EMPLOYEES' RETIREMENT SYSTEM OF THE STATE OF HAWAII

INVESTMENT POLICY

Last Amended: December 14, 2020

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INTRODUCTION

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A. Introduction

The purpose of this Investment Policy ("Policy") is to provide the Employees' Retirement System of the State of Hawaii ("ERS" or "Plan") with a comprehensive set of guidelines for proper management of its investment decisions. The Board of Trustees of the ERS, in its role as a fiduciary, is obligated to follow a procedurally prudent process when investing the Plan's assets. Fiduciary prudence is based on the conduct of the members of the Board of Trustees ("Trustees") and is evaluated by the *process* through which the Plan's assets are managed.

Evolving legal standards have made clear the legal responsibility of fiduciaries to manage a plan's assets in a prudent manner, and the guidelines contained in this Policy are based on the relevant legislation and regulations confronted by public pension funds. However, the guidelines go beyond simply outlining legally prudent management of investment decisions–they are intended to assist the Trustees in achieving long-term success in investing the Plan's assets.

Success in this context is defined as achieving a long-term return that is needed in conjunction with actuarial defined contributions to fund the plan over time and is reasonable through a fully diversified approach to the capital markets without being too aggressive or conservative as to run the risk of under-achieving a reasonable return.

Today's prudence emphasizes fiduciary responsibility regarding the portfolio and its purpose, rather than on the performance of the plan. Trustees as fiduciaries have the responsibility for the general management of the Plan's assets. They are responsible for setting and overseeing the implementation of the Plan's investment policy, but need not be investment managers or investment specialists and are not responsible for the results of any single investment. Although it is not possible to guarantee investment success, following the process outlined in this Policy will significantly improve the odds of structuring an investment portfolio which will stand up to public scrutiny and benefit the Plan's beneficiaries by providing an acceptable long-run return.

This Policy, although comprehensive in its coverage, does not provide an in-depth analysis of all-important issues, which Trustees must deal with when investing the Plan's assets. It therefore should not be viewed as the only "tool" required by the Trustees for prudent investment management, but rather as one component of the Trustees' "educational tool kit", to be used in conjunction with continuing education and the advice and services of investment consultants and investment managers.

ERS PLAN OVERVIEW

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B. 1. ERS PLAN SUMMARY

The Employees' Retirement System of the State of Hawaii ("ERS" or "Plan") was established by the Hawai'i legislature in 1925. The ERS provides retirement, disability and survivor benefits for employees of the State of Hawai'i ("State") and its counties, including teachers, professors, police officers, firefighters, judiciary employees, judges and elected officials.

Administration of the ERS falls under the policy and executive direction of a Board of Trustees, with certain areas of administrative control vested in the State Department of Budget and Finance. The Board of Trustees consists of eight members ("Trustees"): the State Director of Finance, ex officio; four members of the ERS elected by the membership (two general employees, one teacher and a retiree); and three citizens of the State who are not State or county employees and are appointed by the Governor, two of whom must have at least three years of experience providing financial services, including investments, to public, corporate, or private institutional clients.

The ERS is a tax-qualified governmental pension plan that meets the requirements of section 401(a) of the Internal Revenue Code. As such, the ERS is exempt from federal income taxation on its investment earnings. Since January 1, 1988, member contributions have been tax deferred under Section 414(h) of the Internal Revenue Code.

The ERS has both contributory and noncontributory benefit structures, or "plans." ERS members in the contributory plans are required to make contributions to the ERS and may also be covered by Social Security. The ERS's original benefit structure was a contributory plan. Members of certain occupational groups are required to be members of the original contributory plan. The original contributory plan also includes employees hired before July 1, 1984, who did not elect to join the noncontributory plan, which was established effective July 1, 1984. A new contributory plan (known as the "hybrid plan") was established effective July 1, 2006. Most employees hired after June 30, 2006, as well as employees hired before July 1, 2006, who elected to join the hybrid plan, are members of the hybrid plan.

Members of the noncontributory plan do not make contributions to the ERS and must be covered by Social Security. The noncontributory plan includes most employees hired between July 1, 1984 and July 1, 2006, as well as employees hired before July 1, 1984, who elected to join the noncontributory plan and did not transfer to the hybrid plan.

B. 2. MISSION STATEMENT

The mission of the ERS is to provide superior services to members in a cost-effective manner through qualified personnel while maintaining the highest ethical standards. The mission will be accomplished by ERS in cooperation with the Board of Trustees and the ERS staff through the following objectives:

Exemplary Service	To provide accurate, courteous, and prompt service to ERS members.
Benefit Standards	To provide retirement, disability, and survivor benefits for State and county employees.
Funding Standards	To provide for the long-term funding of ERS on an actuarial basis so that sufficient assets will be accumulated to pay for the statutory benefits of current and future retirees.
Staffing	To attract and retain professional, highly trained staff in an atmosphere conducive to innovation, challenges, and a high level of performance.

Research	To continuously perform studies on pension issues and to compare the ERS with other public and private pension systems.
Management	To manage by leading, planning, organizing, and controlling ERS operations in a cost effective manner for the benefit of ERS members and State and county taxpayers, utilizing personnel, technology and capital efficiently, while providing the highest level of service.
Ethical Standards	To maintain the highest ethical standards.
Investment Return	To obtain a reasonable return on investments consistent with the preservation of principal, while maintaining sufficient liquidity to react to the changing environment and to pay benefits when due.

B. 3. STATUTES

The primary statute pertaining to ERS investments is Section 88-119, Hawai'i Revised Statutes ("HRS"). Section 88-119, HRS, and other statutes pertaining to ERS investments are included in this Manual in Appendix A.

B. 4. ADMINISTRATION

Provisions pertaining to the administration of the ERS are contained in Chapter 88, HRS, and Title 6 (Department of Budget and Finance), Chapters 20-29 (Employees' Retirement System), Hawai'i Administrative Rules.

B. 5. RESPONSIBILITIES OF THE VARIOUS PARTIES

The principal parties include:

- Board of Trustees
- Executive Director
- Investment Staff
- Actuary
- Legal Counsel
- Bank Custodians
- General Investment Consultant
- Real Estate Consultant
- Private Equity Consultant
- Investment Managers

GENERAL RESPONSIBILITIES

1. Board of Trustees

Main Responsibilities

a. Pursuant to Chapter 88, HRS, the general administration of the ERS is vested in the Board of Trustees of the ERS (the "Board of Trustees" or "Board").

b. Responsible for setting investment policies and determining the strategic allocation of investments through the formulation of investment guidelines.

c. Maintains overall responsibility for financial management of the Plan.

d. Appoints the Executive Director of the ERS ("Executive Director") and the Chief Investment Officer of the ERS ("CIO").

e. Selects the ERS's actuaries ("Actuary" or "actuary"), bank custodians ("Custodian" or "custodian"), and investment consultants ("Investment Consultants" or "investment consultants") and determines specific duties, authority, responsibilities, fiduciary status, and forms and amounts of compensation of each.

f. Monitors and evaluates the Actuary, Custodian, Investment Managers and Investment Consultants, as well as the results of the Plan's investments.

g. Reviews and approves strategic and tactical plans.

h. Monitors the portfolio's development and performance through performance reports.

i. The Board of Trustees has formed an Investment Committee to review new investment proposals.

j. Each Trustee is responsible for obtaining and maintaining the necessary training and education required to carry out his/her duties at the ERS. **Trustees may be required to travel to industry conferences and participate in educational forums as opportunities arise.**

2. Executive Director

The Executive Director is responsible for the overall oversight and administration of ERS programs, and cooperates with the CIO in the implementation of the strategic vision and policy direction for the investment program as established by the Board of Trustees.

Main Responsibilities

a. Monitor investment staff compliance with investment policies and procedures.

b. Review and approve investment management contract terms and conditions.

c. Assist CIO in development and implementation of strategic vision for investment operations.

d. Participate as a member of the Internal Executive Investment Committee.

e. Manage procurement process for hiring of investment consultant(s), actuarial, custodial bank and related service providers.

f. Provide accounting and other organizational support necessary for efficient program operation.

g. Monitor, advise and develop in conjunction with the CIO administrative processes applicable to the investment program.

3. Investment Staff (managed by the Chief Investment Officer)

The Investment Staff carries out the investment administration of the Plan on behalf of the Board of Trustees and is responsible to the Board of Trustees through the CIO and Executive Director.

Main Responsibilities

a. The Investment Staff should receive the necessary training and education required to carry out its duties. It may be necessary for Investment Staff to travel to industry conferences and to participate in educational forums as opportunities arise.

b. Responsible for the oversight of ERS's investment portfolio. Monitors and oversees the ERS's external investment managers and the internal investment portfolio.

c. Meets with Investment Managers to review performance and to monitor compliance with investment policies and procedures, and contractual guidelines.

d. Identifies, researches, and selects managers for consideration of investment by the Plan; negotiates fees and contracts; determines appropriate sizing and timing of investment; and terminates investment managers if necessary.

e. Develops search criteria for consultants and custodial banks; participates in the evaluation and selection of investment consultants; and recommends termination of investment consultants if necessary.

f. Oversees security lending programs.

g. Formulates, evaluates, recommends and implements investment policies and procedures for all strategic classes. Conducts ongoing review and maintains the Policy.

h. Monitors performance benchmarks, risk characteristics and performance attribution analysis for the broad investment portfolio, strategic classes and individual investment managers.

i. Implements long-term and short-term strategic allocation plans. Develops programs to efficiently implement strategic allocation decisions, including securities trading and cash management.

j. Develops search criteria, evaluates and participates in the selection of asset transition management firms.

k. Develops and implements investment education and training programs for Investment Staff; recommends training and investment education to Board.

l. Reviews proposed legislation on matters dealing with the ERS's investment programs. Assists the Program Specialist and the Executive Director with drafting of legislative proposals, testimonies and administrative rules.

m. Pursuit of industry certifications: CFA, CAIA, FRM, etc.

n. Participates as advisory board member of designated investment managers or funds.

o. Provides and delivers investment education to the Board of Trustees.

4. Actuary

The Actuary is hired by, and responsible to, the Board of Trustees. However, the Board of Trustees does not have direct control over the work of the Actuary, because the studies do not involve any discretion but rather are based on the "facts" of the Plan and standard actuarial procedures.

Main Responsibilities

a. Measures and evaluates the actuarial soundness of the Plan on an annual basis.
b. Provides actuarial values for the asset/liability study.
c. Performs actuarial studies as requested by the Board of Trustees and the Executive Director.
d. Reviews proposed legislation and provides estimates of the cost impact of the proposed legislation.
e. Performs actuarial evaluations to determine the annual State and county contributions to fund the ERS.
f. Performs annual stress test.
g. Performs experience studies and recommends changes to actuarial assumptions.

5. Legal Counsel

The Attorney General of the State of Hawai'i ("State Attorney General") serves as the legal adviser to the Board of Trustees and staff.

6. Bank Custodian

The Custodian is hired by, and responsible to, the Board of Trustees.

Main Responsibilities

a. Provides a monthly reconciliation of ERS assets between the bank's records and each investment manager's statement.
b. Provides safekeeping and custody of all securities purchased by managers on behalf of the Plan.
c. Provides for timely settlement of securities transactions.
d. Maintains short-term investment vehicles for investment of cash not invested by managers.
e. Checks all investment manager accounts daily to make sure that all available cash is invested.
f. Collects interest, dividend and principal payments on a timely basis.
g. Processes corporate actions.
h. Files and monitors class action settlements on behalf of ERS.
i. Prices all securities at least on a monthly basis, preferably on a daily basis contingent on strategic class and types of securities.
j. Manages a securities lending program.

k. Generally, provides data and reports directly to the ERS and service providers on a regular basis.

l. Provides monthly, quarterly and annual reports.

m. Values and monitors derivatives and the trades from which they emanate.

n. Provides continuing education programs for the Board of Trustees and Investment Staff.

o. Provides a daily compliance report to Investment Staff for ERS public markets managers.

7. General Investment Consultant

The role of the general investment consultant ("General Investment Consultant") is to provide objective, independent third-party advice to the Board of Trustees and to support investment office activities and operations. A General Investment Consultant does not have discretionary decision-making authority on behalf of the Board of Trustees. The General Investment Consultant functions in a research, evaluation, education, and due diligence capacity for the Board of Trustees and maintains a fiduciary responsibility for the quality of the service delivered. General Investment Consultants are identified and hired by, and provide advice and services to, the Board of Trustees.

Main Responsibilities

a. Recommends strategic procedures and processes.

b. Upon the request of the Board of Trustees, prepares a strategic allocation study.

c. Assists Investment Staff with investment manager structure, selection, monitoring and evaluation.

d. Measures and evaluates the overall performance of the portfolio.

e. Carries out special projects at the request of the Board of Trustees, Executive Director or Investment Staff.

f. Provides continuing education to the Board of Trustees and Investment Staff.

g. As deemed appropriate by Investment Staff and the General Investment consultant, sources and conducts due diligence on prospective investments.

8. Real Estate Consultant

The role of the real estate consultant ("Real Estate Consultant") is to provide objective, independent third-party advice to the Board of Trustees needed to support investment office activities and operations. The Real Estate Consultant functions in a research, evaluation, education, and due diligence capacity for the Board of Trustees and maintains a fiduciary responsibility for the quality of the service delivered. Real Estate Consultants are identified and hired by, and provide advice and services to, the Board of Trustees.

Main Responsibilities

a. Recommends investments, strategic procedures and process.

b. Develops the annual core and non-core real estate strategic plans with input from Investment Staff and the General Investment Consultant.

c. Oversees the implementation of the separate account tactical plan process.

d. Assists Investment Staff with investment manager structure, selection, monitoring and evaluation.

e. Measures and evaluates the overall performance of the core and non-core real estate programs.

f. As requested, represents the ERS as a member of advisory boards.

g. Available to administer required portfolio level control and monitoring systems.

h. Carries out special projects at the request of the Board of Trustees, Executive Director, and Investment Staff.

i. Provides continuing education to the Board of Trustees, Executive Director, and Investment Staff.

9. Private Equity Consultant

The role of the private equity consultant ("Private Equity Consultant") is to lead the implementation of the private equity program. The Private Equity Consultant maintains a certain level of discretionary decision-making authority on behalf of the Board of Trustees. The Private Equity Consultant operates in a variety of capacities for the Board of Trustees including education, evaluation, sourcing, selection, fiduciary, and implementation. Private Equity Consultants are identified and hired by, and provide advice and services to, the Board of Trustees and act as fiduciary for assets under their management.

Main Responsibilities

a. Leads implementation of the private equity program.

b. Develops the annual strategic plan with input from Investment Staff and the general investment consultant.

c. Recommends use of specialty investment managers, if applicable.

d. Sources and conducts due diligence on prospective investments.

e. Maintains dialogue with Investment Staff regarding the investment pipeline and due diligence.

f. Completes an investment disclosure form and submit to Investment Staff for review prior to closing into a prospective investment.

g. Acts as a fiduciary regarding investment discretion and advice.

h. Measures and evaluates the overall performance of the private equity portfolio.

10. Investment Managers

The role of Investment Managers is to manage assets, within a specified mandate, on behalf of the ERS in a fiduciary capacity. The specific relationship (including, for example, fees, investment restriction, etc.) between each Investment Manager and the Board of Trustees is outlined in the investment management contract or manager agreement between the specific Investment Manager and the ERS.

11. Fiduciary Responsibilities of Trustees

The duties and responsibilities of the Board of Trustees are governed and limited by Hawai'i statutes and laws. In the past, the Board of Trustees has also looked to general trust law, such as outlined by the Third Restatement, Trusts, for guidance as to its duties and responsibilities regarding the investment of ERS assets. In connection with the foregoing, the Board of Trustees has adhered to the following:

a. Except as otherwise provided by law, administer ERS investments solely in the interest of Plan participants.

b. Approve written investment policies, monitors and documents the process. In doing so the Trustees must:

   i. Determine the Plan's missions and objectives.

   ii. Choose an appropriate strategic allocation strategy.

   iii. Establish specific investment policies consistent with the Plan's objectives.

c. Diversify assets with regard to specific risk/return objectives for the participants/beneficiaries.

d. Use "prudent experts" to support investment decisions and monitoring.

e. Control investment expenses.

f. Monitor the activities of the Executive Director, Investment Staff, and investment consultants.

g. Avoid conflicts of interest.

The Board of Trustees, Executive Director, and Investment Staff should regularly undertake continuing education relevant for their duties. Specifically, all Trustees and key Investment Staff should participate in educational programs which provide basic instruction on the four primary components of the investment management process:

a. Fiduciary responsibility and procedural process.

b. Developing investment policy guidelines and designing investment manager structures.

c. Implementing investment policies.

d. Evaluating and controlling an investment program.

12. Statutory Protection

Under Hawaii law, non-trustee ERS employees generally are protected from personal liability for tortious acts taken in the performance of their public duty, unless there is clear evidence that their acts were motivated by malice, and not by an otherwise proper purpose.

Section 26-35.5, HRS, is applicable to members of boards and commissions, including the Trustees. As it pertains to the Trustees, Section 26-35.5 generally protects Trustees from <u>personal</u> liability in civil actions for damages or loss resulting from acts or omissions in their capacity as a Trustee <u>unless</u> the individual acts with a malicious or improper purpose.

More specifically, Section 26-35.5(b), HRS, states that:

> Notwithstanding any law to the contrary, no member shall be liable in any civil action founded upon a statute or the case law of this State, for damage, injury, or loss caused by or resulting from the member's performing or failing to perform any duty which is required or authorized to be performed by a person holding the position to which the member was appointed, unless the member acted with a malicious or improper purpose, except when the plaintiff in a civil action is the State.

Section 26-35.5(c), HRS, describes the circumstances in which Trustees will be indemnified by the State in civil actions arising under federal law, the laws of another state, or the law of a foreign jurisdiction.

Section 26-35.5, HRS, also contains subsections describing when indemnification is not available and when the State Attorney General will provide representation.

B. 6. CODE OF ETHICS

Trustees and Staff

The State Code of Ethics is contained in Chapter 84, HRS. The State Code of Ethics applies to Trustees and to all ERS employees, including Investment Staff. The State Code of Ethics includes the following requirements and prohibitions:

1. Trustees and ERS employees may not solicit or accept gifts that will influence the performance of their duties.
2. Trustees, ERS employees, former Trustees and former ERS employees may not disclose confidential ERS information or use confidential ERS information for their personal gain or the benefit of anyone else.
3. Trustees and ERS employees may not use their ERS position to secure unwarranted privileges for themselves or others.
4. Trustees and ERS employees must disqualify themselves from making any decision or recommendation on a matter in which they have a substantial financial interest.
5. Trustees and ERS employees may not, within twelve months after leaving an ERS position, represent a person or organization for compensation on ERS matters.

Trustees and Staff are responsible for familiarizing themselves with the requirements of the State Code of Ethics and for adhering to the provisions of the Code.

B. 7. DELEGATION OF AUTHORITY

Under general trust law, trustees may, and for many purposes do, delegate authority to properly selected and supervised agents. The Board has statutory authority to hire an Executive Director, a CIO, investment advisors, and legal counsel. Consistent with generally accepted fiduciary standards referenced in this Policy, while the Board of Trustees is able to delegate authority concerning the buying and selling of securities and other investments, they may not totally abdicate their fiduciary responsibilities. The duty of prudence requires that the Board of Trustees establish parameters and guidelines for investment, set controls to be maintained, and monitor the performance of the investment advisors and staff.

B. 8. CONFLICTS OF INTEREST

Trustees and Staff

Section 84-14, HRS, entitled "Conflicts of Interests," is part of the State Code of Ethics. Section 84-14 applies to Trustees, Administrative and Investment Staff. In part, Section 84-14 prohibits Trustees, Executive Director (ED) and Investment Staff from taking any official action directly affecting a business or other undertaking in which the Trustee, ED or Investment Staff member has a substantial financial interest, or directly affecting a private undertaking in which the Trustee, ED or Investment Staff member is engaged as legal counsel, adviser, consultant, representative or agent capacity. The State Ethics Commission has issued an "Ethics Guide for Elected Officials, Employees, Members of Boards and Commissions." The main points from this Guide are:

1. Trustees and staff must act in good faith and not allow their personal interests to prevail over the interest of the ERS.
2. Trustees and staff shall conduct themselves so as to avoid even the appearance of any illegal or unethical conduct, and shall at all times do their utmost to carry out their duties with courtesy and in a professional manner.
3. Trustees and staff should exclude themselves from discussions and/or votes the results of which would or could affect that person's immediate family, or any other entity in which that person has an ownership or other financial interest.
4. If a Trustee or staff is not sure whether his/her interest constitutes a conflict, such Trustee or staff shall fully disclose his/her interest and the Board should refer the matter to the State Attorney General or State Ethics Commission for advice. Until an advisory is issued, the Trustee or staff should exclude himself/herself from discussions and/or voting on the matter in question.
5. Trustees and staff shall disclose before the discussion of the issue any conflict or possible conflicts of interest. The Trustee or staff shall recuse himself/herself from participating in any discussion, votes, or other decision making on the matter. The recording secretary shall note for the minutes the Trustee's or staff's disclosure.

ERS GENERAL INVESTMENT OVERVIEW

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C. 1. ERS INVESTMENT PLAN SUMMARY

1. Primary Goal

The preservation of capital is of primary concern of the Employees' Retirement System of the State of Hawaii ("ERS" or "Plan"). The Board of Trustees of the ERS ("Board of Trustees" or "Board") seeks preservation of capital with a consistent, positive return for the Plan. Although pure speculation is to be avoided, the Board recognizes that a return in-line with the actuarial rate is associated with a certain degree of risk. Risk to be assumed must be considered appropriate for the return anticipated and consistent with the total diversification of the Plan.

2. Structure

The ERS implements a risk-based, functional framework for allocating capital within the total portfolio. This framework makes use of strategic/functional classes that in-turn utilize underlying asset classes and strategies. Each of these classes is designed to achieve a certain goal (e.g., Diversifying Strategies class) and/or be exposed to a specific set of macroeconomic risks that are common amongst the different strategy types and/or assets within the class (e.g., Broad Growth class). As a result of this structure, each strategic class is expected to be exposed to a set of major and minor macroeconomic risks. Each program's policy section contains a list of the relevant macroeconomic risks. Definitions for each of these macroeconomic risks can be found in Appendix B of this Manual.

a. *Evolving Strategic Allocation Targets*

ERS' long-term policy is implemented in phases as outlined below.

Implementation Plan for Long-term Policy			
	Current (7/1/2020)	7/1/2021	7/1/2022
Broad Growth	72%	67.5%	**63%**
Diversifying Strategies	28.0%	32.5%	**37%**
Total Portfolio	*100%*	*100%*	***100%***

b. *Current Strategic Allocation Target Ranges (7/1/2020)*

The ERS will be invested according to the following strategic class targets and ranges:

	Lower Limit	Target	Upper Limit
Broad Growth	62%	72%	82%
Diversifying Strategies	18%	28%	38%
Opportunities	0%	0%	3%

The Chief Investment Officer of the ERS ("CIO") may set the actual class levels anywhere within the upper and lower limits above. For deviations in excess of +/- 3%, the CIO shall provide regular ongoing justifications for the deviations. Adjustments in the above targets may be reviewed in conjunction with the annual strategic allocation review. The general consultant should conduct a formal strategic allocation study at least every three years for the Board of Trustees to verify or amend the strategic targets and ranges.

c. *Total Investment Portfolio Evaluation Benchmark*

To monitor the total investment portfolio result, a custom benchmark is constructed to measure the target mix. This target benchmark mix will evolve over time, but it is based on the above-highlighted evolving allocation targets and the broad benchmarks listed below (i.e. evolving weights x benchmark return).

- Broad Growth Blended Benchmark[1]
- Diversifying Strategies Blended Benchmark[1]

Individual ERS investment managers ("Investment Managers" or "investment managers") <u>will not</u> be measured against this total investment portfolio objective. However, it is expected that the sum of their efforts will exceed the objective over time.

C. 2. INVESTMENT MANAGEMENT POLICY

1. Manager Discretion

The investment managers shall be given full discretion to manage the assets under their supervision subject to this Investment Policy, Guidelines, and Procedures manual ("Manual"), their assigned mandate, the laws of the State of Hawai'i ("State"), and their investment management agreements with the ERS.

2. Manager Evaluation

Individual investment managers will be measured against an appropriate benchmark, index and peer group as appropriate. Relevant manager evaluation benchmarks are stated in investment management agreements with the ERS.

3. Policy on Local Managers

The Board of Trustees wishes to utilize qualified local firms in the management of a portion of the ERS's assets. Due to the size of the ERS's portfolio and the fiduciary responsibility of the board members to select qualified firms in accordance with overall Board investment strategy, the following guidelines have been established for the identification, selection and evaluation of Hawai'i-based investment management firms.

a. It shall be the policy of the Board to allocate assets to local investment managers in accordance with the Board's strategic allocation and long-term investment policies.

[1] Refer to program section for detailed description of benchmark, and possible evolving benchmark timeline.

b. The asset mix of the combined local investment managers' portfolios shall be determined under a fiduciary framework with respect to the overall portfolio and relevant strategic classes.

c. Evaluation of Local Firms

   i. All local firms retained by the Board of Trustees shall be evaluated in a similar fashion as all other investment managers within the same strategic class.

C. 3. REPORTING REQUIREMENTS FOR INVESTMENT MANAGERS

1. Investment Managers of Liquid Mandates

Investment managers of liquid mandates must abide by the reporting requirements stated within their investment management agreements.

2. Investment Managers of Illiquid Mandates

Investment managers of illiquid mandates must abide by the reporting requirements stated within their partnership agreements.

C. 4. SECURITIES LENDING GUIDELINES

The policies and guidelines governing the securities lending program shall pertain to the Custodian, unless such services are contracted otherwise. A *separate contract*, distinct from the custody relationship, detailing the type of securities lending relationship and program is both mandatory and essential in the treatment of securities lending as, foremost, an investment function with the associated risks and return implications, and fiduciary responsibility.

On an annual basis, the Custodian shall provide a detailed report of the ERS's securities lending activities. This summary shall be the basis for verification that the Custodian is complying with these securities lending guidelines. After reviewing the report provided by the Custodian, the General Investment Consultant shall prepare a report summarizing the ERS's securities lending activity and compliance with the ERS's policies.

1. Objective

The Custodian, as the ERS's securities lending agent, receives cash or government securities (defined below) as collateral for loans of their securities to approved borrowers. On an ongoing basis, the securities lending agent identifies eligible collateral and, in the case of cash collateral, the opportunity for a market rate of return consistent with allowed investment latitude and thereby seek to generate positive program spreads.

The securities lending agent must exercise investment discretion consistent with the overall objective of preserving principal; providing a liquidity level consistent with market conditions and the lending and trading activities of the ERS; and maintaining full compliance with stated guidelines and statutory provisions. The securities lending agent shall exercise prudence and expertise in managing the cash collateral reinvestment function.

3. Program Guidelines

Maintenance of the integrity and operational functionality of the securities lending program shall be pursued with utmost diligence. The securities lending agent shall have documented policies and procedures in place detailing the following if not stipulated in the securities lending contract for both domestic and international securities.

a. *Borrower Limits/Creditworthiness*

b. *Acceptable Collateral*

c. *Marking to Market*

d. *Corporate Actions/Distributions*

e. *Proxy Voting Limitations*

f. *Recall of Loaned Securities*

g. *Revenue Splits*

h. *Valuation and Reporting of Loaned Securities and Cash Collateral Reinvestments*

i. *Borrower Risk (Default)*

j. *Cash Collateral Reinvestment Risk*

k. *Operational Negligence*

l. *Counterparty Indemnification*

m. *Other relevant policies*

The securities lending agent shall at all times exercise prudence and due care and shall comply at all times with Section 88-121.5, Hawai‘i Revised Statutes and all other applicable laws, rules and regulations of federal, state, and local entities or agencies having jurisdiction, including but not limited to banking and securities regulatory bodies, taxation authorities and the US Department of Labor.

4. Collateral Management

The securities lending agent shall exercise prudence and reasonable care in discharging its discretion in the investment management of cash and non-cash collateral, including asset/liability (gap) management that is appropriate relative to the market environment or conditions that the securities lending agent is operating in. Provided that the management of collateral, specifically cash, imposes the greater risk, the securities lending agent shall adhere to the overall investment objective of ERS. Policies regarding issuer, credit, exposure and rating limits utilized in the securities lending program per investment vehicle shall be under the full discretion of the provider, and appropriate and consistent with the stated general guideline. Issues such as exposure guidelines, prohibited securities for cash investment, duration strategies, and matched and mismatched book are both strategic and tactical investment functions and shall be consistent with the above objective.

