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**D. Management of Components**

To manage the assets assigned to the Broad Growth class components, the Board of Trustees (“Board of Trustees” or “Board”) of the Employees’ Retirement System of the State of Hawaii (“ERS”) utilizes a combination of active and passive external managers. Per policy, the Board delegates the manager selection process to the ERS’s general investment consultant (“General Investment Consultant”) and the ERS’s investment staff (“Investment Staff”), but retains final decision authority for selecting managers for a specific investment mandate. Investment Staff is also expected to manage the components’ allocations to align with their respective allocation targets over time. From time-to-time, based on market dynamics and trends, Investment Staff has the discretion to vary each respective component’s allocation away from the allocation target, but always within the upper and lower limits as shown in the table under Section C. above. Investment Staff is responsible for reporting to the Board component allocation levels that vary materially from their allocation targets.

Within each component, assets are allocated across a series of mandates and/or investment styles. In combination, these mandates and styles capture a broad, representative sampling of the available investment opportunity set within the specified component. The mandate/style allocations within each component are as follows:

*Traditional Growth Component Allocation Policy*

Long-only Public Equity – 100%	
Global – 100%	
Passive	
Mid-Large Cap	100%
Small Cap	0%
Active	
Mid-Large Cap	62%
Small Cap	38%
Total Passive	60%
Total Active	40%

*Stabilized Growth Component Allocation Policy*

Covered Calls – 17%		Public Extended Global Credit – 17%		Cash-Secured Put-Writing – 34%	
Passive	0%	Passive	0%	Passive	0%
Active	100%	Active	100%	Active	100%

Low Volatility Equity – 17%		Core Real Estate – 15%*		Credit – 0%*	
Passive	0%	Passive	0%	Passive	0%
Active	100%	Active	100%	Active	100%

\*See the Appendix of this section for further detail on the structure of the subcomponent

*Stabilized Growth Component Manager Allocation Policy*

Covered Calls – 17%		Public Extended Global Credit – 17%	
Active – Gateway	100%	Active – WAMCO	50%
		Active – Tortoise Credit	30%
		Active – PIMCO	20%

Cash-Secured Put-Writing – 34%		Low Volatility Equity – 17%	
Active – Gateway	33.33%	Active – Robeco	50%
Active – Neuberger Berman	33.33%	Active – TOBAM	50%
Active – UBS	33.33%		

Core Real Estate – 15%*		Credit – 0%*	
Heitman	0-100%**	Active – TBD	TBD
Other	0%-33%**		

\*See the Appendix of this section for further detail on the structure of the sub-component

\*\*Actual allocations will be determined by property dynamics, cash flows, and input from the ERS's Real Estate Consultant

*Private Growth Component Manager Allocation Policy*

Investment manager allocations are determined separately by the ERS's Private Equity and Real Estate Consultants. See the Appendix of this section for more detailed information.

**APPENDIX: CREDIT SUB-COMPONENT**

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## 1. Investment Objectives & Structure of the Credit Program

### A. General Description

The Credit Program 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 class's investment return.

### B. Strategic Objective

The objective of the ERS Credit Program 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 Program sub-component portfolio:

#### Total Return

1. Over rolling 3-year periods, the total Credit program is expected to generate a minimum total dollar-weighted rate of return (internal rate of return or IRR) that exceeds an absolute return of LIBOR+6%, net of all investment management fees and expenses.
2. Over rolling 10-year periods, the total Credit portfolio is expected to generate a minimum time-weighted rate of return in excess of 50% Barclays Global High Yield Index + 50% S&P LSTA Leveraged Loan Index, net of all investment management fees and expenses.

### D. Investment Strategies

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

1. Corporate Credit. Partnerships/Fund of Ones ("FOOs") 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.
2. Mortgage Credit. Partnerships/FOOs 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.

3. Specialty Finance. Partnerships/FOOs 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.
4. Hedging. Partnerships/FOOs 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 shall utilize a separate account or fund of one specifically tailored to meet the needs of the ERS. 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. In addition, each manager will be subject to specific investment manager guidelines (see Section 3 below).

### **B. Monitoring and Reporting**

#### **1. 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 General Consultant will provide an annual update of the Credit program.

In addition to the return metrics highlighted above, Investment Staff and the General Consultant 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.

#### **2. Monitoring**

The Credit manager(s) will provide cash flow, valuation, and any other requested information to Investment Staff, Consultant(s) and the ERS's custodian bank on a monthly

basis and will notify Investment Staff of any instances of any material changes carrying values.

Performance 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 fees and expenses. So that the performance numbers reported by the manager and the custodian are the same, the manager 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.

