. 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 market rate fixed income 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. 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 Illinois, Iowa, Minnesota, Michigan, Indiana, Ohio or Pennsylvania.

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 Portfolio Manager 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 Managing Director – 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 Managing Director – PMFA.
3. The Private Debt Portfolio’s aggregate portfolio 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, portfolio managers or other staff authorized by the Managing Director – 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.

L. Venture Capital Portfolio

The SWIB Venture Capital Portfolio (the “Venture Capital Portfolio” includes both the Wisconsin Venture Capital Portfolio (formerly known as the Wisconsin Private Equity 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, through strategic partnerships, or as co-investments in venture-backed companies.
- 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 located in Wisconsin.

A private equity consultant hired by SWIB will review prospective investments in limited partnerships or other fund vehicles and confirm that such investments meet a prudent investor standard prior to SWIB’s investment. From time to time, SWIB may also consider formation of fund investments where it may participate both as a general partner and as limited partner. In such cases, subject to the approval limits below, SWIB will retain a consultant to advise it on the strategy and opportunity. A “follow-on fund” is an investment or an investment vehicle that has the same sponsor or manager and is either parallel to, or has a substantially similar investment strategy as, a fund in which SWIB is or has been an investor. Any other guidelines notwithstanding, the Venture Capital Portfolio commitments are subject to the following approvals:

Approval By:	Managing Director- PMFA	Chief Investment Officer	Executive Director
New Manager			
• Venture Capital Funds	Up to \$30 million or less	More than \$30 million up to \$60 million	More than \$60 million
• Venture Capital Co-Investments	Up to \$10 million or less	More than \$10 million up to \$20 million	More than \$20 million
Follow on Commitments			
• Venture Capital Funds	Up to \$50 million but manager exposure not to exceed 20% of the aggregate Venture Capital Portfolio value	More than \$50 million up to \$75 million	More than \$75 million
• Venture Capital Co-Investments (excluding funds of one)	Up to \$10 million with exposure not to exceed 10% of the aggregate Venture Capital Portfolio value	More than \$10 million up to \$20 million with exposure not to exceed 10% of portfolio value	More than \$20 million with exposure not to exceed 10% of portfolio value
SWIB ownership greater than 33% of an individual fund, excluding co- investments and funds of one			
Either CIO or Executive Director			

Notwithstanding any of the approval thresholds above, the following additional restrictions shall apply to the Venture Capital Portfolio:

1. SWIB may not own more than 50% of a portfolio company's outstanding equity (through both fund ownership and co-investment).
2. Venture capital investments may be made only through limited partnerships or other fund vehicles that invest the majority of their capital in the U.S. or other developed markets. Venture co-investments are restricted to U.S. companies only. No more than 2% of the Core Fund may be invested in venture capital.
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 or
 - (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.
4. Venture capital co-investments made within the Wisconsin Venture Capital Portfolio are limited to companies with their headquarters or primary operations in Wisconsin. No more than 5% of the Venture Capital Portfolio shall be in co-investments from the Non-Wisconsin Venture Capital Portfolio.
5. Neither the aggregate exposure (including co-investments) to any fund manager or sponsor, nor the aggregate amount of investments in any company, may exceed 20% of the aggregate Venture Capital Portfolio aggregate value without approval of the CIO and Executive Director. For purposes of the chart above and this paragraph, aggregate Venture Capital Portfolio value is defined as the net asset value plus unfunded commitments.
6. Subject to the approval thresholds and the restrictions above, the Venture Capital Portfolio Manager or other staff authorized by the Managing Director – 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.

M. 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, through strategic partnerships, and as co-

investments in operating or holding companies. Investment guidelines and soft parameters shall be applied to the aggregate composition of the Private Equity Portfolio (including the Legacy, Co-Investment and Current Return portfolios). A private equity consultant hired by SWIB will review prospective investments in limited partnerships or other fund vehicles with new managers and confirm that such new investments meet a prudent investor standard. Follow-on funds, co-investments and secondary fund purchases do not require consultant review. A “follow-on fund” is an investment or an investment vehicle that has the same sponsor or manager and is either parallel to, or has a substantially similar investment strategy as, a fund in which SWIB is or has been an investor. Co-investments where SWIB is the lead investor may not be made.

