



Kentucky Retirement Systems

Statement of Investment Policy Adopted
November 4, 2015

This statement of investment policy is issued by the Board of Trustees of the Kentucky Retirement Systems (Systems) in connection with investing the pension and insurance funds of the Kentucky Employees Retirement System, the County Employees Retirement System and the State Police Retirement System. This document supersedes all prior documents entitled Statement of Investment Policy.

I. The Board of Trustees

The retirement plans administered by the Kentucky Retirement Systems are a “Qualified Pension Plan” under Section 401 of the Internal Revenue Code. Additionally, KRS 61.701 establishes health insurance benefits to recipients of the Kentucky Employees Retirement System, County Employees Retirement System and State Police Retirement System. KRS 61.702 provides that all amounts necessary to provide for insurance benefits shall be paid to the insurance fund. The Board shall administer the fund in the same manner as the retirement funds.

The pension plans and the health insurance trust are administered by a 13 member Board of Trustees. Six trustees are appointed by the Governor of the Commonwealth of Kentucky. Of the six trustees appointed by the Governor, one must be knowledgeable about the impact of pension obligations on local governments, one is chosen from candidates provided by the Kentucky League of Cities, one is chosen from candidates provided by the Kentucky Association of Counties, one is chosen from candidates provided by the Kentucky School Boards Association, and finally two must have investment experience as defined by KRS 61.645(1)(e). Six trustees are elected by the membership of the respective trusts and include two trustees representing the Kentucky Employees Retirement System, three trustees representing the County Employees Retirement System, and one trustee representing the State Police Retirement System. Finally, the Secretary of the Personnel Cabinet serves ex-officio as the thirteenth trustee.

The Board of Trustees authorizes and directs the appointment of an Investment Committee with full power to act for the board in the acquisition, sale and management of the securities and funds of the Systems in accordance with the provisions of the Statutes and Investment Policy of the Board. The Board shall review the actions of the Investment Committee at each quarterly Board meeting.

II. The Investment Committee

The Investment Committee consists of five members of the Board of Trustees. Three members of the committee are appointed by the chairperson of the Board of Trustees. In accordance with statute, two positions are filled by the Trustees that were appointed to the board as persons with specific experience (Section 61.645.1.e.2). The committee acts on behalf of the board on investment related matters.

The Investment Committee has the following oversight responsibilities:

- A. Assure compliance with this policy and all applicable laws and regulations.
- B. Approve the selection and termination of service providers. If a situation warrants a termination of an investment manager prior to the next available investment committee, the Chief Investment Officer can terminate an investment manager relationship with a detailed review of the situation to occur at the next investment committee.
- C. Meet quarterly to evaluate whether this policy, the investment activities and management controls and processes continue to be consistent with meeting the Systems' goals. Mandate actions necessary to maintain the overall effectiveness of the program.
- D. Review assessment of investment program management processes and procedures, and this policy relative to meeting stated goals.

III. Staff Responsibilities

The Chief Investment Officer is responsible for administration of investment assets of the Systems consistent with the policies, guidelines and limits established by the law, this Statement of Investment Policy and the Investment Committee.

The Chief Investment Officer receives direction from and reports to the KRS Investment Committee on all investment matters, including but not limited to the following:

- A. Maintaining the diversification and risk exposure of the funds consistent with policies and guidelines.
- B. Monitoring and assessing service providers, including annual onsite visits, to assure that they meet expectations and conform to policies and guidelines.
- C. Assess and report on the performance and risk exposure of the overall investment program relative to goals, objectives, policies and guidelines.
- D. Recommend changes to service providers, statutes, policies or guidelines as needed to maintain a productive relationship between the investment program and its goals; act as liaison on all investment related matters.
- E. Communicating with the mass media and other agencies, entities or institutions regarding investment related issues.
- F. Identify issues for consideration by the Investment Committee and prepare recommendations regarding such matters.

The Chief Investment Officer or designee is authorized to execute trades on fixed income and equity securities (including ETF's) and to execute proxies for the Board consistent with this Policy.

To carry out this Policy and investment related decisions of the Board, the Chief Investment Officer or designee is authorized to execute agreements and other necessary or proper documents pertaining to investment managers, consultants, investment related transactions or other investment functions.

IV. Service Providers

A. Investment Managers

In instances where the Investment Committee has determined it is desirable to employ the services of an external Investment Manager, the following shall be applicable:

1. Investment Managers shall be qualified and agree to serve as a fiduciary to the Systems and shall generally have been in the business of investment management for large United States institutional investors for at least three to five years.
2. Investment Managers shall manage assets in accordance with this Policy and any additional guidelines established by contract, as may be modified in writing from time to time.
3. Total assets assigned to the selected manager shall not exceed 25% of the firm's total assets under management and shall not exceed 25% of a firm's total assets under management in a commingled product. Separate accounts or funds of one are not included in this 25% limit.
4. The assets managed by any one active or passive investment manager shall not exceed 15% of the assets in the pension and insurance funds.

B. Custody Bank

The Board shall hire custodians and other agents who will be fiduciaries to the Systems and who will assume responsibility for the safekeeping and accounting of all assets held on behalf of the Systems and other duties as agreed to by contract.

C. Investment Consultants

Qualified independent investment consultants may be retained by the Systems for asset allocation studies, asset allocation recommendations, performance reviews, manager searches and other investment related consulting functions and duties as set forth by contract.

D. Selection

Qualified investment managers, custody banks, investment consultants and other service providers shall be selected by the Investment Committee. The selection shall be based upon the demonstrated ability of the professional(s) to provide the required expertise or assistance. In order to create an efficient and effective process, the Investment Committee or Chief Investment Officer may, in their sole discretion, utilize RFI, RFP, third party proprietary software or database, review of existing service provider capabilities or any combination of these or other methods to select a service provider. Relevant criteria for the selection of investment managers are contained in the Transactions Procedures statement.

All contact and communication with service providers seeking a business relationship with the Systems shall be directed to the Division Director for that specific asset class. However, this rule is not applicable to existing service providers if the contact or communication is in response to an information request from the Investment Committee or if it is incidental contact not related to specific Systems business.

V. Investment Philosophy

The Trustees of the Kentucky Retirement Systems recognize their fiduciary duty not only to invest the Systems' funds in formal compliance with the Prudent Person Rule but also to manage those funds in continued recognition of the basic long term nature of those systems. The Trustees interpret this to mean, in addition to the specific guidelines and restrictions set forth in this document, that the assets of the three systems shall be proactively managed -- that is, investment decisions regarding the particular asset classes, strategies, and securities to be purchased or sold shall be the result of the conscious exercise of discretion.

The Trustees recognize that, commensurate with their overall objective of maximizing long-range return while maintaining a high standard of portfolio quality and consistency of return, it is necessary that proper diversification of assets be maintained both across and within the classes of securities held to minimize/mitigate overall portfolio risk. Consistent with carrying out their Fiduciary Responsibilities and the concept of Modern Portfolio Theory, the Trustees will not systematically exclude any investments in companies, industries, countries, or geographic areas unless required to do so by statute. Within this context of proactive management and the necessity for adherence to proper diversification, the Trustees rely upon appropriate professional advice from multiple service providers.

The Trustees and other fiduciaries shall discharge their duties with respect to the Systems: (1) solely in the interest of the participants and beneficiaries; (2) for the exclusive purpose of providing benefits to participants and beneficiaries; (3) with the care, skill and caution under the circumstances then prevailing which a prudent person acting in a like capacity and familiar with those matters would use in the conduct of an activity of like character and purpose; (4) impartially; (5) incurring and paying appropriate and reasonable expenses of administration and (6) in accordance with a good faith interpretation of the laws, regulations and other instruments governing the Systems.

Additionally, the Trustees and other fiduciaries shall not engage in any transaction which results in a substantial diversion of the Systems income or assets without adequate security and reasonable rate of return to a disqualified person or in any other prohibited transaction described in Internal Revenue Code Section 503(b).

