City of Austin Employees' Retirement System

City of Austin Employees' Retirement System
Board Approved Policy

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March 30, 2021

Investment Policy Statement (IPS)

for

City of Austin Employees' Retirement System (COAERS)

Table of Contents

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I. STATEMENT OF POLICY

Purpose and Scope

This document is the official Investment Policy of the City of Austin Employees' Retirement System (the "System"). The policies in this document (the "Policy") have been adopted by the Board of Trustees of the System (the "Board") to establish the objectives and policies of the System's investment program. This document also articulates the policies and guidelines and procedures that are employed in the day-to-day management of System investments by Staff. No responsible party shall deviate from the terms and requirements of this policy without the prior authorization of the Board. Specific guidelines for the implementation of this policy, including contracting terms and the mandate details for each strategy/manager, are set forth in the Investment Implementation Policy, which is incorporated into and made a part of this policy by reference.

Investment Goals

The sole purpose of the Fund is to accumulate the financial reserves necessary to provide benefits to eligible members of the System and their beneficiaries. To achieve this outcome consistently and sustainably, the Fund will be structured and managed to maximize, net of all fees and expenses, the probability of:

1. Achieving a long-term, annualized nominal rate of return that:
    - Meets or exceeds the actuarially assumed rate of return for the System; and
    - Ranks in the top quartile of peer comparisons consistently.

2. Achieving a long-term, risk-adjusted relative rate of return that:
    - Meets or exceeds the Policy Benchmark (i.e., the Strategic Benchmark); and
    - Meets or exceeds the Passive Benchmark (i.e., the Reference Portfolio).

3. Achieving these strategic objectives via fiduciary best practices that:
    - Ensure proper diversification of asset classes and factor exposures; and
    - Maintain appropriate long-term risk and return expectations; and
    - Adapt the Fund's positioning to changing market conditions.

The Board, with consultation, advice and assistance from the System's Staff and Investment Consultant, will use the Fund's strategic asset allocation process and its effective implementation as the primary tools to achieve these goals. A primary emphasis of the management of the Fund is consistency of growth by seeking to balance the risk of inadequate long-term returns against the risk of permanent impairment of capital. Taxes shall not be a consideration except that the System's tax-exempt status should be preserved.

Investment Beliefs

The Fund is a permanent entity with long-lived liabilities and, as such, it should strive to be a thoughtful, analytical, and patient investor that is focused on achieving successful outcomes.

Clear governance and decision-making structures that promote decisiveness, simplicity, efficiency, and accountability are effective and add value to the Fund.

To the extent possible, investment decision-making should be driven by data and analysis, including the findings of relevant research on financial markets and investment management.

Strategic asset allocation is the most critical aspect of the investment process, with the level of risk assumed by the Fund driven primarily by its allocation to equity investments.

The Fund should seek to be well compensated for the investment risks it chooses to bear, risks that should be articulated at the time of investment and revisited regularly.

Diversification across asset classes and risk factors is central to the System's investment strategy, and investments that may improve the Fund's risk/return profile will be considered.

Equities are the most prudent investment vehicle for long-term growth of real values, and the associated drawdown risk should be carefully managed in light of the Fund's liabilities.

Costs can significantly reduce net returns and therefore must be carefully measured and managed when making decisions regarding investment strategy and implementation.

Implementation should occur passively and in public markets unless a high likelihood of success on a risk-adjusted, net-of-fees basis can be expected from other approaches.

Interpretation, Review and Revision

It is intended that this policy and all addenda hereto be construed and administered such that they comply with all applicable federal and state laws and regulations, as such may be amended from time to time to reflect best practices for prudent investors.

The Executive Director is authorized to approve variances from the policies set forth herein in furtherance of such compliance. The Executive Director is also authorized to update this policy for strictly administrative items subject to approval by the General Counsel. Any variance approved for compliance with law shall be approved by General Counsel, Investment Counsel, or Tax Counsel as appropriate. The Executive Director shall report any such variances or updates to the Board at its next regular meeting via the Investment Committee.