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

	Managing Director – PMFA	Chief Investment Officer	Executive Director
New Manager			
• Buy-outs	\$100 million or less	Over \$100 million up to \$300 million	Over \$300 million
• Strategic Partnerships	\$30 million or less	Over \$30 million up to \$60 million	Over \$60 million
• Co-Investments	\$30 million or less	Over \$30 million up to \$60 million	Over \$60 million
Follow-on Commitments			
• Buy-outs	\$150 million or less	Over \$150 million up to \$300 million	Over \$300 million
• Strategic Partnerships	\$50 million or less	Over \$50 million up to \$75 million	Over \$75 million
• Co-Investments	\$50 million or less	Over \$50 million up to \$75 million	Over \$75 million
SWIB ownership greater than 33% of an individual fund, excluding co-investments	Either CIO or Executive Director		

2. SWIB may not own more than 50% of a company's outstanding equity (through both fund ownership and co-investment).

3. The Private Equity Portfolio shall not include investments in venture capital funds.
4. Investments may be made through funds, strategic partnerships, or co-investments. Co-investments must be made in one of the following ways and may only be made in the U.S. or other developed markets:
 - (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,
 - (3) alongside or with a strategic partner that has entered into a written agreement to co-invest with SWIB and to be responsible for due diligence, or
 - (4) as approved by the CIO or the Executive Director.
5. 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 exposure without approval of the CIO and Executive Director. (Exposure is defined as net asset value plus unfunded commitments.)
6. No more than 45% of the Private Equity Portfolio may be invested (including commitments to investments) outside of the U.S., without the approval of the CIO and Executive Director.
7. No more than 33% of the Private Equity Co-investments exposure may be invested outside of the U.S. in other developed markets, without the approval of the CIO and Executive Director.
8. Other guideline limitations notwithstanding, portfolio managers or other staff authorized by the Managing Director – 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.

N. 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). Certain investments with relatively higher expected returns, and higher risk, may be used on a more tactical basis. A real estate consultant hired by SWIB will review prospective commingled fund investments

with new managers and/or new strategies and confirm such new investments meet a prudent investor standard. Follow-on funds and secondary fund purchases will not require consultant review. A “follow-on fund” is either (a) a direct investment that is parallel to a fund in which SWIB is or has been an investor or (b) an investment or an investment vehicle that has the same sponsor or manager and is either parallel to, or has a substantially similar investment strategy as, a fund in which SWIB is or has been an investor.

Each real estate investment (including the individual investments in a separate account tranche) must be processed and closed in accordance with applicable provisions of the Real Estate Procedures Manual.

All portfolio commitments are subject to the following approvals:

	Managing Director – PMFA	Chief Investment Officer	Executive Director
Commingled Fund			
• New Fund	\$100 million or less	Over \$100 million up to \$300 million	Over \$300 million
• Follow-on Fund	\$150 million or less	Over \$150 million up to \$300 million	Over \$300 million
Core - Separate Account*	\$150 million or less	Over \$150 million up to \$300 million	Over \$300 million
Non-Core – Separate Account*	\$100 million or less	Over \$100 million up to \$300 million	Over \$300 million

*With respect to a separate account tranche, approval is required for the tranche, but 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 total Real Estate Equity Portfolio exposure without approval of the CIO and Executive Director. (Exposure is defined as net asset value plus unfunded commitments.) This does not apply to real estate investments for which SWIB has sole discretion to select, retain, and terminate manager(s) and/or advisors 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 market value of the Real Estate Equity Portfolio and portfolio investments in any one public REIT or company may not exceed 3% of the market value of the Real Estate Equity Portfolio.

SWIB's direct ownership position in any public REIT or company may not exceed 20% of outstanding voting equity, without Board approval. Any externally managed REIT portfolio(s) will be managed under separate authority, with guidelines set out in the management agreements between SWIB and the selected manager(s).