VI. Investment Objectives

The Board of Trustees realizes that prudent investment management is a duty. In fulfillment of this duty, the Board of Trustees recognizes that while long-term objectives are important, it is also necessary that short-term benchmarks be used to assess the periodic performance of the investment program.

Accordingly, the Board of Trustees has established the following investment objectives:

- Long-Term: Defined as a period of time exceeding twenty years.
 - The total assets of the Systems should achieve a return which exceeds the actuarially required rate of return of 7.50%.
 - In addition to exceeding the actuarially required rate of return, the total fund return should exceed the return achieved by its blended performance benchmark.
- Short-Term: Defined as any period shorter than the defined Long-Term period.

- The returns of the particular asset classes of the System, measured on a rolling basis, should seek to exceed the returns achieved by comparable passive market indices as described in the appropriate Addendum of this statement.

VII. Derivative Securities and Leveraging

Definition:

A derivative is broadly defined as a financial instrument whose value, usefulness, and marketability is derived from or linked to the value of an underlying security.

Definitions and examples in the investment universe include:

Forward Contracts - a forward contract is a non-standardized, Over-the-Counter (OTC) contract between two parties, governed by ISDA agreements, to buy or sell an asset at a specified future time at a price agreed to today. This is in contrast to a spot contract, which is an agreement to buy or sell an asset at a set price today. It costs nothing to enter a forward contract. The party agreeing to buy the underlying asset in the future assumes a long position, and the party agreeing to sell the asset in the future assumes a short position. The price agreed upon is called the delivery price, which is equal to the forward price at the time the contract is entered into. An example of a forward contract is a currency forward contract. Currency forward contracts are commonly used to hedge foreign currency risk, which is an inherent risk of investing in international assets.

Futures Contracts - a futures contract is a standardized, exchange traded contract between two parties to buy or sell a specified asset of standardized quantity and quality at a specified future date at a price agreed to today (the futures price). Futures contracts are not "direct" securities like stocks, bonds, rights or warrants. The party agreeing to buy the underlying asset in the future assumes a long position and the party agreeing to sell the asset in the future assumes a short position. Futures may be settled in cash or physically settled depending on the characteristics of the underlying asset and the specifications of the contract. If futures are physically settled the buyer must make arrangements for taking physical delivery. An example of a futures contract is the S&P 500 Futures contract which is traded at the Chicago Mercantile Exchange. The S&P 500 futures contract is commonly used for equitization of cash held in the equity portfolio of a fund so as to keep un-invested cash levels at a minimum. Futures contracts have many other uses for portfolio managers and are considered a valuable tool for adding flexibility and cost effectiveness to the management of a portfolio.

Options - Options are derivative financial instruments that may be standardized, exchange traded, or OTC contracts that specify a contract between two parties for a future transaction on an asset at a reference price. The buyer of the option gains the right, but not the obligation, to engage in that transaction, while the seller incurs the corresponding obligation to fulfill the transaction. The price of an option is derived from the difference between the reference price and the value of the underlying asset (commonly a stock, a bond, a currency or a futures contract) plus a premium based on the time to maturity, expected volatility, and the interest rate environment. Other types of options exist, and options can in principle be created for any type of valuable asset.

An option which conveys the right to buy an asset is called a call; an option which conveys the right to sell an asset is called a put. The reference price at which the underlying asset may be traded is called the strike price or exercise price. The process of activating an option and thereby trading the underlying asset is referred to as exercising it. While there are several styles of option contracts the two most common are American-style contracts and European-style contracts. American-style options contracts may be exercised at or before expiration while European-style options may only be exercised at expiration. Most options have an expiration date while others have strike reset points. If the option is not exercised by the expiration date, it becomes void and worthless.

In return for assuming the obligation, called writing the option, the originator of the option collects a payment, a premium, from the buyer. The writer of an option must make good on delivering (or receiving) the underlying asset or its cash equivalent, if the option is exercised.

An example of an option contract is an S&P 500 put contract. These contracts may be used by a portfolio manager to purchase downside portfolio protection or may be combined with other options contracts to temper volatility in the portfolio, thus reducing risk.

Swaps and Swaptions – Swaps are derivative financial instruments in which counterparties exchange certain benefits of one party's financial instrument for those of the other party's financial instrument. (Swaptions are simply options on swaps) Most swaps are non-standardized, OTC contracts between two parties and are governed by ISDA agreements. Some types of swaps are also exchanged on public markets such as the Chicago Mercantile Exchange, the Chicago Board Options Exchange, Intercontinental Exchange and Frankfurt-based Eurex AG. The benefits of a swap depend on the type of financial instruments involved. At the initiation of a swap contract, two counterparties agree to exchange one stream of cash flows against another stream. These streams are called the legs of the swap. The swap agreement defines the dates when the cash flows are to be paid and the way they are calculated. Usually at the time when the contract is initiated, at least one of these series of cash flows is determined by a reference point such as an interest rate, foreign exchange rate, equity price or commodity price. The cash flows are calculated on a notional principal amount, which is usually not exchanged between counterparties. Value transfers can be made with cash or collateral depending on contract terms.

An example of a swap contract is an interest rate swap. An interest rate swap is an agreement to exchange a series of cash flows on periodic settlement dates over a certain time period. The duration properties of interest rate swaps are the primary reason for their popularity as an effective portfolio management tool for fixed income managers. If a fixed income manager agrees to pay a floating rate and receive a fixed rate in a swap, s/he will be increasing duration in her/his portfolio.

Warrants - a warrant is a type of derivative security that entitles the holder to buy or sell the underlying stock of the issuing company at a fixed exercise price until the expiry date. Warrants may be either exchange traded or OTC in nature. OTC Warrants are typically long term in nature.

Warrants are frequently attached to bonds (to reduce interest rates for the issuer) or preferred stock (to reduce dividend payments) as a sweetener. Warrants can also be used in private equity deals. Frequently, these warrants are detachable, and can be sold independently of the bond or stock. (Typically traded OTC)

This list is not intended to be an all encompassing list of derivative contracts available for use in the portfolios, but rather, to display a sample of the most common types of contracts and describe the spirit of their intended use in the portfolios.

Derivatives Permitted Use:

KRS permits external managers and Investment Division (Staff) to invest in derivative securities, or strategies which make use of derivative investments, for exposure, cost efficiency and risk management purposes, if such investments do not cause the portfolio to be leveraged beyond a 100% invested position. Any derivative security shall be sufficiently liquid that it can be expected to be sold at, or near, its most recently quoted market price. Typical uses of derivatives in the portfolio are broadly defined below:

Exposure:

Derivatives are an effective way for a portfolio manager to gain exposure to a security that the manager does not want to purchase in the cash market. Reasons for gaining exposure to a security through the use of derivatives may include cheaper transactions costs, liquidity/lack of supply in the underlying market, and the flexibility to implement investment views with minimum portfolio disruption. An example is a cash equitization program.

Cost Efficiency:

Derivatives are often used due to the cost efficiency associated with the contract properties. Given the fact that derivatives can be used as a form of insurance, upfront trading costs must be sufficiently low for investors to purchase the contract and insure their portfolios efficiently. Furthermore, due to properties associated with derivatives and cash outlay characteristics (minimal cash outlay at inception of the contract) derivatives are generally a vehicle of gaining cost efficient exposure. An example is the cost (zero) to purchase a futures contract.

Risk Management:

Derivatives can be used for mitigating risk in the portfolio. When used as a risk management tool, derivatives can significantly reduce an identified financial risk or involuntary risk from investment areas by providing changes in fair values or cash flows that substantially offset the changes in fair values or cash flows of the associated item being hedged. An example is the use of currency forwards to offset periods of dollar strength when international equity markets increase in value, thereby protecting foreign asset gains in the portfolio.

Derivatives Restricted Use:

Settlement:

Investments in futures contracts are to be cash settled unless physically settled and stored by external managers. At no time shall KRS agree to take physical delivery on a futures contract.

Position Limits:

Futures and options positions entered into by KRS, or on its behalf, will comply with all position and aggregate limits established by the local governing authorities within each jurisdiction.