All previous System investment policies and objectives are superseded by this document. The Board will formally review this Policy at least annually to determine whether it remains appropriate in light of the Board's investment philosophy and objectives. This document will also be reviewed periodically and updated as necessary to reflect changes in the capital markets and to reflect best industry practices for prudent investors. Any revisions to this document will be promptly supplied to the appropriate parties in written form.

II. INVESTMENT RESPONSIBILITIES

The System's investments (the "Fund") are held in trust for the exclusive benefit of its members, beneficiaries, and retirees and may not be diverted under any circumstances. This "exclusive benefit" rule shall be strictly followed when making, implementing and monitoring investment decisions. Specific care should also be taken to structure the System's investment relationships to maximize alignment while mitigating the conflicts of interest and agency problems that often exist in the financial services industry.

Specific duties and responsibilities are set forth below for the parties that are established to act as fiduciaries regarding the investment program for the Fund in achieving its objectives.

Board of Trustees

The Board has the fiduciary duty of overseeing the management of the Fund and the associated investment process. In fulfilling this responsibility, the Board will establish, maintain, and require compliance with this policy and its stated objectives. Within this framework, the Board will select, retain, monitor, and evaluate the Investment Consultant, Investment Managers, Custodian (as defined herein), and other parties to serve the goal that actual results meet the objectives. At its discretion, the Board may delegate authority for strategic and operational aspects of the Fund to Staff, though it may not delegate overall responsibility for the program.

The Investment Committee is chartered to assist the Board of Trustees in fulfilling its fiduciary oversight responsibility for the management of the System's investments. Duties of the Investment Committee may include, but are not limited to:

- formulating and recommending to the Board the overall investment policies of the System,
- establishing and recommending to the Board investment guidelines in furtherance of those policies, all of which shall be subject to approval by the Board,
- monitoring investment performance relative to the strategic objectives and compliance with relevant investment risk guidelines set forth in policy, and
- monitoring the management of the Fund for compliance with relevant investment policies and guidelines.

Professional Staff

The Executive Director, the Chief Investment Officer, the Chief Financial Officer, and other Investment Staff will constitute the System's Professional Staff ("Staff"). Staff is responsible for rendering to the Board objective, competent, professional investment advice that is free from conflicts of interest. Staff will make recommendations to the Board regarding the Fund and will be responsible for implementing both Board decisions and applicable portions of this policy.

Executive Director

The Executive Director is appointed by the Board to manage and administer the System and its investments under the supervision and direction of the Board, and in accordance with applicable state and federal laws. In carrying out these responsibilities, the Executive Director has fiduciary responsibilities delegated by the Board under applicable law and is authorized to exercise his or her best judgment and discretion in planning, organizing, and administering the operations and investments of the System and ensuring that internal controls are in place to safeguard System assets. The Executive Director is hereby authorized by the Board to exercise his or her fiduciary responsibilities to take such action(s) as are necessary or appropriate to protect the investments of the System using his or her best judgment and discretion, based on advice of the Chief Investment Officer and Consultant(s), and as practicable and appropriate, reviewed by General Counsel, Investment Counsel, and/or Board Chair. The Executive Director is also responsible for informing the Board of any such action taken or other situation involving the investment program that merit its attention.

The Executive Director will establish procedures and controls for efficient implementation of investment programs by Investment Staff. The Executive Director may delegate to another member of Staff any right, power or duty assigned to the Executive Director in this policy. Such delegation may include, but not be limited to, the Executive Director's delegation to the Chief Investment Officer to supervise and oversee the performance of any responsibilities delegated to Investment Staff set forth in this policy, provided that the Executive Director shall be responsible for the supervision and oversight of the Staff member to whom such right, power, or duty is assigned.