3. No more than 40% of the aggregate portfolios may be invested (including commitments to investments) outside the U.S. Commingled funds that are authorized to invest more than 50% of their capital in emerging markets require prior approval of the CIO and Executive Director.
4. Other guideline limitations notwithstanding, the portfolio manager or other staff authorized by the Managing Director – 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.
7. Staff may hire up to five real estate advisors at any time with delegated investment discretion. These advisors shall have investment discretion of up to \$100 million of capital for each discretionary investment, with guidelines set out in the management agreements between SWIB and the selected manager(s). Staff has authority to terminate selected managers and/or advisors and hire replacement managers and/or advisors.

O. 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 fixed income instruments and in instruments with both current pay and equity features. Investment guidelines

and soft parameters shall be applied to the aggregate composition of the Private Equity Portfolio (including the Legacy and Co-Investment Portfolios), unless otherwise stated. A private equity consultant hired by SWIB will review prospective investments in limited partnerships or other fund vehicles with new managers and confirm that such new investments meet a prudent investor standard. Follow-on funds, co-investments and secondary fund purchases will not require consultant review. A “follow-on fund” is an investment or an investment vehicle that has the same sponsor or manager and is either parallel to, or has a substantially similar investment strategy as, a fund in which SWIB is or has been an investor. Co-investments where SWIB is the lead investor may not be made.

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

	Managing Director – PMFA	Chief Investment Officer	Executive Director
New Manager			
<ul style="list-style-type: none"> • Funds or Strategic Partnerships 	\$100 million or less	Over \$100 million up to \$300 million	Over \$300 million
<ul style="list-style-type: none"> • Co-Investments 	\$30 million or less	Over \$30 million up to \$60 million	Over \$60 million

Follow-on Commitments			
<ul style="list-style-type: none"> • Funds or Strategic Partnerships 	\$150 million or less	Over \$150 million up to \$300 million	Over \$300 million
<ul style="list-style-type: none"> • Co-Investments 	\$50 million or less	Over \$50 million up to \$75 million	Over \$75 million
Investments in excess of 33% of individual fund (excluding co-investments)	Either CIO or Executive Director		

2. SWIB may not own more than 50% of a company’s outstanding equity (through both fund ownership and co-investment).
3. Investments may be made through funds, strategic partnerships, or co-investments. Co-investments may be made only in the U.S. or other developed markets. Co-investments must be made in one of the following ways:

- (1) alongside a fund with the same sponsor or manager as a fund that is in, or has been in, the Current Return Portfolio;
 - (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 prospective commitment for the Current Return Portfolio;
 - (3) alongside or with a strategic partner that has entered into a written agreement to co-invest with SWIB and to be responsible for due diligence; or
 - (4) as approved by the CIO or the Executive Director.
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 20% of the total Private Equity Portfolio exposure without approval of the CIO and Executive Director. (Exposure is defined as net asset value plus unfunded commitments.)
 5. No more than 40% of the Current Return Portfolio may be invested (including commitments to investments) outside of the U.S.
 6. No more than 25% of any fund or strategic partnership shall be invested (including commitments to investments) in emerging markets.
 7. Other guideline limitations notwithstanding, portfolio managers or other staff authorized by the Managing Director – 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. 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, but 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 its investments will be in limited liability vehicles rather than SMAs, but may make use of SMAs if it is in the best interest of SWIB to do so.
 - c. *Special Opportunity Investments*: 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-invest, or external manager “best ideas” opportunities. Special Opportunity Investments will be capped at 20% of the market value of the total HF Portfolio.
2. Hedge Fund Investment Strategies:
- a. *Event-Driven* – investments up (debt or credit) and down (equity) the corporate capital structure where an expectation exists for realized profits over a short to medium time frame as a result of a known catalyst such as a merger, spinoff, or restructuring.
 - b. *Equity Long-Short* – long and short investments in publicly traded stocks.
 - c. *Global Macro* – global investments in indexes, commodities, interest rates, and currencies as a result of relative value or directional forecasts from a systematic or discretionary approach.
 - d. *Market Neutral/Arbitrage* – a range of fixed income, convertible, statistical arbitrage strategies that seek to hedge out all market related risks to earn consistent returns.
 - e. *Multistrategy* – hedge funds that use multiple strategies in managing assets.