Initial Collateral levels will not be less than 102% of the Market Value of the Borrowed Securities, or not less than 105% if the borrowed securities and the Collateral are denominated in different currencies. Marking-to-market is performed every business day subject to de minimis rules of change in value, and the Borrower is required to deliver additional Collateral when necessary so that the total Collateral held by the securities lending agent for all loans to the Borrower of all participating lenders will at least equal the market value of all the borrowed securities of all participating lenders loaned to the Borrower.

Listed below are the cash and non-cash Collateral guidelines specifying eligible investments, credit quality standards, and diversification, maturity and liquidity requirements. Except for Prior Purchased Assets[2], all requirements listed in these guidelines are effective at the time of purchase of any security or instrument as a cash Collateral investment and at the time of receipt of any non-cash Collateral. Agent will make use of market standard settlement methods for cash investments and non-cash collateral including the use of a tri-party custodian as approved by Agent's appropriate risk committee. Settlement through a tri-party custodian may result in cash collateral being held on deposit at the tri-party custodian.

a. *Cash Collateral Guidelines*

i. Investment Objectives

Cash Collateral of the Collateral Account is invested to seek the following objectives:

1. preservation of capital
2. maintenance of liquidity, and
3. maximization of current income to the extent consistent with (a), and (b), above by investing cash Collateral in accordance with the guidelines stated below. Within quality, maturity, and market sector diversification guidelines, investments are made in those securities Agent judges to offer the most attractive relative yields.

ii. Investment Guidelines

A separate cash Collateral account shall be maintained for each currency, subject to the eligibility rules below. Cash Collateral shall be denominated in either U.S. Dollars or Euro currency, and shall be invested in securities or instruments managed under the following guidelines:

b. *Eligible Investments:*

i. Securities and Exchange Commission (SEC) Rule 2a-7 money market mutual funds.

ii. Securities issued or guaranteed as to principal and interest by the Government of the United States or issued or guaranteed by agencies or instrumentalities thereof.

[2] There may be certain assets held as Collateral that complied with the requirements of a prior version of these guidelines then in effect at the time of purchase of such assets, but that may not meet these latest guidelines (such assets termed "Prior Purchased Assets"). Such Prior Purchased Assets may continue to impact the overall securities lending portfolio accordingly. The securities lending agent may, at its sole discretion, hold such Prior Purchased Assets until maturity, or as otherwise determined by it.

iii. High-grade commercial paper and commercial paper master notes, whether or not registered under the Securities Act of 1933, as amended, and promissory notes. Obligor shall have a short-term rating not lower than "A-1, P-1 or F-1", at time of purchase.

iv. Corporate obligations, including the banking industry, which are marketable and rated high-grade. At the time of purchase, either the long-term rating shall not be lower than "AA-, Aa3", or the equivalent thereof, or the short-term rating shall not be lower than "A-1, P-1, or F-1" if less than one year remaining until maturity. Obligations may include fixed, floating and variable rate notes and bonds.

v. Asset backed securities, at the time of purchase, shall have either a long-term rating of "AAA, Aaa" or the equivalent thereof, or a short-term rating not lower than "A-1, P-1, or F-1" if less than one year remaining until maturity. Mortgage-backed securities are not considered asset backed securities for purposes of this restriction. Asset backed securities must be collateralized by credit cards, auto receivables, equipment trusts or student loans.

vi. Certificates of deposit and other bank deposit obligations of U.S. banks or U.S. branches or subsidiaries of foreign banks. At the time of purchase, the issuing bank must have either a short-term issuer debt rating not lower than "A-1, P-1, or F-1" or a long-term issuer debt rating not lower than "AA-, Aa3", or the equivalent thereof.

vii. Bankers' acceptances issued by U.S. banks or issued in the U.S. by branches or subsidiaries of foreign banks. At the time of purchase, the issuing bank must have either a short-term issuer debt rating not lower than "A-1, P-1, or F-1" or a long-term issuer debt rating not lower than "AA-, Aa3", or the equivalent thereof.

viii. Repurchase agreements with respect to the following types of collateral and repo counterparties:

ix. U.S. government securities, agencies, sovereigns, supranationals, commercial paper, municipal bonds, asset-backed securities, mortgage-backed securities (only pass-throughs), corporate bonds (investment grade and high yield), and equities

x. The credit worthiness of the repurchase agreement counterparties shall be monitored by Agent's internal risk committee.

xi. Sovereign debt obligations (other than U.S. Government obligations). At the time of purchase, either the long-term rating shall not be lower than "AA-, Aa3" or the equivalent thereof, or the short-term rating shall not be lower than "A-1, P-1, or F-1" if less than one year remaining until maturity.

xii. Interests or units in any short-term investment fund (including, without limitation, such funds of the ERS's Custodian Bank and any of its affiliates) that invests in any or of the types of investments approved above.

xiii. Capped floaters, provided that Agent shall notify Lender of the usage of such securities and shall employ appropriate risk assessment and manage expertise as specified by the Office of the Comptroller of the Currency.

xiv. Constant Maturity Treasury ("CMT") floaters, provided that Agent shall notify Lender of the usage of such securities and shall employ appropriate risk assessment and manage expertise as specified by the Office of the Comptroller of the Currency.

c. Maturity/Liquidity

The "maturity" of a security or instrument (or "maturities" for more than one security or instrument) shall be defined as follows:

i. The shorter of the date on which the principal amount is ultimately required to be paid or the put date under a demand feature, or

ii. Variable rate eligible U.S. Government and U.S. Agency obligations shall have a maturity equal to the date of the next readjustment of the interest rate, or

iii. The maturity of a pooled investment fund shall be the number of days required to liquidate an investment in the fund under normal market conditions, or

iv. Asset-backed securities shall have a maturity equal to such security's weighted average life (i.e. the average time to receipt of expected cash flows on the security).

A minimum of 60% of the cash portion of the Collateral Account shall be invested in securities which have a maturity (as herein defined) of 97 days or less.

A minimum of 20% of the cash portion of the Collateral Account shall be available each business day. This may be satisfied by maturities (as herein defined), or demand features.

The rate sensitivity or weighted average maturity, as measured to the shorter of the remaining time until the interest rate reset (if applicable) or maturity, of the cash portion of the Collateral Account will be limited to 60 days.

The weighted average maturity, as measured to maturity (as herein defined), of the cash portion of the Collateral Account shall not exceed 120 days.

The maturity of fixed rate investments may not exceed 13 months from the date of purchase. The maturity of floating rate Eligible Investments, including the maturity of variable rate eligible U.S. Government and U.S. Agency securities (as measured to final maturity date, not the next readjustment of interest rate), may not exceed 2 years.

d. Diversification

Subject to the following exceptions, a maximum of 5% of the cash portion of the Collateral Account may be invested in securities or instruments of any one issuer or obligor. Exceptions are as follows:

i. 100% of the cash portion of the Collateral Account may be invested in obligations issued or guaranteed by the U.S. Government or its agencies/instrumentalities

ii. 25% of the cash portion of the Collateral Account may be invested with any one counterparty in repurchase agreements collateralized by U.S. Government or U.S. Government agency securities

iii. 10% of the cash portion of the Collateral Account may be invested with any one counterparty in repurchase agreements collateralized by eligible securities other than U.S. Government or U.S. Government agency securities.

iv. Residual cash balances, which cannot be invested into the marketplace, shall not be subject to diversification limits.

e. General Ratings Provisions:

The ratings above must be designated by at least two Nationally Recognized Statistical Rating Organizations ("NRSROs"), or if only rated by one NRSRO, then rated at the time of purchase in the minimum rating category specified by that NRSRO, as above. For the avoidance of doubt, if all three NRSROs rate the obligation, then the obligation is eligible as long as two NRSRO ratings meet the minimum criteria. In the event that the obligation is not rated, the issuer rating shall be considered with respect to the class of comparable short-term obligation or long-term obligation.

f. Prohibited Transactions and Securities

The following transactions and securities are not permitted as direct investments of Cash Collateral:

i. Additional leverage, which shall mean that Lender may not further lend Eligible Investments in the Collateral Account.

ii. Highly leveraged, structured notes

iii. Range floaters, COFI floaters, Dual Index floaters inverse floaters and leveraged floaters

g. Non-Cash Collateral Guidelines

Listed below are the non-cash Collateral investment guidelines for eligible Collateral.

i. <u>Investment Guidelines</u>

Non-cash eligible instruments may consist of the following:

ii. <u>Eligible Investments</u>

1. Obligations issued or guaranteed by the U.S. Government or its agencies or instrumentalities thereof

2. Obligations issued or guaranteed by OECD (Organization for Economic Cooperation and Development) member states or their local governments, agencies or authorities

3. Canadian Provincial Debt

4. Equity securities, which are part of U.S. and non-U.S. indices (including, but not limited to U.S., U.K., EMU, Japan, Canadian and Australian markets), as approved by Agent's internal risk committee from time to time; and

5. Such other Collateral as the parties may agree to in writing from time to time.

iii. Credit Quality

6. Eligible Instruments as named above may be accepted without limit.

iv. Diversification

1. Eligible Instruments as named above may be accepted without limit.

h. Operation of the Collateral Account

i. Income

Income earned from the investment of cash Collateral, net of (i) expenses, including but not limited to, transaction accounting and reporting expenses, auditing fees, brokerage fees and other commissions, and any miscellaneous expenses, (ii) any applicable withholding of tax, (iii) loan rebate fees paid or accrued to the borrowers, and (iv) any adjustments to provide for regular returns, together with loan fees for loans Collateralized by non-cash Collateral, are distributed to Lender of the Collateral Account on a monthly basis.

On a monthly basis, a portion of the income earned by Lender on a loan on any business day may be withheld by Agent and transferred to income earned on a different loan for that Lender on any other business day if on that day one or more rebates due or accrued to borrowers with respect to one or more loans should exceed the income earned from the cash Collateral supporting those loans. If, despite such transfers, during any month total rebates payable exceed total revenues with respect to any loan or loans of Lender, the net shortfall shall be charged against positive undistributed earnings from other loans of Lender to the extent thereof, and any remaining shortfall shall be allocated between the Lender and the Agent in the same proportions as positive securities lending revenues. Any amounts thereby payable by the Lender shall be the personal obligation of Lender and shall be due and payable upon the Lender's receipt of Agent's invoice for such amounts. Agent may withhold (and Lender is deemed to grant to Agent a lien upon) future loan revenues, and any other property of the Lender then or thereafter in the possession of Agent, to secure the payment of such obligation. Notwithstanding the foregoing, however, all other Collateral losses shall not be shared between the Lender and the Agent to any extent but shall be allocated as provided in the Agreement or these guidelines.

Incidental expenses, (e.g., negative float due to payment advances) incurred in the administration of the Collateral Account are recovered against incidental receipts, (e.g., positive float from pending balances) similarly arising and any remaining balance is added to the lending revenues for the benefit of Lender. Net realized short-term capital gains or losses (if any) may be distributed (or charged) from time to time.

ii. Net Asset Value

Lender hereby directs Agent to maintain the cash portion of the Collateral Account as a fund comprised of units having a constant net asset value of $1.00 per unit and

to value the fund using the amortized cost method (acquisition cost as adjusted for amortization of premium or accretion of discount) for that purpose. Agent will not determine or monitor the fair market value of the investments as a means of comparing the unit value with the market value of its investments. Lender hereby represents and confirms on a continuing basis throughout the term of this Agreement that such a method of valuation and account maintenance is consistent with all laws, rules, regulations and accounting procedures applicable to Lender.

The cash portion of the Collateral Account intends to maintain a constant net asset value within minimum tolerances established by Agent's senior management. There is no guarantee, however, that the cash portion of the Collateral Account will be able to attain that objective. The Collateral Account is not registered under the Investment Company Act of 1940 as a money market fund, is not subject to regulation by the Securities and Exchange Commission and does not comply with federal regulations governing registered money market mutual funds.

In no event shall Agent be personally liable to restore any loss within the Collateral Account, unless the loss was directly caused by the negligence or intentional misconduct of Agent.

iii. Trading Policy

Although the Collateral Account will generally not engage in short-term trading, the Agent may dispose of any portfolio security prior to its maturity if, on the basis of a revised credit evaluation of the issuer or other considerations, Agent believes such disposition is advisable. Subsequent to its purchase, a portfolio security or issuer thereof may be assigned a lower rating or cease to be rated. Such an event would not necessarily require the disposition of the security, if the continued holding of the security is determined to be in the best interest of the Lender. In any event, Agent will notify Lender as soon as reasonably practicable if any security is downgraded after initial purchase below the minimum requirements set forth in these investment guidelines.

C. 5. STRATEGIC ALLOCATION REBALANCING GUIDELINES

1. Rebalancing Assets within the Strategic Allocation

One essential component of a strategic allocation policy is the development and use of rebalancing ranges for the target allocation. According to several studies, systematic rebalancing should reduce portfolio volatility and increase a portfolio's risk-adjusted return. Using the ERS's long-term strategic target allocation, the greatest enhancement to investment performance (i.e., enhancing the annualized return while lowering the risk) is achieved by the rebalancing within the ranges described in C.1. ERS Investment Plan Summary.

The Investment Staff will maintain the classes within their target ranges primarily by using cash flows, although the actual allocations will be rebalanced whenever a class is outside of its strategic target range. The Board of Trustees should review the targets and ranges annually for reasonableness relative to significant economic and market changes, and relative to changes in the ERS's long-term goals and objectives.

If the Plan has positive cash flow (i.e., contributions exceeding disbursements), Investment Staff has the discretion to rebalance by directing new moneys to the under allocated strategic classes on a pro-rata basis. If the Plan has negative cash flow, Investment Staff has the discretion to withdraw moneys to be disbursed from over allocated strategic classes. In each case, the CIO shall keep the Executive Director and the Board of Trustees apprised of current asset movements. Managing strategic allocations in this manner should not incur any additional transaction cost beyond what would have been normally incurred to liquidate or invest assets.

Certain strategic classes have more subjective rebalancing ranges relative to their target allocations. Concerns of liquidity and the long-term horizon for these investments suggest a more infrequent rebalancing schedule. Accordingly, other more qualitative considerations (e.g., transaction costs, liquidity needs, investment time horizons, etc.) regarding the timing of rebalancing certain elements within certain asset classes will be important to consider with the guidelines shown above.

2. Rebalancing Investment Style/Mandate Allocations Within Strategic Classes

Investment Staff is responsible for maintaining appropriate style and mandate weightings, consistent with the respective strategic classes' risk profile(s). Investment Staff and/or the applicable investment consultant shall regularly report style and mandate weightings, and their deviations from policy, to the Board. Any adjustments that cause a material change to a strategic class' risk profile requires Board approval.

3. Single Manager Portfolio and Firm Allocation Limits for Active Mandates

In order to minimize any potential risk associated with large concentrations of the ERS's portfolio assets being managed in a single manager portfolio or by a single firm, the following limits have been put in place:

a. *No single equity manager portfolio shall represent more than 5% of the total ERS portfolio and*

b. *No single manager/firm, when all active mandates associated with that manager/firm are aggregated, shall represent more than 10% of the total ERS portfolio.*

If any single manager portfolio or manager/firm's active assets exceed these limitations, Investment Staff shall provide the Board its solution to reallocate funds from that portfolio or manager/firm within the portfolio to reduce the concentration within a reasonable time period.

The Board may exclude certain firms from these limits.

Exemptions:

Gateway Investment Advisers, the ERS's covered calls manager, was granted a temporary exemption from the single manager portfolio limit at the September 14, 2015 Board meeting.

C. 6. PORTFOLIO TRANSITIONS

From time to time, the ERS will have a need to restructure its portfolios as a result of manager performance or strategic allocation changes. The Board of Trustees, acting on recommendations and suggestions of the Investment Staff and investment consultants, will decide to undertake actions to allocate assets to maintain optimal strategic class weightings and/or to individual managers. Investment Staff will maintain desktop procedures that detail the asset transition decision process and will follow the asset transition steps. Investment Staff will maintain coordination and communication throughout the transition process with other ERS staff and outside parties. During the trade and post-trade processes Investment Staff will evaluate the performance of manager(s) by means of various reports. The CIO will report transition highlights to the Executive Director and the Board when appropriate.

C. 7. RESPONSIBLE INVESTING

The ERS strives to integrate and consider Responsible Investing practices in overseeing the System's assets. This practice aims for a balance between the System's financial goals and needs and the investment's impact on society by the actions of the corporation or entity in which the investment is made.

Falling within the realm of Responsible Investing is the consideration of environmental, social, and corporate governance (ESG) factors, where ESG describes the three main areas of concern that have developed as the central factors in measuring the sustainability and ethical impact of an investment in a company or business. Within these three areas are a broad set of concerns that are increasingly being included in the nonfinancial factors that figure in the valuation of equity, real estate, infrastructure, and fixed income investments. Examples include but are not limited to, a company's carbon footprint, human rights, employee gender and ethnic diversity and non-discrimination, climate change, and effective board oversight. ESG factors have the potential to affect the economic value and performance of an investment now and in the future. Sound corporate governance policies and practices play an important role in protecting economic value while enhancing value for long-term plan participants and beneficiaries. The ERS strives to incorporate ESG into its investment process to identify and select investment partners that share in its alignment of utilizing ESG factors when evaluating the value and risk of portfolio companies.

Upon the encouragement by the House of Representatives of the Twenty-sixth Legislature of the State of Hawai'i, Regular Session of 2012, the ERS will continue to apply the principles of Responsible Investing in investment practices and decisions where possible, and encourages other investment counselors and money managers to apply Responsible Investing to their investment portfolios. The ERS believes that these considerations align with its goal to provide strong long-term investment results to the System.

The following sections outline the ERS's policies and efforts that pertain and support the practice of Responsible Investing:

1. Proxy Voting
2. The Global Sullivan Principles
3. Anti-Terrorism Policies
4. Sudan Policies
5. United Nations – Supported Principles for Responsible Investment (PRI)
6. HiTIP Policies and Procedures (Created by the ERS to fulfill the mandate of Act 260, "A Bill For An Act Relating To The Innovation Economy.")

1. Proxy Voting

The ERS has a fiduciary responsibility to act solely in the best interest of its members and beneficiaries and the right to vote proxies is considered by the ERS as an important part of its fiduciary duty. The ERS will use its rights as an active shareholder to manage risks and hold companies in which they invest accountable for the business decisions the company makes.

The ERS has established comprehensive proxy voting and reporting guidelines that can be customized as necessary to further align the policy with the System's specific interests.

As a starting point, the ERS elected to utilize the *Public Pension Policy* established by Glass, Lewis & Co.to guide proxy voting decisions. The *Public Pension* guidelines are designed to ensure compliance with the special fiduciary responsibilities of public pension plan sponsors in voting proxies on behalf of public employees. The guidelines are designed for investors with extremely long-term investment horizons. While the recommendations reflect analysis and identification of both financial and corporate governance risk, the guidelines also include consideration of stakeholder interests in making proxy voting decisions. The guidelines encourage increased reporting and disclosure on the part of portfolio companies including executive compensation, governance, labor practices and the environment. Glass Lewis evaluates the *Public Pension* guidelines on an ongoing basis and formally updates them on an annual basis if needed. Additionally, the ERS can further adjust the voting policy to reflect the System's specific ESG preferences and beliefs.

The ERS shall retain a proxy voting administrator to aggregate, research, and vote the ERS's proxies related to the Plan's applicable public markets separate accounts. The proxy voting administrator shall have delegated authority to vote the ERS's proxies according to guidelines selected/customized by the ERS. On an ongoing basis the proxy voting administrator shall review the ERS's proxy voting guidelines and annually, or more frequently if necessary, update the guidelines if needed. The proxy voting guidelines are designed to ensure compliance with the fiduciary responsibilities of public plan sponsors voting proxies on behalf of the Plan's participants. The proxy voting administrator shall report to the ERS the proxies voted on behalf of the Plan at least annually, or more frequently upon request.

The ERS reserves the right to delegate proxy voting authority to any managers not able to adhere to the proxy guidelines selected by the ERS, where proxy voting authority cannot be delegated to the Plan's proxy voting administrator (i.e. public equity commingled funds), or where the manager votes proxies only on rare occurrence (i.e. fixed income mandates). Any investment manager voting proxies on behalf of the Board will do so with the primary objective of maintaining and advancing the economic value and interests of ERS members. ERS also requests these investment managers, as part of their investment discretion and fiduciary responsibility, to take into consideration the importance of the Corporate Governance Policies promulgated by the Council of Institutional Investors, proxy voting guidance available through the CFA Institute, and the Global Sullivan Principles. Investment Staff, with the assistance of the applicable investment consultants, shall poll these managers annually as to their proxy voting policies. A letter affirming compliance with the manager's proxy voting guidelines will be requested from these applicable managers on an annual basis. The ERS may request from each manager reports of the proxy votes cast on the ERS's behalf for review.

Corporate Governance Policies
Council of Institutional Investors
(reprinted from www.cii.org)

The ERS believes in carrying forward the Council of Institutional Investors' (CII) goal of instituting strong governance standards at public companies and strong shareholder rights. CII believes effective

corporate governance and disclosure serve the best long-term interests of companies, shareholders and other stakeholders. CII supports shareholders' discretion to employ a variety of stewardship tools to improve corporate governance and disclosure at the companies they own, which includes casting well-informed proxy votes. The ERS encourages its investment managers and proxy voting provider to use the *Corporate Governance Policies* established by the CII to guide proxy voting decisions when casting votes on behalf of the ERS.

The Council expects that corporations will comply with all applicable federal and state laws and regulations and stock exchange listing standards.

The Council believes every company should also have written disclosed governance procedures and policies, an ethics code that applies to all employees and directors, and provisions for its strict enforcement. The Council posts its corporate governance policies on its web site (www.cii.org); it hopes corporate boards will meet or exceed these standards and adopt similarly appropriate additional policies to best protect shareholders' interests.

In general, the Council believes that corporate governance structures and practices should protect and enhance accountability to, and ensure equal financial treatment of, shareholders. An action should not be taken if its purpose is to reduce accountability to shareholders.

The Council also believes shareholders should have meaningful ability to participate in the major fundamental decisions that affect corporate viability, and meaningful opportunities to suggest or nominate director candidates and to suggest processes and criteria for director selection and evaluation.

The Council believes companies should adhere to responsible business practices and practice good corporate citizenship. Promotion, adoption and effective implementation of guidelines for the responsible conduct of business and business relationships are consistent with the fiduciary responsibility of protecting long-term investment interests.

The Council believes good governance practices should be followed by publicly traded companies, private companies and companies in the process of going public. As such, the Council believes that, consistent with their fiduciary obligations to their limited partners, the general members of venture capital, buyout and other private equity funds should use appropriate efforts to encourage companies in which they invest to adopt long-term corporate governance provisions that are consistent with the Council's policies.

The Council believes that U.S. companies should not reincorporate offshore because corporate governance structures there are weaker and therefore reduce management accountability to shareholders.

Council policies neither bind members nor corporations. They are designed to provide guidelines that the Council has found to be appropriate in most situations.

2. Proxy Voting Guidance for ERS Investment Managers with Delegated Proxy Authority

To meet their fiduciary duty with regard to corporate governance, investment managers must follow adequate procedures concerning the voting of proxies. When ERS managers are given the responsibility to vote proxies, they must adopt procedures to ensure that issues are noted, analyzed, and considered before voting. Investment managers must be thoroughly familiar with the issues that arise in proxies. Proxies have economic value and must be voted in the interest of the ultimate shareholder or plan beneficiary. Investment managers cannot simply vote without adequate examination of the underlying issues. Managers of this type may refer to the CFA Institute for general proxy voting guidance. The

skills and experience of the professional investment community, particularly the research and analytic skills, can be used effectively in corporate governance issues, which will ultimately benefit corporations and shareholders alike and enhance the competitiveness of business in global markets. Good corporate governance and good investment decisions go hand in hand.

3. The Global Sullivan Principles

a. Preamble

The objectives of the Global Sullivan Principles are to support economic, social and political justice by companies where they do business; to support human rights and to encourage equal opportunity at all levels of employment, including racial and gender diversity on decision making committees and boards; to train and advance disadvantaged workers for technical, supervisory and management opportunities; and to assist with greater tolerance and understanding among peoples; thereby, helping to improve the quality of life for communities, workers and children with dignity and equality. I urge companies large and small in every part of the world to support and follow the Global Sullivan Principles of corporate social responsibility wherever they have operations.

Feb. 1, 1999
The Rev. Leon H. Sullivan

b. Principles

As a company which endorses the Global Sullivan Principles we will respect the law, and as a responsible member of society we will apply these Principles with integrity consistent with the legitimate role of business. We will develop and implement company policies, procedures, training and internal reporting structures to ensure commitment to these principles throughout our organization. We believe the application of these Principles will achieve greater tolerance and better understanding among peoples, and advance the culture of peace.

Accordingly, we will:

i. Express our support for universal human rights and, particularly, those of our employees, the communities within which we operate, and parties with whom we do business.

ii. Promote equal opportunity for our employees at all levels of the company with respect to issues such as color, race, gender, age, ethnicity or religious beliefs, and operate without unacceptable worker treatment such as the exploitation of children, physical punishment, female abuse, involuntary servitude, or other forms of abuse.

iii. Respect our employees' voluntary freedom of association.

iv. Compensate our employees to enable them to meet at least their basic needs and provide the opportunity to improve their skill and capability in order to raise their social and economic opportunities.

v. Provide a safe and healthy workplace; protect human health and the environment; and promote sustainable development.

vi. *Promote fair competition including respect for intellectual and other property rights, and not offer, pay or accept bribes.*

vii. *Work with governments and communities in which we do business to improve the quality of life in those communities – their educational, cultural, economic and social well-being – and seek to provide training and opportunities for workers from disadvantaged backgrounds.*

viii. *Promote the application of these principles by those with whom we do business.*

We will be transparent in our implementation of these principles and provide information which demonstrates publicly our commitment to them.
5/26/99

Source of Global Sullivan Principles: mallenbaker.net,
http://www.mallenbaker.net/csr/CSRfiles/gsprinciples.html, 11/05/03

ERS has a fiduciary responsibility to act solely in the interest of its members and beneficiaries. Therefore investment managers voting proxies for the board will do so with the primary goal of maintaining or increasing the economic interests of ERS.

4. Anti-Terrorism Policy

a. Introduction

Since 9/11, attention has been focused on the potential security threats certain countries and specific companies pose to the United States of America. The ERS Board of Trustees recognize the heightened awareness of security risks and the fact that public pension funds have come under increased pressure from the general public to divest from companies that do business in countries that support terrorism. On the surface this issue may appear simple and straightforward, but in reality it is very complex and requires information that is not currently available to public pension funds. A policy as simple as requiring divestiture from all companies that do business in certain countries may actually work to the detriment of US foreign policy objectives and needlessly damage US companies and jobs. The Board maintains its fiduciary obligations to the members of the System as its top priority. This requires the Board to act prudently and in the exclusive interest of participants in the management of System assets. In an effort to balance their fiduciary obligations with their moral and ethical responsibility as citizens of the United States of America, the Board of Trustees is hereby establishing this Anti-Terrorism Investment Policy.

b. Background on US Foreign Policy Related to Countries Supporting Terrorism

In the area of foreign policy, regulations and sanctions are complex and continually changing to address the needs of US national security. The US State Department maintains an official list of countries that the US deems to be supporting international terrorism. The countries included on this list and the regulations and sanctions that apply in these countries change frequently. Unfortunately, a list of companies that are deemed to be supporting terrorism is not publicly available at this time. The fact that a company may have a business link to a listed country does not mean that the US government believes the company is supporting terrorism. In many cases, the US government allows business relationships because they believe they further US policy goals via the contracts and leverage that trade and other business connections

create. Placing investment restrictions that would discourage business relationships in these countries could actually run counter to US anti-terrorism initiatives in some instances. As a result of the complexities and lack of public information in this area, ERS must rely upon federal agencies such as the Securities and Exchange Commission and the State, Commerce, Justice and Treasury Departments to provide factual information regarding companies that are supporting terrorism. To date, this information has not been available to ERS or any other public pension fund. Quite simply, factual information that ERS would need to prudently divest from these companies is not available.