Investment:

Investments in securities such as collateralized mortgage obligation (CMO), planned amortization class (PAC) issues, interest only (IO), principal only (PO), inverse floater, or structured note securities are prohibited unless specifically allowed in a manager's contract and delineated in the manager's guidelines. They will only be allowed if, in the judgment of the investment manager, they are not expected to be subject to large or unanticipated changes in duration or cash flows. IO, PO, inverse floaters, and structured note securities are not allowed for use in cash or core fixed income portfolios.

Over-the-Counter (OTC):

Investments in securities not traded on public exchanges that are deemed Over-the-Counter (OTC) in nature are allowed provided that a counterparty risk monitoring component is delineated in the manager's guideline section of the manager's contract. All counterparties must have a short-term credit rating of at least BBB (Standard and Poor's or Fitch) or Baa2 (Moody's).

All OTC derivative transactions, including those managed through Agency Agreements, must be subject to established International Swaps and Derivatives Association, Inc. (ISDA) Master Agreements and have full documentation of all legal obligations of KRS under the transactions. All ISDA Master Agreements entered into by or on behalf of KRS by the Investment Division (Staff) and external manager pursuant to an Agency Agreement shall provide that Netting applies. (Netting allows the parties to an ISDA Master Agreement to aggregate the amounts owed by each of them under all of the transactions outstanding under that ISDA Master Agreement and replace them with a single net amount payable by one party to the other.) The Investment Division (Staff) and external managers may also use collateral arrangements to mitigate counterparty credit or performance risk. If an external manager utilizes a collateral arrangement to mitigate counterparty credit or performance risk the arrangement shall be delineated in the manager's guideline section of the manager's contract.

Derivatives Applications Not Permitted:**Speculation:**

Except for investments in alternative, absolute return investments, and real return investments, derivatives may not be used for any activity for which the primary purpose is speculation or to profit while materially increasing risk to KRS. Derivatives are considered speculative if their uses have no material relation to objectives and strategies specified by KRS IPS or applicable to the portfolio. Derivatives may not be used for circumventing any limitations or restrictions imposed by the KRS IPS or applicable regulatory requirements.

Leverage:

Leverage is inherent in derivative contracts since only a small cash deposit is required to establish a much larger economic impact position. Thus, relative to the cash markets, where in most cases the cash outlay is equal to the asset acquired, derivative investments offer the possibility of establishing substantially larger market risk exposures with the same amount of cash as a traditional cash market portfolio. Therefore, risk management and control processes must focus on

the total risk assumed in a derivative investment. Leveraging for purposes of enhancing yield or total return is expressly prohibited except for investments in alternative and absolute return investments, and real return investments. Furthermore, the use of leveraged ETF's as a means to circumvent derivatives applications not permitted is expressly forbidden. Investment managers in alternative, absolute return investments, and real return investments strategies are granted the authority to engage in positive leverage to the extent authorized in their offering memorandum and delineated in the manager's guideline section of the manager's contract.

The above is not intended to limit KRS from borrowing to cover short-term cash flow needs nor prohibit KRS from loaning securities in accordance with a securities lending agreement.

VIII. Asset Allocation Guidelines

In establishing asset allocation guidelines the Board recognizes that each system has its own capacity to tolerate investment volatility, or risk. Therefore, each system has been studied and asset allocation guidelines have been established on a system by system basis. The Board will cause the asset allocation guidelines of each system to be reviewed annually. The Board will also undertake an asset liability study every three to five years as determined by program needs.

The intent of the Board of Trustees in allocating funds to the investment managers is for the investment managers to fully invest the funds. However, the Board of Trustees is aware that from time to time the investment manager will require a portion of the allocated funds to be held in cash provided the cash holdings do not exceed three percent (5%) of the manager's allocation for any given quarter, unless such cash holdings are an integral part of a fixed income manager's investment strategy.

The individual plan level asset allocations of the each Pension and Insurance Fund constituent will be reviewed monthly by staff relative to its target asset class allocation. Staff shall reallocate the assets when the actual asset class allocation is within one percentage point of the allowable range boundary, but may also opportunistically reallocate when the actual asset class allocation exceeds the target asset class allocation by a margin of +/- 1 percentage points. See Appendix A and B for current asset allocation targets.

Regarding individual investment manager initial allocations, staff will get approval at the investment committee meeting a specific dollar amount intended to be committed to a closed-end fund such as private equity or real estate funds and will get approval for a percent of plan assets for open-end investments such as public equity, public fixed income, and absolute return managers. For those open-end funds where assets can be added or subtracted, the Chief Investment Officer will have full discretion to reduce an investment manager's allocation and will have limited discretion to add to an investment manager's allocation. Limited discretion is defined as doubling the size of any investment committee approved investment amount of an account that is less than or equal to 1% of total assets or adding an additional 1% of capital to any investment committee approved amount that is greater than 1% of total assets. In neither case will this occur prior to the one-year anniversary of the amount approved by the investment committee.

In keeping with its responsibility as trustee and wherever consistent with its fiduciary responsibility, the board encourages the investment of the fund's assets in investments, funds, and securities of corporations which provide a positive contribution to the economy of the Commonwealth of Kentucky. However, where any security is not a prohibited investment under the governing laws and policies, discretion will be granted to the appointed investment managers in the selection of such securities and timing of transactions consistent with the following guidelines and restrictions.

A. Domestic Equity Investments

Investment may be made in common stock, securities convertible into common stock, preferred stock of publicly traded companies on stock markets, asset class relevant ETF's or any other type of security contained in a manager's benchmark. Each individual domestic equity account shall have a comprehensive set of investment guidelines prepared, which contains a listing of permissible investments, portfolio restrictions and standards of performance for the account.

The internally managed equity index funds are intended, consistent with the governing plan documents, to gain exposure to a broad asset sector to replicate the characteristics of the asset class, to minimize administrative expenses and to help achieve overall portfolio objectives. These objectives can be achieved through several management techniques, including but not limited to, portfolio optimization, non-reinvestment of index dividends and other management techniques intended to help achieve the objectives of the entire pension fund.

B. International Equity Investments

Investments may be made in common stock, securities convertible into common stock, preferred stock of publicly traded companies on stock markets, asset class relevant ETF's or any other type of security contained in a manager's benchmark. Each individual international equity account shall have a comprehensive set of investment guidelines prepared, which contains a listing of permissible investments, portfolio restrictions and standards of performance for the account.

The internally managed equity index funds are intended, consistent with the governing plan documents, to gain exposure to a broad asset sector to replicate the characteristics of the asset class, to minimize administrative expenses and to help achieve overall portfolio objectives. These objectives can be achieved through several management techniques, including but not limited to, portfolio optimization, non-reinvestment of index dividends and other management techniques intended to help achieve the objectives of the entire pension fund.

C. Fixed Income Investments

Fixed Income investments will be similar in type to those securities found in the KRS fixed income benchmarks and the characteristics of the KRS fixed income portfolio will be similar to the KRS fixed income benchmarks. The fixed income accounts may include, but are not limited to the following fixed income securities: U.S. Government and Agency bonds, investment grade U.S. corporate credit, investment grade non-U.S. corporate credit, non-investment grade U.S. corporate credit including both bonds and bank loans, non-investment grade non U.S. corporate credit including bonds and bank loans, municipal bonds, non-U.S.

sovereign debt, mortgages including residential mortgage backed securities, commercial mortgage backed securities, and whole loans, asset-backed securities, and emerging market debt including both sovereign EMD and corporate EMD and asset class relevant ETF's.

Each individual fixed income account shall have a comprehensive set of investment guidelines prepared, which contains a listing of permissible investments, portfolio restrictions, risk parameters, and standards of performance for the account.