### 3. Manager Guidelines

<b>Manager(s):</b>	<b>ABC Manager</b>
All allowable securities are described in Section 88-119 (Investments), HRS, the Derivatives Policy in the Appendix of this section, and the following guidelines:	
<b>Component:</b>	<b>Stabilized Growth</b>
<b>Target Return:</b>	<b>LIBOR +6-8%</b>
<b>Target Volatility:</b>	<b>&lt;7%</b>
<b>Minimum Current Yield:</b>	<b>LIBOR +4%</b>
<b>Key Guidelines:</b>	<ul style="list-style-type: none"> <li>- Collateral allocation maximums                             <ul style="list-style-type: none"> <li>o Residential mortgages: 70%</li> <li>o Specialty finance: 70%</li> <li>o Structured credit: 70%</li> <li>o Corporates: 50%</li> <li>o Emerging Markets: 20%</li> <li>o Opportunity set includes but is not be limited to: legacy non-agency RMBS, ABS CDOs, agency risk transfer, FNMA/Freddie preferreds, non-qualified mortgage origination, re-performing loans, mortgage servicing rights, market-place lending, aircraft leases, student loans, auto loans, CMBS, CLO debt/equity, regulatory capital relief, leveraged loans, lightly syndicated loans (“club deals”)</li> </ul> </li> <li>- Diversification                             <ul style="list-style-type: none"> <li>o Position size maximum: 5%</li> <li>o Non-U.S. domiciled issuer maximum: 50%</li> <li>o Emerging markets maximum: 20%</li> </ul> </li> <li>- Liquidity                             <ul style="list-style-type: none"> <li>o Initial lock: 2 years</li> <li>o Private exposure not expected to exceed 50% of the market value</li> </ul> </li> <li>- Leverage                             <ul style="list-style-type: none"> <li>o Not to exceed 1X (debt to equity)</li> </ul> </li> <li>- Hedging                             <ul style="list-style-type: none"> <li>o Hedging ratio: 20-50%</li> <li>o Derivatives may be used for managing interest rate, volatility, term structure, country, currency and sector exposures</li> <li>o Derivative instruments will be limited to liquid instruments actively traded on major exchanges, or, if over-the-counter, executed with major dealers. Such instruments may include: CMBX, ABX, HY CDX, LCDX, CDX, single name CDS, iTraxx, ETFs and other instruments (including swaptions, puts, calls, forwards, options referencing rates, F/X, equity securities, commodities or debt) for the purposes of hedging risk and efficiently transferring existing portfolio exposure</li> </ul> </li> </ul>



<b>Manager(s):</b>	<b>XYZ Manager</b>
All allowable securities are described in Section 88-119 (Investments), HRS, the Derivatives Policy in the Appendix of this section, and the following guidelines:	
<b>Component:</b>	Stabilized Growth
<b>Benchmark:</b>	<ul style="list-style-type: none"> <li>- Primary: LIBOR + 4-6%</li> <li>- Secondary: 50% Barclays Global High Yield Index + 50% S&amp;P LSTA Leveraged Loan Index*</li> </ul> <p><i>*Strategy is "benchmark aware" but is not managed relative to a benchmark</i></p>
<b>Targeted Volatility:</b>	- Not to exceed 50% Barclays Global High Yield Index + 50% S&P LSTA Leveraged Loan Index
<b>Minimum Current Yield</b>	L + 3%
<b>Key Guidelines:</b>	<ul style="list-style-type: none"> <li>- Strategy allocation maximums                             <ul style="list-style-type: none"> <li>o High yield bonds: 90%</li> <li>o Leveraged loans: 60%</li> <li>o Investment grade bonds: 20%</li> <li>o Convertibles: 10%</li> <li>o Structured credit: 20%</li> <li>o Distressed: 25%</li> <li>o Equipment leasing: 10%</li> <li>o Municipal debt: 15%</li> <li>o Preferreds: 10%</li> <li>o Cash: 20%</li> </ul> </li> <li>- Strategy allocation minimums                             <ul style="list-style-type: none"> <li>o High yield bonds: 30%</li> <li>o Leveraged loans: 10%</li> </ul> </li> <li>- Diversification                             <ul style="list-style-type: none"> <li>o Position size maximum: 5%</li> <li>o Average position size: 1-2%</li> <li>o Industry maximum: 25%</li> <li>o Non-U.S. domiciled issuer maximum: 50%</li> </ul> </li> <li>- Liquidity                             <ul style="list-style-type: none"> <li>o Level III maximum: 25%</li> <li>o 8-15 days to liquidate: 30%</li> </ul> </li> <li>- Hedging                             <ul style="list-style-type: none"> <li>o Maximum gross exposure: 135%</li> <li>o Maximum net exposure: 100%</li> <li>o Minimum net exposure: 75%</li> </ul> </li> <li>o Derivatives may be used for managing interest rate, volatility, term structure, country, currency and sector exposures</li> <li>o Derivative instruments will be limited to liquid instruments actively traded on major exchanges, or, if over-the-counter, executed with major dealers. Such instruments may include : LCDX, CDX, single name CDS, iTraxx, ETFs and other instruments (including swaptions, puts, calls, forwards, options referencing rates, F/X, equity securities, commodities or debt) for the purposes of hedging risk and efficiently transferring existing portfolio exposure.</li> </ul>