This policy is intended to avoid 1) discriminating against companies whose activities abroad are supported by the US government; 2) discriminating against companies whose activities abroad do not further terrorism; 3) unnecessarily harming US companies and jobs; and 4) compromising the Board's fiduciary duties to the beneficiaries of the System. Recognizing the dynamic nature of the issue, annually Investment Staff will evaluate this policy to determine if changes need to be made to reflect recent developments in this area. In the event that Investment Staff believes changes to this policy are warranted, they will bring the issue to the attention of the Board of Trustees for consideration.

5. Sudan Investment Policy

Act 192, Session Laws of Hawai'i 2007, expresses the State's desire to not participate in ownership of companies that provide "significant practical support" for genocide activities as currently being conducted by the Sudanese government in the Darfur region. The ERS Board of Trustees wishes to recognize its agreement with the intent of Act 192 and to abide by its requirements. The Board, however, also applies a decision framework of acting for the exclusive benefit of ERS Plan participants. In this respect, the Board recognizes that divestment activities could potentially increase the portfolio's idiosyncratic investment risk. Therefore, divestment guidelines and procedures should seek to minimize the impact of a specific divestment policy (such as Sudan divestment) upon the investment results of the portfolio.

The Board has determined to use the following procedures to comply with Act 192 by requiring the CIO, or another designated member of Investment Staff, to:

a. *Assemble a list of all direct holdings in "scrutinized companies"[3];*

b. *Review publicly available information regarding companies with business operations in the Sudan provided by nonprofit organizations (e.g., the Sudan Divestment Taskforce) and other appropriate parties;*

c. *Send written notice informing companies of their scrutinized company status and the possibility that they may become subject to divestment;*

d. *Monitor other institutional investors that have divested from or engaged with companies that have business operations in Sudan;*

e. *Consider divestment or other corrective actions to the extent reasonable with due consideration for among other things, return on investment, diversification, and the System's other legal obligations;*

[3] Reference Act 192, Section 2. Definitions of "Scrutinized Company."

f. *Inform the ERS's equity investment managers of Board decisions as related to the above processes; and*

g. *Review and update progress of scrutinized companies on a quarterly basis.*

This policy is intended to avoid: 1) discriminating against companies whose Sudan-related business activities are supported by the U.S. government; 2) discriminating against companies whose Sudan-related business activities do not support genocide activities; 3) unnecessarily harming U.S. companies and jobs; and 4) compromising the Board's duties to the beneficiaries of the ERS.

6. United Nations – Supported Principles for Responsible Investment ("PRI")

In May 2018, the ERS became a signatory of the United Nations – *Supported Principles for Responsible Investment.* The six *Principles for Responsible Investment* are a voluntary and aspirational set of investment principles that offer a selection of possible actions for incorporating environmental, social, and corporate governance issues into investment practice. The signatories' commitment is as follows:

"As institutional investors, we have a duty to act in the best long-term interests of our beneficiaries. In this fiduciary role, we believe that environmental, social, and corporate governance (ESG) issues can affect the performance of investment portfolios (to varying degrees across companies, sectors, regions, asset classes and through time).

We also recognize that applying these Principles may better align investors with broader objectives of society. Therefore, where consistent with our fiduciary responsibilities, we commit to the following:

- *Principle 1: We will incorporate ESG issues into investment analysis and decision-making processes.*
- *Principle 2: We will be active owners and incorporate ESG issues into our ownership policies and practices*
- *Principle 3: We will seek appropriate disclosure on ESG issues by the entities in which we invest.*
- *Principle 4: We will promote acceptance and implementation of the Principles within the investment industry.*
- *Principle 5: We will work together to enhance our effectiveness in implementing the Principles.*
- *Principle 6: We will each report on our activities and progress towards implementing the Principles.*

The Principles for Responsible Investment were developed by an international group of institutional investors reflecting the increasing relevance of environmental, social and corporate governance issues to investment practices. The process was convened by the United National Secretary-General.

In signing the Principles, we as investors publicly commit to adopt and implement them, where consistent with our fiduciary responsibilities. We also commit to evaluate the effectiveness and improve the content of the Principles over time. We believe this will improve our ability to meet commitments to beneficiaries as well as better align our investment activities with the broader interests of society.

We encourage other investors to adopt the Principles."

Source: https://unpri.org

As part of its commitment to the PRI, the ERS shall report on an annual basis its progress in implementing the PRI's Six Principles.

7. Hawaiian Targeted Investment Program (HiTIP)

HiTIP was initiated to fulfill the mandate of Act 260, "A Bill For An Act Relating To The Innovation Economy" passed by the Legislature and signed by the Governor in July 2007. The stated purpose of Act 260 is "to encourage the employees' retirement system to invest in Hawai'i venture capital…"

The legislation pertains to HiTIP in that HiTIP targets investments that are directly a part of the Hawaiian community.

A full account of the Hawaiian Targeted Investment Program can be found in Section H Hawai'i Targeted Investment Program Policies and Procedures.

C. 8. POLICY FOR THE USE OF PLACEMENT AGENTS

The ERS shall require the specific and timely disclosure of payments and compensation to Placement Agents[4] in connection with the ERS's investments. This Placement Agent Policy is intended to apply broadly to all investment contracts made by the ERS. The goal of this Placement Agent Policy is to provide transparency into actual payments and help ensure that the ERS investment decisions are made solely on the merits of the investment opportunity in accordance with the Board of Trustees' fiduciary responsibility, and to avoid the appearance of undue influence on the Board or Staff or illegal pay-to-play practices in the award of investment related contracts. Each investment manager shall provide information to determine if any such pay-to-play practices exist. Such information shall be provided prior to the closing of an investment opportunity.

1. Investment Manager Placement Agent Disclosures

Each investment manager shall provide to the ERS the required information listed below. The investment manager must notify the Investment Staff of any changes to any of the information required.

a. Required Disclosure of Payments Made to Placement Agents

i. A written statement of whether the investment manager or any of its principals, employees, agents or affiliates has compensated or agreed to compensate any person or entity to act as a Placement Agent in connection with the ERS's investments.

[4] "Placement Agent" includes any person or entity hired, engaged, retained by, acting on behalf of or serving for the benefit of an investment manager or on behalf of another Placement Agent as a third-party marketer, finder, solicitor, marketer, consultant, broker, or other intermediary to market, solicit, obtain access to the ERS, and/or raise money or investments either directly or indirectly from the ERS. Notwithstanding the foregoing, an individual who is an employee, officer, director, equity holder, partner, member or trustee of an investment manager and who spends one-third or more of his or her time, during a calendar year, managing the securities or assets owned, controlled, invested or held by the investment manager is not a Placement Agent.

ii. The name of the Placement Agent and resumes of the relevant Placement Agent(s) involved with ERS' investment.

iii. Description of any and all compensation paid or agreed to be paid to the Placement Agent, including payment to employees of the investment manager who are retained in order to solicit, or who are paid based in whole or in part upon, an investment from the ERS.

iv. Description of the services rendered or the services expected to be performed by the Placement Agent.

v. Name of the regulatory agencies the Placement Agent or any of its affiliates are registered with, such as The Securities and Exchange Commission (SEC), the Financial Industry Regulatory Association (FINRA), or any similar regulatory agency; proof and details of such registration shall be included, or an explanation as to why no registration is required.

b. *Required Disclosure of Relationships to the Board and; Campaign Contributions*

i. To the best of their knowledge, full disclosure of any connection between the Placement Agent or the investment manager and the ERS, including whether anyone receiving compensation or who will receive compensation with respect to an investment from the ERS from the Placement Agent or the fund manager is: a current or former ERS Board Member, ERS employee, or ERS consultant; a member of the immediate family of anyone connected to or formerly connected to the ERS; a current or former elected or appointed official of the State and/or cities and counties of the State, a current or former employee of the State and/or cities and counties of the State; or anyone seeking to be elected to public office of the State and/or cities and counties of the State or a member of his/her campaign organization or a political action committee.

ii. To the best of their knowledge, full disclosure of the donations made by the Placement Agent or the investment manager during the prior 24-month period to any organization (including contributions to political campaign funds and donations to non-profits) in which any person listed in Paragraph 2.a is an officer, employee, or member of the Board or Advisory Board (or similar body). Additionally, any subsequent donations made by the Placement Agent or the investment manager to any such organization during the time the Placement Agent or the investment manager is receiving compensation in connection with a the ERS investment shall also be disclosed.

iii. To the best of their knowledge, full disclosure of the names of any current or former members of the Board, ERS employees or investment consultants who suggested the retention of the Placement Agent to the investment manager.

c. *Responsibilities of Staff and Consultants*

At the time that investment discussions between an investment manager and the ERS for a prospective investment commence, Investment Staff is responsible for providing investment managers and Placement Agents with a copy of this Placement Agent Policy.

Investment Staff and investment consultants must confirm that the applicable Placement Agent disclosures have been received prior to the completion of due diligence and completion of any

recommendation to proceed with the decision to invest with the investment manager. For new contracts and amendments to existing contracts, the ERS will:

i. Stop investment negotiations with an investment manager who refuses to disclose the required information;

ii. Decline the opportunity to retain or invest with an investment manager who has used or intends to use a Placement Agent who is not registered with the SEC, FINRA, or any similar regulatory agency and cannot provide an explanation as to why no registration is required; and

iii. Investment Staff and investment consultants will assist legal counsel as necessary to secure in the final contract terms and side letter agreements between the ERS and the investment manager, including but not limited to, the following:

iv. The investment manager's agreement that it has complied with and will continue to comply with this Placement Agent Policy.

v. The investment manager's representation and warranty that it will notify the Investment Staff of any changes to any of the information required above.

At any meeting where an investment decision with an investment manager will be considered, Investment Staff and the applicable investment consultants must notify the Board of the name(s) of any Placement Agent(s) used by the investment manager in connection with the proposed investment, and any campaign contributions or gifts reported by each Placement Agent.

Staff must maintain records of all information disclosed to the ERS in accordance with this policy and provide the Board with notice of any violation of this policy as soon as practicable.

d. Responsibilities of Counsel

Legal counsel to the ERS must secure in the final contract terms and side letter agreements between the ERS and the investment manager all requisite agreements and representations and warranties by the investment manager for compliance in accordance with this Placement Agent Policy.

e. Responsibilities of the Board

The Board must review all violations of this Placement Agent Policy reported by Investment Staff, consider whether each violation is material, and consider recommendations from Investment Staff and the Executive Director whether to prohibit that investment manager and/or Placement Agent from soliciting new investments from the ERS for a certain period from the date of the determination.

C. 9. BOARD OF TRUSTEES DISCRETIONARY ACCOUNT GUIDELINES

The ERS Investment Staff shall only hold U.S. Dollar cash in the Board of Trustees (BOT) Discretionary account; the cash shall be swept into the BNY Mellon Short-Term Investment Fund on a daily basis.

1. Investment Objectives

Assets held in the BOT Discretionary account shall be invested to seek the following objectives:

a. *preservation of capital*

b. *maintenance of liquidity, and*

c. *maximization of current income to the extent consistent with (i), and (ii), above by investing assets in accordance with the guidelines stated below.*

2. Investment Guidelines

Funds shall be denominated in U.S. Dollars and shall be invested in securities or instruments managed under the following guidelines:

a. *Eligible Investments:*

i. Securities and Exchange Commission (SEC) Rule 2a-7 money market mutual funds of institutional grade[5].

ii. Interests or units in any short-term investment fund (including, without limitation, such funds of the Custodial Bank and any of its affiliates) that invests in any of the types of investments approved above.

b. *Liquidity*

i. A minimum of 95% of the available cash portion of the BOT Discretionary account shall be invested in Eligible Investments (1) and/or (2) above.

[5] Rule 2a-7 of the act restricts the quality, maturity and diversity of investments by money market funds. Under this act, a money fund mainly buys the highest rated debt, which matures in under 397 days. The portfolio must maintain a weighted average maturity of 60 days or less and not invest more than 5% in any one issuer, except for government securities and repurchase agreements

BROAD GROWTH PROGRAM

SECTION: D

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D. 1. OVERVIEW

1. General Description

The Broad Growth class consists of investment strategies and assets that are largely exposed and/or susceptible to changes in global economic growth and corporate profitability. Such investments typically contain relatively high degrees of risk and exhibit more volatility than other strategic classes. The Broad Growth class consists of four major components: Traditional Growth, Stabilized Growth, Real Assets, and Private Growth. The Traditional Growth component consists largely of global public equity and other similar-risk investments. The Stabilized Growth component consists of a spectrum of growth-exposed investment strategies that exhibit expected returns close to Traditional Growth investments but exhibit materially lower levels of volatility. The Real Assets component consists of private, real assets that can help diversify the Broad Growth class during normal economic environments but that are also sensitive to material changes in economic growth during crisis periods. The Private Growth component consists of growth-oriented higher-risk, higher-returning investments that rely on the private markets rather than the public markets to raise investment capital.

2. Purpose

The Broad Growth class provides the bulk of the total portfolio's investment return due its exposure to the equity risk (and similar) premium. The equity risk premium, while volatile, is the reward associated with bearing economic and corporate risk – it is the highest risk premium available to investors. In addition, over long investment horizons (i.e., greater than 10 years), the equity risk premium is generally significantly positive after accounting for inflation. Due to this feature, the Broad Growth class is expected to increase the purchasing power of the total portfolio's assets over time.

By diversifying into the four major Broad Growth components (Traditional Growth, Stabilized Growth, Real Assets and Private Growth), the Broad Growth class seeks to moderate its risk profile versus investing solely in any one component. This approach seeks to capture the entirety of the equity risk premium as well as capture premiums associated with other risk factors that are closely related to the equity risk premium.

3. Risk Factor Exposures

<u>*Major*</u>
- *Growth Risk*

<u>*Minor*</u>
- *Interest Rate Risk*
- *Liquidity Risk*

D. 2. CLASS STRUCTURE

1. Components

The Broad Growth class consists of two Public Markets components (Traditional Growth and Stabilized Growth) and two components that utilize private markets (Real Assets and Private Growth).

a. *Traditional Growth*

In general, this component can include any strategy that exhibits similar risk exposures and risk/return expectations as the publicly traded global equity market opportunity set. While individual strategies can vary, the aggregate Traditional Growth component should exhibit a high correlation to global equity market indices when examined over full market cycles (e.g., 10-year periods).

b. *Stabilized Growth*

This component includes a spectrum of liquid and illiquid investment strategies that are primarily exposed to economic risk (similar to investments within the Traditional Growth component) with risk profiles that exhibit 25%-50% less volatility than strategies within the Traditional Growth component. While individual strategies can vary, the aggregate Stabilized Growth component should exhibit the above-stated characteristics when examined over full market cycles (e.g., 10-year periods).

For certain sub-components within Stabilized Growth that are managed as a program (e.g., Credit), more detailed information can be found in the Appendix of this section.

c. *Real Assets*

This component includes a spectrum of illiquid investment strategies that represent interests directly in or derived from physical, real assets. In aggregate, this component will tend to produce returns in-line with Stabilized Growth, but the characteristics will vary from strategy to strategy and the component bears the unique attributes of private markets investments (e.g., pacing studies, lagged reporting, etc.).

More detailed information regarding the Private Growth component can be found in the Appendix of this section.

d. *Private Growth*

This component includes a spectrum of private markets investment strategies that are primarily exposed to economic growth risk and can exhibit high levels of measured investment risk. This component will largely consist of Private Equity and similar strategies.

2. Modifications to Component Structure

Modifications to the Broad Growth class's component structure can take four forms:

a. Adding or deleting a specific investment strategy within a specific component;

b. Establishing allocation levels among the components;

c. Adding or deleting a specific component;

d. Establishing allocation ranges among the components;

Staff shall have the discretion to implement items a. and b. above, whereas items c. and d. will only occur with approval of the Board of Trustees or designee (e.g., Investment Committee).

3. Components' Allocations and Allocation Ranges

The Broad Growth class's allocation targets and allocation ranges among its four major components are as follows (as a percent of total Plan assets):

Component	Lower Limit	Upper Limit
Traditional Growth	20%	60%
Stabilized Growth	10%	50%
Private Growth*	5%	25%
Real Assets	5%	25%

* Due to the illiquid nature of the *Private Growth* component, its allocation will be based on pre-established policy allocation ranges, and likely not fluctuate dramatically.

If the actual allocations fall outside of the above-stated ranges, ERS Staff shall provide a written report to the Board of Trustees as to the cause, and if relevant, the planned route for shifting the portfolio back in-line with the policy range.

4. Components' Managers and Managers' Allocations

To manage the assets allocated to each strategic class and its underlying components, the Board delegates investment authority to external investment managers ("investment managers"). ERS Investment Staff has the authority to select the investment managers and their corresponding mandate sizes so long as the components retain their expected characteristics individually and the Broad Growth class maintains its expected characteristics as a whole.

D. 3. RETURN OBJECTIVES & RISK PROFILE

1. Class Return Benchmarks

The ERS utilizes the custom target benchmark below to monitor the performance results of the Broad Growth Class:

BROAD GROWTH BENCHMARK
70% Public Growth Benchmark +
14% Real Assets Benchmark +
16% Private Growth Benchmark

PUBLIC GROWTH BENCHMARK
55.5% MSCI ACWI IMI +
20% Options-Based Equity Benchmark +
9% MSCI ACWI MIN VOL +
15.5% Global Credit Benchmark

REAL ASSETS BENCHMARK
40.0% NCREIF ODCE (qtr lagged) +
35.0% NCREIF ODCE + 1% (qtr lagged) +
12.5% NCREIF Timber (qtr lagged) +
5.0% NCREIF Farmland (qtr lagged) +
7.5% CPI + 4%

PRIVATE GROWTH BENCHMARK
100% MSCI ACWI IMI + 2% (qtr lagged)

The Broad Growth Class portfolio is expected to outperform the above blended benchmark, net of fees, over a full investment cycle. An appropriate measure of an investment cycle would be rolling 5-year periods. The Broad Growth Class portfolio should outperform its benchmark, net of fees, over the majority of rolling 5-year periods.

2. Class Risk Profile

In aggregate, the Broad Growth Class is the ERS's most volatile investment class and is the class that is most sensitive to economic growth trends.

The true risk levels of the various components are expected to be ordered as follows (highest risk to lowest): Private Growth, Traditional Growth, Real Assets, and Stabilized Growth. Due to the diverse nature of strategies within the Real Assets component, its true risk level is expected to generally fall in between Traditional Growth and Stabilized Growth, but it may vary over time. Considering this attribute, it is expected that ERS Staff will notify the Board of material changes in the risk profile of the Real Assets component. Moreover, it is important to note that statistical measures of risk (e.g., performance volatility) are not indicative of the true levels of risk when examined for private markets strategies.

BROAD GROWTH APPENDIX

DERIVATIVES POLICY[1]

Derivatives may be used in the ERS portfolio as a substitute for a cash market security, risk control, income (e.g. Covered Calls), cost reduction, or liquidity management. Derivatives are not permitted for purposes of speculation. Any derivative investment not explicitly authorized below is prohibited.

1. Where derivatives are used as substitutes for a specific cash security or set of cash securities, the return volatility of the combination of the derivative and associated cash position shall be equivalent to the unleveraged cash security or securities underlying the derivative instrument.

2. When options are used for income and risk control (e.g. Covered Calls), the notional value of the options may not exceed the total value of the underlying securities.

3. Managers shall mark-to-market their derivative positions daily.

4. Permitted Instruments:

    a. *Futures* – stock index futures, stock and bond futures, money market futures, and currency futures where the manager has the authority to invest in the underlying or deliverable cash market security.

    b. *Options* – options on stocks, indices, ETFs, and bonds (including interest rate caps and floors). Options on futures, swaps, and currencies are allowed for those managers who have permission to invest in the comparable cash instruments.

    c. *Currency forwards* – only those managers who have the authority to invest in the underlying cash market instrument.

    d. *Swaps (Extended Global Credit managers)* – where the manager has the authority to invest in the underlying cash market instrument. Minimum counterparty rating: A-

5. Futures contracts must be CTFC (Commodity Futures Trading Commission) approved and exchange traded.

6. Options may be either exchange traded or over-the-counter (OTC) subject to counterparty guidelines as noted.

7. Managers may purchase back options in order to close out positions.

8. Counterparties to OTC traded instruments (options and forwards) must be rated investment grade or better as determined by at least one major rating agency.

9. Cross-hedging is not permitted by international equity managers; however, as it is a standard practice for non-U.S. bond managers, it is allowed for Extended Global Credit managers. These credit managers may also use certain developed-market currencies as proxies for otherwise illiquid emerging-market currencies. In such cases, use of such proxies will be disclosed through the ongoing reporting process. The counterparties for foreign currency derivatives must be rated A- or equivalent.

[1] Performance-related criteria for the Private Growth component is specified within the corresponding component section.

10. On an annual basis, all investment managers shall provide a summary of the derivatives used and the reasons for their use. This summary shall be the basis for verification that the investment managers are generally complying with the objectives and constraints of the investment policy. The investment consultant shall elicit responses on each manager's policy in the form of a letter.

11. On a daily basis the custodian bank shall examine all manager derivatives purchases for prohibited derivatives. Should any prohibited derivatives be found, the custodian bank should promptly notify Staff and instruct the manager to sell the prohibited derivatives. The custodian bank will also value and monitor all derivatives and the trades from which they emanate.

REAL ASSETS COMPONENT

1. Program Management

The Real Assets program shall be implemented and monitored through the coordinated efforts of the Board of Trustees ("Board of Trustees" or "Board") of the Employees' Retirement System of the State of Hawaii ("ERS"), the ERS investment staff ("Investment Staff"), and the ERS's investment consultants ("Investment Consultants"). The ERS Investment Staff shall maintain the day-to-day management and implementation responsibilities of the program while leveraging the expertise of the ERS's Investment Consultants where applicable. The Board of Trustees or designee shall provide high-level oversight and approve the long-term, strategic direction of the program during asset-liability studies and/or component structure reviews.

2. Investment Parameters

a. Portfolio Construction

The ERS has determined that, over the long-term, the inclusion of a Real Assets component can enhance the ERS's expected total portfolio investment characteristics. Specifically, investments in Real Assets strategies provide unique exposures and return drivers relative to public market securities and other private markets strategies (e.g., private equity). Moreover, Real Assets strategies are expected to increase the purchasing power of the total portfolio's assets over time, while buffering drawdowns during inflation-oriented crises. As a component of the Broad Growth strategic class, the Real Assets component is expected to produce returns similar to other Broad Growth components but commensurate with its relative level of risk.

Real Assets investments of the ERS shall be made in a manner consistent with the fiduciary standards of the prudent expert rule: (1) for the sole interest of the ERS's participants and their beneficiaries; and, (2) to safeguard and diversify the Real Asset portfolio. The selection and management of Real Assets investments will be guided to preserve investment capital and to maintain prudent diversification of assets and management responsibility. The diversification objective is required to manage overall market risk and the specific risks inherent in any single investment or management selection.

b. Aggregate Target Allocation

The allocation of ERS assets to Real Assets investments shall remain within the limits authorized by the Board of Trustees or designee. The long-term target allocation is 15.5% of the ERS's Total portfolio (based on net asset value of invested capital).

	Long-term Total Portfolio Target (7/1/2022)
Real Assets	15.5%

As a private markets class, the Board of Trustees understands that it is unlikely the ERS will ever be perfectly in-line with the target allocation. However, the Board of Trustees expects the program to be implemented in a prudent and diversified manner with a relatively consistent risk profile. In order to avoid concentration risks, the Board expects the program to incorporate relatively even vintage year and strategy diversification over time (subject to the component target allocations detailed below).

c. *Sub-Component Target Allocations*

The ERS's Real Assets component consist of several sub-components:

i. Real Estate (Core and Non-Core)
ii. Timber
iii. Agriculture
iv. Infrastructure
v. Other Real Assets

Each of the components are expected to be implemented with private markets assets, although public market proxies may be used for transitory purposes. The *Other Real Assets* sub-component is not expected to be used without prior notification of the Board or designee. The following table provides the long-term sub-component-level target allocations and respective ranges within the Real Assets component.

	Long-term Total Portfolio Targets (7/1/2022)	Approximate Sub-Component Targets and Min/Max Ranges
Core Real Estate	6.00%	40% (20-100%)
Non-Core Real Estate	4.50%	30% (0-50%)
Timber	1.75%	10% (0-25%)
Agriculture	1.50%	10% (0-25%)
Infrastructure	1.75%	10% (0-30%)
Other Real Assets	---	---
Total	**15.5%**	**100%**

Due to the unpredictability in the timing of capital calls and distributions, the Board understands that the portfolio is unlikely to ever be perfectly in-line with these targets. Moreover, the ERS Investment Staff maintains discretion around the sub-component targets and can modify the implementation of the actual portfolio subject to the risk management policy (see following section).

d. Risk Management

The construction and management of the Real Assets program will be designed to generate an attractive level of return with prudent diversification that is additive to the total portfolio. The specific risk/return objective of the program is an outcome of the Board's or designee's selection of a target portfolio during asset-liability studies.

As a component of the Broad Growth strategic class, it is expected that the Real Assets program will share some commonalities (i.e., drawdown and positive return periods) with other growth-related strategies, however, the ERS Investment Staff seeks to implement the program in as complementary of a manner as possible.

With Real Assets investments, there is an inherent risk that the actual return of capital, gains, and income will vary from the amounts expected. The ERS shall manage the investment risk associated with Real Assets investments in several ways:

i. Strategic Structure

1. Allocation by sub-component. The ERS Investment Staff can manage allocations to the sub-components with a certain level of flexibility in order to adjust for market dynamics, opportunities, and private market-specific challenges. The ERS Board expects the Investment Staff to maintain a holistic view of the portfolio's aggregate risk posture across all strategic classes, components, and sub-components.
2. Commitment pacing into each segment over time. It is expected that the Real Assets component will be implemented via measured and consistent commitment pacing. However, certain annual commitment amounts among these sub-components may vary significantly, depending upon the capital investment opportunities within each component.

ii. Manager Selection / Institutional Quality

1. All assets must be of institutional investment quality. Institutional quality will be defined as being of a quality whereby the investment would be considered acceptable by other prudent institutional investors (e.g., endowments, foundations, insurance companies, commercial banks and savings institutions, public employee retirement systems, corporate employee benefit plans, and other tax-exempt institutions).

iii. Leverage

1. Leverage levels will be an explicit consideration when examining and monitoring investments. For a given fund, the utilized leverage must be consistent with the objectives of the respective strategy and industry-wide practices.

e. Benchmarks

The aggregate Real Assets component will utilize a blended benchmark based on the underlying sub-component benchmarks and corresponding total portfolio target allocations. As a private markets class, the ERS Board understands that perfect benchmarks do not exist and there will be variances/mismatches over periods of time. The success of the Real Assets program will primarily be examined over rolling 10-year windows.

	Sub-Component Benchmark
Core Real Estate	NCREIF ODCE (qtr lagged)
Non-Core Real Estate	NCREIF ODCE + 1% (qtr lagged)
Timber	NCREIF Timber (qtr lagged)
Agriculture	NCREIF Farmland (qtr lagged)
Infrastructure	CPI + 4%
Other Real Assets	---

f. Monitoring and Reporting

The performance of private Real Assets investments will be calculated on both a time-weighted and dollar-weighted (internal rate of return or IRR) basis. The rate of return calculations will be net of all partnership/LLC fees and expenses.

The ERS's Real Assets (or Real Estate) Consultant will be responsible for calculating and reporting net IRRs on the individual investments as well as at various composite levels as requested by the ERS. The ERS's General Consultant, in conjunction with the ERS's custodian, will produce time-weighted returns on the aggregate Real Assets composite.

The ERS's Investment Staff and/or the appropriate designated retained consultant will provide additional performance measurement information, if requested by the ERS Board or designee.

REAL ESTATE SUB-COMPONENT

1. Investment Objectives

a. Investments In Real Estate

The Employees' Retirement System of the State of Hawaii ("ERS") Board of Trustees has determined that the inclusion of Core and Non-Core Real Estate can enhance the portfolio's structure.

While safety of principal is given primary consideration, the ERS recognizes the need to use active asset management strategies in order to obtain the highest attainable total investment return (income plus appreciation) within the ERS's framework of prudence and managed risk.

