

WRS GOVERNANCE POLICY

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POLICY TITLE: *INVESTMENT POLICY STATEMENT*

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WRS INVESTMENT OBJECTIVES

This Investment Policy Statement ("IPS") provides guidelines for the Wyoming Retirement System ("WRS") investment program established by the WRS Board of Trustees ("Board") to invest the monies of the statutorily created Pension Fund ("Fund"). This IPS is part and parcel of the Board's Governance Policy Manual, which is updated by the Board from time to time. In the case of any conflict between the IPS and Wyoming law or current regulatory requirements, Wyoming law and current requirements shall prevail.

1. RETURN OBJECTIVE

Based on actuarial assumptions adopted by the Board, it is estimated that the portfolio must generate the compound annual return on invested assets shown in Appendix I in order for WRS to accumulate and maintain the assets needed to meet long-term benefit obligations. While the Board acknowledges that in certain time periods the Fund may not achieve this return, it strives to achieve it, net of fees, over a long time horizon of 20-30 years.

2. RISK OBJECTIVE

It is the Board's intention to accept equity market risk and the volatility necessary to achieve its long-term return objective. The Board defines risk as measured by projected volatility and return variability, commensurate with that of the equity market as expressed by the Policy Benchmark, and expects the volatility of returns to be similar to that of the Policy Benchmark over long periods of time.

The Policy Benchmark is a weighted, passive benchmark of the underlying asset classes found in the strategic asset allocation of the Fund, as expressed in the targets found in Appendix I. The possible range of risk outcomes is outlined for the Board each year during the strategic asset allocation review, and is based on scenario analysis using historical asset price correlations, market simulations and peer comparisons.

3. INVESTMENT PHILOSOPHY & CORE BELIEFS

The Board's investment philosophy is based on the following core beliefs:

- a. Strategic asset allocation has the most significant impact on investment risk and return, and the Board's development and maintenance of a diversified strategic asset allocation that strives to optimally fulfill investment objectives is of the utmost importance.
- b. Over the long-term (20-30 years), there is a correlation between the level of investment risk taken and the rate of expected investment return. The Board believes the assumption of risk is reasonable and justified to enhance potential long-term returns while producing a wider range of expected returns, including drawdowns, than more conservative asset mixes.
- c. Some markets are efficient while others are less so. As such, investment strategies will reflect a mix of active and passive investments.
- d. Costs have a meaningful impact on returns. Investment strategies will focus on identifying the most cost efficient method available to generate the highest net return.
- e. Performance measurement provides an assessment of the success of WRS investment strategies and implementation of those strategies.
- f. WRS portfolio returns will be largely dependent on the returns of the markets in which WRS invests.
- g. Future expectations, rather than historical returns, will drive the Board's development of the strategic asset allocation of the Fund.

4. DUTIES AND RESPONSIBILITIES

a. Board

Overseeing the administration and operation of WRS, including control and management of the Fund, is vested solely and exclusively in the Board. All authority delegated by the Board to staff is delegated through the Executive Director, subject to the Investment Limitations section of the Board's Governance Policy Manual. The Board has the responsibility to hire and fire the General Investment Consultant, and has retained the authority to employ other specialty investment consultants from time to time who report directly to the Board.

The Board has ultimate responsibility for selecting the strategic asset allocation of the Fund and its respective Policy Benchmark, which then guides the Chief Investment Officer ("CIO") in executing that allocation. The Board is responsible for ensuring that the Fund is effectively managed at all times in accordance with the laws of the State of Wyoming and the policies and guidelines established by the Board, as well as creating committees and sub-committees necessary to address specific needs for the Fund. The Board shall receive and review reports describing the performance of the Fund at least quarterly.