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

Hedge Fund Portfolio Strategy Target Weights and Ranges

	Target		
	<u>Allocation</u>	<u>Minimum</u>	<u>Maximum</u>
Mkt Neutral	20%	5%	40%
Arb Event-Driven	30%	5%	50%
Equity Long-Short	20%	0%	40%
Global Macro	15%	0%	40%
Multistrategy	<u>15%</u>	5%	40%
	100%		

3. Categories per Allocation: Each allocation above will be divided into 3 main categories – Core, Satellite, and Niche investments. Core investments generally include hedge fund strategies that invest across a broad array of strategies and securities. Satellite investments generally include hedge fund strategies that focus on a narrower or particular segment of the market or strategy. Niche investments generally include hedge fund strategies that focus on a very narrow segment of the market or a market dislocation, which may be small and more illiquid. Niche investments may include some allocation to fund of funds and emerging manager strategies. Special Opportunity Investments, as described in Paragraph 1 above, shall be considered Niche investments. SWIB staff will work with the HF Portfolio Consultant (“Consultant”) to designate each investment as Core/Satellite or Niche.
4. Roles of SWIB staff and Consultant: SWIB Funds Alpha staff and the Consultant will be responsible for conducting initial and ongoing hedge fund due diligence, selecting individual hedge funds, and determining the allocations to individual hedge funds. The Consultant will conduct primary due diligence (which includes business management, trading and operations, valuation, risk management, and disclosures and investment terms) and make individual hedge fund written recommendations to SWIB staff. SWIB staff will conduct its review of the universe of recommended managers from the Consultant and recommend hedge funds according to the approval process. SWIB staff and the Consultant will be responsible for ongoing monitoring of SWIB’s hedge fund investments.
5. Approvals: HF Portfolio allocations are subject to the following approvals:

Investment	Managing Director- PMFA	Chief Investment Officer	Executive Director
New Manager			
Core/Satellite	Up to \$250 million or up to 5% of capital, whichever is less	More than 5% (or \$250 million, whichever is less) and up to 8% of capital	More than 8% of capital
Niche	Up to \$150 million or up to 3% of capital, whichever is less	More than 3% (or \$150 million, whichever is less) and up to 5% of capital	More than 5% of capital
Additional Subscriptions			

Core/Satellite	Up to \$350 million or Up to 7% of capital, whichever is less *	More than 7% (or \$350 million, whichever is less) and up to 10% of capital*	More than 10% of capital*
Niche	Up to \$250 million or up to 5% of capital, whichever is less*	More than 5% (or \$250 million, whichever is less) and up to 7% of capital *	More than 7% of capital*
Special Opportunity Investments	Up to \$75 million	More than \$75 million and up to \$150 million	More than \$150 million
Special Opportunity Investments may not exceed on an aggregate basis more than 20% of the market value of the total HF Portfolio* When calculating capital, it is calculated on an aggregated basis of all current SWIB investments in that Manager			

Definitions: For purposes of the approvals above, capital is defined as the market value of the HF Portfolio allocated to one hedge fund vehicle as a percentage of the total market value of the total HF Portfolio. All measurements for approvals are subject to the latest month-end data and results at the time the portfolio manager requests approval pursuant to the above requirements, and investments shall be made by SWIB within 45 days of such approval. If the investment cannot be closed within such 45-period, the measurement of percentage of capital shall be made again and additional approvals, if any are required pursuant to the above table, shall be sought and received before the investment is made.

6. Other guideline limitations notwithstanding, portfolio managers or other staff authorized by the Managing Director - 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.

VI. 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, 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 Committee or by SWIB's investment management staff, as designated in the Investment Committee Charter. Further, the Investment Committee has adopted separate governance and guidelines with respect to Beta One External Managers.