The selection of investment managers and development of investment policy will be guided to enhance diversification within the portfolio of the ERS's real estate investment program ("Real Estate Investment Program") thereby limiting exposure to any one investment, organization, real estate property type and geographic region (Refer to Section II: Program Management).

i. Real Estate Defined - Real estate assets are defined as those investments that are unleveraged or leveraged, equity or debt positions in private and public real property. Investments in private and public real estate companies are also permissible. The ownership structure(s) should be consistent with any rules, regulations, or law, as applicable, governing the ERS. The ERS will pursue both discretionary separate account investment management and discretionary commingled fund investment management for its real estate allocation.

b. Strategic Allocation

The ERS allocation to real estate shall remain within the limits authorized by the ERS Board of Trustees or designee. Core and Non-Core real estate allocations should be in line with those that are detailed in Section D: Broad Growth Program. Core and Non-Core real estate allocations will be established and managed via scheduled annual commitment pacing approved as a result of the annual strategic plan (see item 2.C. below).

c. Portfolio Return Objectives

The real estate return objectives and benchmarks will follow their respective assignments as detailed in Section D.3. Return Objectives & Risk Profile.

2. Program Management

a. Overview

In compliance with current ERS investment philosophy, the Real Estate Investment Program will primarily utilize discretionary separate account relationships and discretionary commingled fund investment vehicles that are sponsored by real estate investment managers ("Investment Managers"). Under this program, the Investment Managers acquire, operate and dispose of real estate assets in accordance with a work assignment that is outlined in their investment management contract with the ERS (the "Contract") and in the Annual Tactical Plan for separate accounts and the fund documents for commingled funds. The Contract describes the acceptable property types, geographic restrictions, investment structures, leverage and other specific investment parameters. For Separate Accounts, The Annual Tactical Plan is the Investment Manager's "working plan" for each fiscal year and must be reviewed by Investment Staff and Real Estate Consultant and approved by the Board of Trustees or designee. For commingled funds, documents typically refer to the fund's offering memorandum or private placement memorandum, limited partnership or LLC membership agreement, and subscription agreement.

b. Participant Roles and Responsibilities

The ERS's Real Estate Investment Program shall be implemented and monitored through the coordinated efforts of the Board of Trustees or designee(s). Specific responsibilities that fall outside the general responsibilities highlighted in Section B.5. are listed below:

i. Investment Manager - Qualified real estate organizations, registered as Investment Advisors under the 1940 Act that provide institutional real estate investment management services to the ERS. ERS may invest in commingled fund vehicles that are not registered, however, it is preferred that the commingled fund be sponsored and/or managed by a Registered Investment Advisor.

ii. Separate Account Manager Responsibilities - The separate account Investment Manager, acting as a fiduciary on behalf of ERS, acquires, manages and disposes of real estate properties and/or originates or acquires, manages, and realizes upon real estate debt investments in accordance with the annual Tactical Plan and Contract.

iii. Commingled Fund Manager Responsibilities – The commingled fund Investment Manager, acting as a fiduciary on behalf of ERS, acquires, manages and disposes of real estate properties and/or originates or acquires, manages, and realizes upon real estate debt investments in accordance with the terms of the investment vehicle documents.

c. *Annual Real Estate Strategic Plan*

i. Annually, the Investment Staff, with the Real Estate Consultant as requested, will prepare a Strategic Plan which reviews the current status of the portfolio, recent historical and prospective market conditions, and proposes the actions to be taken over the next approximately twelve-month period. This document will recommend general capital allocations to the Core and Non-Core Real Estate Program and the rationale and expectations for inclusion.

ii. The annual Strategic Plan will then be presented to the Board of Trustees or designee for approval.

3. Portfolio Composition

a. *Core Portfolio* - Core investments include equity or debt investments on existing, substantially leased income-producing traditional property types located principally in metropolitan areas that exhibit reasonable economic diversification. Core investments typically exhibit one or more of the following characteristics:

i. Traditional institutional quality property types including office, industrial, retail and multifamily; also included are medical office, senior housing, storage, and student housing properties that demonstrate core characteristics;

ii. Operating and stabilized properties that demonstrate predictable income flows with a high proportion of anticipated total return arising from current income and cash flow;

iii. Well-leased upon purchase of the asset;

iv. Located in institutional markets and in economically diversified metropolitan areas;

v. High credit quality tenants and a staggered lease maturity schedule;

vi. Quality construction and design features;

vii. Reasonable assurance of a broad pool of potential purchasers upon disposition;

viii. Properties requiring quality asset and portfolio management but not requiring specialized operating expertise which is not readily available in the market;

b. *Non Core Portfolio* - Non Core real estate investments represent equity or debt investments in those properties and/or investment strategies that require specialized acquisition and management expertise or skill to mitigate the business and leasing risk that may be associated with individual investments. Non Core investments which may be referred to as Value Added or Opportunistic have greater volatility and leverage compared to core investments and as such are expected to provide yields higher than those associated with core investments.

c. *Value Added* – Value Added investments include equity, debt, or real estate company investments of institutional quality that offer the opportunity to enhance value through rehabilitation, redevelopment, development, lease-up or repositioning. A significant portion of return is from appreciation and includes moderately higher leverage than core. Value added investments typically exhibit one or more of the following characteristics:

i. Properties located in primary as well as secondary and tertiary markets which may not be economically diversified and may have accompanying susceptibility to imbalance of demand and supply;

ii. Traditional as well as non-traditional property types including, but not limited to, hotels, motels, senior housing, student housing, manufactured and residential housing;

iii. Properties that are undermanaged with specific problems that require specialized management skills;

iv. Properties that are less than 70% leased upon purchase or where more than 30% of leases expire in the first three years of purchase

v. Properties involving significant appreciation, lease-up, development and/or redevelopment risks;

vi. Properties using moderate leverage between 50% and 65%;

vii. Investments in institutional quality properties located in mature real estate markets showing high levels of market transparency outside of the United States and Canada;

d. *Opportunistic* – Opportunistic investments include equity or debt investments in real estate properties, real estate operating companies and other investment vehicles that offer the opportunity to capitalize on the disequilibrium of the real estate markets caused by dramatic shifts in capital flows or other fundamental real estate characteristics. Opportunistic investments not only include distressed assets in need of lease up but also assets that provide returns from financial restructuring. Opportunistic investments typically exhibit one or more of the following characteristics:

i. Strategies that seek to exploit inefficiencies in the capital and real estate markets

ii. Strategies that involve financing or acquisition of real estate assets, operating companies, portfolio of real estate assets

iii. Strategies that focus on major development or redevelopment

iv. Properties with substantial leasing, development and entitlement risk

v. Distressed assets

vi. Distressed debt

vii. Major financial re-structuring required

viii. High leverage of between 65% and 90%

ix. Investments in real estate markets driven by growth and continued improvements in market transparency, located outside of the United States and Canada

4. Investments and Risk Management

The ERS shall manage the investment risk associated with real estate in several ways:

a. Institutional Quality

All assets within the Real Estate portfolio must be of institutional investment quality as evidenced by a history of institutional investment in similar properties; expert analysis which supports the economic viability of the market; high quality construction and design features; and a current or potentially competitive position within the property's immediate market area.

b. Diversification

The real estate portfolio shall be diversified by geographic region and property type. Diversification reduces the impact on the portfolio of any one investment or any single Investment Manager's style to the extent that an adversity affecting any one particular area will not impact a disproportionate share of the total portfolio.

c. Target Portfolio

The long-term real estate strategy is for the ERS real estate portfolio to be diversified taking into account the following diversification guidelines:

i. Property Type - The real estate portfolio shall be diversified with the majority of investments comprised of the four traditional property types: office, industrial, retail, and multifamily (apartment). No single traditional property type shall account for greater than 50% of the portfolio. In addition, the range of property type allocations are generally expected to be 0.5x – 1.5x the NFI-ODCE's weight in each property type. Other property types, as defined by NFI-ODCE, are allowed but (on a combined basis) should generally not exceed 20% of the real estate portfolio.

ii. Geographic - Within the United States, the range of geographic allocations are generally expected to be 0.5x – 1.5x the NFI-ODCE weight in each region. International Investments (Non US and Canada) will generally range between 0-20% of the core real estate portfolio.

d. Ownership Structure

The ownership structure for real estate investments may include leveraged and unleveraged equity and debt investments owned directly via separate accounts or through commingled funds. For separate accounts, directly owned investments may be 100% owned by ERS or owned jointly with Suitable Investment Partners. "Suitable Investment Partners" include public, corporate and union pension plans, foundations and endowments, insurance company general accounts or separate accounts, and other tax-exempt institutions, having the same or greater standards of fiduciary care and responsibility as those imposed by ERS guidelines. When dealing with non-core investments that are directly owned, Operating Partners shall be added to the list of "Suitable Investment Partners." The ownership structure of non-core assets within commingled funds will be governed by the fund documents.

e. Leverage

The use of leverage is a prudent tool for enhancing returns and diversifying equity investments, though it does raise the risk profile of the portfolio. As such, ERS has approved leverage targets in order to enhance returns to the total portfolio. The availability and cost of leverage will be factors considered in determining its use. For the total real estate portfolio, the ERS has established a leverage maximum of fifty percent (50%). Third party debt should primarily be non-recourse. At no time shall the origination of new leverage cause the portfolio to exceed the established limits on a loan-to-value basis. In the event that either the portfolio level and/or style level leverage constraint is breached due to a contraction in market values, the Staff and Consultant will notify the Board of Trustees or designee and make a recommendation for action or exception if appropriate.

f. Manager Concentration

ERS shall limit its exposure to any single manager. No single Investment Manager shall be permitted to manage more than 35% of the total allocation to real estate at the time of investment (i.e., purchase) without prior approval from the Board of Trustees or its designee. In the case of the Separate Account Manager(s), concentrations are likely to exist, and be allowed, during build up or wind down periods of such accounts.

g. Investment Size

There is no minimum investment size. The maximum net investment in a single property within a separate account shall be limited to 15% of the allocation to the core real estate program at the time of investment. The ERS's investments in a single commingled fund shall not exceed 20% of the total net market value of the commingled fund at the time of investment. If the commingled fund is in the process raising assets (versus being an open-ended fund), the 20% threshold will be based on target fund size.

5. Investment Process (Separate Accounts*)*

a. Manager Selection Process

ERS Investment Staff, assisted by the Real Estate Consultant as requested, shall have responsibility for sourcing managers. ERS, assisted by the Real Estate Consultant as requested, shall screen and review the managers and arrange interviews and final presentations if necessary. The Real Estate Consultant will assist Investment Staff in negotiating and closing manager agreements, including final fee structures.

b. Leverage

The total level of debt for any single core separate account investment will generally not exceed fifty percent (50%).

c. Monitoring and Reporting

The ERS expects its Separate Account managers to generally act in accordance with the most recent version of the Reporting Standards established jointly by the National Council of Real Estate Investment Fiduciaries ("NCREIF") and the Pension Real Estate Association ("PREA") ("Reporting Standards"). The Reporting Standards were developed with a mission to establish, manage and promote transparent and consistent reporting standards for the real estate industry to facilitate informed investment decision-making.

6. Investment Process (Commingled Funds)

a. Manager Selection Process

In an effort to maintain program simplicity and ensure appropriate underwriting of investment management organizations, the ERS Staff shall utilize only ERS approved real estate investment management firms for the acquisition, asset management and disposition of property and origination, management, and realization of debt investments. In addition to the existing separate account Investment Managers, the ERS has approved a program of commingled fund investing.

The following steps shall be followed in order for the ERS to commit to any prospective commingled real estate investment opportunity:

i. Investment Staff, with assistance from the Real Estate Consultant, sources and performs comprehensive due diligence on attractive investment opportunities consistent with criteria set forth in the annual Strategic Plan.

ii. If, as a fiduciary of the ERS, the Real Estate Consultant determines that the investment merits a commitment from the ERS, the Real Estate Consultant will take the following steps:

1. Discuss with Investment Staff the key findings during due diligence, including investment merits, risks and key conclusions;

2. Follow-up with Investment Staff on additional requests for information based on this discussion and complete an Investment Disclosure Form;
3. In conjunction with the ERS's legal review process, assist legal negotiation and closing into the investment opportunity.

iii. Upon successful review of the investment by Investment Staff, the investment shall be recommended to the Board of Trustees or designee for approval. This recommendation shall contain a summary of the due diligence and a prospective commitment level for the investment.

b. Monitoring and Reporting

i. Reporting System - There shall be a comprehensive reporting and monitoring system for the entire portfolio, Real Estate Consultant, Investment Manager(s) of commingled funds, and individual investments. Situations of underperforming investments, portfolio diversification deficiencies from the Policies & Procedures, and conflicts of interest can then be identified, facilitating active portfolio management.

TIMBER SUB-COMPONENT

1. Investment Objectives

a. Investments in Timberland Assets

Timber investments involve the privately negotiated purchase and, to a lesser degree, leasing of forestland tracts, upon which trees are grown for commercial sale. Investments in timber will primarily be made directly through a separate account or indirectly through a multi-investor structure (i.e., two or more investors investing in a specific timber asset as a limited liability company ["LLC"] or other investment vehicle, as appropriate) in which ERS's separate account is an investor. When applicable and consistent with the objectives of the Real Assets program, commingled funds may also be used to achieve exposure to timberland investments. All timber investments will be managed by a qualified timberland investment manager ("timberland manager" or "manager").

Timber investments of the ERS shall be made in a manner consistent with the fiduciary standards of the prudent expert rule: (1) for the sole interest of the ERS's participants and their beneficiaries; and, (2) to safeguard and diversify the timber portfolio. The timber portfolio will be constructed to preserve investment capital and to maintain prudent diversification of assets.

b. Strategic Allocation

The ERS's allocation to timber investments shall remain within the limits authorized by the Board of Trustees or designee as described in the Real Assets component of this Investment Policy Statement.

c. Portfolio Return Objectives

The timber return objectives and benchmarks will follow their respective assignments as detailed in Section D.3. Return Objectives & Risk Profile.

At a high-level, the timber investments portfolio's rate of return is expected to be generated primarily from biological growth, sale of timber inventory, and purchases and sales of properties. Additionally, value-added investments may be used to enhance timberland investments, and may include recreation leases, carbon sequestration, wetland mitigation, and other ecosystem services.

2. Program Management

a. Overview

In compliance with current ERS investment philosophy, the Timber program will primarily utilize discretionary separate account relationships and discretionary commingled fund investment vehicles that are sponsored by timberland investment managers ("Investment Managers"). Under this program, the Investment Managers acquire, operate and dispose of timberland assets in accordance with a work assignment that is outlined in their investment management contract with the ERS (the "Contract") and in the Annual Tactical Plan for separate accounts and the fund documents for commingled funds. The Contract describes the acceptable property types, geographic restrictions, investment structures, leverage, and other specific investment parameters. For Separate Accounts, the Annual Tactical Plan is the Investment Manager's "working plan" for each fiscal year and must be reviewed by Investment Staff and Real Estate Consultant. For commingled funds, documents typically refer to the fund's offering memorandum or private placement memorandum, limited partnership or LLC membership agreement, and subscription agreement.

b. Participant Roles and Responsibilities

The ERS's Timber Investment Program shall be implemented and monitored through the coordinated efforts of the Board of Trustees or designee; through the Investment Staff; the ERS's general investment consultant ("General Investment Consultant"); the ERS's real estate consultant ("Real Estate Consultant"); and the Investment Manager(s). Specific responsibilities that fall outside the general responsibilities highlighted in Section B.5. are listed below:

i. Investment Manager - Qualified organizations, registered as Investment Advisors under the 1940 Act, that provide institutional timberland investment management services to the ERS. ERS may invest in commingled fund vehicles that are not registered, however, it is preferred that the commingled fund be sponsored and/or managed by a Registered Investment Advisor.

ii. Separate Account Manager Responsibilities - The separate account Investment Manager, acting as a fiduciary on behalf of ERS, acquires, manages and disposes of timberland properties in accordance with the Annual Tactical Plan and Contract.

1. Annual Tactical Plan

Annually, the separate account timberland manager will prepare an Annual Tactical Plan which reviews the current status of the portfolio, recent historical and prospective market conditions, and proposes the steps to be taken to further implement the long-term strategic plan. The Annual Tactical Plan will be reviewed by the Real Estate Consultant and Investment Staff

The format of the Annual Tactical Plan is expected to include: (1) a review of the current status of the portfolio, (2) perceived investment environment, (3) the types and amount of property investments to be sought and underlying rationale, (4) goals for other management responsibilities such as situations being monitored and adding value, and (5) outline the steps anticipated toward portfolio development over the course of the coming year, and (6) any other items requested by the ERS.

iii. Commingled Fund Manager Responsibilities – The commingled fund Investment Manager, acting as a fiduciary on behalf of ERS, acquires, manages and disposes of timberland investments in accordance with the terms of the investment vehicle documents.

3. Strategic Plan

The Timber program is expected to be managed and monitored as a sub-component of the broader Real Assets component. Separate account timberland mandates will contain their own *Annual Tactical Plans* as highlighted above.

a. Portfolio Composition

With timber investments, there exists an inherent risk that the actual return of capital, income and gains will vary from the amounts expected. The composition of the portfolio and its key program management parameters are as follows:

i. Institutional Quality

All assets must be of institutional investment quality. Institutional quality will be defined as being of a quality whereby the investment would be considered acceptable by other prudent expert institutional timber market participants and corporate forest product industry investors.

ii. Diversification

The timber portfolio shall be diversified by:

1. regional geographical location (South, Northeast, West, Other, and International)
2. non-contiguous tract and parcel locations
3. type and species of tree (e.g., softwood "conifer," such as pine, fir redwood, etc., and hardwood "deciduous," such as oak, maple, etc.)
4. end-use market of forest product (building and construction, pulp and paper, furniture and decorative wood)
5. potential purchasers of inventory (mills and processing plants)
6. stage of tree growth (seedling through mature)
7. timing of investment

When fully invested, no one timberland investment should represent in excess of twenty-five percent (25%) of the total market value of the portfolio. These limits are subject to waiver on a case-by-case basis by the Trustees. It is also recognized that during the portfolio development and wind-down stages the full investment parameters may not, of necessity, be met.

iii. Ownership Structure

Account and Investment Structure: The ERS's ownership structure will comprise an arrangement whereby separate account relationships will be established with one or more fiduciary timberland managers. The separate account timberland manager will in turn purchase, on a discretionary basis, timber assets for the ERS's account. When applicable and consistent with the objectives of the Real Assets program, commingled funds may also be used to achieve exposure to timberland investments. Commingled

fund investments will be governed by their fund-specific documentation, and any corresponding side letters, which may vary from the separate account guidelines presented below.

b. Investment Process (Separate Accounts)

i. Eligible Investments

In general, the timberland manager will have discretion to purchase forest tracts that are expected to meet or exceed the ERS's rate of return objectives for timber investment. The rate of return must be appropriate after the consideration of any risk measures employed by the manager. Multi-investor structures and lease holdings may be made, however, the majority of the fully invested portfolio should be made up of fee simple investments. The timberland manager is allowed to enter into joint ventures with forest product companies for up to 20% of the portfolio. However, the structure of the joint venture must not impede, at any time, either the sale of the holding or the ability of the ERS to replace the timberland manager. Also, the manager will minimize the concentration of holdings in areas known to be frequented by natural disasters, for example coastal tracts known to be frequent hurricane paths, flood zones, etc.

Without compromising the geographical diversification targets, the timberland manager will use reasonable efforts to mitigate the incurrence of unrelated business taxable income in the portfolio.

Leverage may be used, on a nonrecourse basis, up to 20% of the timberland market value of the portfolio, with no more than 50% leverage on any one timber investment. The single investment debt level will be measured for compliance at the time leverage is added to the portfolio. Leverage for the total portfolio will be measured for compliance at the time the leverage is added to the portfolio or a portfolio asset is purchased or sold. Leverage may not be added to any investments held as of September 15, 2010.

4. Geographical Location Diversification

Over the long-term, the ERS portfolio should seek portfolio diversification with regard to major timber growing regions. The currency exposure to the ERS from any non-U.S. dollar aspect of the allocation is expected to be negligible over the long-term.

The following ranges set forth the geographic diversification targets for the timberland manager to fulfill:

Region	Range
South	45% - 65%
West	25% - 45%
Northeast	0% - 20%
Other/International	0% - 20%

5. Tree Maturity Diversification

The ERS portfolio will seek to diversify by maturity of timber ranging from immature, pre-merchantable trees through mature, merchantable timber. The timberland manager will create a sustainable timberland portfolio where tree seeding, planting, growth and purchases will replace trees harvested and properties sold.

6. Tree Species Diversification

The portfolio will be diversified by timber type and include both hardwoods and softwoods.

7. End Use Diversification

The ERS portfolio will be structured to sell into several commercial industries, such as paper goods and cardboard, various building and construction materials markets, and finished carpentry and furniture. The timberland manager will also take into account the number of regional processors or purchasers of timber inventory.

8. Tract And Parcel Diversification

The portfolio will be composed of numerous non-contiguous tracts with the goal of diversifying the risk of natural disasters such as fire, disease, pests, etc.

9. Manager Responsibilities

a. *Investment Management*

Timberland managers are directly accountable for the following investment management responsibilities. This section designates certain investment responsibilities that the timberland manager will perform or cause to be performed.

i. Acquisition – The manager will be responsible for sourcing, evaluating and selecting, on a discretionary basis with fiduciary responsibility, timber investments to be made on behalf of the ERS.

The acquisition process will be made with a view to maximize the ERS's risk adjusted rate of return subject to portfolio management/diversification parameters.

ii. Ongoing Operations – The timberland manager shall manage or cause to be managed, the portfolio and individual properties such as to enhance the ERS's value in the investment. This includes silvicultural/forest management, property valuations/appraisals, and cash-flow management.

iii. Disposition – Ongoing, and based on timber market circumstances, the timberland manager shall review the managed investments with respect to continued timely return of capital, income and gains, including both planned and opportunistic sales of timber inventory and properties. The manager shall identify qualified buyers, solicit and evaluate offers, and negotiate property sales.

b. *Monitoring and Reporting*

The ERS expects its Separate Account managers to generally act in accordance to the most recent version of the Reporting Standards established by the National Council of Real Estate Investment Fiduciaries ("NCREIF") and US GAAP.

10. Investment Process (Commingled Funds)

When applicable and consistent with the objectives of the Real Assets program, commingled funds may be used to achieve exposure to timberland investments. The commingled fund Investment Manager, acting as a fiduciary on behalf of ERS, acquires, manages and disposes of timberland investments in accordance with the terms of the investment vehicle documents.

INFRASTRUCTRE SUB-COMPONENT

1. Program Management

a. General Description

The Infrastructure Portfolio is long term in nature, and for time-diversification purposes, investment commitments may be drawn down over several years throughout a defined investment period with respect to certain investment vehicles (e.g., closed-end pooled funds). Accordingly, the ERS Investment Staff and Investment Consultants may recommend total investment commitments that reasonably exceed the total Infrastructure Portfolio allocation authorized for Portfolio investment (e.g., 150% of the authorized allocation amount) to build and maintain the allocation. The Infrastructure program is expected to be managed and monitored as a sub-component of the broader Real Assets component.

b. Investment Structure

The Infrastructure Portfolio may include private equity and private debt investments in closed-end and open-end pooled funds. Private equity fund investments may include equity interests in Infrastructure assets, including energy, communications, transportation, and other types of assets. Private debt fund investments may include structured investments, which provide for stated preferred returns, which may be accrued or paid on a current basis.

c. Diversification

The Infrastructure Portfolio diversification is important in reducing portfolio risk and accomplishing risk-adjusted return expectations in the context of the larger Real Assets component that includes the Infrastructure sub-component. The impact of Infrastructure investments on the Real Assets portfolio's diversification, portfolio risk, and risk-adjusted returns shall be considered when evaluating prospective investments.

d. Leverage

Leverage can be a significant risk factor, impacting the risk / return profile of the Infrastructure Portfolio. The ERS Investment Staff and the investment consultants will monitor closely the leverage level of each Infrastructure fund investment seek to maintain a risk/return level consistent with the ERS's investment objectives.

e. Portfolio Risk and Liquidity Attributes

Infrastructure investments are expected to be private; therefore, on-demand liquidity outside of income is not anticipated. Investments are expected to primarily be "core" investments, equity or debt investment in high-quality infrastructure assets with lower risk/return attributes. Core investments are often regulated or contracted essential assets that may be characterized by a low correlation to GDP growth (e.g., regulated utilities). Volatility levels are anticipated to be reduced by this focus on income-oriented investing.

AGRICULTURE SUB-COMPONENT

1. Program Management

a. General Description

The Agriculture Portfolio target is long term in nature, and for time-diversification purposes, investment commitments may be drawn down over several years throughout a defined investment period with respect to certain investment vehicles (e.g., closed-end pooled funds). Accordingly, the ERS Investment Staff and the investment consultants may recommend total investment commitments that reasonably exceed the total Agriculture Portfolio allocation authorized for Portfolio investment (e.g., 150% of the authorized allocation amount) to build and maintain the allocation. The Agriculture program is expected to be managed and monitored as a sub-component of the broader Real Assets component.

b. Investment Structure

The Agriculture Portfolio may include private equity and private debt investments in closed-end and open-end pooled funds. Private equity fund investments may include equity interests in Agriculture assets, including farmland, delivery, storage, and other types of assets. Private debt fund investments may include structured investments, which provide for stated preferred returns, which may be accrued or paid on a current basis.

c. Diversification

The Agriculture Portfolio diversification is important in reducing portfolio risk and accomplishing risk-adjusted return expectations in the context of the larger Real Assets component that includes the Agriculture sub-component. The impact of Agriculture investments on the Real Assets portfolio's diversification, portfolio risk, and risk-adjusted returns shall be considered when evaluating prospective investments.

d. Leverage

Leverage can be a significant risk factor, impacting the risk / return profile of the Agriculture Portfolio. The ERS Investment Staff and the investment consultants will monitor closely the leverage level of each Agriculture fund investment and seek to maintain a risk/return level consistent with the ERS's investment objectives.

e. Portfolio Risk and Liquidity Attributes

Agriculture investments are expected to be private; therefore, on-demand liquidity outside of income is not anticipated. Investments are expected to primarily be "core" investments, equity or debt investment in high-quality Agriculture assets with lower risk/return attributes. Core investments may be characterized by a low correlation to GDP growth. Volatility levels are anticipated to be reduced by this focus on income-oriented investing.

CREDIT COMPONENT

1. Investment Objectives & Structure of the Credit Portfolio

a. General Description

The Credit Portfolio consists of investment strategies and assets that are largely exposed and/or susceptible to various collateral types (corporate cash flows, mortgages, various credit receivables, etc.) that produce relatively high levels of income. These investments may be traded in public markets or sourced through private issuance. Such investments typically contain relatively lower levels of risk and exhibit lower volatility than other Broad Growth components but do have exposure to growth-related characteristics. In addition, periodic income will likely be a material portion of the Credit Portfolio's investment return.

b. Strategic Objective

The objective of the ERS Credit Portfolio is to complement other Stabilized Growth investments by generating a consistent return by pursuing an opportunistic non-benchmark focused approach across global public and private credit markets.

c. Long-Term Investment Return Objective

The ERS shall use the following rate of return tests to evaluate the performance of the Credit Portfolio:

i. <u>Total Return</u>

1. Over rolling 3-year periods, the total Credit Portfolio is expected to generate a minimum total dollar-weighted rate of return (internal rate of return or IRR) that exceeds an absolute return of 3-month LIBOR (or equivalent short-term interest rate) + 4-6%, net of all investment management fees and expenses.
2. Additional benchmarks will be defined in Staff's procedures to measure the Credit Portfolio's risk and return characteristics against recognized credit indices. The weightings of this market benchmark and its index components may change over time to reflect the underlying composition of the portfolio between public and private markets.
   - 12.5% BC Global High Yield (hedged)
   - 12.5% S&P LSTA Leveraged Loan
   - 37.5% BC Global High Yield (hedged) +1% (month lagged)
   - 37.5% S&P LSTA Leveraged Loan +1% (month lagged)

d. Investment Strategies

The following credit strategies and investment types will be considered eligible for the ERS's portfolio:

i. <u>Corporate Credit</u>. Partnerships/Fund of Ones ("FOOs") or commingled funds which invest in liquid and less liquid corporate credit across the capital structure as well as opportunistically provide private financing. Investment instruments and/or strategies include but are not limited to the purchase and/or origination of investment grade, broadly syndicated high yield bonds, broadly syndicated leveraged loans, narrowly syndicated private debt ("club deals"), collateralized loan obligations ("CLO") debt and equity, municipal securities, capital solutions and convertibles.

ii. Mortgage Credit. Partnerships/FOOs or commingled funds which invest in liquid and less liquid mortgage credit as well as opportunistically provide private financing. Investment instruments and/or strategies include but are not limited to the purchase and/or origination of legacy non-agency residential mortgage-backed securities, ABS CDOs, agency risk transfer, FNMA/Freddie preferreds, non-qualified mortgage origination, re-performing loans, legacy CMBS, CRE CDOs, credit tenant leases and bridge financings.

iii. Specialty Finance. Partnerships/FOOs or commingled funds which invest in liquid and less liquid specialty finance as well as opportunistically provide private financing. Investment instruments and/or strategies include but are not limited to the purchase and/or origination of marketplace lending, equipment leasing, consumer loans, student loans, auto loan, aircraft finance and regulatory capital relief.

iv. Hedging. Partnerships/FOOs or commingled funds which seek to opportunistically hedge beta exposures through derivative exposures. Derivatives may be used for managing interest rate, volatility, term structure, country, currency and sector exposures and will be employed defensively.

e. Investment Structure

The ERS may utilize commingled funds, separate accounts, or funds of one specifically tailored to meet the needs of the ERS for primary, secondary, and co-investments. The Credit component is expected to be allocated 100% to active management.