b. Investment Committee

The Investment Committee established by the Board is responsible for reviewing and proposing investment policy decisions for recommendation to the Board for adoption, including but not limited to: strategic asset allocation; the IPS; the asset classes; and any other material changes to investment processes and procedures. The Investment Committee, along with the Executive Director and CIO, is also responsible for overseeing the General Investment Consultant and any other specialty investment consultants who report to the Board, and monitoring the investment program, including reviewing performance. The Investment Committee shall meet at least quarterly.

c. Investment Staff

- The Executive Director oversees and is responsible for all aspects of the investment program. The WRS Investment Staff includes the CIO and the other professionals employed by WRS to implement and manage the investment program. The Executive Director is responsible for hiring and managing the CIO, subject to the Investment Limitations section of the Board's Governance Policy Manual. The CIO is hired for their financial and investment expertise and is responsible for the implementation of the investment program, including hiring necessary investment professionals who shall report directly to the CIO.
- All material transactions in the investment program shall be approved by the Executive Director or a proxy, and the CIO. The Executive Director and CIO are ultimately responsible for the performance of the Fund relative to its Policy Benchmark, and the Board expects that they will add value to the Fund beyond the Policy Benchmark over full market cycles.
- The CIO, with approval of the Executive Director or their proxy, is responsible for:
 - i. Selecting and terminating investment managers,
 - ii. Providing recommendations to the Investment Committee on asset allocation, the policies and guidelines by which the Fund is managed conducting tactical and rebalancing trades (as outlined in Appendix III),
 - iii. Implementing the strategic asset allocation of the Fund,
 - iv. Overweighting and underweighting asset classes within the strategic ranges set by the Board (outlined in Appendix I).
- The Executive Director and the CIO may retain investment consultants and other outside investment service providers necessary to ensure prudent management of the Fund. The Executive Director and CIO shall notify the Investment Committee of any material changes to the Fund.

d. Investment Managers

WRS employs professional investment managers and delegates to them the discretion to manage Fund assets in line with expectations and investment guidelines established and negotiated by WRS in legal agreements.

Each investment manager shall provide prompt notification to Investment Staff of any changes in the firm's organizational relationships, professional staff, or services that impact or could be reasonably expected to impact the services provided to WRS.

e. General Investment Consultant

The Board has authorized WRS to employ the services of a General Investment Consultant, which shall serve as the primary source for quarterly investment performance reporting for the Fund, as well as reconciling monthly performance with the Fund's Custodial Bank. The General Investment Consultant shall conduct asset allocation and asset-liability studies, advise the Board on asset allocation decisions and provide overall Fund-level recommendations, as requested by the Board from time to time.

The General Investment Consultant shall recommend to the Investment Committee the appropriate benchmarks for each manager, asset class, and the total Fund, based on the underlying objectives of each strategy. The Board and Investment Staff may, from time to time, employ the services of other specialty investment consultants in addition to the General Investment Consultant. The Board and Investment Staff shall consider the recommendations of the General Investment Consultant and other specialty investment consultants in conjunction with other available information for the purpose of making informed and prudent decisions.

5. PERFORMANCE EVALUATION

The Board shall evaluate the performance of the Fund relative to its objectives and to the returns available from the capital markets over various rolling time periods, with a focus on achieving its objectives over a full market cycle of 5-7 years. In general, the Board will utilize relative, rather than absolute benchmarks in evaluating performance. The total performance of the Fund shall be evaluated relative to the investment objectives and constraints identified in this IPS. Specifically, the total Fund performance shall be evaluated relative to a "custom benchmark", in order to assess the implementation of the WRS investment program. The Fund is expected to achieve its actuarial assumed rate of return over a 20-year time period, and the Board acknowledges the 30-year time period standard in actuarial studies for projecting liabilities.

Staff, under the direction of the Executive Director and/or CIO, shall evaluate the performance of the underlying Investment Managers within the Fund. An underlying investment manager will be evaluated on an ongoing basis for adherence to their stated objectives, based on both qualitative and quantitative criteria. Criteria for evaluation may include, but is not limited to: the ability to achieve their performance and risk objectives over a full market cycle, application and adherence to their stated investment process, compliance with investment guidelines, and ability to maintain a stable organization and retain key investment professionals.