Investment Staff

Investment Staff is required by the Board to provide professional investment analysis and support, to exercise a standard of care consistent with fiduciary duty, and to maintain the integrity of the investment program. Responsibilities of Investment Staff include investment analysis and research, asset allocation recommendations, risk management, manager selection and monitoring, rebalancing, and trade cost analysis. Investment Staff support the investment program at the strategic and operational levels through the establishment of appropriate policies and procedures. Investment Staff are also responsible for implementation and maintenance of analytical tools to measure and monitor risk as further described in this policy and internal procedures. Investment Staff will also advise regarding the development of this policy and its implementation, and provide assistance in selection and monitoring of all Managers, Consultants, and Custodians.

Chief Investment Officer

The Chief Investment Officer (CIO) is part of the Investment Staff and directs the investment program consistent with Board-adopted investment goals and objectives, this policy and the Investment Implementation Policy, and within applicable state and federal laws. The CIO works with the Executive Director to ensure that adequate resources are available to implement the Board's investment policies, including custody relationships, internal procedures, qualified investment staff, and analytical and risk management tools, subject to the budget approval process. The CIO works closely with non-CIO Investment Staff and the Investment Consultant(s) to ensure that policies and procedures provide adequate controls to protect the integrity of the investment program, and oversees all investment processes including the selection and oversight of Managers.

Any reference to Investment Staff responsibilities in this policy, including any addendum to this policy, should be construed to mean that the Chief Investment Officer has supervisory and oversight authority of such delegated responsibilities.

Non-CIO Investment Staff

The non-CIO Investment Staff report to the CIO and are primarily responsible for the daily operation and implementation of the investment program. Non-CIO Investment Staff members work with the CIO and Consultant(s) to advise the Board on investment policy and management issues. Such issues may include without limitation, the development of investment goals and objectives, investment policies and strategies, investment risk management policies, asset allocation decisions, the hiring or termination of Managers, the establishment of investment performance benchmarks, and the development of investment management guidelines and restrictions.

Finance Staff

Finance Staff is independent of the Investment Staff and serves as the record keeper for the System's investments. The Chief Financial Officer (CFO) directs the Finance Staff and is primarily responsible for cash management as outlined in this policy, including the monitoring of liquidity requirements to meet benefit payments. Finance Staff is also responsible for ensuring the timely payment of manager fees and tracking these fees for budgeting purposes.

Investment Consultant(s)

The Board may obtain the services of one or more qualified firms or individuals to assist and advise the Board and Staff regarding the structure, strategy, management, and investment of the Fund (a "General Investment Consultant"). The duty of a General Investment Consultant is to render objective, competent, professional advice and assistance that is free from conflicts of interest and to work with the Board and Staff regarding the investment process. This responsibility includes meeting regularly with the Board to provide perspective on the Fund's goals, strategy, structure, and risk as well as the progress toward fulfilling the Fund's long-term objectives.

A General Investment Consultant will advise, consult and work with the Board and Investment Staff to develop and maintain a well-diversified portfolio of investments for the Fund. Fund positioning and performance will be reviewed regularly, and recommendations will be made as appropriate. A General Investment Consultant will assist the Board and Staff in manager selection and monitoring as needed, including informing the Board promptly of material changes to portfolio investments. Within this process, a General Investment Consultant assumes fiduciary responsibility for advice given regarding the management of the investment process. A General Investment Consultant will perform its duties and obligations in conformance with generally accepted industry standards and its contract with the System.

The Board may also hire one or more qualified firms or individuals to assist and advise the Board and Staff regarding specialized mandates such as selection of managers and/or investments (a "Specialized Investment Consultant"). For example, should the Board consider making direct investments, it may obtain the services of one or more qualified firms or individuals to assist and advise the Board and Staff regarding the selection of specific investments (a "Direct Investments Consultant"). Within this context direct investments are defined for the purpose of this policy as investments that are not invested or managed by an investment manager appointed by the Board pursuant to Section 802.204, Texas Government Code.