2. Implementation

a. Investment Approval Process

The investment approval process (i.e., the selection of investment managers for this component) will be consistent with ERS's manager selection and retention processes as discussed under Section C of this policy manual. Any selected mandates will also be subject to the policies put forth under Section D (Broad Growth class policy) of this manual.

b. Reporting

Time-weighted investment performance results for Credit mandates will be reported in a manner consistent with results produced for other account mandates under the Broad Growth class and consistent with general reporting requirements found in Section C of this policy manual. In addition, in order to assess whether the component is meeting its objectives as discussed above in paragraph 1.C. (Long-term Investment Return Objective), the Staff will provide an annual update of the Credit program.

In addition to the return metrics highlighted above, Investment Staff may develop additional metrics to assess the progress of the Credit program. Such metrics may include, but not be limited to:

- Yields based upon cash income produced by the related portfolio(s);
- Default rates and/or impairment rates exhibited by the portfolio(s);
- Sector and/or collateral concentration levels within the portfolios;
- Other measures.

PRIVATE GROWTH COMPONENT

1. Program Management

a. Responsibilities

The Private Growth program shall be implemented and monitored through the coordinated efforts of the Board of Trustees ("Board of Trustees" or "Board") of the Employees' Retirement System of the State of Hawaii ("ERS"), the ERS investment staff ("Investment Staff"), the ERS private equity consultant ("Private Equity Consultant"), and the ERS specialty managers ("Specialty Managers"). Specific responsibilities that fall outside the general responsibilities highlighted in Section B.5. are listed below:

b. Specific Responsibilities: Board of Trustees

i. Investment Selection

1. Evaluate all proposed activities or investments that may fall outside the parameters and direction of the annual Strategic Plans;
2. Mediate any disputes regarding investment selection that may take place between Investment Staff, the Private Equity Consultant(s) and/or Specialty Managers

2. Investment Objectives

a. Portfolio Construction

The ERS has determined that, over the long term, inclusion of private markets investments (private equity, certain private debt opportunities, etc.) would enhance the ERS's expected portfolio investment characteristics. Specifically, as a result of the possibility of enhanced rates of return over publicly traded securities and returns that have low-to-moderate correlation with those associated with other major strategic class components, the use of private equity investments tends to increase the portfolio's overall long-term expected real return, and reduce year-to-year portfolio volatility.

Private growth investments of the ERS shall be made in a manner consistent with the fiduciary standards of the prudent expert rule: (1) for the sole interest of the ERS's participants and their beneficiaries; and, (2) to safeguard and diversify the Private Growth portfolio. The selection and management of Private Growth assets will be guided to preserve investment capital and to maintain prudent diversification of assets and management responsibility. The diversification objective is required to manage overall market risk and the specific risks inherent in any single investment or management selection.

b. Target Allocation

The allocation of ERS assets to Private Growth investments shall remain within the limits authorized by the Board of Trustees. Allocated capital will be defined as invested capital (based on market value). The Board of Trustees recognizes that it will be necessary to make capital commitments in excess of the target allocation in order to achieve and maintain progress toward its long-term target.

The goal of the ERS is to spread out the timing of new commitments so as to avoid an undue concentration of commitments in any one year. Over the long-term, it is expected that barring

any unforeseen events approximately equal amounts of new funding will be committed each fiscal year to garner the benefits of vintage year diversification.

c. Benchmarking / Return Targets

The ERS shall use the following rate of return tests to evaluate the performance of the Private Growth portfolio:

i. Total Return (Realized and Unrealized Gain/Loss plus Income)

1. Over rolling 10-year periods, the total Private Growth portfolio is expected to generate a minimum total dollar-weighted rate of return (internal rate of return or IRR) that exceeds an equivalent public global equity return (MSCI ACWI IMI) by 200 basis points ("bps") per year, net of all investment management fees and expenses
2. Any individual fund investment is expected to produce a commensurate return that contributes to the overall Private Growth portfolio return objectives

d. Risk Management

The selection and management of assets in the Private Growth portfolio will be guided to generate a high level of risk adjusted return, to provide minimal amounts of current income, and to maintain prudent diversification of assets and specific investments.

With private growth investments, there is an inherent risk that the actual return of capital, gains and income will vary from the amounts expected. The ERS shall manage the investment risk associated with private growth investments in several ways:

i. Strategic Structure

1. Allocation by strategic component.

   The Private Growth component consists of two segments: (i) private equity and (ii) other private investments. Descriptions and characteristics of these segments are discussed in the appendix to this section.

2. Commitment pacing into each segment over time.

   It is expected that the private equity component will have scheduled annual commitments. However, certain annual commitment amounts among these segments may vary significantly, depending upon the capital investment opportunities within each component.

ii. Manager Selection / Institutional Quality

1. All assets must be of institutional investment quality. Institutional quality will be defined as being of a quality whereby the investment would be considered acceptable by other prudent institutional investors.

2. It shall be expected that "foundation managers" to the ERS private equity portfolio (that is, are expected to comprise a significant subset of total ERS private growth assets) periodically report to the Board of Trustees and/or Investment Staff as requested on the progress of ERS investments under their management.

PRIVATE EQUITY SUB-COMPONENT

1. Investment Objectives & Structure of the Private Equity Program

a. Benchmarking/Return Targets

The ERS shall use the following rate of return tests to evaluate the performance of the Private Equity sub-component portfolio:

i. Total Return (Realized and Unrealized Gain/Loss plus Income)

1. Over rolling 10-year periods, the total Private Equity portfolio is expected to generate a minimum total dollar-weighted rate of return (internal rate of return or IRR) that exceeds an equivalent public global equity return (MSCI ACWI IMI) by 200 basis points ("bps") per year, net of all investment management fees and expenses
2. Any individual fund investment is expected to produce a commensurate return that contributes to the overall Private Equity portfolio return objectives

b. Investment Structures

The following are considered allowable investment structures for the private equity program. It shall be noted that the Private Equity Consultant or Specialty Manager are expected to act as fiduciaries on behalf of the ERS and the investment structures mentioned below must be within accordance of the investment policies set forth in this Manual and the annual Strategic Plan. Such investment activity is subject to active review by Investment Staff on a regular basis.

i. Co/Direct Investments

Co-investments may be sourced by the Private Equity Consultant or Specialty Manager, or Investment Staff, and must be approved by the Board of Trustees or designee.

ii. Primary Investments in Private Equity Funds

Capital commitments to limited partnerships and/or limited liability companies established for the purpose of private equity investment are managed through the Private Equity Consultant or a Specialty Manager.

iii. Secondary Investments

Purchasing an existing interest in a private equity fund is managed through the Private Equity Consultant or a Specialty Manager.

iv. Separate Accounts

Investment vehicles typically set up for a single limited partner where the investment manager constructs a diversified portfolio of private market investments that are tailored specifically to the needs and objectives of the investor. Separate accounts should offer the ERS access to economics that are below generally prevailing rates and/or target strategies that are traditionally difficult for the ERS to access directly (e.g., Venture Capital).

c. Investment Strategies

The following private equity strategies and investment types will be considered eligible for the ERS's portfolio:

i. Corporate Finance/Buyout:

Partnerships/LLCs which provide funding to acquire majority or controlling interests in a business or product lines from either a public or private company. Buyout sub-strategies are classified by total capital commitments and include Small, Mid, Large and Mega buyouts

ii. Fund-of-Funds

Blind pool partnerships/LLCs that evaluate, select and monitor investments in other limited partnership/LLC investments

iii. Mezzanine Debt

Partnerships/LLCs which invest in unsecured or junior obligations in financings. These generally take the form of subordinated debentures or preferred stock. They typically earn a current coupon or dividend and have warrants on common stock or conversion features

iv. Distressed Debt

Partnerships/LLCs which invest in non-investment grade privately placed debt securities. Common sub-strategies include Distressed For Control, Non-Control and Trading

v. Project Finance

Partnerships/LLCs which invest in industrial leveraged or unleveraged lease or project financings. These can include participation in equity, mezzanine, or senior debt investments. Investments should be made after the development phase, as part of the project's permanent financing, when projects are going operational

vi. Special Situations

Partnerships/LLCs with investment strategies which have gained an institutional following, but where sporadic opportunities do not justify a separate long-term strategic allocation. Categories includes partnerships/LLCs which make strategic block investments, have very broad mandates, focus on restructuring/recovery or focus on specific industries or which seek to exploit opportunities created by changing industry trends or governmental regulations

vii. Venture Capital

Investments in start-up companies generally exhibiting promising potential and/or high-growth characteristics. Such investments generally exhibit minimal leverage and can consist of the following stages: Seed/Early, Middle, Late-Stage and Growth Equity

viii. Other

Partnerships/LLCs which invest in publicly traded securities or which employ strategies different from those cited above such as, hedge fund strategies, commodity trading, post-venture equities, investments in commercial leases, and other non-traditional strategies. The purchase of secondary partnership/LLC interests is also allowed

d. Diversification Requirements

The private equity portfolio shall, to the extent possible[2] be diversified as to investment strategy, timing of investment, size and life cycle of investment, industry sector, investment sponsor organization (e.g., general partner group), capital structure and geographical location. Diversification reduces the impact on the portfolio of any one investment or any single investment style to the extent that an adversity affecting any one particular area will not impact a disproportionate share of the total portfolio.

It is also recognized that during the portfolio development and wind-down stages the full investment parameters may not, of necessity, be met.

The scope and size of the ERS program is such that significant investments in fewer, more concentrated "foundation" managers are preferred to smaller, more numerous managers. While ERS has not set a minimum dollar amount per partnership/LLC, the Private Equity Consultant and/or Specialty Manager will be charged with deploying the capital efficiently, such that funding targets are achieved with a minimal number of partnership/LLC holdings. Long-term diversification targets among eligible investment strategies will be set forth in the annual Strategic Plan document, and reviewed and updated as necessary.

i. Geographic

Over the long-term, the ERS portfolio should seek portfolio diversification with regard to major regional areas both domestically, and internationally.

The portfolio shall primarily target investments domiciled within North America. In line with the ERS's total international allocation, the portfolio shall seek to limit international investments (outside of North America) by targeting no more than 35% of the private equity investment allocation to such investments. The currency exposure to the ERS from the non-dollar aspect of the allocation is expected to be negligible.

ii. Industry

The ERS portfolio will seek to diversify by industry sector (as outlined through the Global Industry Classification Standard) and shall target that no one industry classification represents more than 35% of the private equity portfolio.

[2] Investments will be primarily in "blind pool" funds where there is limited control over the diversification process.

iii. Life Cycle

Commitments to partnership/LLC investments generally will be staged over time. It is the long-term goal of ERS to spread out investment timing such that new commitments will be made each fiscal year. This policy will have the effect of dollar cost averaging the ERS's portfolio over business cycles to help insulate the portfolio from event risk.

e. General Partner

The ERS portfolio will seek to diversify by issuer of limited partnership/LLC securities, and other specific investments sponsors. No more than 20% of the ERS's private equity portfolio net asset value will be invested with any one investment sponsor organization.

i. Single Investment

No single private equity commitment shall comprise more than 100bps of total ERS assets under management. An exception to this limitation may be offered for separate accounts, subject to approval by the Board of Trustees.

ii. Limited Partner

The ERS is permitted to own up to 20% of any particular partnership/LLC subject to the General Partner limitation (item 4) above.

2. Implementation of Private Equity Program

a. Annual Strategic Plan

i. Annually, the Private Equity Consultant and Specialty Managers (if applicable), in conjunction with Investment Staff, will prepare a Strategic Plan which reviews the current status of the portfolio, recent historical and prospective market conditions, and proposes the actions to be taken over the next approximately twelve-month period.

ii. The annual Strategic Plan will then be presented to the Board of Trustees for approval

b. Investment Approval Process

The following steps shall be followed in order for the ERS to commit to any prospective private equity investment opportunity:

i. Private Equity Consultant sources and performs comprehensive due diligence on attractive investment opportunities consistent with criteria set forth in the annual Strategic Plan

ii. If, as a fiduciary of the ERS, the Private Equity Consultant determines that the investment merits a commitment from the ERS, the Private Equity Consultant will take the following steps:

1. Discuss with Investment Staff the key findings during due diligence, including investment merits, risks and key conclusions
2. Follow-up with Investment Staff on additional requests for information based on this discussion and complete a due diligence memorandum.
3. In conjunction with the ERS's legal review process, facilitate legal negotiation and closing into the investment opportunity

iii. The Board of Trustees shall be notified in the event of a disagreement between Investment Staff and the Private Equity Consultant on an investment recommendation

iv. The Specialty Manager (if applicable) will be expected to operate on a discretionary basis

1. The Specialty Manager is to operate under the oversight of and provide regular updates to Staff.

c. *Monitoring and Reporting*

i. Reporting System

There shall be a quarterly reporting and monitoring system for the entire portfolio by the Private Equity Consultant. The monitoring shall include asset/risk allocation and portfolio performance in sufficient detail to identify situations of underperformance, diversification deficiencies and conflicts of interest. Due to the large number of funds, the ERS investment staff will employ a sampling methodology to verify that the Private Equity Consultant is adequately executing the monitoring program and detecting major performance issues within the private equity portfolio.

ii. Performance Measurement

The Private Equity Consultant and Specialty Manager(s) will provide cash flow, valuation, and any other requested information to Investment Staff and the Private Equity Consultant quarterly, and the ERS's custodian bank ("custodian") on a monthly basis, and will notify Investment Staff of any instances of materially different carrying values from those reported by general partners.

Performance may be calculated on a time-weighted and/or dollar-weighted (internal rate of return or IRR) basis, as applicable, with primary emphasis being placed on the internal rate of return. The rate of return calculations will be net of all partnership/LLC fees and expenses, but gross of Private Equity Consultant and/or Specialty Manager fees and expenses. The manager and/or Private Equity Consultant will be responsible for reviewing the custodian's figures as to timing, amount, value of in-kind securities at distribution and reported net asset value, and reconciling and explaining any discrepancies.

HiTIP PROGRAM

SECTION: E

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E.1. INTRODUCTION

The Hawaii Targeted Investment Program (HiTIP) was created by the Employees' Retirement System of the State of Hawaii ("ERS") to fulfill the mandate of Act 260, "A Bill For An Act Relating To The Innovation Economy" ("Act 260") passed by the Legislature and signed by the Governor in July 2007. The purpose of Act 260 is "to encourage the employees' retirement system to invest in Hawai'i venture capital…"

The HiTIP should be viewed as a distinct component of the broader ERS private equity program for two distinct reasons. First, Act 260 stipulates that the ERS provide specific updates to the State of Hawai'i ("State") with respect to the HiTIP. Second, the investment directives that apply to the HiTIP are different than those that apply to the broader ERS private equity investment portfolio. Act 260 stipulates that the ERS require that the HiTIP earn returns for the ERS investment portfolio by making investments in emerging growth and growth-oriented businesses in traded sector industries in Hawai'i.

In accordance with HRS chapter 88, the Board of Trustees of the ERS (the "Board") determines the investment policies and procedures for all ERS investment activities, including the HiTIP. ERS employees will act as staff overseeing HiTIP and its fund-of-funds advisor and report HiTIP activities to the Board, in conjunction with the fund-of-funds advisor. In this capacity, ERS investment staff ("Investment Staff") and/or the fund-of-funds advisor may periodically recommend new or updated HiTIP investment policies and procedures to the Board for review and comment. HiTIP investment policies and procedures, which are attached, reflect the following principles:

1. The purpose of the HiTIP is to produce competitive risk-adjusted investment returns for the ERS by making investments in emerging growth and growth-oriented businesses in traded sector industries, with specific emphasis on Hawai'i. The HiTIP's mission is not economic development, but economic development may be one significant byproduct of the investment program.
2. HiTIP funds will be invested only through external general partners/managers or co-investments.
3. General partners/managers will be fully discretionary, i.e., after funds are allocated to the limited partnership or limited liability company ("LLC"), they are totally responsible for the investment of these funds within the partnership's or LLC's investment guidelines.

The Board and Investment Staff will delegate the selection, retention and monitoring of external partnerships or LLCs to a dedicated fund-of-funds advisor (or manager-of-manager) and will not entertain individual investment proposals from individual businesses or for particular projects, except as a result of in-kind distributions of assets to the HiTIP by external partnerships/LLCs. Except as described in the preceding sentence, individual investment decisions will be left to the general partnership or LLC managers.

E.2. POLICY

1. Background

The Hawaii Targeted Investment Program (HiTIP) is a distinct component of the ERS private equity portfolio. The ERS has established the HiTIP to participate in attractive long-term alternative investment opportunities in emerging growth and growth-oriented businesses in traded sector industries, emphasizing the greater-Hawai'i geographic region. Investment of moneys in the HiTIP will generally be implemented through participation in limited partnerships or LLCs that make private equity and debt investments, including investments in emerging growth and growth-oriented businesses, although other management and investment arrangements may be considered under appropriate circumstances. For the purposes of this policy:

a. "Emerging growth business" means a new or small company that has the capacity, upon obtaining appropriate capital, to generate significant high skill, high wage employment within one or more traded sector industries.

b. "Growth-oriented business" means an existing company with the potential to generate significant revenue and/or profit growth within one or more traded sector industries, resulting in a commensurate increase in high skill/wage employment in the pertinent sectors.

c. "Traded sector" means industries in which member firms sell their goods or services into markets for which national or international competition exists.

d. Chapter 88, Hawai'i Revised Statutes ("HRS"), which governs ERS investment activities, and this ERS Investment Policies, Guidelines and Procedures manual ("Manual") will govern investment the activity of the HiTIP.

2. General Policy

Private equity investments, such as those encompassed by the HiTIP, should contribute favorably to the risk-adjusted investment returns of the total ERS investment portfolio, and are compatible with the general objectives of the ERS investment portfolio.

Private equity investments possess a higher degree of risk with a higher return potential than traditional investments. Accordingly, total rates of return are expected to be greater than those that may be obtained from conventional public equity or debt investments. They have a lower correlation relative to other investment classes and should therefore contribute to an effective management of risk and the enhancement of returns on a total ERS portfolio basis.

Similar to other portfolio segments under its authority, ERS should endeavor to retain appropriate fiduciary expertise to manage all or a portion of the private equity portfolio, including the HiTIP.

3. Objectives

a. Portfolio Investment Performance Objective

The performance objective for HiTIP investments is significant long-term net returns to the ERS investment portfolio, (e.g., after management fees and general partner's carried interest) above a benchmark reflecting public market alternatives or counterparts plus an appropriate premium to compensate for illiquidity, risk, and expense. The return expectation should be tempered, however, given the potential concentration of investments within Hawai'i. The performance objective for private equity investments is a net internal rate of return (i.e., dollar-weighted rate of return) of: the MSCI ACWI IMI ND Index plus 200 basis points, measured over the life of the

partnership or LLC. Staff will periodically evaluate the performance benchmark and associated premium.[1] In any case, results of such investments may not be meaningful for several years.

b. Diversification of HiTIP Investment Risks

Diversification helps to minimize risk in the HiTIP's investments and the following types of diversification should be considered, including, but not limited to:

i. Stage

Diversify investments throughout the various stages from early stage through later stage financing.

ii. Industry Sectors

Investments will be diversified across industries, subject to the investment opportunities and the discretion, within the parameters of the partnership/LLC agreements, of the general partners/managers retained.

iii. Size of Investments

Investments will be diversified among a range of partnerships/LLCs of varying sizes, generally with a minimum commitment size of $1 million but with an ERS ownership percentage usually at or below one-third of the total fund.

iv. Geographical

The HiTIP, by statute, will be biased toward Hawaiian companies and/or concentrated within the State; this risk cannot be diversified away and may be significant. While such a geographic bias is likely to exist, there is a reasonable likelihood that the business mix of the underlying companies could be global in nature, offsetting the above-referenced lack of geographic diversification.

v. Time

The HiTIP will endeavor to invest in a consistent manner over time and shall not seek to "time the market."

c. Total Private Equity Portfolio Diversification

Correlation of the HiTIP's investment return to other private equity segments is expected to be relatively low, and the inclusion of this component should, therefore, provide an added measure of diversification to the broader ERS private equity program.

d. HiTIP Program Size – Prudent Level of Investment

Act 260, requires ERS to "develop criteria to determine the amount of funds that may be prudently invested in Hawai'i private placement investments." To meet this requirement, the ERS relied upon an independent third-party analysis of Hawai'i private equity investment trends, published in January 2008 by the Hawai'i Institute for Public Affairs (HIPA), a nonpartisan research institute focusing on key Hawaiian economic trends. The analysis, entitled *Venture Capital in Hawai'i – An assessment of Market Opportunities*, proved to be a foundational study on private equity capital formation within the State. Over the years, other reports have generally confirmed the findings of the HIPA report.[2]

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[1] ERS changed the private equity benchmark from the Russell 3000 Index plus 350 basis points effective 10/1/2014.

[2] See, for example, Hawaii Innovation Assets Report, 2015-2015, commissioned by the Hawaii Business Roundtable; #STARTUPPARADISE, Stafford Capital Partners, June 2016.

One important condition for any private equity program to deliver its expected return objective is that the market(s) it serve(s) have an imbalance of supply and demand for private equity capital. Specifically, if the expected amount of capital available for investment is less than the expected amount of capital required, then a "funding gap" is said to exist. Such a funding gap can cause investor capital to be marginally more attractive, allowing investors to seek incrementally higher returns. The larger the funding gap, the broader the investment choices and the lower the competition among investors placing capital in the marketplace.

The HIPA report found that a modest private equity funding gap exists in Hawai'i. Based on a review of the report's figures by the ERS's general investment consultant, the annual expected funding gap falls in a range of ~$5 million to ~$45 million. In order to increase the probability of the HiTIP's successfully meeting its objectives, ERS's general investment consultant recommended that the HiTIP fund only a fraction of the expected funding gap, to a maximum of 50%, to bring more flexibility and higher returns to the program, and a minimum of 25%, to attract a sufficient number of vendors to compete for the opportunity to manage a Hawai'i-oriented private equity program with a focus on venture capital and other growth-oriented opportunities.

E.3. PROCEDURES

1. Procedures and Standards

a. General Procedures

i. The ERS, with assistance from consultants, as requested, will seek, identify, and screen appropriate fund-of-funds advisors that exhibit (i) expertise in structuring successful long-term targeted investment programs, (ii) sufficient resources to screen, analyze, and conduct due diligence on a wide array of private equity partnerships (and/or LLCs), and (iii) a willingness to commit significant resources to Hawai'i-focused private equity investment.

ii. The ERS, with assistance from consultants, as requested, will select an appropriate advisor to execute the HiTIP investment program. Key aspects of the program are (i) identifying partnerships or partnership groups (or LLCs) that are focused on, emphasize, or have made material investment allocations to the greater-Hawai'i economy, (ii) developing a long-term investment strategy and/or business plan that places high priority on committing material amounts of capital to Hawai'i businesses, and (iii) establishing and fostering a growing private equity network within Hawai'i.

iii. The fund-of-funds advisor will identify promising investment vehicles and conduct full due diligence (including legal due diligence) on prospective investments. Upon completion of its due diligence, the fund-of-funds advisor will evaluate the investment vehicle and determine whether the investment should be pursued.

iv. Direct investments into portfolio company co-investments are not allowed without first making the appropriate changes to this policy.

v. Upon satisfactory due diligence and legal reviews, the fund-of-funds advisor will, on behalf of the Board, authorize a commitment to a specific partnership, LLC, where ERS holds an economic interest in a vehicle that is managed by a general partner or managing member.

vi. At least annually, the fund-of-funds advisor will provide a written report to the Board containing a summary of the approved investment vehicles since the last report. The summary may include: a description of the general partner's/manager's background, historical performance, and organization; the proposed investment strategy; the terms of the investment; the expected rate of return; the merits of the investment; issues and concerns surrounding the investment and how they were resolved; and issues and provisions that were subject to negotiation.

b. Selection Criteria – External General Partners/Managers

i. The HiTIP's fund-of-funds advisor will generally invest with partnership (or LLC) groups with prior investment management experience. Primary emphasis will be on the quality and experience of the individuals who manage the investments. It is expected that the fund-of-funds advisor will conduct sufficient due diligence to address and examine the criteria for selection outlined in this section. The fund-of-funds advisor will provide a summary due diligence report to Investment Staff for each partnership commitment.

ii. <u>Additional criteria to be considered shall include</u>:

1. A well-developed investment focus that meets the HiTIP's objectives, and a favorable assessment of the proposed investment's strategy and market conditions;
2. Relevant investment experience of partners/managers and key staff, individually and as a team, as well as their stability;
3. Organizational depth and significant time commitment to the investment vehicle;
4. Well-structured decision-making and transaction execution processes, including:
   - deal flow and initial analysis of portfolio investments,
   - pricing, selection and negotiation of portfolio investments,
   - financial structuring of portfolio investments,
   - management or oversight of portfolio companies,
   - development of exit strategies;
5. Consideration of relevant issues, such as conflicts of interest and alignment of interests, among others;
6. Experience in, and a demonstrated record of, successful prior investments;
7. Appropriate proposed terms and structure for the investment.
8. Meaningful capital commitments by the partners/managers.

c. Standards

i. <u>Types of Allowable Investments</u>

The applicable State statute (Section 88-119, HRS) allows for a wide array of investment vehicles. ERS private equity investment policies allow investments in limited partnership LLC vehicles without prior Board approval.

ii. Prudent Investor Standard

The selection of HiTIP investment vehicles will be guided by the care, skill and diligence that a prudent investor acting in a similar capacity and familiar with such investments would use in managing and investing a similar account. Investments should be expected to enhance the expected risk-adjusted investment returns of the broader ERS investment portfolio.

iii. Negotiated Terms

Terms, such as preferred returns, lower fee structures, and profit splits should be negotiated where prudent, adhering to best practices within the institutional investment community. All agreements are subject to the satisfactory negotiation of terms by the fund-of-funds advisor.

2. Strategy

a. Allocation

The HiTIP will be selective and more focused than the current private equity program, and invest such assets prudently, and as opportunities become available. Diversification within the HiTIP is a consideration, but is extremely limited given the intent of Act 260, which is the primary impetus for HiTIP.

i. Allocation by Fund Type

An important component of the HiTIP investment strategy is to seek out and invest in Hawai‘i-based opportunities. Access to such opportunities may occur through (i) partnerships/LLCs that are headquartered in Hawai‘i or (ii) partnerships/LLCs that are not located in Hawai‘i, but make or consider investments in Hawai‘i. One framework to categorize partnerships is as follows:

1. Partnerships/LLCs that are Hawai‘i focused – Those partnerships/LLCs that invest a significant percentage of their capital locally or have a permanent physical and staff presence in Hawai'i.
2. Partnerships/LLCs that have a Hawai‘i presence – Those partnerships/LLCs that spend or make a commitment to spend significant time and resources in Hawai'i.
3. Partnerships/LLCs that are occasional investors – Those partnerships/LLCs that commit to actively seek Hawai'i investments.