6. MANAGER EXPOSURE POLICY

The Board has adopted the following general policies to be used in limiting exposure to any single investment manager or product. The Board may override these policies at its discretion:

a. WRS Exposure Limitations:

- The maximum allocation to a single active strategy at a manager/firm/general partner, shall not exceed 10 percent of the total market value of the Fund.
- The maximum allocation to a single manager/firm/general partner, including passive strategy exposure, in aggregate, shall not exceed 25 percent of the total market value of the Fund. Maximum exposure to a Manager/Firm in active strategies only is 15%.

b. Investment Manager Exposure Limitations:

The maximum allocation to any one single product of a manager/firm, shall not exceed 10 percent of the Manager's investment strategy assets. Board approval shall be required for any investment that exceeds this amount. In the case of private investments, the current market value of all strategy assets, including expected commitments, shall be used to determine exposure, and the Board acknowledges that due to time lags in receiving data on these strategies, and the natural course of fundraising, real-time exposure may not be possible to review.

7. LIQUIDITY OBJECTIVES

The Board intends to maintain adequate liquidity in the Fund at all times. Adequate liquidity is defined as the amount necessary to meet the immediate obligations for WRS benefit payments and operation. Secondly, adequate liquidity should be maintained to accommodate rebalancing and reallocation during most economic environments.

- Ongoing** - Fund liquidity will be determined for all potential investments by the Investment Staff. Compliance with stated limitations shall be confirmed prior to funding further investments.
- Annual** - A liquidity review shall be constructed by the General Investment Consultant at least annually, as part of the strategic asset allocation review process. This review shall identify allocation of assets by their defined liquidity provisions and shall be presented to the Board as requested.

8. MANAGER DUE DILIGENCE/ GUIDELINES

The Board expects that Staff shall create guidelines for each separately managed account, stating the expectations for the strategy being funded. Depending on the asset class in question, guidelines may limit leverage, specific securities, duration, or derivatives. Generally speaking, leverage is only permitted by Investment Managers if it is explicitly stated in their fund offering documents and/or guidelines.

Staff shall track guidelines and contractual obligations with each investment manager. Should there be a compliance breach as set forth within the manager contract/ guidelines, Staff shall take any necessary corrective action.

9. PROXY VOTING REQUIREMENTS

The Board believes that Investment Staff has the appropriate expertise to assign the voting of proxies. Investment Staff may delegate the responsibility of voting proxies to its investment managers. Investment Staff expects that its investment managers will execute all proxies in a timely fashion and provide a full accounting of all proxy votes, including a written explanation of individual voting decisions, upon request.

10. STATUTORY AND REGULATORY COMPLIANCE

Each investment manager, staff member, trustee, consultant or other agent of WRS is strictly responsible for compliance with all relevant statutory and regulatory requirements as those requirements pertain to their duties and responsibilities as fiduciaries.

APPENDIX I – Strategic Asset Allocation

Adopted December 4, 2009, Revised: April 22, 2011; May 25, 2012; February 22, 2013; February 28, 2014; May 22, 2014; February 25, 2015; February 25, 2016; February 16, 2017; February 15, 2018; September 10, 2018; February 7, 2019; May 16, 2019