APPENDIX 1 - APPROVED EXCHANGES

Approved Exchanges for Derivative Trading

Acronym	Exchange*	Approval Date
BOX	Boston Options Exchange	2/22/2010
CBT	Chicago Board of Trade	7/28/2009
CBOE	Chicago Board Options Exchange, Incorporated	2/22/2010
CME	Chicago Mercantile Exchange	7/28/2009
EUREX		7/28/2009
EURONEXT		7/28/2009
ICE	Intercontinental Exchange	1/21/2010
ISE	International Securities Exchange, LLC	2/22/2010
LSE	London Stock Exchange	7/28/2009
MSE	Montreal Exchange	7/28/2009
PHLX	NASDAQ OMX PHLX	2/22/2010
NSDQ	NASDAQ Options Market	2/22/2010
AMEX	NYSE Amex LLC	2/22/2010
NYSE	NYSE Arca, Inc.	2/22/2010
NYSE LIFFE		7/28/2009
OSE	Osaka Securities Exchange	7/28/2009
SFE	Sydney Futures Exchange	7/28/2009
TSE	Tokyo Stock Exchange	7/28/2009

*Global Securities Portfolio and the Alpha Portfolio are approved to trade on any exchange whose clearing house is a Qualifying Central Counterparty (QCCP) as defined by the Bank for International Settlement (BIS) (subject to quarterly reporting to the Investment Committee).

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		
	U.S. Equity	Strategic Target +/- 15% of the Strategic Target	
	Int'l Equity	Strategic Target +/- 15% of the Strategic Target	
	Investment Grade	Strategic Target +/- 15% of the Strategic Target	
	High Yield	Strategic Target +/- 100 bps	
	Global	Strategic Target +/- 15% of the Strategic Target	
	EM Debt	Strategic Target +/- 100 bps	
	Variable Fund		
	U.S. Equity	65% to 75%	
	Int'l Equity	25% to 35%	
	Maximum Small Cap Exposure	U.S. Equities	2.75x Benchmark
	Ex Ante Tracking Error	Public Equities	.75% - 2.25%
Public Fixed		.4% - 1.2%	
Core Fund		.6% - 1.8%	
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	U.S. Public Fixed	+/- 15% of Benchmark	
	Global Fixed	+/- 15% of Benchmark	

ACTIVE/INDEXED EQUITIES

Minimum Number of Holdings

Small Cap Diversified	100
Shareholder Opportunity	10
Global Sector Portfolios	Lesser of 25 names or 25% of sector index names
Global Equity Concentrated	100

PORTFOLIO ASSET CLASS CHARACTERISTIC	ASSET CLASS	DISCUSSION TRIGGER
	Merger Arb	10
	Low Volatility Global Equity	25% of index names
Ex Ante Tracking Error	Passives:	
	R1000 Index	6 bp annualized
	MSCI ex US	20 bp annualized
	Small Cap Diversified	3% - 9%
	Shareholder Opportunity	3% - 9%
	Global Sector Portfolios	2% - 6%
	Global Equity Concentrated	2% - 6%
	Low Volatility Global Equity	2% - 6%
Maximum Position Size	Passives	5% notional value of futures
	Small Cap Diversified	5%
	Shareholder Opportunity	15%
	Global Sector Portfolios	Benchmark weight \pm 5%
	Global Equity Concentrated	Benchmark weight \pm 5%
	Merger Arb	15%
	Low Volatility Global Equity	Benchmark weight \pm 5%
Maximum ETF Exposure	Passives	5% of portfolio value
	Small Cap Diversified	+/- 15% of portfolio value
	Shareholder Opportunity	+/- 15% of portfolio value
	Global Sector Portfolios	+/- 15% of portfolio value

PORTFOLIO ASSET CLASS CHARACTERISTIC	ASSET CLASS	DISCUSSION TRIGGER
	Global Equity Concentrated	+/- 15% of portfolio value
Maximum Company Ownership	Passives	10% of outstanding
	Small Cap Diversified	10% of outstanding
	Shareholder Opportunity	19% of outstanding
	Global Sector Portfolios	10% of outstanding
	Global Equity Concentrated	10% of outstanding
	Merger Arb	10% of outstanding
	Low Volatility Global Equity	5% of outstanding
Top Ten Holdings	Small Cap Diversified	25% of portfolio
P/E Ratio	Small Cap Diversified	50%-150% of Benchmark
	Global Sector Portfolios	50%-150% of Benchmark
	Global Equity Concentrated	50%-150% of Benchmark
	Low Volatility Global Equity	50%-150% of Benchmark
Maximum Sector Exposure	Small Cap Diversified	Benchmark weight \pm 10%
	Shareholder Opportunity	Benchmark weight \pm 20%
	Merger Arb	25% of portfolio value
	Global Equity Concentrated	Benchmark weight \pm 5%
	Low Volatility Global Equity	Benchmark weight \pm 10%
Maximum Notional Uncovered Sold Calls	Passives	5% of portfolio value