Longer-term, the HiTIP seeks to achieve reasonable and prudent weightings among the above fund types, with a clear emphasis on Hawaii-based investments. More specifically, the fund-of-funds advisor has agreed to make commitments so that ~15-50% of investments will be directed toward Hawai'i focused partnerships depending on the availability of attractive opportunities and the remaining ~50-85% of investments will reside with partnerships/LLCs that fall under the latter two above categories., Significant concentration toward any of the above segments can occur over time as a result of how and when opportunities become available and because each HiTIP investment will likely not be fungible and/or exhibit low levels of liquidity.

ii. Method of Participation

The HiTIP will consider well-established investment vehicles as well as new and smaller investment vehicles. To the extent possible, partnerships and/or LLCs shall be structured to create an alignment of interest between the limited partners/passive investors and the general partners/managing members.

iii. Investment Funding

Partners/managers retained by the HiTIP shall make capital calls during agreed upon investment periods in accordance with negotiated agreements. Such requests must be in compliance with both fund-of-funds advisor and ERS internal control procedures.

iv. Investment Liquidations

Partners/managers shall return capital to the HiTIP through cash distributions, whenever possible. Partners/managers shall liquidate any marketable securities before making distributions to the HiTIP. In instances where liquidation is not in the best interest of the HiTIP, partners/managers may distribute securities with sufficient advance notice to the fund-of-funds and Staff. ERS may utilize the fund-of-funds advisor or retain a third party manager to liquidate such securities as deemed appropriate by the third party manager, generally, within a six-month period.

3. Implementation

a. Staff Requirements

Appropriate Investment Staff will be assigned as the workload necessitates. It is expected that the retained fund-of-funds advisor will be responsible for much of the day-to-day operations of the HiTIP. To gain further insights into the overall due diligence process (particularly within the State), Investment Staff may conduct due diligence visits in conjunction with, or separate from, the fund-of-funds advisor on specific investment opportunities. Such visitations should not impact the advisor's recommendations and implementation activities.

b. Legal Counsel

The fund-of-funds advisor is responsible for obtaining all relevant legal advice for the HiTIP investments.

c. Contract Execution

i. The Board will approve an overall multi-year commitment level to the fund-of-funds advisor. The Board will give discretion to the fund-of-funds advisor, acting as a fiduciary on behalf of the ERS, to conduct business, financial, and legal due diligence on, and then approve commitments to, underlying partnerships/LLCs.

ii. The fund-of-funds advisor, as general partner or manager of the limited partnership or LLC described in D.1, below, is authorized to execute contracts for specific HiTIP investments, up to the total commitment level authorized by the Board.

d. Fund-of-Funds Advisor Contract

i. The fund-of-funds advisor contract shall be structured as a general partner/limited partner agreement with a termination date not to exceed twelve years, including extension periods.

ii. The fund-of-funds agreement shall include a "no-cause" fund-of-funds advisor/general partner replacement clause with a maximum 90 day notice period.

iii. It is the policy of the Board to continuously review all contracts.

iv. Upon the expiration of the Fund-of-Funds Advisor's contract, or whenever directed by the Board, ERS, with assistance from consultants, as requested, shall undertake and complete a search process which shall include the following:

1. Identification of those potential fund-of-funds advisor candidates who may reasonably be believed to perform those services under examination;

2. Directing of proposals which shall include all relevant factors.

4. Monitoring

a. Reports

i. Reports prepared by the HiTIP fund-of-funds advisor will be furnished to the Board and Investment Staff, quarterly, on HiTIP activity and performance, and annually in an expanded format.

ii. Underlying general partners/managers shall provide semi-annual reports to the fund-of-funds advisor and Investment Staff on investment activity and performance. In addition, audited financial statements shall be provided on an annual basis.

iii. Section 88-119(11), HRS, requires that ERS report annually to the legislature on HiTIP investment activity, as well as on any other ERS investments that are located in Hawai'i. As part of the reporting process, ERS is required to report rationale for not investing in Hawai'i venture capital investments.

b. Adherence to Strategy

The actual strategy employed by underlying general partners/managers will be judged relative to stated objectives and strategies. Investment Staff and the fund-of-funds advisor will interact with the general partners/managers periodically as necessary. It is also expected that the fund-of-funds advisor and/or Investment Staff will also attend advisory meetings, board meetings, and/or annual investor meetings of the underlying partnerships or LLCs, as required (particularly with respect to Hawai'i-based investments), as part of the monitoring process. Given the illiquid nature of these investments, however, it is not anticipated that these investments can be exited once a commitment is made.

5. Review and Modification of Investment Policy Statement

The Board may review this policy statement and procedures from time to time to determine if the Board deems modifications to be necessary or desirable.

DIVERSIFYING STRATEGIES

SECTION: F

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F.1. OVERVIEW

1. General Description and Purpose

The ERS total portfolio is expected to produce a positive long-term real (inflation-adjusted) compound return sufficient to keep the total portfolio reasonably close its long-term path to fully funded status. To achieve such a return, the total portfolio must accept significant exposures to economic growth and corporate profitability via portfolios of equity and credit investments that dominate Broad Growth's risk and are highly volatile. Periods of significant depreciation in such growth-related investments do occur, causing the total portfolio to fall off its path to full funding but also creating opportunities to rebalance into depreciated or distressed growth assets, provided there is sufficient liquidity in Diversifying Strategies ("DS") portfolios that have preserved their value or have appreciated during these crisis periods for growth assets.

The overall objectives of the DS strategic class are to provide stability, diversification, and liquidity complements to the Broad Growth strategic class. The DS class can help diversify the Broad Growth Class during challenging periods, such as material equity market drawdowns. The DS strategic class consists of three major components to accomplish these goals: Liquid Defensive ("LDef"), Liquid Diversifying ("LDiv"), and Illiquid Diversifying ("IDiv").

LDef is structured to provide significant positive returns when growth assets are producing significant negative returns, while LDiv and ID are structured to produce uncorrelated returns during both crisis and non-crisis periods for growth assets, thereby stabilizing DS returns when LDef is experiencing a material drawdown. The target capital allocations to the three DS components are generated during asset-liability studies but will vary to a moderate extent over most periods as Staff implements and as opportunities present themselves. The IDiv component's role is to increase DS performance and reduce volatility by capturing idiosyncratic investment opportunities that are illiquid in nature or structure and not dependent on the growth risk premia. Individual strategies within DS should also demonstrate their expected relationships (e.g., correlations) to growth risk over the various stages of a market cycle.

The DS strategic class utilizes (1) systematic strategies that capture market-based and non-market-based risk premiums and (2) discretionary strategies relying on manager skill to structure trades that capture the inherent value in mispriced assets; both of these types of strategies are expected to behave in a manner that is primarily distinct or counter to the equity risk premium and credit risk premium. Such investments are typically designed to exhibit volatility that is in-line with the risk of the Broad Growth strategic class, so that during periods of Broad Growth stress, the DS strategic class can provide meaningful support.

These strategies focus on capital efficiency and employ certain financial mechanisms to target specific levels of volatility (e.g., derivatives-based leverage). This approach emphasizes capital efficiency thereby enabling the relatively small capital base of the DS strategic class to offset a meaningful level of volatility inherent in the Broad Growth strategic class.

2. Risk Factor Exposures

Major

- Interest Rate Risk (due to Long Treasury Duration component)
- Inflation Risk
- Varying market-based risks based upon their trending behaviors

Minor

- Specific non-market systematic style risks (periodic)

F.2. CLASS STRUCTURE

1. Legal Structure

The LDef and LDiv components utilize a series of Delaware LLC's, one for each DS investment manager, to ensure transparency of the assets and transactions in each account, ensure the ability to subscribe or redeem units daily, and limit liability. The exception to using an LLC structure relates to Treasury/Agency Duration Capture portfolios, which may instead utilize a custody account. Portfolios within these components are typically included in the systematic DS rebalancing regime.

The IDiv component utilizes commingled vehicles and Delaware LLC's that limit liability and have liquidity restrictions that restrict or prevent the redemption of capital on short notice. IDiv portfolios are not included in the systematic DS rebalancing regime.

2. Components and Underlying Strategies

Each of the three major components (LDef, LDiv, and IDiv) can consist of a variety of underlying strategies. The strategy types may vary over time and market cycles, but their characteristics should align with the respective component that they reside in. Staff has the authority to add and remove strategies from each of the components as appropriate. Justification criteria for additions and removals shall be documented in the DS Procedure Manual.

a. *LDef Examples of Approved Strategies:*

i. Treasury/Agency Duration Capture ("TADC")

1. Portfolios of long-dated (maturities in excess of 10 years) high-quality bonds (U.S. Treasuries and government-backed, high-quality, very liquid agencies) that can be sold in their entirety at market price within 24 to 48 hours, and cash-collateralized derivatives that mirror the performance of long-dated high-quality bonds and maintain the duration/volatility targets of the long Treasury index. Long-dated Treasuries have proven to be the most responsive to equity-related market crises as global investors seek the highest-quality asset possible during such periods, and can be viewed as the "first-responder" during an equity-related crisis as it tends to appreciate significantly in a crisis' initial phases.
2. Portfolios consisting of mostly or all U.S. government-issued or backed securities that are short/intermediate-dated (maturities less than or equal to 10 years); investment grade, short-dated U.S.-dollar denominated securities may also be included.

ii. Systematic Trend Following ("STF")

1. Long-short portfolios utilizing both cash and derivatives-based instruments to capture both periodic appreciation and periodic depreciation trends that evolve and dissipate across a very wide array of liquid global markets. Risk/volatility is calibrated to a pre-determined level utilizing cash and derivatives-based leverage.

2. Trends take time to formbut once they do, there is significant evidence that shows positive returns can be generated by investing in persistent trends. In this respect, STF strategies provide subsequent support/substitution to the TADC component during the mid-to-latter stages of a market crisis.

iii. Defensive Return Capture ("DRC")

1. Long-short portfolios utilizing both cash and derivatives-based instruments to produce positively-convexed returns over time that are significantly positive during crisis periods for growth-risk assets. These strategies may be systematic or discretionary and are typically directional. Risk/volatility is calibrated to a pre-determined level utilizing cash and derivatives-based leverage.

2. Strategies that hedge specific, unwanted ERS portfolio risks, such as inflation or foreign currency exposures, typically utilizing derivatives-based instruments (e.g. long options, total return swaps, FX forward agreements).

b. LDiv Examples of Approved Strategies:

i. Alternative Return Capture ("ARC")

1. Long-short portfolios utilizing both cash and derivatives-based instruments to systematically capture well-researched/documented non-market risk premia (e.g., momentum, carry, value, low-volatility, etc.) on a continuous basis, utilizing an array of liquid global markets and employing significant leverage to capture the risk premia. Risk/volatility is calibrated to a pre-determined level utilizing cash and derivatives-based leverage.

2. Directional, long-short portfolios utilizing fundamental and price-based indicators to establish return forecasts across global interest rates, foreign exchange, stock indices and commodities. Risk/volatility is calibrated to a pre-determined level utilizing cash and derivatives-based leverage.

3. Over time these various risk premia and systematic global macro strategies are expected to produce positive returns that are generally unrelated to the other major market risk premia (e.g., equity, credit, interest rates, inflation).

ii. Relative Value/Arbitrage ("RVA")

1. Long-short portfolios utilizing both cash and derivatives-based instruments to arbitrage opportunities and capitalize on relative value difference across a wide range of markets while only taking modest amounts of growth risk; strategies may include convertible arbitrage, event arbitrage (e.g. merger arbitrage and initial public market strategies), credit arbitrage, volatility arbitrage, and other relative value strategies utilizing a wide range of global markets. Where appropriate and depending on the nature of the strategy, risk/volatility may be calibrated to a pre-determined level utilizing cash and derivatives-based leverage that varies over time depending on opportunities.

c. *IDiv Examples of Approved Strategies:*

i. Insurance-Linked ("IL")

1. IL strategies may utilize a wide range of contracts that are related to collecting premiums for insuring against various types of risk that can be estimated, including property losses related to natural and man-made catastrophes, life, business interruption, pandemics, etc. Insurance companies underwrite the risk and then offload part of their risk to investors via various contractual arrangements, typically for terms of one year or less. IL strategies use limited partnerships or limited liability corporations to invest capital, which may be commingled with investors' capital and advanced to other insurance entities in fully collateralized arrangements. These legal structures have limited redemption liquidity, liability limited to the capital invested, and typically require collateral to be held in U.S. T-Bills.

ii. Idiosyncratic Return Capture ("IRC")

1. Long/short portfolios with insignificant correlation to growth risk, utilizing both cash and derivatives-based instruments to take advantage of mispriced assets based on analysis, manager insights and a combination of conventional and unconventional data sources. Risk/volatility vary over time depending on opportunities. Liquidity is limited either because the portfolio utilizes a commingled fund or a separate account with redemption liquidity restrictions.

3. Modifications to Class/Component Structure

Modifications to the DS strategic class's structure can take four potential forms:

a. Changing the legal structure;

b. Adding or deleting one or more of the three components;

c. Revising allocation ranges among the components;

d. Adjusting the breadth of investment strategies utilized within each component;

The four modifications to the DS's structure will occur only with approval of the Board of Trustees or their designee. manager selection, strategies utilized, sub-components and manager allocations are at the discretion ERS staff.

4. Components Allocation Ranges

The DS class's allocation ranges among its three major components are as follows (as a percent of total DS class assets):

DS Class Component Target Allocation Range*

Component	Lower Limit	Target**	Upper Limit
Liquid Defensive	20%	50%	80%
Liquid Diversifying	10%	40%	70%
Illiquid Diversifying	0%	10%	30%

* The liquid allocation structure above is designed to translate into an expected annualized volatility close to the expected volatility of the ERS's Public Growth portfolio over a market cycle.

** These are the average targets anticipated, but ERS staff will dynamically adjust them according to market conditions.

5. Management of Components and Sub-Components

To manage the assets assigned to the DS strategic class components, the Board of Trustees ("Board of Trustees" or "Board") of the Employees' Retirement System of the State of Hawaii ("ERS") may utilize external investment managers ("investment managers"), a DS Platform Manager, ERS investment staff, specialist consultants, and the ERS General Consultant as requested.

Each investment manager is responsible for executing the particular investment strategy (i.e., mandate) that the ERS has hired them to manage. Investment managers perform all of the typical investment functions expected for separately managed accounts with the addition of daily oversight by the DS Platform Manager where applicable.

The DS Platform Manager, acting as a fiduciary to the ERS, is responsible for establishing the managed account structure and service provider relationships; serving as manager of the LLC's; overseeing the day-to-day operations of the DS strategic class, components, sub-components, managed accounts, funds (IDiv funds may only be monitored on a monthly basis, with a lag and to a limited extent due to limited transparency), and managers. The DS Platform Manager will also measure market risk, enforce compliance to DS policies, procedures, limits and guidelines as well as systematically rebalancing the liquid accounts utilizing the rebalancing rules established in the DS Procedures Manual; helping to identify crisis situations; conducting initial and annual manager operational due diligence; providing manager, portfolio and market investment research including analysis of strategies for their correlation properties to growth risk both before and after introduction into DS; assisting ERS investment staff in investment due diligence as requested, and communicating with and advising the ERS investment staff on risk issues and investment/risk guidelines.

The ERS investment staff, and in particular the ERS DS Manager designated by the ERS CIO, is responsible for:

a. Evaluating and recommending investment managers and DS Platform Manager candidates to the Board of Trustees or designee as stated in the ERS Investment Governance Matrix.
b. Conducting onsite investment manager due diligence (initially and regularly thereafter consistent with best practice standards) and DS Platform Manager (annually) due diligence;
c. Monitoring the DS class on a daily basis, allocating capital to and adjusting risk targets for DS components;
d. Approving rebalancings and changes in manager allocations and investment managers;
e. Creating and maintaining the DS Procedures Manual;
f. Adjusting investment and risk guidelines/limits as approved by the DS Crisis Committee, chaired by the ERS CIO and as documented in the DS Procedures Manual;
g. Establishing the DS rebalancing rules; and
h. Reporting class level risk/return metrics to the ERS Board on a quarterly basis.

Staff will remain within the guidelines of the ERS Investment Governance Matrix with respect to approving managers, terminating managers, and monitoring managers. ERS Staff, and in particular the ERS DS Manager, in conjunction with the DS Platform Manager and the General Consultant will maintain a DS Procedures Manual.

The General Consultant is responsible for monitoring the DS strategic class on a monthly basis, advising the ERS DS Manager and CIO on DS policy, procedures, limits and guidelines, assisting the ERS investment staff in its due diligence and oversight responsibilities as requested, and providing

quarterly/annual reporting of the DS class to the ERS Board as part of its Total Plan reporting package. Within each component and sub-component, assets are expected to be allocated across one or more mandate(s). In combination, these mandates capture a broad, representative sampling of the available investment opportunity set within the specified component.

F.3. RETURN OBJECTIVES & RISK PROFILE

1. Class Return Benchmarks

Within the DS strategic class, the standards for component performance reporting may vary. Keeping this in mind, the ERS utilizes the target benchmark below to monitor the performance results of the aggregate DS strategic class:

15% Bloomberg Barclays U.S. Treasury Long Index +
15% Bloomberg Barclays U.S. Intermediate Aggregate ex. Credit +

20% MLM Global EV Index (15% Vol) +
46.5% (90 Day Treasury Bills + 2.64%/year)+

3.5% Swiss Re Global Cat Bonds (hedged)

The DS class portfolio is expected to match or outperform the above benchmark, net of fees, over a full market cycle. An appropriate measure of a market cycle would be rolling 5-year periods. The DS strategic class should outperform its benchmark, net of fees, over the majority of rolling 5-year periods.

2. Class Risk Profile

The aggregate DS strategic class has a total risk (standard deviation) range/budget in order to effectively counterbalance the volatility experienced in the ERS's Public Growth components. There is also a value-at-risk guideline (one day DS net asset value loss at a 5% probability) established by the DS Committee to ensure that downside DS risk is contained. These guidelines are provided below.

DS Class Absolute Risk Level Maintenance Policy

Measure	Lower Risk Guideline	Upper Risk Guideline
Annualized Volatility	4%	20%
Value at Risk (5%)	n/a	<=2.0%

If the behavior of the DS strategic class causes its recent historical volatility to deviate significantly beyond these limits, then a rebalancing process and/or target volatility adjustment should occur among the DS managers based on recent risk profiles of each manager/component as well as on prospective risk views for each manager/sub-component/component.

DIVERSIFYING STRATEGIES: APPENDIX

DERIVATIVES POLICY FOR DS CLASS SEPARATE ACCOUNTS

Derivatives may be used in the DS portfolio to access the risk premia and market exposures inherent to the mandates comprising the DS component portfolios; they may also be used as a substitute for a cash market security, risk control, income, cost reduction, or liquidity management. Derivatives are not permitted for purposes of speculation. **Any derivative investment not explicitly authorized below is prohibited.**

1. Where derivatives are used as substitutes for a specific cash security or set of cash securities, the return volatility of the combination of the derivative and associated cash position shall be equivalent to the unleveraged cash security or securities underlying the derivative instrument.
2. The Administrator for each DS account shall mark-to-market their derivative positions daily.
3. Permitted Instruments:
    a. *Futures* – commodity futures, equity index futures, bond futures, money market futures, and currency futures where the manager has the authority to invest in the underlying or deliverable cash market security. No physical delivery can be taken in commodity futures.
    b. *Currency forwards & spot FX.*
    c. *Total return swaps on equity securities, credit instruments, commodities and exchange traded funds ("ETF's"), both long and short.*
    d. *Interest rate swaps and swaptions.*
    e. *Credit default swaps and credit index default swaps.*
    f. *Exchange-traded options and OTC options (to allow customization of term, strike price, underlying asset/instrument/index; physical delivery cannot be involved in commodities).*
    g. *Other OTC derivative types subject to approval by the Board of Trustees or its designee.*
4. Futures contracts must be CTFC (Commodity Futures Trading Commission) approved and exchange traded.
5. All trading counterparties must be approved by the DS Platform Manager and be rated investment grade as determined by at least one major rating agency.
6. Cross-hedging is permitted.
7. On a daily basis, the DS Platform Manager shall examine all derivatives purchases of each DS investment manager for prohibited derivatives and will be promptly notified by Staff of any change in permitted or prohibited instruments. Should any prohibited derivatives be found, the Platform Manager should promptly notify ERS investment staff and instruct the investment manager to sell the prohibited derivatives.

OPPORTUNITIES PROGRAM

SECTION: G

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G.1. OVERVIEW

1. General Description

The Opportunities class is established to invest in strategies that are not currently included in the strategic policy portfolio but which have the potential to improve overall investment results over time. It is expected that such investments must eventually mature, be liquidated, or graduate out of the Opportunities class to one of ERS's strategic classes. Key characteristics of opportunistic investments might include: being significantly undervalued due to market dislocations, high potential expected returns due to unique time-specific opportunities, special opportunities presented to the ERS given its unique standing in the investment marketplace, etc.

The Opportunities class will have a policy target allocation of 0%. It will be allowed to vary between 0% and 3% of Total Portfolio assets. The 0% policy target is indicative of the transitory nature of investments in the Opportunities class. In this respect, when there are no compelling opportunities, or it is impractical to implement such opportunities, it is expected that the Opportunities class would have an actual allocation very near, or equal to, 0%.

2. Purpose

The Opportunities class provides the ERS a means to pursue unique investment opportunities that do not fit into its strategic policy portfolio. Such investments often involve transitory time-sensitive market opportunities. Given these features, funds invested in the Opportunities class are expected to range widely. In fact, due to the transitory nature of these investments, there may be periods when the class contains no strategies or vehicles.

3. Risk Factor Exposures

Due to the significant variation of strategies expected to flow through the Opportunities class, risk factor exposures are also expected to fluctuate significantly.

Major Exposures (time varying)

- Growth Risk
- Interest Rate Risk
- Liquidity Risk
- Idiosyncratic Risks

Minor

- Inflation Risk

G.2. CLASS STRUCTURE

1. Overview

By definition, the Opportunities class will be an aggregation of individually unique investment opportunities, each focused on exploiting a specific market environment or investment idea. As a result, the structure of the class can and will likely be highly variable, ranging from high concentrations of risk factor exposures to a reasonable range of risk diversification. The characteristics of the Opportunities class will fallout from specific investments made and held at a specific time. Unlike the ERS's other major strategic classes, there is no intention to manage the overall Opportunities class to a pre-defined set of risk parameters/characteristics.

2. Changes to Class Structure

Changes to class structure will be driven by bottom-up investment allocations. There is no pre-established structure to the Opportunities class. Structural changes within this class can evolve in a dramatic fashion, given the size, timing, and quantity of investments made within the class.

3. Opportunities Class Managers' Selection and Managers' Allocations

To manage the assets allocated to the Opportunities class, the Board will delegate investment authority to external investment managers. The ERS's investment consultants and Investment Staff have joint authority for identifying specific investment opportunities, determining the allocation amount, selecting investment manager candidates, and recommending specific managers for specific investment mandates within the class. The Board has the final authority to approve or disapprove the specific managers recommended for each mandate. Investment Staff has the authority to manage the allocation to each investment manager after the initial allocations are made.

G.3. RETURN OBJECTIVES

1. Benchmarks for Individual Mandates

Each mandate within the Opportunities class will have a specific performance benchmark. Since the mandates can vary widely (e.g., utilize public markets, private markets, or be a hybrid of both types of markets; be sector-specific; etc.), specific benchmarks are also likely to vary widely. Where possible, a specific performance benchmark will closely match the mandate's opportunity set of investments.

2. Benchmarks for the Aggregate Class

The overall benchmark for the Opportunities class is the market value weight of the underlying benchmarks. The difference between this weighted benchmark and the actual results of the Opportunities class will help determine the implementation success of the overall Opportunities Program. Long-term returns from the Opportunities class should match or exceed ERS' total fund performance benchmark. This difference provides an assessment of whether the Opportunities class is providing added value to ERS's overall investment program.

G.4. MANAGER INVESTMENT GUIDELINES

All investments and investment managers are subject to Section 88-119 (Investments), Hawai'i Revised Statutes, the Derivatives Policy and Watch Criteria in the Appendix of this section. Each manager and its mandate within the Opportunities Program will be assigned investment guidelines comparable to those utilized in ERS' other investment programs.

OPPORTUNITIES PROGRAM: APPENDIX

DERIVATIVES POLICY FOR THE OPPORTUNITIES CLASS

Derivatives may be used in the ERS portfolio as a substitute for a cash market security, risk control, income, cost reduction, or liquidity management. Derivatives are not permitted for purposes of speculation. **Any derivative investment not explicitly authorized below is prohibited.**

1. Where derivatives are used as substitutes for a specific cash security or set of cash securities, the return volatility of the combination of the derivative and associated cash position shall be equivalent to the unleveraged cash security or securities underlying the derivative instrument.
2. The notional value of the derivatives positions will likely exceed the total value of the underlying capital assigned to the mandate.
3. Managers shall mark-to-market their derivative positions daily.
4. Permitted Instruments*:*
    a. *Futures* – equity index futures, bond futures, money market futures, and currency futures where the manager has the authority to invest in the underlying or deliverable cash market security.
    b. *Options* – options on indices, ETFs, and bonds (including interest rate caps and floors). Options on futures, swaps, and currencies are allowed for those managers who have permission to invest in the underlying or deliverable cash market security.
    c. *Currency forwards* – only those managers who have the authority to invest in the underlying cash market instrument.
5. Futures contracts must be CTFC (Commodity Futures Trading Commission) approved and exchange traded.
6. Options must be exchange traded.
7. Managers may purchase back options in order to close out positions.
8. Counterparties to OTC traded instruments (forwards) must be rated investment grade (A-) or better as determined by at least one major rating agency.
9. Cross-hedging is permitted. The counterparties for foreign currency derivatives must be rated A- or equivalent.
10. On an annual basis, all investment managers shall provide a summary of the derivatives used and the reasons for their use. This summary shall be the basis for verification that the investment managers are generally complying with the objectives and constraints of the investment policy. The investment consultant shall elicit responses on each manager's policy in the form of a letter.
11. On a daily basis the custodian bank shall examine all manager derivatives purchases for prohibited derivatives. Should any prohibited derivatives be found, the custodian bank should promptly notify Staff and instruct the manager to sell the prohibited derivatives. The custodian bank will also value and monitor all derivatives and the trades from which they emanate.

IMPLEMENTATION OVERLAY PROGRAM

SECTION: H

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H. 1. OVERVIEW

1. General Description

Overlay mandates are inherently custom by design. The objectives, roles, and guidelines for an overlay manager can differ immensely from mandate to mandate. For the ERS, due to its fairly unique portfolio structure, it is critical for the overlay manager to understand the ERS's investment objectives and portfolio structure, to have processes and systems in place to measure exposures on a daily basis, to efficiently place trades to replicate desired exposures and hedge unwanted exposures, and to provide robust reports to the ERS on a daily, monthly and quarterly basis.

The overlay is designed to improve the efficiency and performance of the Total Portfolio by avoiding certain cash-drag and market-timing impacts that stem from paying benefits, receiving employer/employee contributions, making private markets funds' contributions and receiving distributions, and other cashflow related activities. While the main role of such a manager will be to equitize this frictional cash (i.e., invest cash balances in an efficient manner to replicate the Total Portfolio), there are additional services that the overly manager may implement if requested by ERS Investment Staff. Examples of these services include assisting the ERS Investment Staff with portfolio rebalancing, asset allocation tilts, transitions, and hedging unwanted risks or exposures, among others. The overlay manager will take responsibility for the funds that currently reside in the ERS cash operating account, which typically has one to two percent of total ERS assets in cash, plus an additional amount of funds to efficiently manage the cashflows from private markets investments, benefits payments and employee/employer contributions. Cash in this new overlay account will vary over time so that cash can be paid and received without affecting capital deployed elsewhere in the portfolio, but is expected to be between one and four percent of total ERS assets.

Since the overlay account may contain only a portion of the un-invested cash being equitized and the account may be creating desired exposures or hedging unwanted exposures that exist in the ERS portfolio outside of the overlay account, the derivatives in the account may create liabilities that exceed the value of the overlay account.

2. Purpose

A portfolio implementation overlay is a completely transparent and liquid investment account that utilizes exchange-traded derivatives, currency forward rate agreements, and securities to:

a. Securitize un-invested cash to reduce performance drag,

b. Bridge exposure gaps related to manager transitions and portfolio reallocation to reduce unwanted tracking error,

c. Passively rebalance the portfolio back towards policy targets without the need to disturb investment managers, thereby reducing transaction costs,

d. Within pre-established policy ranges, tilt the capital allocations to express a market view,

e. Hedge such unwanted risks as foreign currency exposure, and

f. Better manage factor exposures to reduce unrewarded factors and increase rewarded factors.