Return Objective: **7.0%** net of expenses

Asset Class	Current Weight As of 12/31/2018 (%)	Target Asset Allocation Weight (%)	Target Asset Allocation Range ^{1,2} (%)	Asset Class Benchmark Index
Tactical Cash	1.0	2.0	0.0 – 5.0	Barclays Short Treasury
Total Fixed Income	21.6	21.0		Blended Benchmark
Marketable Fixed Income	18.4	18.0	13.0 – 25.5 ³	Blended Benchmark
Core Plus	6.0	5.0		Bloomberg Barclays U.S. Aggregate
US Government Debt	9.8	9.0		Bloomberg Barclays Government
Opportunistic Credit	2.6	4.0		50% Credit Suisse Leveraged Loan/ 50% Bloomberg Barclays High Yield
Private Debt	3.2	3.0	2.5 – 7.5	Cambridge Associates Vintage Year Blend (QTR Lag)
Total Equity	48.6	48.5		Blended Benchmark
Marketable Equity	44.7	44.0	39.0 – 49.0 ³	Blended Benchmark
Domestic Equity	22.0	21.2		Russell 3000 Total Return Index
International Developed Equity	14.4	14.2		MSCI EAFE IMI, Net Dividend
Emerging Markets Equity	8.3	8.6		MSCI EM IMI, Net
Private Equity	3.9	4.5	2.5 – 12.5	Cambridge Associates Global All Private Equity (QTR Lag)
Marketable Alternatives	19.6	19.0	14.0 – 24.0	HFRI FoF Index
Opportunistic/Directional	6.8		0.0 – 10.0	
Absolute Return	8.2		5.0 – 15.0	
Enhanced Fixed Income	0.0		0.0 – 10.0	
Global Asset Alloc. (GAA)	4.6		2.5 – 12.0	
Private Real Assets	9.2	9.5	7.0 – 13.0	Cambridge Associates Vintage Year Blend (QTR Lag)
Natural Resources	2.9		2.5 – 7.5	Cambridge Associates Vintage Year (QTR Lag)
Infrastructure	2.2		2.5 – 7.5	MSCI World Infrastructure (QTR Lag)
Real Estate	4.1	3.5	2.5 – 7.5	NCREIF ODCE

¹ All ranges for Private Markets are long-term ranges.

² Range based on a percentage of total assets.

³ Strategic ranges for subcategories within Marketable Equity and Marketable Fixed Income are calculated as +/- 50% of Target Asset Allocation Weight with a maximum adjustment of 5.0% in either direction, unless otherwise noted.

APPENDIX II - Investment Strategy Descriptions

Adopted September 10, 2018

I. OVERLAY

Overlays may be used in order to achieve portfolio rebalancing, tactical implementation of asset allocation decisions, and/or currency positions for the Fund. Investment Staff shall select appropriate overlay providers and guidelines for those providers, as needed, and shall report to the Board as changes are considered and implemented. The General Investment Consultant shall incorporate performance inclusive of any overlays into standard quarterly performance reports.

II. TACTICAL CASH

Cash is typically comprised of Treasury Bills and high quality commercial paper with a very short duration. Tactical Cash is utilized by Investment Staff to implement asset allocation strategy on a tactical level.

III. FIXED INCOME

a. Core Plus

U.S. investment grade bonds, most often represented by the allocation of the Bloomberg Barclays U.S. Aggregate, are typically what are referred to as "core bonds." The index includes Treasury securities, Government agency bonds, Mortgage-backed bonds, Corporate bonds, and a small amount of foreign bonds traded in the U.S. Core plus fixed income strategies invest a majority in core bonds, with the ability to opportunistically invest in "plus" sectors, which fall outside of core bond allocations. These sectors include Treasury Inflation-Linked Securities, below-investment grade corporate bonds, bank loans, and emerging market debt.

b. US Government Debt

U.S. government debt strategies invest mainly in U.S. government-backed fixed income securities. These strategies will typically invest in a combination of U.S. Treasury securities, U.S. Agency securities, and Agency Mortgage-Backed Securities ("MBS").

c. Opportunistic Credit

A majority of opportunistic credit strategies invest in a combination of high yield (or below-investment grade) corporate debt and bank loans from U.S. issuers. High yield corporate debt and bank loans typically yield higher than investment grade credit. This is because the companies issuing them are more likely to experience defaults than those issuing investment grade-rated bonds, so investors demand a yield premium. However, the term "unconstrained credit" can define strategies that include sovereign bonds, emerging market debt, investment grade corporate debt, securitized debt, and municipals.