D. Private Equity Investments

Subject to specific approval of the Investment Committee of the Board of Trustees, investments may be made for the purpose of creating a diversified portfolio of alternative investments. Private equity investments are expected to achieve attractive risk-adjusted returns and, by definition, possess a higher degree of risk with a higher return potential than traditional investments. Accordingly, total rates of return from private equity investments are expected to be greater than those that might be obtained from conventional public equity or debt investments. They have low correlation to other investment classes and therefore can contribute to reducing the risk and enhancing the returns of a total portfolio, as well as providing portfolio diversification. Examples of such investments include, but are not limited to, venture capital partnerships, private equity, leveraged buyouts and funds, private debt, timberland, oil and gas partnerships, commodities and private placements. While it is expected that the majority of these assets will be invested within the United States, a portion has been allocated to non-US investments. These non-U.S. investments are not restricted by geography.

Guidelines for Private Equity

The private equity market is highly sophisticated and specialized with respect to variety and types of investment structures. There exist major competition for deal flow on the part of both investor and general partners. To a great extent, market forces drive the bargaining of economic terms. Most investment vehicles are structured as commingled vehicles and often blind pool investment partnerships. The most common offering forms are equity private placements where the governing laws of the partnership impose a passive role of the limited partner investor. These contractual arrangements are long-term in nature and provide the general partner or sponsors a reasonable time horizon to wisely invest capital, add value through intensive operational management, then realize the proceeds of such an investment. Moreover, terms of the partnership are proposed by the general partner are critical to the economic incentives and ultimate net performance of the partnership.

Over the long term, KRS will use a specified index plus risk premium approach.

Investment Strategy and Plan Guidelines

To strengthen the diversification of the investments, several guidelines will be utilized in Staff's formulation and recommended annual investment strategy and plan. These guidelines encompass annual commitment levels to the asset class, types of investment vehicles that can be utilized, controlling financing stage risks, industry, manager and geography

concentration/diversification limits, acceptable contact negotiations, appropriate sizes for investments, and the preferred alignment of interests.

Investment Vehicles: KRS will gain exposure to private equity investments by hiring external investment managers either directly or through participation in secondary private equity markets. Typically, the Fund will subscribe as a Limited Partner to limited partnership vehicles sponsored by such specialty external investment managers. KRS may also gain exposure by utilizing the following vehicles: limited liability companies and co-investments alongside the Fund's existing or potential limited partnerships.

Investment Timing Risks: Staff should limit the potential for any one investment to negatively impact the long-term results of the portfolio by investing across business cycles. Moreover, the portfolio must gain exposure to the array of financing stages by opportunistically exploiting the best investments at different stages of the business cycle. Staff may also consider purchasing secondary partnership interests to shorten the effective life of the partnership interest and therefore positively impacting the current and long term net return of the portfolio. In addition, mindful of vintage year diversification, KRS should seek to identify attractive commitments annually, further ensuring the portfolio invests across business cycles.

General Partner Diversification: Staff will seek to work with a variety of general partners due to their specialized expertise in particular segments of the private equity market and source of their deal flow. No more than fifteen (15) percent of the KRS Pension or Insurance total allocation to private equity investments may be committed to any one partnership, without the approval of the Board.

Geographical Diversification: To ensure geographical diversification, the target range for total commitments outside of the United States will be 15-45% through commitments to funds located and or investing both in and outside of the United States.

Industry/Sector Concentration: As fallout of diversified commitments outlined above, it is expected that the portfolio will be generally diversified by sector/industry. KRS will maintain diversification by ensuring:

No more than 35% of total net assets of the private equity portfolio may be invested in a single sector of the domestic economy.

No more than 50% of total net assets of the private equity portfolio may be invested in a single industry within a particular sector.

No more than 10% of total net assets of the private equity portfolio may be invested in any single equity or debt related assets.

Subcategory Strategy

The private equity portfolio includes strategic subcategory classifications including venture capital, buyouts and debt-related. The target percentages set forth below for each category are based on invested capital. For specific plan allocations to Private Equity, Please refer to

Appendix A for the Pension funds and Appendix B for the Insurance funds. All plans will have a policy range of 5% and KRS staff shall periodically review policy ranges targets.

The following sub-asset target allocations are based on market value and will have a range of +/- 10%:

Sub-Category	Target Allocations	Ranges
Venture Capital	10.0%	10-30%
Buyouts	70.0%	50-70%
Debt-Related	20.0%	10-30%

E. Real Estate Investments

Subject to specific approval of the Investment Committee of the Board of Trustees, Investments may be made in equity and debt real estate for the purpose of achieving the highest total rate of return possible consistent with a prudent level of risk. Allowable real estate investments include open-end and closed-end commingled real estate funds, joint venture investments, public and private REITs (real estate investment trusts), public real estate operating companies, and real estate related debt.

Private real estate investments are unique and can be illiquid and long term in nature. Given that this may lead to large short term performance discrepancies versus public benchmarks, KRS more appropriately measures its real estate investments based on both relative return and absolute return methodologies:

Relative Return: The real estate portfolio is expected to generate returns, net of all fees and expenses, in excess of the National Council of Real Estate Investment Fiduciaries Open End Diversified Core Equity Index (“NCREIF ODCE”) lagged 1 calendar quarter.

Absolute Return: The long term real return objective (returns adjusted for inflation) for the KRS real estate portfolio is five percent (5%), net of investment management fees. This return shall be calculated on a time-weighted basis using industry standard reporting methodologies.

KRS has determined that the primary role of the real estate asset class is to provide for the following:

- Attractive risk adjusted returns through active management and ability to access managers with the expertise and capabilities to exploit market inefficiencies in the asset class.

The illiquid nature of real estate investments combined with the complexity of investments makes it difficult for casual investors to effectively access the asset class effectively.

It is the belief that through active management and by investing in top tier managers with interests aligned through co-investment and incentive based compensation, KRS can maximize its risk adjusted returns.

This active management approach will be pursued.

- Diversification benefits through low correlations with other asset classes, primarily the U.S. equity markets.
- Provide a hedge against unanticipated inflation, which real estate has historically provided due to lease structures and the increases in material and labor costs during inflationary periods.
- Permit KRS to invest in unique opportunities that arise due to dislocations in markets that occur from time to time.

Allocation to Real Estate Asset Class

KRS divides the real estate investment universe into core, value-add, opportunistic and public securities sectors, with descriptive attributes of each listed below. It should be noted that targeted returns for each sector denoted in the descriptions below are based on industry guidelines and may vary based on different points in market cycles and changes in general inflation levels.

A. Core Properties

- Operating, substantially leased office, retail, industrial or apartment properties. Several alternative property types may be included in Core such as self-storage, medical office, ground leases, senior housing and triple net leased properties to the extent they exhibit similar risk and return attributes to the traditional Core property types.
- Generally have institutional qualities for size, physical attributes and location.
- Target total returns of 7%-9% per year (net of fees and promoted interest), with a high proportion of the total return to be generated from current income and a small proportion of the total return generated from appreciation.
- Leverage for core properties is moderate with an upper limit of 50% loan to value.

B. Value Added Properties

- Office, retail, industrial or apartment properties that have moderate risk associated with their investment. Several alternative property types may be included in Value-Added such as self-storage, medical office, senior housing and triple net leased properties to the extent they exhibit similar risk and return attributes for Value-Added investments.

- Value-Added investments are targeted to capitalize on defects with specific properties that can be identifiable and correctable through leasing, re-development, management and/or recapitalization.
- Target returns for value added investments are 9% to 12% per year (net of fees and promoted interest).
- Leverage for value added investments is generally limited to approximately 65% loan to value.

C. Opportunistic Investments

- Opportunistic investments can be comprised of any property sector. Opportunistic investments can include office, retail, industrial and apartments with high-risk attributes. In addition, hotels, operating companies, development, land and distressed properties are all examples of opportunistic investments
- Leverage for opportunistic investments can be 75% loan to value or higher in certain cases.
- Opportunistic investments will target returns in excess of 12% (net of fees and promoted interest) in order to compensate for the additional risk commensurate with the increased risk compared to core property investments.