The ERS overlay manager will initially focus on the first four purposes listed above.

3. Risk Factor Exposures

Due to the dynamic nature of an overlay program, risk factor exposures are also expected to fluctuate significantly over time.

Major Exposures
- Growth Risk
- Interest Rate Risk
- Currency Risk

Minor
- Inflation Risk

H.2. PROGRAM STRUCTURE

1. Overview

ERS Staff will retain full responsibility for making decisions related to establishing the benchmarks for securitizing cash, permissible derivatives contracts, rebalancing, tilting the portfolio, and hedging. The overlay manager will execute the overlay program on a daily basis by accessing portfolio data from the ERS custodian to measure current exposures and un-invested cash levels using a systematic methodology agreed upon in advance with ERS Staff to make the appropriate trades. A proxy methodology may be used to approximate the value of portfolio assets that are reported on a lagged basis. The overlay account will utilize a futures commission merchant (FCM) as an agent and other executing futures brokers who are responsible solely for the execution, clearing and/or carrying futures contracts and options on futures. As such, the overlay manager will authorize the custodian to provide initial and variation margin to the FCM as required in the Futures and Options on Futures Account Agreement that the ERS signs with the FCM. The overlay manager will prepare daily, monthly and quarterly reports for ERS Staff detailing positions, trades, return attribution and risk metrics. The overlay manager and ERS Staff will monitor the risk and return of the overlay on an ongoing basis to ensure that it is performing according to expectations and within risk tolerances.

2. Changes to Class Structure

ERS Staff will consult with the General Consultant and notify the Board before any material changes to the structure or purposes are implemented.

H.3. RETURN OBJECTIVES

1. Benchmarks for Overlay Program

Cash securitization positions and the overlay program as a whole will utilize the Total Portfolio benchmark net of the illiquidity premia for private market investments, but gross of fees. Positions held for other approved purposes will not be benchmarked, but are expected to return at least the 3-month LIBOR rate for the capital they utilize. The overlay manager will be evaluated on how effectively (both cost and execution) the program is implemented versus the targeted exposures.

IMPLEMENTATION OVERLAY: APPENDIX

DERIVATIVES POLICY FOR IMPLEMENTATION OVERLAY PROGRAM

Derivatives may be used in the overlay account to access the market exposures of the overlay mandate. Derivatives are not permitted for purposes of speculation. **Any derivative investment not explicitly authorized below is prohibited.**

1. The notional value of the derivatives positions will likely exceed the total value of the underlying capital assigned to the mandate.
2. The overlay manager must mark-to-market their derivative positions daily.
3. Permitted Derivative Instruments:
    a. *Futures* – commodity futures, equity index futures, bond futures, money market futures, and currency futures – only types that are pre-approved by ERS Staff are permitted. No physical delivery can be taken in commodity futures.
    b. *Options* – options on indices, ETFs, and bonds (including interest rate caps and floors). Options on futures, swaps, and currencies are allowed if overlay manager has permission to invest in the underlying or deliverable cash market security.
    c. *Currency forwards & spot FX.*
    d. *Total return swaps – only* types that are pre-approved by ERS Staff are permitted (both long and short).
    e. *U.S. government agency floating rate notes – only* types that are pre-approved by ERS Staff are permitted.
4. Futures contracts must be CTFC (Commodity Futures Trading Commission) approved and exchange traded.
5. Options must be exchange traded.
6. All counterparties must be rated investment grade as determined by at least one major rating agency. Counterparties to OTC traded instruments (e.g. forwards) must be rated investment grade (A-) or better as determined by at least one major rating agency.
7. Manager may purchase back options in order to close out positions.
8. Cross-hedging is permitted.
9. On an annual basis, all investment managers shall provide a summary of the derivatives used and the reasons for their use. This summary shall be the basis for verification that the investment managers are generally complying with the objectives and constraints of the investment policy. The investment consultant shall elicit responses on each manager's policy in the form of a letter.
10. On a daily basis the custodian bank shall examine all manager derivatives purchases for prohibited derivatives. Should any prohibited derivatives be found, the custodian bank should promptly notify ERS Staff and instruct the manager to sell the prohibited derivatives. The custodian bank will also value and monitor all derivatives and the trades from which they emanate.

IPS APPENDICIES

SECTIONS: A-D

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NOTE:

The information contained in Appendices B, C, and D are included in this Manual solely for use as an educational guide for Trustees and Staff in their decision-making process. Appendices B, C, and D are not part of the Board's Investment Policy, Guidelines, and Procedures manual. The Board's adopted policies and procedures are the sole governing instruments.

APPENDIX A: STATUTES

CHAPTER 88:
HAWAI'I REVISED STATUTES AS AMENDED 2014

§88-119 Investments. Investments may be made in:

(1) Real estate loans and mortgages. Obligations (as defined in section 431:6-101) of any of the following classes:

(A) Obligations secured by mortgages of nonprofit corporations desiring to build multirental units (ten units or more) subject to control of the government for occupancy by families displaced as a result of government action;

(B) Obligations secured by mortgages insured by the Federal Housing Administration;

(C) Obligations for the repayment of home loans made under the Servicemen's Readjustment Act of 1944 or under Title II of the National Housing Act;

(D) Other obligations secured by first mortgages on unencumbered improved real estate owned in fee simple; provided that the amount of the obligation at the time investment is made therein shall not exceed eighty per cent of the value of the real estate and improvements mortgaged to secure it, and except that the amount of the obligation at the time investment is made therein may exceed eighty per cent but no more than ninety per cent of the value of the real estate and improvements mortgaged to secure it; provided further that the obligation is insured or guaranteed against default or loss under a mortgage insurance policy issued by a casualty insurance company licensed to do business in the State. The coverage provided by the insurer shall be sufficient to reduce the system's exposure to not more than eighty per cent of the value of the real estate and improvements mortgaged to secure it. The insurance coverage shall remain in force until the principal amount of the obligation is reduced to eighty per cent of the market value of the real estate and improvements mortgaged to secure it, at which time the coverage shall be subject to cancellation solely at the option of the board. Real estate shall not be deemed to be encumbered within the meaning of this subparagraph by reason of the existence of any of the restrictions, charges, or claims described in section 431:6-308;

(E) Other obligations secured by first mortgages of leasehold interests in improved real estate; provided that:

(i) Each leasehold interest at the time shall have a current term extending at least two years beyond the stated maturity of the obligation it secures; and

(ii) The amount of the obligation at the time investment is made therein shall not exceed eighty per cent of the value of the respective leasehold interest and improvements, and except that the amount of the obligation at the time investment is made therein may exceed eighty per cent but no more than ninety per cent of the value of the leasehold interest and improvements mortgaged to secure it; provided further that the obligation is insured or guaranteed against default or loss under a mortgage insurance policy issued by a casualty insurance company licensed to do business in the State. The coverage

provided by the insurer shall be sufficient to reduce the system's exposure to not more than eighty per cent of the value of the leasehold interest and improvements mortgaged to secure it. The insurance coverage shall remain in force until the principal amount of the obligation is reduced to eighty per cent of the market value of the leasehold interest and improvements mortgaged to secure it, at which time the coverage shall be subject to cancellation solely at the option of the board;

(F) Obligations for the repayment of home loans guaranteed by the department of Hawaiian home lands pursuant to section 214(b) of the Hawaiian Homes Commission Act, 1920; and

G) Obligations secured by second mortgages on improved real estate for which the mortgagor procures a second mortgage on the improved real estate for the purpose of acquiring the leaseholder's fee simple interest in the improved real estate; provided that any prior mortgage shall not contain provisions that might jeopardize the security position of the retirement system or the borrower's ability to repay the mortgage loan.

The board may retain the real estate, including leasehold interests therein, as it may acquire by foreclosure of mortgages or in enforcement of security, or as may be conveyed to it in satisfaction of debts previously contracted; provided that all the real estate, other than leasehold interests, shall be sold within five years after acquiring the same, subject to extension by the governor for additional periods not exceeding five years each, and that all the leasehold interests shall be sold within one year after acquiring the same, subject to extension by the governor for additional periods not exceeding one year each;

(2) Government obligations, etc. Obligations of any of the following classes:

(A) Obligations issued or guaranteed as to principal and interest by the United States or by any state thereof or by any municipal or political subdivision or school district of any of the foregoing; provided that principal of and interest on the obligations are payable in currency of the United States; or sovereign debt instruments issued by agencies of, or guaranteed by foreign governments;

(B) Revenue bonds, whether or not permitted by any other provision hereof, of the State or any municipal or political subdivision thereof, including the board of water supply of the city and county of Honolulu, and street or improvement district bonds of any district or project in the State; and

(C) Obligations issued or guaranteed by any federal home loan bank, including consolidated federal home loan bank obligations, the Home Owner's Loan Corporation, the Federal National Mortgage Association, or the Small Business Administration;

(3) Corporate obligations. Below investment grade or nonrated debt instruments, foreign or domestic, in accordance with investment guidelines adopted by the board;

(4) Preferred and common stocks. Shares of preferred or common stock of any corporation created or existing under the laws of the United States or of any state or district thereof or of any country;

(5) Obligations eligible by law for purchase in the open market by federal reserve banks;

(6) Obligations issued or guaranteed by the International Bank for Reconstruction and Development, the Inter-American Development Bank, the Asian Development Bank, or the African Development Bank;

(7) Obligations secured by collateral consisting of any of the securities or stock listed above and worth at the time the investment is made at least fifteen per cent more than the amount of the respective obligations;

(8) Insurance company obligations. Contracts and agreements supplemental thereto providing for participation in one or more accounts of a life insurance company authorized to do business in Hawai‘i, including its separate accounts, and whether the investments allocated thereto are comprised of stocks or other securities or of real or personal property or interests therein;

(9) Interests in real property. Interests in improved or productive real property in which, in the informed opinion of the board, it is prudent to invest funds of the system. For purposes of this paragraph, "real property" includes any property treated as real property either by local law or for federal income tax purposes. Investments in improved or productive real property may be made directly or through pooled funds, including common or collective trust funds of banks and trust companies, group or unit trusts, limited partnerships, limited liability companies, investment trusts, title-holding corporations recognized under section 501(c) of the Internal Revenue Code of 1986, as amended, similar entities that would protect the system's interest, and other pooled funds invested on behalf of the system by investment managers retained by the system;

(10) Other securities and futures contracts. Securities and futures contracts in which in the informed opinion of the board, it is prudent to invest funds of the system, including currency, interest rate, bond, and stock index futures contracts and options on the contracts to hedge against anticipated changes in currencies, interest rates, and bond and stock prices that might otherwise have an adverse effect upon the value of the system's securities portfolios; covered put and call options on securities; and stock; whether or not the securities, stock, futures contracts, or options on futures are expressly authorized by or qualify under the foregoing paragraphs, and notwithstanding any limitation of any of the foregoing paragraphs (including paragraph (4)); and

(11) Private placements. Investments in institutional blind pool limited partnerships, limited liability companies, or direct investments that make private debt and equity investments in privately held companies, including but not limited to investments in Hawai‘i high technology businesses or venture capital investments that, in the informed opinion of the board, are appropriate to invest funds of the system. In evaluating venture capital investments, the board shall consider, among other things, the impact an investment may have on job creation in Hawai‘i and on the state economy. The board shall report annually to the legislature on any Hawai‘i venture capital investments it has made; provided that if the board determines it is not prudent to invest in any Hawai‘i venture capital investments the board shall report the rationale for the decision. The board, by January 1, 2008, shall develop criteria to determine the amount of funds that may be prudently invested in Hawai‘i private placement investments. [L 1925, c 55, pt of §7; RL 1935, pt of §7926; am L 1935, c 156, §1; am L 1939, c 5, pt of §1; am L 1941, c 50, §1 and c 61, §1; RL 1945, §710, subs 2; am L 1947, c 233, §1; am L 1949, c 297, §1; am L Sp 1949, c 27, §1; am L 1951, c 56, §1; am L 1955, c 270, §§1, 2; RL 1955, §6-75; am L 1959, c 81, §1, c 144, §1, and c 175, §1; am L 1961, c 111, §1; am L 1965, c 222, §11; am L 1967, c 166, §§1, 2; HRS §88-110; am L 1969, c 107, §1, c 110, pt of §1, and c 159, §1; am L

1970, c 89, §§1 to 3; am L 1974, c 177, §1; am L 1977, c 83, §1; am L 1978, c 11, §2; am L 1981, c 129, §1; am L 1983, c 105, §1; am L 1986, c 71, §1 and c 77, §2; am L 1987, c 114, §1; am L 1990, c 34, §8; am L 1991, c 17, §1; am L 1998, c 151, §21; am L 1999, c 168, §1; am L 2000, c 297, §12; am L 2006, c 169, §21; am L 2007, c 260, §2]

§88-119.5 Investment guidelines. Notwithstanding any other law to the contrary, real estate loans and mortgages made pursuant to section 88-119(1)(D) and (E) shall be in accordance with conditions and restrictions set forth by the board of trustees; provided that the board may establish the minimum and maximum loan amounts and interest rates for these real estate loans and mortgages by motion, at any duly noticed meeting of the board. The board of trustees, subject to chapter 91, shall adopt, amend, and repeal rules having the force of and effect of law to implement all provisions of this section other than those relating to loan amounts and interest rates for its real estate loans and mortgages. [L 1982, c 165, §3; am L 1991, c 17, §2; am L 1998, c 151, §22]

§88-120 Service charges. The board of trustees may pay out of any of the several funds held for investment, a reasonable amount to any person for servicing and handling of mortgages purchased by the board or for supplying investment advisory or consultative services; and to meet such other costs incident to the prudent investment of system funds as the board may approve.

§88-121 Power to make agreements to protect securities on reorganization or otherwise. Anything in this part to the contrary notwithstanding, the board of trustees may enter into an agreement or agreements for the purpose of protecting the interests of the system in securities held by the system, or for the purpose of reorganization of a corporation which issued securities so held, and deposit of securities there under with a committee or depositories appointed under the agreement, but the agreement and deposit must first be approved in writing by a majority of the members of the board with a statement of their reasons for such approval. The board may accept corporate stock or bonds or other securities, which may be distributed pursuant to any such agreement approved as aforesaid or to any plan or reorganization approved in writing by a majority of the members of the board with a statement of their reasons for such approval. But if securities so received consist in whole or in part of stock in any corporation or of bonds or obligations which are not secured by adequate collateral security or where less than two-thirds of the total value of the required collateral security therefore consist of collateral other than stock, then any stock and any such bond or obligation so received shall be disposed of within five years from the time of acquisition or before expiration of such further period or periods of time as may be fixed in writing for that purpose by the governor.

§88-121.5. Power to enter into security loan agreements. Anything in this part to the contrary notwithstanding, the board of trustees may enter into an agreement or agreements with a financially responsible stock or bond brokerage firm, bank, or similar financial institution ("borrower") authorized to do business under the laws of any state or the United States, for the purpose of lending to the borrower securities held by the system, subject to the following conditions:

(1) The securities shall be loaned to the borrower for a period not to exceed one year;

(2) At the termination of the loan period, the borrower shall deliver to the board of trustees certificates for identical securities which are of the same class and issue as the loaned securities;

(3) For the protection of the system, the borrower shall deliver to the board of trustees or its agent, collateral in the form of cash, letters of credit, bonds, or other interest-bearing notes and obligations of the United States or federal instrumentalities which are eligible for investment by the board of trustees, in an amount not less than one hundred two percent of the market value of the loaned securities, as determined by the board of trustees. The

system shall have a security interest in the collateral to secure borrower's obligations under the agreement. The board of trustees shall not be obligated to return the collateral or any part thereof to the borrower, except upon borrower's delivery to the board or its agent of securities identical to the loaned securities, as provided in paragraph (2). The board of trustees or its designated agent shall monitor the market value of the loaned securities daily, and if, on any business day, the amount of the collateral deposited by the borrower is less than one hundred two percent of the market value of the loaned securities on that day, the borrower shall immediately deposit with the board or its agent additional collateral in the form of cash, letters of credit, bonds, or other interest-bearing notes and obligations of the United States or federal instrumentalities which are eligible for investment by the board of trustees. Such additional collateral, together with the collateral previously on deposit, shall be in an amount not less than one hundred two percent of the market value of the loaned securities at the time of such deposit;

(4) The board of trustees, at its election, may use or invest any collateral delivered by a borrower to the board or its agent pursuant to the agreement, and any income and profits earned on the collateral shall be retained for the benefit of the system. Any investment of the collateral shall be subject to section 88-119;

(5) Until the termination of the loan, the borrower may securities, including the right to transfer the loaned securities to others and vote or otherwise consent as a holder of such securities; provided that the borrower shall exercise all the incidents of ownership of loaned, be obligated to the board of trustees for all dividends and distributions made with respect to the loaned securities during the period of the agreement, including, without limitation, cash, stock or property dividends or distributions, interest payments, and subscription rights;

(6) In the event that the borrower, at the termination of the loan period, fails to deliver to the board of trustees certificates for identical securities which are of the same class and issue as the loaned securities, the borrowers shall forfeit to the system the collateral deposited. (L 1981, c 212, §1)

APPENDIX B: RISK FACTOR DEFINITIONS

Growth Risk - Risk related to uncertainties associated with the future growth path of a society's economy, and in particular, Gross Domestic Product (GDP) and corporate profitability. In general, economic growth is measured by the real (inflation-adjusted) growth rate of a society's GDP or per capita real GDP growth rate. Since many types of investments are dependent on the growth rate of an economy, other measures can be used to determine an investment market's sensitivity to economic growth uncertainties. Such measures might include: VIX (a measure of equity market uncertainty), credit spreads (high-yield bonds and/or investment-grade bonds), and/or changes in the dispersion of economists' GDP growth estimates. (synonym(s): economic growth risk)

Inflation Risk - The uncertainty over the future real value (after inflation) of your investment. This is the risk that inflation will undermine the performance of your investment and that it will lose purchasing power over time.

Interest Rate Risk - The variability and/or uncertainty of interest rate changes over time. There are various dimensions of interest changes, including changes in the level of yields, changes in the term structure of interest rates (the yield curve), and changes to a portfolio's general sensitivity to interest rates changes (duration and convexity).

Leverage Risk - Societal leverage risk is reflected by both the amount of total debt of a society (government debt plus individual debt plus corporate debt) and the tightness or looseness of the terms and conditions associated with such debt. If debt is shrinking and terms are relatively stringent, then leverage risk is declining. If debt is increasing and terms are loosening and/or becoming more accommodating, then leverage risk is increasing.

Liquidity Risk - The potential that the trading volume of a market or a specific investment or security will freeze up, leaving investors with no opportunity (or at least extremely limited opportunity) to exit an investment at a market-determined price. In such cases, investors who must liquidate such investments quickly will likely confront only liquidation options that require a substantial sacrifice of the investment's value.

Regulatory Risk- Uncertainty in relation to the geopolitical environment, as analyzed and ranked by the Economist Intelligence Unit, a subsidiary of The Economist publishing group out of London.

APPENDIX C: MANAGER STYLE GROUPS

Domestic Equity Management Style Groups

The Equity management style groups that follow are maintained in two separate databases; one exclusively for open-end mutual funds with the indicated style and one for separate account investment manager products with the indicated style.

Aggressive Growth – Managers who invest in growth securities with significantly higher risk/return expectations than the broader market. Sometimes make concentrated "bets" by selecting a small number of securities or by investing in only a few specific sectors. Selects from companies with market capitalization significantly below the broader market. Invests in companies with P/E ratios, Price-to-Book values, and Growth-in-Earnings values above the broader market. The companies typically have zero dividends or dividend yields below the broader market. Invests in securities which exhibit greater volatility than the broad market as measured by the securities' Beta and Standard Deviation values.

Contrarian – Managers who invest in stocks that are out of favor or which have little current market interest, on the premise that gain will be realized when they return to favor. Sometimes makes concentrated "bets" by selecting a small number of securities or by investing in only a few specific sectors. Invests in companies with Return-on-Assets values, Return-on-Equity values, Growth-in-Earnings values, and Growth-in-Dividend values below the broad market. Chooses securities that, due to their contrary status, do not move with the broader market, as measured by a low Beta and significant non-market risk.

Core – Managers whose portfolio holdings and characteristics are similar to that of the broader market as represented by the Standard & Poor's 500 Index, with the objective of adding value over and above the index, typically from sector or issue selection. The core portfolio exhibits similar risk characteristics to the broad market as measured by low residual risk with Beta and R-Squared values close to 1.00.

Large Cap Growth – Managers who invest mainly in large companies that are expected to have above average prospects for long-term growth in earnings and profitability. Future growth prospects take precedence over valuation levels in the stock selection process. Invests in companies with P/E ratios, Price-to-Book values, Return-on-Assets values, and Growth-in-Earnings values above the broader market. The companies typically have zero dividends or dividend yields below the broader market. Invests in securities which exhibit greater volatility than the broader market as measured by the securities' Beta and Standard Deviation. The Growth Style Group is composed of two Growth Style sub-groups; the Growth (Sector Rotator) Style Group and the Growth (Stock Selection) Style Group.

Large Cap Value – Managers who invest in predominantly large capitalization companies believed to be currently undervalued in the general market. The companies are expected to have a near-term earnings rebound and eventual realization of expected value. Valuation issues take precedence over near term earnings prospects in the stock selection process. Invests in companies with P/E ratios, and Price-to-Book values below the broader market. Usually exhibits lower risk than the broader market as measured by the Beta and Standard Deviation. The Value Style Group consists of the Value (Bottom Up) Style Group and the Value (Top Down) Style Group.

Middle Capitalization – Managers who invest primarily in mid-range companies with market capitalizations between core equity companies and small capitalization companies. The average market capitalization is approximately $3 billion. Invests in securities with greater volatility than the broader market as measured by the risk statistics Beta and Standard Deviation. The Middle Capitalization Style Group consists of the Middle Capitalization Growth Equity and the Middle Capitalization Value Equity Style Groups.

Middle Capitalization (Growth) – Managers who invest primarily in mid-range companies that are expected to have above average prospects for long-term growth in earnings and profitability. Future growth prospects take precedence over valuation levels in the stock selection process. The average market capitalization is approximately $3 billion with market capitalizations between core equity companies and small capitalization companies. Invests in companies with P/E ratios, Price-to Book values, and Growth-in Earnings values above the broader market as well as the middle capitalization market segment. Invests in securities with greater volatility than the broader market and the middle capitalization segment as measured by the risk statistics Beta and Standard Deviation.

Middle Capitalization (Value) – Managers who invest primarily in mid-range companies believed to be currently undervalued in the general market. Valuation issues take precedence over near term earnings prospects in the stock selection process. The average market capitalization is approximately $3 billion with market capitalizations between core equity companies and small capitalization companies. Invests in companies with P/E ratios, Return-on-Equity values, and Price-to-Book values below the broader market and the middle capitalization segment. Invests in securities with risk/reward profiles in the lower risk range of the medium capitalization market.

Sector Rotation – Managers who identify sectors of the economy that show the best potential for investment, and then target markets and firms for investment within the selected sectors according to fundamental investment criteria. Sector weighting takes precedence over individual security selection in the investment process.

Small Capitalization – Managers who invest in companies with relatively small capitalization. The average market capitalization is approximately $400 million. The companies typically have zero dividends or dividend yields below the broader market. The securities exhibit greater volatility than the broader market as measured by the risk statistics Beta and Standard Deviation. The Small Capitalization Style Group consists of the Small Capitalization (Growth) Style Group and the Small Capitalization(Value) Style Group.

Small Capitalization (Growth) – Managers who invest mainly in small companies that are expected to have above average prospects for long-term growth in earnings and profitability. Future growth prospects take precedence over valuation levels in the stock selection process. Invests in companies with P/E ratios, Price-to Book values, and Growth-in Earnings values above the broader market as well as the small capitalization market segment. The companies typically have zero dividends or dividend yields below the broader market. The securities exhibit greater volatility than the broader market as well as the small capitalization market segment as measured by the risk statistics values Beta and Standard Deviation.

Small Capitalization (Value) – Managers who invest in small capitalization companies that are believed to be currently undervalued in the general market. Valuation issues take precedence over near term earnings prospects in the stock selection process. The companies are expected to have a near-term earnings rebound and eventual realization of expected value. Invests in companies with P/E ratios, Return-on-Equity values, and Price-to-Book values below the broader market as well as the small capitalization market segment. Invests in securities with dividend yields in the high range for the small capitalization market. Invests in securities with risk/reward profiles in the lower risk range of the small capitalization market.

Yield – Managers whose primary objective is a high current dividend yield. Invests in companies with Price-to-Book values and Growth-in-Earnings values below the broader market. Invests in securities with dividend yields above the broader market. Invests in securities with significantly lower volatility than the broader market as measured by risk statistics values for Beta and Standard Deviation.
Fixed-Income Management Style Groups

The fixed-income management style groups that follow are maintained in two separate databases; one exclusively for open-end mutual funds with the indicated style and one for separate account investment manager products with the indicated style.

Mortgage – Managers who invest primarily in mortgage-backed securities including agency (FHLMC, GNMA, FNMA) and private issue pass-throughs, asset-backed securities, and mortgage derivatives (REMICS/CMOs, IOs, POs). Funds may also contain a small percentage of U.S. Treasuries.

Active Cash – Managers whose objective is to achieve a maximum return on short-term financial instruments through active management. The average portfolio duration is typically less than one year.

Active Duration – Managers who aggressively employ interest rate anticipation in setting portfolio duration. Portfolios are actively managed so that large changes in duration are made in anticipation of interest rate in hopes of profiting from downward rate movements and minimizing losses from upward rate movements.

Convertible Bond – Managers who invest in convertible bonds. Convertible bonds offer the downside floor price of a "straight" bond while potentially allowing the holder to share in price appreciation of the underlying common stock. This conversion feature makes it possible for the bondholder to convert the bond to shares of the issuer's common stock.

Core Bond – Managers who construct portfolios to approximate the investment results of the Barclays Capital Government/Corporate Bond Index or the Barclays Capital Aggregate Bond Index with a modest amount of variability in duration around the index. The objective is to achieve value added from sector and/or issue selection.

Core Plus – Active managers, benchmarked against the broad market (i.e. Barclays Capital Aggregate Index), whose objective is to add value by tactically allocating significant portions of their portfolios among non-benchmark sectors (e.g. high yield corporates, non-US$ bonds, etc.) while maintaining majority exposure similar to the broad market. The median tendency of allocation between the two determinant sectors, high yield and non-US$ bonds, is 10% and 5% respectively. In addition, municipals, CMBS, convertibles and others are marginally utilized by core plus managers to add value.

Defensive – Managers whose objective is to minimize interest rate risk by investing predominantly in short to intermediate term securities. The average portfolio duration and risk/return profile is similar to that of the Merrill Lynch 1-3 Year Bond Index.

Extended Maturity – Managers whose average portfolio duration is significantly greater than that of the Barclays Capital Government/Corporate Bond Index. These portfolios exhibit risk/return characteristics similar to the long-bond portion of the Barclays Capital Government/Corporate Index, called the Barclays Capital Government/Corporate Long Bond Index. Variations in bond portfolio characteristics are made to enhance performance results. This results in an aggressive risk/return profile that embraces interest rate risk in search of both high yields as well as capital gains.

High Yield – Managers whose investment objective is to obtain high current income by investing primarily in non-investment grade fixed-income securities. Due to the increased level of default risk, security selection focuses on credit-risk analysis.

Intermediate – Managers whose objective is to lower interest rate risk while maintaining reasonable yield levels by investing primarily in intermediate term securities. The average portfolio duration and risk/return profile is similar to that of the Barclays Capital Intermediate Government/Corporate Bond Index.

Money Market – Open-end mutual funds that invest in low-risk, highly liquid, short-term financial instruments and whose net asset value is kept stable at 1$ per share. The average portfolio maturity is 30 to 60 days.

International Equity Management Style Groups

The International Equity Management Style Groups that follow are maintained in two separate databases; one exclusively for open-end mutual funds with the indicated style and one for separate account investment manager products with the indicated style. All International Equity Style Groups exclude pure index funds and regional funds (outside of regional style groups) in favor of actively managed, well-diversified products.