The Specialized Investment Consultants are hired by, and report to, the Board to assist in the management of the specialized portfolio. The Specialized Investment Consultants provide advice to the Board on specific asset class policies, recommends pacing commitments, Manager selection and terminations, Manager guidelines and restrictions, participates in the due diligence process and ongoing monitoring of Managers including policy compliance, provides analysis of investment performance, and provides advice on other investment-related issues. Specialized Investment Consultants work closely with Staff in all aspects of the specialized investment portfolio including its relationship to the Fund as a whole.

It is imperative that Consultants have the independence and ability to inform the Board in the event of any concerns related to investment activity. If any Consultant learns of a material issue regarding deviation from prudence, objectivity, policy or parameter adherence or any other matter of concern involving the investment program, the Consultant has a duty to express that concern in writing to the Executive Director and CIO while also recommending any action to be taken as deemed necessary. The Consultant shall also contact the Board if it concludes that further immediate action is required and is beyond the authority granted to the Executive Director or Investment Staff. In any event, all such material matters will be reported to the Board at its next regularly scheduled meeting.

Investment Managers

Except for direct investments, investments for the Fund shall be made and managed by one or more investment managers ("Managers") who meet the requirements of Sections 802.203(d) and 802.204, Texas Government Code. Managers will construct and manage a portfolio of investments (the "Portfolio") consistent with the investment philosophy and strategy they are hired to implement in compliance with this policy and/or any agreement(s) they execute with the System. The Board's Investment Implementation Policy sets out specific processes and procedures with respect to manager selection, contracting, monitoring, and retention.

Custodian(s)

Custodian bank(s) ("Custodian" or "Custodians") will maintain custody of the cash, securities, commingled funds and other investments of the Fund. The Custodian(s) will be responsible for safekeeping, clearing and settling securities as appropriate for the accounts they are assigned. The Custodian(s) will regularly value, list and summarize these holdings for review by the Board, Staff and Consultant. In addition, a bank or trust depository arrangement with the Custodian(s) may be utilized to invest cash in liquid, interest-bearing instruments.

A Master Custodian will be designated to accurately record all transactions affecting the Fund. The audited entries from the Master Custodian shall constitute the official book of record for the Fund. All Custodians will be directed to provide timely and accurate information to the Master Custodian.

III. FIDUCIARY CONDUCT

An investment fiduciary includes, but is not limited to, a person who exercises discretionary authority or control in the investment of the investments of the System or who renders, for a fee, advice to the System. The term investment fiduciary includes, but is not limited to, the members of the Board, the General Counsel of the System, the System's Staff, Investment Consultant(s), Managers, and the Custodian.

An investment fiduciary shall discharge his or her duties exclusively in the interest of the participants in the System and their beneficiaries and shall:

1. Act with the same care, skill, prudence, and diligence under the circumstances then prevailing that a prudent person acting in a similar capacity and familiar with those matters would use in the conduct of a similar enterprise with similar aims;
2. Act with due regard for the management, reputation, and stability of the issuer and the character of the particular investments being considered;
3. Act in accordance with this Policy and ensure that the Fund is invested in a manner consistent with this Policy;
4. Make investments for the sole purpose of providing benefits to participants and participants' beneficiaries, and of defraying reasonable expenses of supervising, safeguarding, and investing the assets of the System; and
5. Give appropriate consideration to those facts and circumstances that an investment fiduciary knows or should know are relevant to the particular investment or investment course of action involved, including the role which the investment or investment course of action plays in that portion of the investments for which an investment fiduciary has responsibility. For purposes of this subdivision, "appropriate consideration" shall include, but is not necessarily limited to, a determination by an investment fiduciary that a particular investment or investment course of action is reasonably designed, as part of the investments of the System, to further the purposes of the System, taking into consideration the risk of loss and the opportunity for gain or other return associated with the investment or investment course of action. Trustees shall give consideration of the following factors as they relate to System's investment strategy:
   - (a) the diversification of the investments of the System;
   - (b) the liquidity and income profile of the investments of the System relative to the anticipated cash requirements of the System; and
   - (c) the projected return of the investments of the System relative to the funding objectives of the System.