D. Public Securities

- Public Real Estate securities (“Public Securities”) do not allow for control over the assets or management. Examples of public securities may include REITs and CMBS, among others. Investment strategies using public securities may be classified as core, value-add, or opportunistic strategies based on the characteristics of those specific investments and are reviewed on a case by case basis. Real estate strategies utilizing public securities that provide daily liquidity to KRS shall be required to be classified as “Public Securities” under the Investment Policy Statement.
- Public Securities generally have higher risk and return characteristics than Core properties due to higher leverage and operating company risks. In addition, the daily pricing of securities result in additional reported volatility of returns.
- Daily pricing and public market trading provide liquidity. However, due to small float and limited market capitalization of Public Securities, improved liquidity may come at a price.
- The emergence of the international Public Securities market has broadened the universe to include Asia, European, Australian and North American property companies.

- Expected returns are approximately 9%-11% (net of fees) over a 10-year period and 11-13% (net of fees) for non-U.S. Public Securities.

Diversification and Risk Management Guidelines

The policy ranges for the real estate portfolio sectors have been set with reasonably wide ranges in order to allow KRS to capitalize on market inefficiencies and attractive opportunities, while also maintaining a certain level of low risk stability to the portfolio. Since many of the real estate investments will be private market investments in commingled funds, KRS will not have precise control over the actual real estate exposure. Funding, de-funding and rebalancing the portfolio may be protracted (like private equity) due to the asset classes illiquid characteristics.

A. Sector Diversification

KRS will seek to limit investments using the following diversification limits:

	Target	Range
Core:	70%	50% to 90%
Value Added:	20%	10% to 30%
Opportunistic:	10%	0% to 20%
Public Securities:	0%	0% to 20%

B. Investment Vehicles

Due to the size of KRS's portfolio, the preferred investment structure is commingled funds. Exceptions may be for public equity accounts which may be efficiently invested through a separate account or single property investments. Single property investments, outside of a joint venture with an approved property manager or co-investment with an approved real estate fund manager, shall be limited to no more than 5% of the total real estate allocation.

KRS may also consider co-investment opportunities in cases where discounted fees and appropriate diversification can be achieved for a particular investment opportunity.

C. Diversification

KRS will seek to control risk in its real estate investment program by diversifying its investments by investment manager, property type and location diversification.

D. Investment Manager

KRS will limit the amount committed to any one investment manager to the larger of

twenty percent (20%) of the total allocation for real estate investments or 1% of the total funds value at the time of commitment.

E. Property Type Diversification

KRS will seek to limit investments by property type diversification using the following limits:

Office: 0% to 40% of the total allocation

Retail: 0% to 40% of the total allocation

Apartment: 0% to 40% of the total allocation

Industrial: 0% to 40% of the total allocation

F. Other: 0% to 40% of the total allocation (other includes hotels, self-storage, parking, etc.)

Geographic Diversification

The KRS real estate portfolio shall seek to include investments diversified across various locations with different economic concentrations. The portfolio shall be at least 80% invested in U.S. markets.

Diversification will be monitored with respect to major regional areas; e.g. Pacific, Mountain, Southwest, Southeast, Mideast, Northeast, East North Central, West North Central. International monitoring will be carried out in a similar fashion as that used domestically.

G. Total Leverage

KRS recognizes that leverage is an inherent component of real estate investments and use of leverage can be an effective means to increase overall returns from time to time on a risk-adjusted basis. There will be a limit of 65% of the total portfolio placed on the use of leverage.

All portfolio leverage will be secured through the individual fund investments. There will be no recourse debt permitted.

H. Vintage Year Risks

KRS will seek to avoid any concentrated vintage year risks.

F. Real Return Investments

The purpose of the Real Return Portfolio is to identify strategies that provide both favorable stand alone risk-adjusted returns as well as the benefit of hedging inflation for the broader plans. Real return strategies are not necessarily a separate asset class but may include real assets, such as infrastructure, real estate, commodities, and natural resources among others, as well as financial assets that have a positive correlation to inflation. This can include “real” bonds such as TIPs (and other inflation linkers) or “real” stocks such as REITs, MLPs, and oil & gas stocks. Additionally, real return managers may attempt to add value by tactically allocating to various asset classes according to how each asset class performs across an economic cycle and the manager’s perception of where we are in the cycle. The goal is to invest in inflation sensitive assets during inflationary periods, and avoid those assets in deflationary periods, thus providing a positive real return across the cycle.

The real return opportunity set may include numerous vehicles to access a wide variety of investment styles and strategies. These investment vehicles may include mutual funds, ETFs, separately managed accounts as well as hedge funds (open-end limited partnerships) and private equity (close-end limited partnerships). The list of strategies that the KRS Real Return Portfolio may use includes, but is not limited to, the following:

- GTAA (Global Tactical Asset Allocation)/ Global Macro: GTAA or macro strategies are those that make directional bets on major markets or asset classes instead of individual securities. GTAA and macro strategies typically invest in all major assets classes including equity markets, credit and debt instruments, currencies/interest rates, and commodities. These strategies tend to focus on economic factors that would suggest an opportune time to invest in a given asset class, and will change their allocations actively over time. Within a real return portfolio, these strategies may use inflation as the economic factor to gain exposure to and will target a real rate of return over time.
- Inflation Linked Securities are securities that directly tie coupon payments or principal increases to an inflation index, such as CPI. These strategies could include not only US TIPs, but also global sovereign inflation linked bonds, corporate or infrastructure inflation linked bonds, and possibly short duration floating rate bonds.
- Inflation Sensitive Equities include publicly traded equity and equity related securities in companies which have a high sensitivity to inflation in their profit margins via the nature of their operating assets, such as energy companies, basic materials and miners, natural resource stocks, and listed infrastructure. This category can also include REITs, MLPs as well as ETFs and index products on REITS, MLPs, natural resource stocks, etc.
- Commodities: Commodities are the raw materials that are physical inputs into the production process. Managers that invest in liquid commodity strategies using exchange traded futures can span from simple indexing (matching a long-only commodities index), to enhanced indexing or active long (selecting positions that vary from the index but within fairly tight ranges), as well as unconstrained long-short managers.
- Private Property: For the purposes of this policy, private property refers to the ownership of an idiosyncratic, physical asset that is predominately fixed and/or permanent or at least substantially long-

lived. This includes real estate, such as land and any improvements to or on the land, as well as timberland and farmland. Timberland investing involves the institutional ownership of forest for the purpose of growing and harvesting the timber. The timber may be used for furniture, housing lumber, flooring, pulp for paper, woodchips, and charcoal, among other things. Farmland investing entails ownership of land used primarily if not exclusively for agricultural production both for crops, including row crops and permanent crops, as well as livestock. Private property can also include infrastructure investing, which refers to financing the manufacture or development of the underlying fundamental assets and basic systems that are necessary for an economy whereby such assets are largely fixed and long-lived. These tend to be high cost, capital intensive investments that are vital to a society's prosperity and facilitate the transfer, distribution, or production of basic goods and services.

- **Natural Resources:** Natural resources can include investing in the financing, development, extraction, and production of minerals, basic materials, petroleum products, and water as well as renewable resources such as agricultural commodities and solar energy. As opposed to property, the returns generated in these investment strategies come more from the actual production of the resource itself. Further, these are depleting and/or consumable assets that are also portable and fungible and which in the aggregate comprise a majority of the inputs into most measurements of inflation.
- **Private Assets:** Private assets can include tangible or intangible assets that are not easily sold in the regular course of a business's operations for cash, and which are held for their role in contributing directly to the business's ability to generate profit. As the useful life of the asset tends to extend across many years and the assets tend to be capital intensive as well, they have some similarity to private infrastructure. Further, given that the assets contribute directly to the production process as well as often retaining intrinsic value, there is a fundamental link to inflation somewhat similar to natural resources.
- **Other (Opportunistic Inflation Hedge):** Other/opportunistic strategies include those that have a propensity to provide a positive real return or positive correlation with inflation over time. Liquid strategies such as inflation swaps, diversified inflation hedging mutual funds, or nominal bonds backed by inflation sensitive assets may be included in this allocation, while other illiquid strategies that may provide the same real profile can include private equity in inflation sensitive companies, hard asset-backed private credit, and structured inflation-linked products among others.