*Public Inflation-Linked Component Allocation Policy*

GILS – 50%		Commodities – 50%*	
Passive	100%	Passive	0%
Active	0%	Active	100%

\*Mandate is currently unfunded as of 1/1/2018

*Private Inflation-Linked Component Allocation Policy*

Timber – 25-35%		Agriculture – 15-25%*		Infrastructure – 40-60%	
Passive	0%	Passive	0%	Passive	0%
Active	100%	Active	100%	Active	100%

\*Mandate is currently unfunded as of 1/1/2018

**E. 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. The ERS's investment consultants and Investment Staff have joint authority for identifying and selecting investment manager candidates for specific investment mandates. The Board has final authority over the selection of specific managers for each mandate. Investment Staff has the authority to manage the allocation to each investment manager. Under this authority, Investment Staff may reduce funding to one or more specific manager(s) and/or increase funding to one or more specific manager(s) as long as the risk profile of the component or sub-component is maintained. The investment manager allocations within each component mandate are as follows:

*Public Inflation-Linked Component Manager Allocation Policy*

GILS – 50%		Commodities – 50%*	
Passive – BlackRock	100%	Active – TBD	TBD
Passive	100%	Passive	0%
Active	0%	Active	100%

\*Mandate is currently unfunded as of 1/1/2018

*Private Inflation-Linked Component Manager Allocation Policy*

Timber – 25-35%		Agriculture – 15-25%*		Infrastructure – 40-60%	
Active – Hancock	100%	Active – TBD	TBD	Active – KKR	100%
Passive	0%	Passive	0%	Passive	0%
Active	100%	Active	100%	Active	100%

\*Mandate is currently unfunded as of 1/1/2018

The aggregate Real Return class does not have an active risk (tracking error) threshold/budget due to the stable nature of the class benchmark (CPI + 3%), and the difficulty of benchmarking a class containing private markets investments on a continuous basis.

**C. Component Risk Profiles**

The ERS is expected to manage the Public Inflation-Linked component portfolio by utilizing passive management (i.e., very low tracking error) around the respective benchmark discussed under Section F.3.A. above. Causes of tracking error away from the benchmark may be due to modest sector/style biases, timing of manager funding and rebalancing, and benchmark tracking risk. The allowable tracking error range for the Public Inflation-Linked component is:

**Tracking Error Ranges – Key Real Return Class Components**

<b>Component</b>	<b>Allowable Tracking Error</b>
Public Inflation-Linked	0.0% - 1.0%/year

Private Inflation-Linked does not have an active risk threshold/budget due to the difficulty of benchmarking private markets investments on a continuous basis.

**F.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, and the following guidelines:

**A. Public Inflation-Linked Manager Guidelines**

Passive Global Inflation-Linked Fixed Income (GILS)

<b>Manager(s):</b>	<b>BlackRock</b>
All allowable securities are described in Section 88-119 (Investments), HRS, the Derivatives Policy in the Appendix of this section, and the following guidelines:	
<b>Component:</b>	Public Inflation-Linked
<b>Benchmark:</b>	Bloomberg Barclays World Government Inflation-Linked Bond Index (USD hedged)
<b>Max. Tracking Error Objective:</b>	0.20% annualized Refer to appendix for Watch Criteria and Return Expectations
<b>Active Risk Allocation Objective:</b>	security selection: minimum: 0%; systematic factors: maximum: 100%
<b>Security Allowances/Restrictions:</b>	<ul style="list-style-type: none"> <li>- Cash equivalent portion shall not exceed 5%.</li> </ul> <p><b><u>Permitted Investments include but are not limited to:</u></b></p> <ul style="list-style-type: none"> <li>- Benchmark securities</li> <li>- Inflation-linked and nominal bills/notes/bonds issued by countries represented within the benchmark.</li> <li>- Cash and money market instruments.</li> <li>- Currency forward contracts for hedging currency risk relative to the benchmark.</li> <li>- Futures contracts for duration hedging, cash management, and other efficient portfolio management purposes.</li> </ul> <p><b><u>Credit Quality</u></b></p> <ul style="list-style-type: none"> <li>- Securities in the portfolio will reflect the credit quality of the bonds in the benchmark and the average credit quality will be in-line with the benchmark.</li> <li>- In case of a downgrade leading to an issuer dropping out of the benchmark, the downgraded security may be held for up to one month.</li> </ul> <p><b><u>Currencies</u></b></p> <ul style="list-style-type: none"> <li>- Currency exposures cannot deviate in aggregate more than +/- 2% from benchmark currency exposures.</li> </ul>