Every investment will be subject to thorough due diligence, which shall be conducted by Staff with assistance from the Investment Consultant and reviewed by the Investment Committee.

Notwithstanding the performance of such due diligence, the determination of whether prudence has been exercised with respect to an investment decision shall be made by taking into consideration the overall diversification of the Fund within the context of its investment strategy rather than evaluating the merits of a single investment in isolation.

In adopting this Policy, the Board requires all Trustees and Staff involved in the investment of Fund assets to make all investment decisions in the best interest of the System and to abide by the System's Ethics Policy. This Policy states that no covered person may solicit, accept, or agree to accept any gifts, personal benefits, or personal favors offered to them because of their position with the System.

Within this context, the acceptance by Staff of invitations to seminars, conferences, receptions and business meals when (1) such event has a presentation or discussion of topics pertinent to the investment of Fund assets or relates to the official duties of the individual and (2) the sponsor or a representative of the sponsor is present are permitted if not otherwise prohibited by law. This exception also applies to the acceptance of transportation, lodging and meals in connection with conferences, seminars, and advisory committee meetings where the services rendered by Staff are more than merely perfunctory as in accordance with applicable laws. In all cases, Staff should use reasonable care and judgment to not place themselves in a situation that might cause, or be perceived to cause, a loss of independence or objectivity.

IV. INVESTMENT RISK MANAGEMENT

<u>**Purpose and Scope**</u>

The Board recognizes that bearing prudent levels of compensated investment risk is critical in meeting the Fund's long-term return objectives, which are in turn essential to the sustainable provision of adequate benefits.

- **Market Risk (i.e., Volatility or Absolute Risk):** Market risk is associated with making investments in the pursuit of long-term capital gains while facing the potential for infrequent but significant losses. Market risk is typically defined in terms of market volatility, which is often expressed as the standard deviation of monthly returns over three or more years. Given the System's purpose, liquidity requirements, and predictability of contributions, the Board elects to assume levels of market risk that rank in the second or third quartile of its comparable peers in pursuing the investment program. <u>Based on this philosophy and its absolute return objective, the Fund's long-term volatility is expected to be approximately 10%-12% on an annualized basis.</u>
- **Active Risk (i.e., Tracking Error or Relative Risk):** Active Risk refers to the amount of risk in the portfolio that is attributable to the management decisions made by its fiduciaries. A common measure of active risk is commonly called tracking error, which can be best estimated within portfolios of tradable liquid securities.

  Tracking error budgets relative to the assigned benchmarks are established for the total Fund and its actively managed public market portfolios as follows:

	Neutral	Maximum
TOTAL FUND	**150 bps**	**300 bps**
US Equity	200 bps	500 bps

Developed Market Equity	400 bps	700 bps
Emerging Market Equity	500 bps	800 bps
Fixed Income	150 bps	300 bps
Real Assets	350 bps	500 bps
Multi-Asset	300 bps	600 bps

These figures shall be measured on both a realized and prospective basis using rolling three- and five-year horizons. Deviations from these risk ranges will be reviewed with the Board via the Investment Committee along with the justification and recommended remedy.

- **Mission Risk.** Risk for the System should also be viewed more broadly to include the probability of not meeting its primary investment objective, which is to enable the provision of promised benefits in perpetuity. To this end, the Investment Risk Management effort seeks (1) to identify the key sources of uncertainty with the greatest potential impact on Fund performance, (2) to identify potential regime changes in market conditions that could have significant impact on the long-term performance of the Fund (such as economic growth and inflation) or affect the appropriateness of its asset allocation parameters and/or implementation approach, and (3) to measure, monitor and manage those risks in view of the level of compensation that has been realized and is expected for bearing those risks.