The Real Return allocation shall seek to achieve the following:

- 1) **Short-term benchmark:** For periods less than five years or a full market cycle, the allocation should achieve an annual rate of return that exceeds the appropriate benchmark (the weighted average return of the underlying investment benchmarks) annually over a complete market cycle, net of all investment management fees.
- 2) **Strategic objective:** For periods greater than five years or a full market cycle, the allocation should not only outperform the short-term benchmark, but also achieve a rate of return that exceeds (CPI + 300 basis points) as well.

Portfolio Guidelines

No more than 35% of the total net assets of the Real Return portfolio may be invested in any one registered investment vehicle, mutual fund, or separately managed account.

No more than 20% of the total net assets of the Real Return portfolio may be invested in any single closed-end or open-end limited partnership or other unregistered investment vehicle.

The relative allocations to the liquid and illiquid portfolios will be determined according to each individual plan's liquidity needs, funding status, and allocation targets on an investment by investment basis. However, no plan shall invest more than 50% of the Real Assets Allocation into the Illiquid Real Assets Portfolio.

G. Cash Equivalent Securities

Selection of particular short-term instruments, whether viewed as liquidity reserves or as investment vehicles, should be determined primarily by the safety and liquidity of the investment and only secondarily by the available yield. The following short-term investment vehicles are considered acceptable: Publicly traded investment grade corporate bonds, variable rate demand notes, government and agency bonds, mortgages, municipal bonds, and collective STIFs, money market funds or instruments (including, but not limited to, certificates of deposit, bank notes, deposit notes, bankers' acceptances and commercial paper) and repurchase agreements relating to the above instruments. Instruments may be selected from among those having an investment grade rating at the time of purchase by at least one recognized bond rating service. In cases where the instrument has a split rating, the lower of the two ratings shall prevail. All instruments shall have a maturity at the time of purchase that does not exceed two years. Repurchase agreements shall be deemed to have a maturity equal to the period remaining until the date on which the repurchase of the underlying securities is scheduled to occur. Variable rate securities shall be deemed to have a maturity equal to the time left until the next interest rate reset occurs, but in no case will any security have a stated final maturity of more than three years.

The Systems' fixed income managers that utilize cash equivalent securities as an integral part of their investment strategy are exempt from the permissible investments contained in the preceding paragraph. Permissible short-term investments for fixed income managers shall be included in the investment manager's investment guidelines.

H. Absolute Return Strategies

The purpose of the Absolute Return Portfolio is to identify strategies that provide both favorable stand-alone risk-adjusted returns as well as the benefit of diversification for the overall plan. Absolute return

strategies, by definition, are not necessarily a separate asset class, but broaden the opportunity set within existing asset classes such as stocks, bonds, currencies and commodities by going both long and short, employing derivatives and leverage, shortening and extending investment horizons, and moving across public and private markets, amongst others. By focusing on the idiosyncratic risks of security selection and often attempting to minimize systematic market risks through hedging activities, absolute return managers can make investment decisions unconstrained by restrictive relative benchmarks such as the S&P 500 or Barclay's Aggregate Bond Index, and add value to portfolios by achieving favorable risk-adjusted returns in most market environments while also reducing overall plan volatility.

The absolute return opportunity set is generally considered to include hedge funds and other strategies attempting to achieve positive returns without heavy reliance on the assumption of traditional systematic risk factors. Investment vehicles used to access this opportunity set can include limited partnerships, but also mutual funds, ETFs, and separately managed accounts, amongst others. Absolute return strategies are extremely heterogeneous, as managers have both greater variability within a strategy and the flexibility to evolve across styles and asset classes. This is a key benefit of absolute return; however, it also makes strategy classifications less meaningful and manager selection significantly more important. It also necessitates relatively broader allowable strategy ranges than in other more traditional asset classes.

The list of strategies that the KRS Absolute Return Portfolio may utilize includes, but is not limited to:

- **Equity Strategies:** Equity based hedge funds are those which primarily purchase listed stocks, long and short, using no to substantial leverage. These strategies may differ across multiple styles such as broad or sector based mandates, geographically focused or global, concentrated versus diversified, long biased or market neutral, or short term trading versus longer term fundamental. Sub-strategies in this category would include fundamental long/short equity, short bias, tactical trading, and equity market neutral.
- **Event Driven:** Event driven strategies also invest in the securities of corporate issuers, including stocks and corporate bonds. However, these strategies will invest based upon specific corporate actions that will change the value of these securities including mergers, spin-offs, tender and exchange offers and bankruptcy or restructuring. These strategies can be flexible across equity/credit, long/short as well as other style characteristics noted earlier. Another critical differentiator among event driven strategies is whether they pursue primarily hard versus soft catalysts. Examples of sub-strategies in this category include merger arbitrage, shareholder activism, multi-strategy event, special situations, and opportunistic value/soft catalyst.
- **Credit Strategies:** Credit strategies are those which focus on the debt side of the capital structure. They may have equity exposure, but the vast majority of the portfolio is invested in credit securities. Similarly, these strategies may be long biased or more hedged, may be more fundamentally based or more quantitative, focus on paying versus non-performing, and shorter term trading versus longer term focused. However, some funds may be focused on structured credit markets, including RMBS and CMBS, and others may move opportunistically across various credit segments. Sub-strategies may include long/short corporate credit, structured credit, and distressed securities.

- **Relative Value:** Relative Value strategies are those that do not invest in the intrinsic value of any individual security, but rather research the historical and/or mechanical relationships between related securities and invest in the spread. For example, they may bet on one bond being overvalued relative to another bond from the same issuer. These strategies are almost always market neutral, but may vary from moderately to highly leveraged, concentrated versus diversified, or from HFT (high frequency trading) to a longer term investment horizon. Examples of sub-strategies in this category include fixed income arbitrage, convertible arbitrage, and statistical arbitrage.
- **Multi-Strategies:** Multi-Strategy hedge funds are those which will actively employ several of the other major hedge fund categories. Typically, hedge funds may do more than one thing, but to be a true multi-strategy, a hedge fund must have meaningful allocations of capital to at least 3 of the other four major categories: equity, credit/event, relative value, and macro/CTA. A true multi-strategy hedge fund should not have 50% to 70% of NAV invested in one strategy or 50% to 70% of the historical return attribution from one strategy. Finally, most multi-strategy hedge funds have their roots in one specific style and have evolved into multi-strategies over time.
- **Global Macro:** Macro strategies are those that make directional bets on major markets or asset classes instead of individual securities. Global macro funds are typically diversified across 3 of the 4 major liquid markets: equity indices, credit/debt, currencies/rates, and commodities. These strategies are often quantitative or discretionary, or shorter term/market timing versus longer term/macroeconomic focused. Finally, some traders may focus largely on certain markets, such as rates or currencies, trading on fundamental economic signals.
- **CTA/Commodity/Currency:** Managed Futures or CTAs will trade the same markets as global macro funds (i.e. equity indices, debt markets, currencies, and commodities) but will focus heavily on price or other technical signals, instead of fundamental or economic data. CTAs tend to be purely systematic (black-box) or discretionary, shorter to longer term and will employ either trend following/momentum strategies or counter-trend/ mean reversion. Similar to macro funds, some CTAs focus purely on certain markets, such as commodities or currencies.
- **Other:** Strategies in this category, sometimes referred to as alternatives to alternatives, tend to be the most highly uncorrelated strategies. These may not be true “alpha” generators, as they often are simply accessing extremely unique and non-competitive markets, looking to harvest systemic risk premia found in these markets. However, the “betas” they are accessing are truly idiosyncratic. These strategies are much smaller and tend to have a bit higher illiquidity than other hedge funds. Examples of sub-strategies that fall in this category would be intellectual property, weather risk, and insurance strategies.

The Absolute Return allocation shall seek to achieve the following.

- 1) Short-term benchmark: For periods less than five years or a full market cycle, the allocation should achieve an annual rate of return that exceeds the appropriate benchmark (HFRI Diversified Fund of Fund Composite), net of all investment management fees, with similar risk relative to the benchmark.
- 2) Strategic benchmark: For periods greater than five years or a full market cycle, the allocation should not only outperform the short-term benchmark, but also achieve a rate of return that exceeds the appropriate long-term benchmark (1 Year Treasury Bill Rate + 500 basis points) as well.