IV. EQUITY

a. Domestic Equity

This sub-asset class seeks to provide a combination of long-term capital appreciation and dividend income that in aggregate is expected to exceed the rate of inflation. Domestic equity funds primarily invest in the stock of U.S. domiciled, publicly traded companies and can be actively or passively (index fund) managed. Funds are characterized by size and style. Size is determined by market capitalization, as managers can focus on a particular area of the capitalization spectrum (micro, small, smid, mid, or large), or invest across the capitalization spectrum (all). A funds' investment style is determined by the types of companies owned (growth, value, or core). In addition, active fund managers have the flexibility to determine their investment time horizon, portfolio level turnover, and the level of concentration in the portfolio. At times, active manages may hold out-of-benchmark companies if deemed attractive.

b. International Developed Market Equity

Like the Domestic Equity sub-asset class, International Developed Market Equity seeks to provide long-term capital appreciation and dividend income that in aggregate are expected to exceed the rate of inflation. Investments in this category will be made through a diverse group of strategies varying in size, investment style, and exposure to opportunities in a large group of developed countries. It is expected that investments in this sub-asset class will perform well during periods of rising economic growth; however, because of the non-US nature of these investments, they will also include non-dollar currency exposure not found within the US equity portfolio.

c. Emerging Market Equity

This sub-asset class seeks to provide long-term capital appreciation in excess of inflation primarily by providing exposure to emerging markets, which may grow more quickly than developed markets.

V. PRIVATE MARKETS

a. Private Real Assets

• Infrastructure

Infrastructure assets are the essential goods and services, of the U.S economy, utilized by companies and individuals during their ordinary activities. Examples of public infrastructure assets in which Infrastructure Funds may invest include, but are not limited to: Transportation (such as rail assets or airports), Communications (such as broadcasting towers, cables and telephone switching facilities), Materials handling (such as ship and train loading facilities), and Utility facilities (such as electricity power lines and oil/gas pipelines).

- **Natural Resources**

Natural resources assets are essentially products of the Earth.

- i. Extracted resources strategies generate returns from a variety of economic activities related to non-renewable products of the environment. These non-renewable products form the basis for two broad areas: (a) the oil, natural gas, and coal energy complex and (b) the industrial and precious metals sectors.
- ii. Harvested resources strategies generate returns primarily through agricultural husbandry. That is, funds purchase farmland or timberland in order to derive returns from the growth and sale of, for example, grapes or pulpwood.
- iii. Renewable energy investment strategies generate returns from a variety of economic activities within the emerging alternative energy complex. Among other things, these strategies concentrate on solar, hydro, geothermal, and wind power, as well as biofuels and biomass.

- **Real Estate**

Real estate assets are properties, including land and/or structures, designed for commercial or residential use. Examples of real estate assets in which Real Estate Funds may invest include, but are not limited to, apartment, industrial, office, retail, residential, hotel, and specialty properties.

- i. Core real estate investments include both private and public investments. Private core real estate funds can be either open-ended or closed-ended, with the former being more common and providing additional liquidity options to investors.
- ii. Non-core strategies generally encompass greater risk, whether it is through increased use of leverage, greater reliance on renovation or development, a focus on secondary markets, or a number of other factors. In return for taking on greater risk, investors in non-core real estate strategies expect to be compensated via higher returns. Non-core allocation can include strategies such as: value-added, opportunistic, and debt.