PORTFOLIO ASSET CLASS CHARACTERISTIC	ASSET CLASS	DISCUSSION TRIGGER
	Small Cap Diversified	5% of portfolio value
	Shareholder Opportunity	5% of portfolio value
	Global Sector Portfolios	5% of portfolio value
	Global Equity Concentrated	5% of portfolio value
	Merger Arb	5% of portfolio value
	Low Volatility Global Equity	5% of portfolio value
Maximum Notional Uncovered Sold Puts	Passives	5% of portfolio value
	Small Cap Diversified	5% of portfolio value
	Shareholder Opportunity	5% of portfolio value
	Global Sector Portfolios	5% of portfolio value
	Global Equity Concentrated	5% of portfolio value
	Merger Arb	5% of portfolio value
	Low Volatility Global Equity	5% of portfolio value
Maximum Cash	Passives	1% in unequitized cash
	Small Cap Diversified	5%
	Shareholder Opportunity	10%
	Global Sector Portfolios	5%
	Global Equity Concentrated	5%

PORTFOLIO ASSET CLASS CHARACTERISTIC	ASSET CLASS	DISCUSSION TRIGGER
	Low Volatility Global Equity	5%
GOVERNMENT/CREDIT		
Number of Issuers	Gov't/Credit	20-200
Interest Rate Futures/Interest Rate Swaps Absolute Duration Contribution	Gov't/Credit	25% of Benchmark
Maximum Industry Sector Exposure	Gov't/Credit	Greater of 10% or 3 x Benchmark
Ex Ante Tracking Error	Gov't/Credit	.34% - 1.01%
Maximum Cash	Gov't/Credit	20%
GLOBAL FIXED INCOME		
Interest Rate Futures/Interest Rate Swaps Absolute Duration Contribution	Global Fixed	25% of Benchmark
Maximum Exposure to Individual Sovereign Issuer	Global Fixed	40%
Ex Ante Tracking Error	Global Fixed	.5% - 1.5%
Maximum Cash	Global Fixed	20%
Credit Default Swap Indices	Global Fixed	Notional amount of CDX contract exceeds 20% of portfolio Exposure to corporate credit securities (CDX and cash bonds combined) exceeds 20% of the portfolio as measured on a gross basis Notional market value of a short credit position exceeds 10% of the portfolio (on a net basis)
Global Bond Ex-Credit Ex Ante Tracking Error	Global Fixed	.35% - 1%
PRIVATE MARKETS & FUNDS ALPHA		
Maximum Outside Developed Markets	Private Equity	15% of Buyouts (Current and Legacy Portfolios) 15% of Current Return Portfolio
Maximum Venture Capital	Private Equity	15%

PORTFOLIO ASSET CLASS CHARACTERISTIC	ASSET CLASS	DISCUSSION TRIGGER
Minimum Buyouts (corporate finance, special situation, mezzanine)	Private Equity	85%
Maximum Co-Investments	Private Equity	20% of Buyouts
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 ²	Private Equity	5% of Buyouts
Minimum Funds	Private Equity	80%
Maximum Venture Capital Exposure	Venture Capital	Aggregate portfolio value not to exceed 25% of Private Equity and Private Debt Portfolio
Maximum Co-Investments in Venture Capital Portfolio	Venture Capital	8% of Venture Capital Portfolio (not including separate accounts) (guideline is 10%)
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%
Ex ante volatility range	Hedge Fund/Alpha	2.5% to 6.5%, measured with a trailing two year risk sampling period

² 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.