Portfolio Guidelines

No more than 10% of the total net assets of the Absolute Return portfolio may be invested in any one single manager hedge fund. No more than 15% of the total net assets of the Absolute Return portfolio may be invested in any one single separately managed account, mutual fund, or other registered investment vehicle.

No more than 15% of the total net assets of the Absolute Return portfolio allocation may be invested with any one single hedge fund manager strategy (excluding Funds of Funds). No more than 25% of the net assets of the Absolute Return portfolio allocation may be invested with any one single investment manager (excluding Funds of Funds).

As the Absolute Return allocation can invest in various investment vehicles and strategies with differing liquidity profiles, it is important to consider liquidity as a separate risk spectrum. In order to manage the portfolio and provide the system liquidity as necessary, but remain flexible enough to capture returns available in moderately illiquid opportunities, the Absolute Return allocation will adhere to the following liquidity targets:

At all times, at least 25.0% of the Absolute Return portfolio as a whole is to be available in quarterly or better liquidity vehicles.

At all times, no more than 50.0% of the Absolute Return portfolio as a whole is to be committed to vehicles that provide liquidity on a greater than annual basis.

No investments to vehicles with a greater than 5 year lock-up are permitted in the Absolute Return portfolio.

Performance Measurement

The Kentucky Retirement Systems (“KRS”) overall fund performance is measured relative to the KRS Pension or Insurance Total Fund Benchmark. The benchmark is calculated by means of a weighted average methodology. This method is consistent with industry-wide standards and the practices utilized by the CFA Institute. It is the product of the various component weights (i.e., asset classes’ percentages) by their respective performance (returns). Due to market fluctuations and acceptable divergence, the asset classes’ weights (percentages) are often not equivalent to the benchmark’s weights. Therefore, the performance may indicate that the Funds have outperformed (underperformed) relative to their respective benchmarks, even when the preponderance of lesser weighted categories have underperformed (outperformed) their indices.

KRS measures its asset classes, sub-asset classes, sectors, strategies, portfolios, and instruments (investment) performance with indexes that are recognized and published (e.g., S&P 500 & Barclays Aggregate Bond Index). These indices are determined to be appropriate measures of investments and composites of investments with identical or similar investments profiles, characteristics, and strategies. The benchmarks and indexes are intended to be objective, investable, replicable, representative and measurable of the investment mandate and, developed from publicly available information that is acceptable to KRS and the investment manager/advisor as the neutral position consistent with the underlying investor status. KRS’ investment consultant and staff recommend the benchmarks and indexes. These measures shall be subject to the annual review and approval of the KRS Investment Committee and ratification of the Kentucky Retirement Systems’ Board of Trustees.

The KRS Total Fund Benchmarks and sub-components, indexes, are described in Appendix A and B of this document.

The following descriptions represent general standards of measurement that will be used as guidelines for the various classes of investments and managers of the Kentucky Retirement Systems. They are to be computed and expressed on a time-weighted total return basis:

Total Public Asset Class Allocations

Short-term

- For periods less than five years or a full market cycle, the Asset Class Allocation should exceed the returns of the appropriate Index.

Intermediate & Long-term

- For periods greater than five years or one market cycle, the Asset Class Allocation should exceed the appropriate Index, compare favorably on a risk-adjusted basis, and generate returns that rank above the median return of a relevant peer group. Volatility, as measured by the standard deviation of monthly returns, should be comparable to the Index.

Individual Public Security Portfolios: Individual portfolios shall be assigned a market goal or benchmark that is representative of the style or market capitalization of the assignment. Individual accounts should be monitored using the following Standards:

Short-term

- For periods less than five years or a full market cycle, individual portfolios should exceed the returns of their market goal or benchmark.

Intermediate & Long-term

- For periods greater than five years or one market cycle, individual portfolios should exceed the return of their market goal or benchmark, compare favorably on a risk-adjusted basis, and generate returns that rank above the median return of a relevant peer group. Volatility, as measured by the standard deviation of monthly returns, should be comparable to the benchmark.

Alternative Assets:

In addition to exceeding the appropriate benchmark listed in Appendix A and B, the Alternative portfolio should also seek to achieve the following:

Short-term

- Alternative investments should earn a Net IRR that place the investment above the median Net IRR of other similar funds, of the same vintage year, as reported by Venture Economics.

Intermediate & Long-term

- The private equity portfolio should earn a return that meets or exceeds the KRS Private Equity Index. Individual private equity investments should earn a Net IRR above the median Net IRR of other similar funds, of the same vintage year, as reported by Venture Economics.

Real Estate

The Total Real Estate allocation of the fund shall be benchmarked to the appropriate benchmark and are listed in Appendix A and B.

In addition, target returns for value added investments should be 9% to 12% per year (net of fees and promoted interest). Target returns for Opportunistic investments should be in excess of 12% (net of fees and promoted interest) in order to compensate for the additional risk commensurate with the increased risk compared to core property investments.

Real Return

The total Real Return allocation shall seek to :

- (1) Achieve a rate of return that exceeds the appropriate benchmark annually over a complete market cycle (historically 3-5 years), net of all investment management fees.
- (2) Achieve a rate of return that exceeds the appropriate real return composite index over a complete market cycle (historically 3-5 years), net of all investment management fees.
- (3) Achieve a positive risk/reward trade-off when compared to similar style real return Investment Managers.

Absolute Returns

The total Absolute Return allocation shall seek to :

- (1) Achieve a rate of return that exceeds the appropriate benchmark annually over a complete market cycle (historically 3-5 years), net of all investment management fees.
- (2) Achieve a positive risk/reward trade-off when compared to similar style FOF return Investment Managers.

X. Investments Performance Review Procedures

On a timely basis, but not less than quarterly, the Investment Committee, on behalf of the Board of Trustees, will review the performance of the portfolio for determination of compliance with this Statement of Investment Policy. On an annual basis, a comprehensive review of each asset class and underlying portfolios shall be conducted by the staff and presented to the Investment Committee. The review shall consist of an organizational, performance and compliance assessment.

The Compliance Officer shall perform tests at least monthly to assure compliance with the restrictions imposed by this policy. These tests shall be performed at the asset class and total fund level. Quarterly, the Compliance Officer shall prepare a report to the Investment Committee detailing the restrictions tested, exceptions, the cause of the exception and the subsequent resolution. The Investment Committee shall report the findings to the Board of Trustees at the next regularly scheduled meeting.

The following restrictions shall be tested at least monthly:

- ▶ The amount of stock in the domestic or international equity allocation in any single corporation shall not exceed 5% of the aggregate market value of the Systems' assets.
- ▶ The amount of stock held in the domestic or international equity allocation shall not exceed 3% of the outstanding shares of any single corporation.
- ▶ The amount of stock in any one industry in the domestic equity allocation shall not exceed 10% of the aggregate market value of the Systems' assets.
- ▶ Investment in "frontier" markets (those countries not included in the MSCI EM Index) shall not exceed 5% of the System's international equity assets.
- ▶ The duration of the core and global fixed income portfolios combined shall not exceed that of the KRS Fixed Income Index by more than 25% and shall not be lower than 2 years of duration as measured by effective duration, modified duration, or dollar duration.
- ▶ The duration of the TIPS portfolio shall not deviate from the KRS TIPS benchmark by more than 10%.
- ▶ The amount invested in the debt of a single issuer shall not exceed 5% of the total market value of the Systems' assets, with the exception of U.S. Government issued, guaranteed or agency obligations (or securities collateralized by same), and derivative securities used for exposure, cost efficiency, or risk management purposes in compliance with Section VII of this policy.

- ▶ 25% of the fixed income assets must have liquidity that is trade date plus one day settlement and 50% of the fixed income assets must have liquidity that is trade date plus three days or better.

The Chief Investment Officer shall develop a comprehensive set of investment guidelines for each externally managed account. These guidelines should ensure, at the total fund and asset class level, that the restrictions set forth above are preserved.