Developed Markets – Managers who invest predominantly in well developed markets (i.e. G-20 nations) in the regions of Europe, Australia, the Far East, and Canada. The objective of adding value over and above the index is achieved through stock selection and/or changes in the weighting of individual countries versus the index. These portfolios will exhibit risk/return portfolios similar to the MSCI World ex US ND Index.

Emerging Markets –Managers whose well-diversified portfolio holdings are mostly large holdings in emerging countries, as characterized by the countries within the MSCI Emerging Markets Free Index. The objective of adding value over and above the MSCI Emerging Markets Free Index is achieved through stock selection and/or changes in the weighting of individual countries versus the index. These portfolios are characterized by aggressive risk/return profiles that generate high volatility in search of high returns.

Bottom Up/Stock Selection – Managers who primarily emphasize stock selection in their portfolio construction. The country weighting process is mainly a by-product of the stock selection decision, or can be passively set according to the index country weights.

Core – Managers whose well-diversified portfolio holdings are mostly large issues in developed countries with liquid markets, resulting in characteristics similar to that of an index such as the Morgan Stanley Capital International(MSCI) EAFE Index. The objective of adding value over and above the index, is achieved through stock selection and/or changes in the weighting of individual countries versus the index.

Europe – Managers who invest predominantly in the well developed stock markets of Europe. These products will exhibit risk/return profiles similar to the MSCI Europe Index.

Japan – Managers who invest predominantly in the equity of companies in Japan.

Pacific Basin – Managers who invest predominantly in Pacific Basin equities. Countries include Japan, Hong Kong, Singapore, Malaysia, Australia, and New Zealand. These products will exhibit risk/return profiles similar to the MSCI Pacific Index.

Pacific Rim – Managers who invest predominantly in Pacific Basin equities excluding Japan. Countries include Hong Kong, Singapore, Malaysia, Australia, and New Zealand. These products will exhibit risk/return profiles similar to the MSCI Pacific ex-Japan Index.

Small Capitalization – Managers who invest in international companies with relatively small capitalization. The companies typically have zero dividends or dividend yields below the broader market. The securities exhibit greater volatility than the broader market as measured by the risk statistics Beta and Standard Deviation.

Top Down/Country Allocator – Managers who attempt to add value over an index such as the Morgan Stanley Capital International (MSCI) EAFE Index by emphasizing macroeconomic analysis in selecting allocations in countries with above average gain prospects. Stock selection plays a secondary role in the investment decision process, or can be passively matched to the index stock holdings within each country.

Global Equity Management Style Groups

Active Global Equity – Managers who invest in both foreign and domestic equity securities in varying proportions. These products will exhibit risk/return profiles similar to the MSCI World Index.

Passive Global Equity – Managers who seek to replicate the performance and characteristics of the MSCI All Country World Index.

International Fixed-Income Management Style Groups

Global Fixed-Income – Managers who invest in both foreign and domestic fixed-income securities. These funds seek to take advantage of international currency and interest rate movements, differing bond yields, and/or international diversification.

Non-U.S. Fixed-Income – Managers who generally invest their assets only in non-U.S. fixed-income securities. These funds seek to take advantage of international currency and interest rate movements, bond yields, and/or international diversification.

Other Management Style Groups

CAI Total Real Estate Funds – This is not officially a style group. Rather it consists of 150 open and closed-end commingled funds managed by real estate firms.

APPENDIX D: GLOSSARY OF INVESTMENT TERMS

144(a) Securities -- 144a securities are in concept "semi-private placement securities," that are normally traded by sophisticated institutional investors with limited financial information on the issuing company. SEC rule 144a exempts issuers from SEC registration requirements. While not legally required to file with the SEC, issuers normally do provide some sort of documentation describing the issue and financial information about the issuing company.

Accrual Basis Accounting – As opposed to cash basis accounting, this values assets based upon accrued changes in values, not actual cash flows. For example, dividends are included in the portfolio value (i.e. accrued) as of the ex-dividend date, rather than the payment date (or the declaration date).

Active Management – A form of investment management which involves buying and selling financial assets with the objective of earning positive risk-adjusted returns.

Adjusted R-Squared - The R-squared measure (see R-squared definition) adjusted for additional errors associated with the overall model. The basic R-squared measure will increase simply by adding more variables to the regression model. The Adjusted R-squared factors out this bias.

Alpha – The constant value in a statistical regression equation. Measures the added value by a manager. A positive alpha indicates that a manager has performed better than its beta(s) would predict. In contrast, a negative alpha indicates the fund has underperformed, given the expectations set by beta(s). Alpha is always relative to the underlying factor model (e.g., single or multi-factor).
(synonym(s): added value)

Alternative Investments – These generally refer to institutional blind pool limited partnerships/LLCs which make private debt and equity investments in privately held companies, as well as hedge funds and other publicly traded derivatives-based strategies.

American Depository Receipts (ADRs) – Financial assets issued by U.S. banks that represent indirect ownership of a certain number of equity shares in a foreign firm. ADRs are held on deposit in a bank in the firm's home country.

American Shares – American shares are securities issued in the US by a transfer agent acting on behalf of a foreign firm.

Balanced Fund – An investment strategy which is a combination of equities and bonds.

Basis Point – 1/100th of 1%.

Behavioral Finance - A field of finance that proposes socio-/psychological-based theories to explain investment market anomalies. Within behavioral finance, it is assumed that the information structure and the characteristics of market participants systematically influence individuals' investment decisions as well as market outcomes.

Benchmark Portfolio – A portfolio against which the investment performance of an investment manager can be compared for the purpose of determining the value-added of the manager. A benchmark portfolio must be of the same style as the manager, and in particular, similar in terms of risk.

Best Execution – This is formally defined as the difference between the strike price (the price at which a security is actually bought or sold) and the "fair market price," which involves calculating opportunity costs by examining the security price immediately after the trade is placed. Best execution occurs when the trade

involves no opportunity cost, for example when there is no increase in the price of a security shortly after it is sold.

Beta - Measures a security's or portfolio's sensitivity to movements in a specific risk factor. Various factor betas are determined simultaneously by utilizing a multiple regression model that utilizes return time series for each relevant risk as the explanatory (or independent) variable and the portfolio/security return as the explained (or dependent) variable. Each beta is the slope (or response) coefficient in the multi-linear equation (the "β's" in the following equation: $y= \alpha + \beta_i x_i + \beta_{ii} x_{ii} + \ldots + \beta_n x_n + \varepsilon$). In a multiple regression, individual factor betas can range from negative to positive, reflecting how a portfolio responds to the behavior of each factor. Importantly, in basic multiple regression models, the beta for each factor assumes that the other factor behaviors are held constant. Beta is most commonly used to refer to an investment's sensitivity to equity market risk per the CAPM or similar model (see below).
(synonym(s): exposure, factor exposure)

Boardroom Risk – The risk that Trustees will not ride out short term volatility (and therefore wind up altering a sound long-term strategy) due to pressure put on them in their role as Trustees.

Bottom-up Analysis – An approach to valuing securities which first involves analyzing individual companies, then the industry, and finally the economy and overall capital market.

Capital Asset Pricing Model (CAPM) – An equilibrium model of asset pricing which states that the expected return of a security increases as the security's sensitivity to the market (i.e. beta) increases. That is, as the expected return of a security or portfolio increases (decreases), risk increases (decreases) as well.

Capitalization-weighted Market Index – A method of calculating a market index where the return of a security (or group of securities) is weighted by the market value of the security (or group of securities) relative to total value of all securities.

Carry - The difference between an investment with a lower expected absolute cost and an investment with a higher expected return. For example, if U.S. Treasury Bills have an expected yield of 1% and 30-year U.S. Treasury Bonds have an expected yield of 4%, then the amount of Carry is 3% (i.e., that amount earned if you short (or borrow) U.S. Treasury Bills to finance a purchase of 30-year U.S. Treasury Bonds).

Cash Sweep Accounts – A money market fund into which all new contributions, stock dividend income and bond interest income is placed ("swept") for a certain period of time. At regular intervals, or when rebalancing is necessary, this cash is invested in assets in line with the strategic allocation stipulated in the IPS.

CFA Institute – The CFA Institute is the umbrella organization for the two large investment management advisers' groups, the Institute of Chartered Financial Analysts and the Financial Analysts Federation. This organization administers the annual examinations for the CFA designation and also publishes industry guidelines for performance measurement reporting and calculations. The CFA Institute instituted a standardized performance reporting format on January 1, 1993.

Commodities - Any basic good exchanged during commerce, which includes goods traded on a commodity exchange. Commodities are most often used as inputs in the production of other goods or services. The quality of a given commodity may differ slightly, but it is essentially uniform across producers. When they are traded on an exchange, commodities must also meet specified minimum standards, also known as a basis grade. Some traditional examples of commodities include grains, gold, beef, oil, and natural gas.

Commingled Fund – An investment fund which is similar to a mutual fund in that investors purchase and redeem units that represent ownership in a pool of securities.

Commission Recapture – An agreement by which a plan sponsor earns credits based upon the amount of brokerage commissions paid. These credits can be used for services which will benefit the plan, such as consulting services, custodial fees, or hardware and software expenses.

Conditional VaR - A risk assessment technique often used to reduce the probability a portfolio will incur large losses. This is performed by assessing the likelihood (at a specific confidence level) that a specific loss will exceed the value at risk. Mathematically speaking, CVaR is derived by taking a weighted average between the value at risk and losses exceeding the value at risk. This term is also known as "Mean Excess Loss", "Mean Shortfall" and "Tail VaR".

Conditional Value at Risk was created to be an extension of Value at Risk (VaR). The VaR model allows managers to limit the likelihood of incurring losses caused by certain types of risk - but not all risks. The problem with relying solely on the VaR model is that the scope of risk assessed is limited, since the tail end of the distribution of loss is not typically assessed. Therefore, if losses are incurred, the amount of the losses will be substantial in value.
(synonym(s): downside risk, tail risk)

Convertible Bond – A bond which may, at the holder's option, be exchanged for common stock.

Core Bond – A fixed income investment strategy which constructs portfolios to approximate the investment results of the BC Government/Corporate Bond Index with a modest amount of variability in duration around the index. The objective is to achieve value added from sector or issue selection.

Core Equity – An investment strategy where the portfolio's characteristics are similar to that of the S&P 500 Index, with the objective of adding value over and above the index, typically from sector or issue selection.

Correlation Coefficient – A statistical measure similar to covariance, in that it measures the mutual variation between two variables. The correlation coefficient is bounded by the values -1 and +1.

Covariance – A statistical measure of the mutual variation between two variables.

Credit Risk - The risk of loss of principal or loss of a financial reward stemming from a borrower's failure to repay a loan or otherwise meet a contractual obligation. Credit risk is typically measured by the yield differentials between fixed income instruments (e.g., corporate bond yields versus Treasury bond yields; high-yield corporate bond yields versus investment-grade corporate bond yields; etc.). Since credit obligations are typically more senior in the corporate capital structure than equity, credit risk is lower or higher depending on the amount of equity that supports the credit obligations. Since credit risk and equity risk are thus linked, changes in the yields of credit instruments may very well indicate changes in the equity risk of a corporation.

Currency Risk - The risk of an investment's value changing due to changes in currency exchange rates. When a U.S. investor invests in another country, it must first convert its U.S. Dollars to the other country's currency. Once converted this non-U.S. currency can then purchase assets in that other country's markets. The value of those investments will fluctuate in local currency terms, but the value of local currency also fluctuates in relation to the U.S. Dollar. This latter fluctuation relates directly to currency risk. If the U.S. Dollar ends up with a higher value in relation to the other country's currency, then value will have been lost due to currency fluctuations regardless of how the investment is performing within its country market. The opposite is also true if the U.S. Dollar ends up with a lower value versus the other country's currency. This phenomenon exists across all pairs of currencies across numerous countries.

Current Yield – The annual dollar amount of coupon payments made by a bond divided by the bond's current market price.

Defensive – A fixed income investment strategy where the objective is to minimize interest rate risk by investing only in short to intermediate term securities. The average portfolio maturity is typically two to five years.

Derivative – A financial derivative is a security which derives its value from a more fundamental financial security such as a stock or bond. For example, the value of a stock option depends upon the value from the underlying stock. Because the stock option cannot exist without the underlying stock, the stock option is derived from the stock itself.

Dividend Yield – The current annualized dividend paid on a share of common stock, expressed as a percentage of the stock's current market price.

Down Market Capture Ratio - The portion of the market's performance that was captured by the manager using only periods where the market return is negative. A down market capture of less than 100% is considered desirable.

Duration – A measure of the average maturity of the stream of interest payments of a bond. The value of a given bond is more sensitive to interest rate changes as duration increases, i.e. longer duration bonds have greater interest rate volatility than shorter duration bonds.

Dollar-weighted Measurement – In calculating summary statistics, a process by which performance measures are weighted by the dollar amounts of assets in each time period.

Earnings Per Share – A firm's reported earnings divided by the number of its common shares outstanding.

Economically-targeted Investment – Investments where the goal is to target a certain economic activity, sector or area in order to produce corollary benefits in addition to the main objective of earning a competitive risk-adjusted rate of return.

Efficient Market – A theory which claims that a security's market price equals its true investment value at all times since all information is fully and immediately reflected in the market price.

Efficient Portfolio – A portfolio which offers maximum expected return for a given level of risk or minimum risk for a given level of expected return.

Equity Beta - Measures a security's or portfolio's sensitivity to movements in the broad equity market. The "broad equity market" can be defined from either a domestic or global perspective. Equity beta is often determined by utilizing a simple regression model that utilizes an equity benchmark as the explanatory (or independent) variable and the portfolio/security return as the explained (or dependent) variable. The Equity Beta is the slope coefficient in the simple linear equation ("m" in the basic "y=mx+b" equation we all learned in middle-school math class). In investment finance, the Equity Beta can range from negative to positive, but typically ranges in value from -1.0 to 2.0. Equity Betas of reasonably diversified equity portfolios are usually greater than 0.75.

ERISA – The Employee Retirement Security Act, signed into law in September 1974. ERISA established a strict set of fiduciary responsibilities for corporate pension funds, and some states have adopted the ERISA provisions for public plans. It is recommended that public pension plans use the ERISA regulations as guidelines for managing the plan's assets in a procedurally prudent manner.

Eurobond – An international bond denominated in a currency other than that of the country where the bond is issued.

Exchange Traded Funds (ETF's) – ETF's are registered, open-ended unit investment trusts that invest in a basket of stocks designed to track the performance of a given index. However, like a closed-end fund, investors buy shares in ETF's from another shareholder on the open market rather than from a fund company.

Exculpatory – A clause or set of regulations, for example the "safe harbor rules", which generally frees Trustees from responsibility and liability.

Extended Maturity – A fixed income investment strategy where average portfolio maturity is greater than that of the Barclays Capital Government/Corporate Bond Index. Variations in bond portfolio characteristics are made to enhance performance results.

Fiduciary – Indicates the relationship of trust and confidence where one person (the fiduciary) holds or controls property for the benefit of another person. For example, the relationship between a Trustee and the beneficiaries of the trust.

Fundamental Indexing – A process for building passive investment portfolios that utilizes measures of company size not related to the price of a company's stock, which is used when calculating the market value of company. Company market values, in turn, are used to determine proportional weightings in "cap-weighted" indices (the industry-standard practice). Proponents of fundamental indexing argue that cap-weighted indices have significant biases toward momentum (or trending) risk. Weighting companies on more stable fundamental factors can allow investors to avoid this bias. Detractors of fundamental indexing argue that the construction rules of fundamental indexing simply lead to portfolios exhibiting other biases (such as size and value biases).

Funding Risk – The risk that anticipated contributions to the plan will not be made.

Geometric Returns – A method of calculating returns which links portfolio results on a quarterly or monthly basis. This method is best illustrated by an example, and a comparison to *arithmetic returns*, which does not utilize a time link. Suppose a $100 portfolio returned +25% in the first quarter (ending value is $125) but lost 20% in the second quarter (ending value is $100). Over the two quarters the return was 0%, and the method of calculating the geometric return would indicate this. However, the arithmetic calculation would simply average the two returns: (25%)(.5) + (20%)(.5) = +2.5%.

Global Equity – Managers who invest in both foreign and domestic equity securities but excludes regional and index funds.

Going-in Yield - The expected yield-to-maturity on a portfolio going forward. When estimating a regression model of a specific portfolio's expected returns, the regression's estimated constant term (typically referred to as the equation's "α" or "alpha" term) represents the going-in yield.

Growth Equity – Managers who invest in companies that are expected to have above average prospects for long-term growth in earnings and profitability.

High Yield – A fixed income investment strategy where the objective is to obtain high current income by investing in lower rated, higher default-risk fixed-income securities. As a result, security selection focuses on credit risk analysis.

Index Fund – A passively managed investment in a diversified portfolio of financial assets designed to mimic the performance of a specific market index.

Interest Rate Risk – The uncertainty in the return on a bond caused by unanticipated changes in its value due to changes in the market interest rate.

Intermediate – A fixed income investment strategy where the objective is to lower interest rate risk by investing only in intermediate-term securities. The average portfolio maturity is typically five to seven years.

Liquidity – In general, liquidity refers to the ease by which a financial asset can be converted into cash. Liquidity is often more narrowly defined as the ability to sell an asset quickly without having to make a substantial price concession.

Liquidity Risk – The risk that there will be insufficient cash to meet the fund's disbursement and expense requirements.

Lost Opportunity Risk – The risk that through inappropriate market timing strategies a fund's portfolio will miss long-run market opportunities.

Manager Search – The selection of specific managers following the manager structure.

Manager Structure – The identification of the type(s) of managers to be selected within each broad class of assets.

Marked to the Market – The daily process of adjusting the value of a portfolio to reflect daily changes in the market prices of the assets held in the portfolio.

Market Anomaly - An investment return distortion that contradicts broadly accepted financial theories such as the Efficient Markets Hypothesis (EMH) and the Capital Asset Pricing Model (CAPM). For example, the CAPM is a theoretical model that says stock returns (above the risk-free rate of return) are a function of only two types of risk: (i) risk of the broad equity market and (ii) unique risk associated with the company the stock represents. The CAPM indicates that, over time, incremental returns associated with (ii) above should cancel out. Empirical evidence reveals, however, that such incremental returns are, in fact, positive. This result indicates that a "market anomaly" exists and/or another risk factor needs to be added to the CAPM to make it more robust.

Market Risk – See Systematic Risk.

Market Timing – A form of active management that shifts funds between strategic classes based on short-term expectations of movements in the capital markets.

Momentum - The rate of increase/decrease of a security's price or volume. The idea of momentum in securities is that their price is more likely to keep moving in the same direction than to change directions. In technical analysis, momentum is considered an oscillator and is used to help identify trend lines. Once a momentum trader sees acceleration in a stock's price, earnings or revenues, the trader will often take a long or short position in the stock in the hope that its momentum will continue in either an upward or downward direction. This strategy relies on short-term movements in a stock's price rather than fundamental value.

Money Markets – Financial markets in which financial assets with a maturity of less than one year are traded.

Passive Management – For a given strategic class, the process of buying a diversified portfolio which attempts to duplicate the overall performance of the strategic class (i.e. the relevant market index).

Performance Attribution – The identification of the sources of returns for a security or portfolio over a particular time period.

Preferred Stock – Preferred stocks actually behaves as a fixed-income investment because the dividend payment is fixed. However, unlike bonds, the dividend payment is not legally binding.

Price-earnings Ratio – A firm's current stock price divided by its earnings per share.

Private Placement – The direct sale of a newly issued security to one or a small number of large institutional investors.

Proxy Voting – A written authorization given by a shareholder to someone else to vote his or her shares at a stockholders annual or special meeting called to elect directors or for some other corporate purpose.

Purchasing Power Risk – The risk that a portfolio will earn a return less than the rate of inflation, i.e., a negative real return.

Real Estate Investment Trust (REIT) – An investment fund whose objective is to hold real estate-related assets, either through mortgages, construction and development loans, or equity interests.

Restatement Third, Trusts (Prudent Investor Rule) – A set of new and more specific standards for the handling of the investment process by fiduciaries. These standards were adopted in 1992 and rely heavily on modern investment theory.

Return On Equity – The earnings per share of a firm divided by the firm's book value per share.

Risk Factors - Key elements that are most influential in explaining a security's or portfolio's return. In a statistical modeling sense, they are the explanatory variables in a regression equation whose behaviors are deemed to influence the behavior of the dependent (or explained) variable based upon fundamental knowledge. Risk factors can be benchmarks or other more fundamental variables (such as GDP growth or changes in the levels of certain interest rates).

Risk Premia - The return in excess of an opportunity cost (e.g., risk-free rate of return) or funding source that an investment is expected to yield. An asset's risk premium is a form of compensation for investors who tolerate the extra risk - compared to that of an opportunity cost/forgone option - in a given investment.

Risk-Adjusted Return - A concept that refines an investment's return by measuring how much risk is involved in producing that return, which is generally expressed as a number or rating. Risk-adjusted returns are applied to individual securities and investment funds and portfolios.

There are five principal risk measures: alpha, beta, r-squared, standard deviation and the Sharpe ratio. Each risk measure is unique in how it measures risk. When comparing two or more potential investments, an investor should always compare the same risk measures to each different investment in order to get a relative performance perspective.

Roll Yield - The amount of return generated in a futures market that is achieved by rolling a short-term contract into a longer-term contract and profiting from the convergence toward a higher spot price. Profiting from roll yield is a common goal for many strategies used by traders in the futures market.

"Backwardation" occurs when a futures contract will trade at a higher price as it approaches expiration compared to when the contract is farther away from expiration. Rolling into less expensive futures contracts allows the trader to consistently profit from the rise in a futures' price as it nears expiration.

The biggest risk to this strategy is that the market will shift to "contango" (opposite as backwardation). This type of changing market has led to major losses by various hedge funds in the past.

R-squared (R^2) – Formally called the coefficient of determination, this measures the overall strength or "explanatory power" of a statistical relationship. In general, a higher R^2 means a stronger statistical relationship between the variables which have been estimated, and therefore more confidence in using the estimation for decision-making.

Sharpe Ratio – This statistic is a commonly used measure of risk-adjusted return. It is calculated by subtracting the "risk-free" return (usually 3 Month Treasury Bill) from the portfolio return and dividing the resulting "excess return" by the portfolio's risk level (standard deviation). The result is a measure of return gained per unit of risk taken. The higher the Sharpe ratio, the better the fund's historical risk-adjusted performance.
(synonym(s): risk-adjusted return)

Skill - Associated with the ability to add value beyond simply tilting the portfolio toward one or more systematic market factors (e.g., tilt toward small cap, value, or an economic sector). From a statistical perspective, a portfolio will exhibit added value due to skill if its "α" or "alpha" term is positive after taking into account all relevant "β's" or "betas" (i.e., the contribution(s) associated with the tilt(s) toward certain systematic factors). In addition, skill is associated with consistency of added value over time and typically should be examined over multiple, independent time periods. Typically, evidence of true skill only becomes apparent after several years of investment experience. Other qualitative factors associated with skill include (i) the stability of an investment team, (ii) the integrity of the investment process, (iii) the scale of the assets under management, etc.
(synonym(s): added value, alpha)

Small Capitalization – Managers who invest in equities of companies with relatively small capitalization. The cut-off point for small capitalization varies from manager to manager, but on average targets firms with capitalization of $200-$600 million.

Small Cap Effect - A theory that holds that smaller firms, or those companies with a small market capitalization, outperform larger companies. Outperformance of stocks of smaller companies versus stocks of larger companies typically exhibits itself over longer investment horizons. There can be extended periods of time where the inverse condition exists (stocks of large companies outperform stocks of smaller companies). Rationale for the existence of the Small Cap Effect often reflects the idea that such companies exhibit various forms of business distress, on average, versus the average business conditions of larger companies.

"Smart" Beta - Typically refers to a rules-based investment strategy that is largely passive in nature and avoids the pitfalls of market capitalization-based indexes. For example, an investment strategy that simply screens for high dividend stocks on a regular basis and adjusts the portfolio accordingly would be considered a smart beta strategy. Other portfolio construction techniques that rely on basic company fundamentals (e.g., fundamental indexing) would also be considered smart beta strategies. An important pitfall of smart beta strategies is that, even though they are designed to eliminate certain biases associated with market-cap weighting (e.g., mis-timed overweighting of momentum), they introduce other biases into a portfolio (e.g., value bias, sector biases, etc.).
(synonym(s): fundamental indexing, "low-vol" equity)

Socially-targeted Investment – An investment which is undertaken based upon social, rather than purely financial, guidelines.

Soft Dollars – The portion of a plan's commissions expense incurred in the buying and selling of securities that is allocated through a directed brokerage arrangement for the purpose of acquiring goods or services for the benefit of the plan. In many soft dollar arrangements, the payment scheme is effected through a brokerage affiliate of the investment consultant. Broker-investment consultants servicing smaller plans receive commissions directly from the counseled account. Other soft dollar schemes are effected through brokerages that, while acting as the clearing/transfer agent, also serve as the conduit for the payment of fees between the primary parties to the directed fee arrangement.

Sortino Ratio - A measure of the portfolio's excess return, relative to a target rate, divided by the portfolio's downside variance (semi standard deviation), relative to the target rate.
(synonym(s): downside risk-adjusted return)

Specific Risk – The part of a security's total risk which is not related to movements in the market and therefore can be diversified away.

Standard Deviation (and variance) – A statistical measure of portfolio risk. It reflects the average deviation of the observations from their sample mean. Standard deviation is used as an estimate of risk since it measure how wide the range of returns typically is. The wider the typical range of returns, the higher the standard deviation of returns, and the higher the portfolio risk. If returns are normally distributed (i.e. has a bell shaped curve distribution) then approximately 2/3 of the returns would occur within plus or minus one standard deviation from the sample mean.
(synonym(s): volatility, total risk)

Strategic Allocation – The process of determining the optimal allocation of a fund's portfolio among broad strategic classes. Typically involves rebalancing back to the normal mix at specified time intervals (quarterly) or when established tolerance bands (e.g., + and - 10%) are violated

Strategic Allocation Risk – The risk that a non-optimal strategic allocation will be undertaken which does not meet the fund's return and risk targets.

Systematic Risk – The part of a security's total risk that is related to movements in the market and therefore cannot be diversified away.

Tactical Allocation – Closely related to a strategy of market timing, this strategy uses certain indicators to make adjustments in the proportions of a portfolio invested in stocks, bonds, and cash.

Term-to-maturity – The time remaining until a bond's maturity date.

Time-weighted Return – A method of measuring the performance of a portfolio over a particular period of time. It is the cumulative compounded rate of return of the portfolio, calculated on each date that cash flow moves into or out of the portfolio.

Top-down Analysis – An approach to valuing equities which first looks at the economy and overall capital market, then industries, and finally individual firms.

Treynor Ratio – The portfolio's average excess return over a specified period divided by the beta relative to its benchmark over the same time frame. This is used to measure the excess return per unit of systematic risk taken.

Up Market Capture Ratio - The portion of the market's performance that was captured by the manager using only periods where the market return is positive. An up market capture of greater than 100% is considered desirable.

Value at Risk (VaR) - A statistical technique used to measure and quantify the level of financial risk within a firm or investment portfolio over a specific time frame. Value at risk is used by risk managers in order to measure and control the level of risk which the firm undertakes. The risk manager's job is to ensure that risks are not taken beyond the level at which the firm can absorb the losses of a probable worst outcome.

Value at Risk is measured in three variables: the amount of potential loss, the probability of that amount of loss, and the time frame. For example, a financial firm may determine that it has a 5% one-month value-at-risk of *at least* $100 million. This means that there is a 5% chance that the firm could lose more than $100 million in any given month. Therefore, a *minimum* $100 million loss should be expected to occur once every 20 months.

Value Effect - A theory that holds that value stocks outperform growth stocks. The significance of the Value Effect has been empirically tested by several investment finance practitioners. Value stocks are those stocks that have low market values in relation to their book value of equity and/or offer higher-than-average dividends in relation to their market value. Growth stocks are those stocks of companies that exhibit higher-than-average corporate earnings growth rates over specific periods of time.

Value Equity – Managers who invest in companies believed to be undervalued or possessing lower than average price/earnings ratios, based on their potential for capital appreciation.

Volatility - A statistical measure of the dispersion of returns for a given security, portfolio, or market index. Volatility can either be measured by using the standard deviation or variance between returns from that same security, portfolio, or market index. Commonly, the higher the volatility, the riskier the investment. (synonym(s): risk, variance, standard deviation)