PORTFOLIO ASSET CLASS CHARACTERISTIC	ASSET CLASS	DISCUSSION TRIGGER
Equity Delta to the S&P 500	Hedge Fund/Alpha	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
One year annual Conditional Value at Risk (CVaR)	Hedge Fund/Alpha	A targeted 95% one year annual CVaR of greater than 7% based on trailing two year risk sampling period

APPENDIX 3 – WRS INTERNAL BENCHMARKS as of May 1, 2017¹

Core Trust Fund Benchmark²		
	Current Benchmark	
Global Equities	50.0% - 86% MSCI World/4% Russell 2000/10% MSCI EM	- 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
Fixed Income	24.5% See Public Fixed Income benchmark ⁴	
Inflation Protection	14.5% See Inflation Sensitive benchmark ⁵	
Real Estate	8% NFI-ODCE ⁶	
Private Equity/Debt	8% “Roll-up” of six component benchmarks ⁷	
Multi Asset	4% See Multi Asset benchmark ⁸	
Cash	(-9%) 3-Month LIBOR + 10bps	
Total	100%	

Variable Trust Fund Benchmark			
	Current Benchmark	As of	Prior Benchmark
Domestic Equities	70% Russell 3000	07/01/2012	69% Russell 3000
International Equities	30% MSCI All Country World Index (ACWI) ex US ³		30% MSCI All Country World Index (ACWI) ex US ³
Multi-Asset			1%

Note: “Roll-up” refers to the market-weighted aggregation of benchmark components or indices, based on SWIB’s actual market exposures.

¹ Refer to the Historical Benchmark Adjustments for additional background.

² The major asset class weights are established through the annual asset allocation exercise; Private Equity and Real Estate weights float between 5% and 11%. The Private Equity excess weights are taken from Public Equities, Real Estate excess weights are taken 50% from Public Equities and 50% from Fixed Income. Multi-Asset weights float between 1% and 7% with excess weights taken 50% from Public Equities and 50% from Fixed Income.

³ MSCI effective 7/1/2009. Beginning 1/1/2010, the tax treatment of the MSCI benchmark updated to a custom net-of-tax benchmark based on SWIB-specific tax treatment.

⁴ Public Fixed Income Benchmark (effective 1/1/2010, excludes TIPS): Fixed Blend of six components
 67% Bloomberg Barclays Capital Govt/Credit
 12% Citigroup WGBI Unhedged (Net Tax)
 5.5% BofA Merrill Lynch US HY Index
 5.5% JPM EMBI Global Diversified
 8% Bloomberg Barclays US Treasuries
 2% Bloomberg Barclays US Treasuries Long

⁵ Inflation Sensitive Benchmark:
 (Effective 10/1/14): “Rollup” of Bloomberg Barclays Capital TIPS Index and S&P Dow Jones Commodity Index

⁶ Real Estate Benchmark:
 (Effective 1/1/13): 100% NFI-ODCE (NCREIF Fund Index – Open End Diversified Core Equity)

⁷ Private Equity/Debt Benchmark:
 Component one: Burgiss Global All Private Equity
 Component two: Burgiss US Buyout (weighted vintage year)
 Component three: Burgiss Venture Cap (weighted vintage year)
 Component four: Burgiss Index (weighted vintage year)
 Component five: Credit Suisse Leveraged Loan Index + 1%
 Component six: Bloomberg Barclays Capital Duration-Adjusted Baa Corporate plus 20 basis points

⁸ Multi Asset Benchmark:
 65% MSCI World
 25% Bloomberg Barclays Capital Govt/Credit
 10% Citigroup WGBI Unhedged (Net Tax)

⁹ Beginning 1/1/2010, the tax treatment of the MSCI benchmark updated to a custom net-of-tax benchmark based on SWIB-specific tax treatment.