XI. Additional Items

The KRS Board recognizes that the voting of proxies is an important responsibility in assuring the overall performance of the Fund over a long time horizon. The Board has delegated the responsibility of voting all proxies to an outside Proxy Voting service provider or contracted external investment manager. The Board expects that the proxy voting service will execute all proxies in a timely fashion, and in accordance with the voting policy which has been formally adopted.

The Board has adopted the ISS U.S. Proxy Voting Guidelines as the System's approved Proxy Voting Policy for all internally voted items. This policy is updated at least annually by ISS and hereby incorporated by this reference. The policy can be found publically using the following link:

<http://www.issgovernance.com/files/2012USSummaryGuidelines1312012.pdf>

A. Investment Brokerage Policy dated May 2011

The Investment Committee brokerage policy is hereby incorporated by reference.

B. Transactions Procedures Policy dated November 2014

The Investment Committee transaction procedures are hereby incorporated by reference.

C. Securities Litigation Policy and Procedures dated May 2011

The Investment Committee securities litigation policy and procedures are hereby incorporated by reference.

D. Investment Securities Lending Guidelines dated May 2011

The Investment Committee securities lending policy and procedures are hereby incorporated by reference.

E. Securities Trading Policy for Trustees and Employees dated February 2015

F. Manager and Placement Agent Statement of Disclosure Policy dated August 2012

Signatories

As Adopted by the Investment Committee
Date: November 4, 2015

Signature: DLB
Dr. Daniel L. Bauer
Chair, Investment Committee

As Adopted by the Board of Trustees
Date: December 3, 2015

Signature: Thomas K. Elliott
Mr. Thomas K. Elliott
Chair, Board of Trustees



Kentucky Retirement Systems

Appendix A: Addendum to the Statement of Investment Policy
Pension Fund – Asset Allocation / Benchmark Composite
Effective January 1, 2016

This addendum to the investment policy is issued by the Board of Trustees of Kentucky Retirement Systems (Systems) in connection with investing the pension funds of the Kentucky Employees Retirement System, the County Employees Retirement System and the State Police Retirement System. This document supersedes all prior documents entitled Addendum to the Statement of Investment Policy.

I. Asset Allocation with Benchmarks

KRS Pension Fund - Asset Allocation							
Asset Class	Benchmark	Target					Allowable Range (+/- Target)
		KERS	KERS Hazardous	CERS	CERS Hazardous	SPRS	
US Equity	Russell 3000	22.0%	26.5 %	26.5 %	26.5 %	23.0%	5.0%
Non US Equity	MSCI ACWI Ex-US IMI	20.0%	26.5%	26.5%	26.5%	23.0%	5.0%
Global Fixed Income	Barclays Universal Index	10.0%	6.0%	6.0%	6.0%	9.0%	2.0%
Credit Fixed Income	Barclays US High Yield	12.0%	6.0%	6.0%	6.0%	9.0%	2.0%
Real Estate	NCREIF ODCE	5.0%	5.0%	5.0%	5.0%	5.0%	2.0%
Absolute Return	HFRI Diversified FOF	10.0%	10.0%	10.0%	10.0%	10.0%	2.0%
Real Return	Custom - Allocation Specific	8.0%	8.0%	8.0%	8.0%	8.0%	2.0%
Private Equity ST <5 Yrs	Actual Performance	10.0%	10.0%	10.0%	10.0%	10.0%	3.0%
Private Equity LT 5+ Yrs	Russell 3000 + 300 bps (lagged)						
Cash	Cit Grp 3-mos Treasury Bill	3.0%	2.0%	2.0%	2.0%	3.0%	2.0

II. Total Fund Blended Benchmark Composite

Pension Fund Composite		
US Equity	Russell 3000	25.6%
Non US Equity	MSCI ACWI Ex-US IMI	25.2%
Global Fixed Income	Barclays Universal Index	6.8%
Credit Fixed Income	Barclays U.S. High Yield	7.2%
Real Estate	NCREIF ODCE	5.0%
Absolute Return	HFRI Diversified FOF	10.0%
Real Return	Custom - Allocation Specific	8.0%
Private Equity <Short Term <5 Yrs>	Actual Performance	10.0%
Private Equity <Long Term 5 Yrs+>	Russell 3000 (lagged 1 qtr) + 300 bps	
Cash	Cit Grp 3-mos Treasury Bill	2.2%

At the November 3, 2011 Investment Committee meeting Staff was authorized to combine Public and Private Equity targets and exposures to help manage portfolio risks caused by the unintended overweight to Private Equity, which is caused by the denominator effect over time.

Signatories

As Adopted by the Investment Committee

Date: November 4, 2015

Signature: _____

Dr. Daniel L Bauer

Chair, Investment Committee

As Adopted by the Board of Trustees

Date: December 3, 2015

Signature: _____

Mr. Thomas K. Elliott

Chair, Board of Trustees



Kentucky Retirement Systems

Appendix B: Addendum to the Statement of Investment Policy Insurance Fund – Asset Allocation / Benchmark Composite Effective January 1, 2016

This addendum to the investment policy is issued by the Board of Trustees of Kentucky Retirement Systems (Systems) in connection with investing the insurance funds of the Kentucky Employees Retirement System, the County Employees Retirement System and the State Police Retirement System. This document supersedes all prior documents entitled Addendum to the Statement of Investment Policy.

I. Asset Allocation with Benchmarks

KRS Insurance Fund - Asset Allocation							
Asset Class	Benchmark	Target					Allowable Range (+/- Target)
		KERS	KERS Hazardous	CERS	CERS Haz	SPRS	
US Equity	Russell 3000	26.5 %	26.5 %	26.5 %	26.5 %	26.5 %	5.0%
Non US Equity	MSCI ACWI Ex-US IMI	26.5%	26.5%	26.5%	26.5%	26.5%	5.0%
Global Fixed Income	Barclays Universal Index	6.0%	6.0%	6.0%	6.0%	6.0%	2.0%
Credit Fixed Income	Barclays US High Yield	6.0%	6.0%	6.0%	6.0%	6.0%	2.0%
Real Estate	NCREIF ODCE	5.0%	5.0%	5.0%	5.0%	5.0%	2.0%
Absolute Return	HFRI Diversified FOF	10.0%	10.0%	10.0%	10.0%	10.0%	2.0%
Real Return	Custom – Allocation Specific	8.0%	8.0%	8.0%	8.0%	8.0%	2.0%
Private Equity ST <5 Yrs	Actual Performance	10.0%	10.0%	10.0%	10.0%	10.0%	3.0%
Private Equity LT 5+ Yrs	Russell 3000 + 300 bps (lagged)						
Cash	Cit Grp 3-mos Treasury Bill	2.0%	2.0%	2.0%	2.0%	2.0%	2.0

II. Total Fund Blended Benchmark Composite

Insurance Fund Composite		
US Equity	Russell 3000	26.5%
Non US Equity	MSCI ACWI Ex-US IMI	26.5%
Global Fixed Income	Barclays Universal Index	6.0%
Credit Fixed Income	Barclays U.S. High Yield	6.0%
Real Estate	NCREIF ODCE	5.0%
Absolute Return	HFRI Diversified FOF	10.0%
Real Return	Custom – Allocation Specific	8.0%
Private Equity <Short Term <5 Yrs>	Actual Performance	10.0%
Private Equity <Long term 5 Yrs+>	Russell 3000 (lagged 1 qtr) + 300 bps	
Cash	Cit Grp 3-mos Treasury Bill	2.0%

At the November 3, 2011 Investment Committee meeting Staff was authorized to combine Public and Private Equity targets and exposures to help manage portfolio risks caused by the unintended overweight to Private Equity, which is caused by the denominator effect over time.

Signatories

As Adopted by the Investment Committee
Date: November 04, 2015

Signature: *DL Bauer*
Dr. Daniel L. Bauer
Chair, Investment Committee

As Adopted by the Board of Trustees
Date: December 3, 2015

Signature: *Thomas K. Elliott*
Mr. Thomas K. Elliott
Chair, Board of Trustees