- b. **Private Debt**

Private and opportunistic debt strategies can include investments in distressed debt, mezzanine debt and or opportunistic debt. Distressed debt strategies use private financial capital to primarily purchase debt securities of "financially distressed entities," often to gain equity control post restructuring or bankruptcy; mezzanine debt strategies use private financial capital to primarily purchase subordinated debt interest of privately held companies; opportunistic debt strategies use private financial capital to primarily purchase fixed income securities that capitalize on dislocations in the corporate-, mortgage-, and asset-backed fixed income markets.

c. Private Equity

Private Equity includes investments in buyout, venture capital, and distressed opportunities, and is accessed through private vehicles, which often include a 7- 0 year lockup period. A buyout strategy is an investment that uses private financial capital to buy an entire or a controlling part of a U.S. company; a venture capital strategy is a pooled investment that uses private financial capital to invest in "venture" or start-up business; a distressed debt strategy is a pooled investment that uses private financial capital to primarily purchase debt securities of "financially distressed entities," often to gain equity control post restructuring or bankruptcy.

VI. MARKETABLE ALTERNATIVES

Marketable Alternatives strategies shall include but not be limited to, the following investment strategies:

a. Long/Short Funds

Long/short equity funds typically invest in both long and short sides of equity and credit markets, generally focusing on diversifying or hedging across particular sectors, regions or market capitalizations.

b. Global Macro Funds

Global macro funds typically focus on identifying extreme price valuations and leverage is often applied on the anticipated price movements in equity, currency, interest rate and commodity markets.

c. Multi-Strategy Funds

Multi-strategy funds typically are characterized by their ability to allocate capital based on perceived opportunities among several hedge fund strategies. Through the diversification of capital, managers seek to deliver consistently positive returns regardless of the directional movement in equity, interest rate or currency markets.

d. Managed Futures Funds

Managed futures funds (often referred to as CTAs or Commodity Trading Advisors) typically focus on investing in listed bond, equity, commodity futures and currency markets, globally.

e. Event Driven Distressed Funds

These funds typically invest across the capital structure of companies subject to financial or operational distress or bankruptcy proceedings. Such securities often trade at discounts to intrinsic value due to difficulties in assessing their proper value, lack of research coverage, or an inability of traditional investors to continue holding them.

f. Fixed Income Arbitrage Funds

Fixed income arbitrage funds typically attempt to generate profits by exploiting inefficiencies and price anomalies between related fixed income securities. Funds often seek to limit volatility by hedging out exposure to the market and interest rate risk.

g. Risk Arbitrage Funds

Risk arbitrage event driven hedge funds typically attempt to capture the spreads in merger or acquisition transactions involving public companies after the terms of the transaction have been announced.

h. Equity Market Neutral Funds

Equity market neutral funds typically take both long and short positions in stocks while seeking to reduce exposure to the systematic risk of the market (i.e., a beta of zero is desired).

i. Convertible Arbitrage Funds

Convertible arbitrage funds typically aim to profit from the purchase of convertible securities and the subsequent shorting of the corresponding stock when there is a pricing error made in the conversion factor of the security.

j. Risk Parity Funds

Risk parity is a portfolio construction methodology that is based on allocating risk as opposed to allocating capital in order to achieve a risk-balanced portfolio. The idea is to attempt to equalize the contribution to total portfolio risk from all asset classes, based on market, or beta exposures. Therefore no single asset class should dominate total portfolio risk. Leverage is often employed to generate an attractive return, meaning notional exposure is higher than 100 percent.

APPENDIX III - Tactical Trading Policy

Tactical Trades shall be focused on opportunities having an intended duration of less than year, and shall be reviewed by Investment Staff no less frequently than on a monthly basis within the following parameters:

1. Trades shall be executed using an institutional, independent third party, and that party shall provide profit/loss reports for each trade on a periodic basis.
2. The gross notional exposure limits at inception of all trades as a percentage of total WRS portfolio value is as follows: *[Note: The ability to execute one-sided trades allows for portfolio leverage equal to the aggregate value limit of 5%.]*

	One-Sided Trades (%)	Two-Sided Trades ¹ (%)
Single Trade	2.5%	5.0%
Aggregate Value	5.0%	10.0%
Aggregate Value of Both		10%

3. The maximum loss (realized + unrealized) of an individual trade is 0.3 percent of total Fund market value (-\$25.5 million based on total WRS portfolio market value as of July 2018).