Internal Domestic and Global Equities – Managers and Benchmarks		
Portfolio	Current Benchmark	As of date
Small Cap Diversified	Russell 2000 Index	01/01/2004
Russell 1000 Index	Russell 1000 Index	08/01/2008*
MSCI US Index	MSCI US Index	03/01/2017*
Liquidity US Large Cap	Aggregated Liquidity Benchmark	03/01/2017
Liquidity US Small Cap	Russell 2000 Index	03/01/2017*
Global Consumer Discretionary	MSCI World Consumer Discretionary Index ⁹	01/01/2010
Global Financials	MSCI World Financials Index ⁹	01/01/2010
Global Real Estate	MSCI World Real Estate Index ⁹	03/01/2017*
Global Healthcare	MSCI World Healthcare Index ⁹	01/01/2010
Global Industrials	MSCI World Industrials Index ⁹	01/01/2010
Global Materials	MSCI World Materials Index ⁹	01/01/2010
Global Information Technology	MSCI World Information Technology Index ⁹	01/01/2010
Global Consumer Staples	MSCI World Consumer Staples Index ⁹	01/01/2010*
Global Energy	MSCI World Energy Index ⁹	03/01/2013*
Global Telecommunications	MSCI World Telecommunications Index ⁹	03/01/2013*
Global Utilities	MSCI World Utilities Index ⁹	03/01/2013*
Policy Overlay US Large Cap	MSCI US Index	03/01/2017
Policy Overlay US Small Cap	Russell 2000 Index	03/01/2017*
Synthetic US Large Cap	MSCI US Index	03/01/2017
Synthetic US Small Cap	Russell 2000 Index	11/01/2015*

Internal International Equities – Managers and Benchmarks		
Portfolio	Current Benchmark	As of date
MSCI World ex US	MSCI World ex US Index ⁹	05/01/2011*
MSCI World ex US Liquidity	MSCI World ex US Index ⁹	07/01/2012*
Synthetic MSCI World ex US	MSCI World ex US Index ⁹	07/01/2016*

Internal Domestic and Global Fixed Income – Managers and Benchmarks		
Portfolio	Current Benchmark	As of date
Government Credit	Bloomberg Barclays Capital Govt/Credit	01/01/2003
Global Fixed Income	Citigroup World Govt Bond Index (Net Tax)	07/01/1999
Fixed Income Liquidity	Bloomberg Barclays Capital Treasury Bond Index	07/01/2012*
Policy Overlay Treasuries	Bloomberg Barclays Capital Treasury Bond Index	11/01/2015*
Synthetic Treasuries	Bloomberg Barclays Capital Treasury Bond Index	09/30/2016*

Internal TIPS – Manager and Benchmark		
Portfolio	Current Benchmark	As of date
TIPS	Bloomberg Barclays Capital TIPS Index	01/01/2004

Liquid Investments – Managers and Benchmarks		
Portfolio	Current Benchmark	As of date
Short Term Credit	3-Month USD LIBOR	09/01/2013*

Real Estate – Manager and Benchmark		
Portfolio	Current Benchmark	As of date
Real Estate Equity	100% NFI-ODCE	01/01/2013

Private Equity/Debt – Managers and Benchmarks		
Portfolio	Current Benchmark	As of date
Private Equity	Burgiss Global All Private Equity	01/01/2016
Private Equity Co-Investments	Burgiss Buyout Equal Weighted by Vintage Year	01/01/2016
Current Return	Credit Suisse Leverage Loan Index + 1%	01/01/2017
Wisconsin Venture Capital	Burgiss Venture Capital Wtd by Vintage Year	01/01/2016
Non-Wisconsin Venture Capital	Burgiss Venture Capital Wtd by Vintage Year	04/01/2016

Wisconsin Private Debt	Bloomberg Barclays Capital Duration Adjusted Baa Corporate +20 bps	01/01/2005
Non-Wisconsin Private Debt	Bloomberg Barclays Capital Duration Adjusted Baa Corporate +20 bps	05/01/2015*
Private Equity Legacy	Burgiss Weighted by Vintage Year	01/01/2016

Multi Asset – Managers and Benchmarks

Portfolio	Current Benchmark	As of date
Global Securities	65% MSCI World Custom Net, 25% Bloomberg Barclays Govt/Credit, 10% Citigroup WGBI Unhedged	01/01/2016

Alpha Pool – Managers and Benchmarks

Portfolio	Current Benchmark	As of date
Hedge Funds	3 Month LIBOR + 10 bps	01/01/2017
Tactical Alpha	3 Month LIBOR + 10 bps	01/01/2017

*Portfolio inception date equals the current benchmark “As of date”

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