Any deviations from the trading parameters described above shall require approval of the Investment Committee. Investment Staff shall notify the Investment Committee within 2 business days from notification by a Third Party of the need for a deviation.

¹ A two sided-trade consists of a long position and a short position of approximately equal dollar value.

APPENDIX IV - Asset Class Guidelines

Investment Limitations

1. A WRS investment cannot be more than 10% of a manager's total assets in a single strategy, without Board Approval.
2. The maximum allocation to a single active manager in its own investment products is 15%. The maximum allocation to a single passive manager in its own products is 25%.
3. Minimum current liquidity – At least 30% of the current market value of the plan should be in assets or collective investment vehicles that can be liquidated at fair market value within 30 days.
4. Maximum private investments – New investments in private markets (investment terms greater than or equal to five (5) years) shall not be made that would cause allocations to exceed the following limits:

Invested Capital –

- a. Private Debt > 10% of Total Fund AUM
- b. Private Equity > 10% of Total Fund AUM
- c. Infrastructure/Real Estate/Other > 10% of Total Fund AUM

Committed Capital – Market value of invested capital plus total value of future commitments should not exceed:

- d. Private Debt >15% of Total Fund AUM
- e. Private Equity >15% of Total Fund AUM
- f. Infrastructure/Real Estate/Other >15% of Total Fund AUM

Cash

Equity managers for WRS shall be fully invested at all times, except in anticipation of large withdrawals instructed by WRS. Equity managers should maintain less than 7.5% of their portfolios in cash equivalents except for periods of short-term portfolio repositioning not to exceed 5 trading days, unless the contract with the equity manager specifically provides otherwise. Fixed income managers for WRS may maintain higher cash balances. An exception shall be made for alternative investments and activist managers.

Equity Guidelines

The objectives of the plan's public equity investments are to provide it with total return, capital appreciation, protection against inflation risk and returns consistent with the appropriate index. All public equity investments, over-the-counter securities, and other equity related securities held by the System shall be limited to securities that are actively traded on U.S. exchanges or Non-U.S. exchanges. Furthermore, securities that are acquired as the result of corporate actions are permitted.

The plan shall employ diversification by both geography and investment style (e.g., value versus growth) and capitalization (small, mid, large). The plan may implement the strategies described in this section (i) through active management and/or (ii) passively through exchange traded funds ("ETFs"), mutual funds, derivatives and other types of index funds. The guidelines in this section apply to all active public equity managers, which are diversified across the following strategies:

1. US Equity
2. Non-US Developed Market Equity
3. Emerging Market Equity

No manager that uses investment leverage as part of its strategy will be allowed within the Equity asset class. To the extent that any manager does use leverage, such as for managing cash flows on a short term basis, the Board will calculate any impact on returns, and adjust the portfolio return accordingly

Allowable Use of Derivatives

Derivative instruments may be used selectively in lieu of physical securities by investment managers for WRS under the following conditions:

1. Derivatives may be used (i) when they offer better liquidity (lower transaction costs), (ii) when they offer greater precision for the purposes of managing a portfolio's duration, yield curve exposure, prepayment or credit risk or (iii) to hedge foreign currency risk.
2. While derivatives are used primarily to reduce risk exposures, they may also be employed to increase exposure to a certain risk factor if that desired exposure is not easily obtained via physical securities.
3. Permissible derivative instruments include futures, forwards, options and swaps. Warrants are only permitted when attached to securities authorized for investment unless the contract with the manager specifically provides otherwise.
4. The use of derivatives by an investment manager may not materially alter their portfolio risk profile beyond that which is implied by their investment style.

This Section does not apply to the use of derivatives in alternative investment portfolios, overlay, or tactical trades. Derivatives may be utilized within alternative investment portfolios provided that the instruments and strategies utilized are consistent with this investment policy of the alternative investment vehicle.

Fixed Income Guidelines

US Government Mandates

The US Government Fixed Income allocation shall be managed as a domestic fixed income allocation, benchmarked against the Barclays US Government Aggregate, and adhere to the following guidelines:

- The average credit rating shall be at least AAA using the middle rating of S&P, Fitch and Moody's.
- US Treasury exposure shall be no less than 50%, and may range up to 100%.
- The underlying credit of any individual investment held will be backed, implicitly or explicitly, by the full faith and credit of the US Government. No foreign government issues will be held.

- The weighted average effective duration of the portfolio will be within +/- 2 years of the marketable fixed income blended benchmark.
- No holdings-level or portfolio-level leverage shall be permitted. Reverse repo agreements and forward commitments to manage duration and yield-curve exposure (i.e., to manage risk), are permissible, however.

US Agg Benchmarked Mandates

The Core Plus Fixed Income allocation will be managed as a portfolio of primarily US domiciled credits and be benchmarked against the Barclays Capital US Aggregate Bond Index. Each portfolio shall adhere to the following guidelines:

- The weighted average effective duration of the portfolio will be within +/- 2 years of the marketable fixed income blended benchmark.
- Duration exposure to non-USD instruments shall not exceed 20% of total portfolio duration.
- Average credit quality of at least single A shall be maintained. Subject to this constraint;
 - At least 30% of the portfolio shall be invested in AAA-rated holdings.
 - No more than 30% of holdings may be below BBB-rated, those that are must be in current pay (CCC or better) status.
 - No more than 20% of the portfolio may be exposed to non-USD denominated bonds.
- No holdings-level or portfolio-level leverage shall be permitted. Reverse repo agreements and forward commitments to manage duration, sector and yield-curve exposure (i.e., to manage risk), are permissible, however.

Opportunistic Credit Mandates

The purpose of the opportunistic credit allocation is to provide total returns similar to equity with a potentially lower loss profile (they are higher in the capital structure than equity). Investment opportunities in this asset class, which is meant to capture returns available in liquid, non-investment grade credit generally, can be very broad. Investments in this asset class can be implemented through commingled funds, separate accounts or passive indices. This asset class will be benchmarked against a 50:50 blend of the Bloomberg Barclays High Yield Index and the Credit Suisse Leveraged Loan Index, which represents broad benchmarks for fixed rate bonds and floating rate loans, respectively.

- At least 50% of the holdings of each account managed on behalf of WRS should trade on an open exchange.
- Duration should be maintained within +/- 50% of the blended benchmark.
- Equity exposure, in the form of warrants or options, are acceptable up to 10% of the account value.
- No more than 40% shall be invested in investment grade securities.

Private Markets

The objectives of WRS' private market investments, which are considered to be alternative investments, are to provide the plan with total return, capital appreciation, portfolio diversification, protection against inflation risk and consistent returns as measured by the appropriate index. The

funds shall be actively managed. The System will employ diversification by sub-asset classes across private markets including private equity, private real assets and private debt, and within sub-asset classes: Buyout, growth and venture capital within private equity; real estate, natural resources and infrastructure within private real assets; distressed, special situations and niche strategies within private credit.

Hedge Funds

The objectives of the System's hedge funds investments, which are considered to be alternative investments, are to provide WRS with total return, portfolio diversification, certain defensive capacities, capital appreciation, moderate levels of volatility with low correlation to traditional financial assets and consistent returns measured by the appropriate index. WRS' Office may implement the strategies described in this section (i) through active management and/or (ii) passively through ETFs, mutual funds and other types of index funds. The guidelines in this section apply to all active hedge funds managers.

i. The portfolio shall be diversified across underlying hedge fund strategies and hedge fund managers.