This risk budgeting framework defines the Board's tolerance for volatility and tracking error at the Fund level and provides a transparent, measurable methodology for allocating risk to implementation efforts in pursuit of the System's investment objectives. To ensure that this Risk Budget continues to be appropriate it will be reviewed at least annually concurrent with the Strategic Asset Allocation review and formal asset allocation study. A more in-depth review will be done at least every five years and coincide with the formal Asset/Liability Study.

Other Types of Investment Risk

The Board takes several steps throughout the investment process to identify, measure, and report on investment risk at a variety of different levels. The key risks that are to be identified and addressed in the internal processes of the Investment Staff include:

- **Strategy Risk:** Strategy risk is the risk of pursuing an inferior investment strategy due to lack of clarity in investment beliefs, objectives, and/or risk tolerance. To the extent any of these decision components change, the parameters established in the Strategic Asset Allocation may no longer be appropriate and require review. To ensure that the Strategic Asset Allocation process and parameters remain appropriate:
    - A formal pension financial (asset/liability) study will be conducted at least every five years, or whenever there have been material changes to the contribution or benefit policy.
    - A formal asset allocation study will be conducted at least every three years to validate or amend the SAA parameters.
    - The Strategic Asset Allocation process and parameters will be reviewed at least annually for reasonableness relative to significant economic and market changes and to changes in the Board's long-term goals and objectives.

- **Asset Allocation Risk:** the Board uses a number of critical assumptions to set the Strategic Neutral Allocations and Rebalancing Ranges for the Fund as part of the SAA process. This effort is in support of its goal of establishing an investment program that will allow the System to meet its long-term liabilities through investment returns as well as contributions, but faulty assumptions can jeopardize this aim. The Board via the Investment Committee will monitor these assumptions as well as Fund positioning relative to SAA parameters set forth elsewhere in this Policy at least quarterly.

- **Implementation Risk:** Implementation Risk is the risk of losses or unmet expectations due to either poorly designed investment guidelines or Managers not delivering on the expectations that are embedded in well-designed guidelines. These risks are managed through proper and timely initial and ongoing due diligence programs, portfolio oversight and monitoring, and a willingness to make timely changes when appropriate.

- **Liquidity Risk:** the Board acknowledges that sufficient liquidity must be maintained to meet benefit payment obligations. The allocation to highly liquid investments will be monitored on a quarterly basis, as will the Fund's anticipated contributions, benefit payments, and any capital calls or other investment commitments. Liquid investments may be used to meet short-term cash needs and due consideration will be given to transaction costs when raising cash to meet benefit payments and other commitments.

- **Currency Risk:** to the extent that the Fund invests extensively in international markets, a negative currency return may result from adverse movements in foreign exchange rates. Over long periods of time, currency movements are not expected to add significant returns to the portfolio but may add to its volatility. As such, the Board may authorize Staff to hedge this risk or seek return from this risk by employing active currency management at the Fund level. The Fund utilizes unhedged benchmarks and does not require its Managers to hedge the currency exposure in their portfolios.

- **Leverage Risk:** Leverage is an exposure to an asset class that is not fully collateralized by cash or an exposure to an asset that has been acquired without being fully funded. There are two primary types of leverage: financial leverage and economic leverage. Leverage by itself does not necessarily create additional market risk or variation in market returns, and in fact can be used to deliver greater diversification and better risk-adjusted returns than an unlevered but concentrated portfolio.

  The Fund has exposure to leverage through different structures and vehicles and that leverage is inherent in some investment strategies as a means to achieve their target market exposures. The use of leverage will be monitored in portfolios where derivatives or other forms of leverage are employed (such as in Real Estate and Infrastructure) and also at the Fund level.

- **Statutory Risk:** the Board will track compliance with any and all statutes or laws related to the investment program.

- **Solvency Risk:** trends that could serve to erode the long-term funded status of the System (such as low investment returns, weak global growth, and poor demographics) are to be identified, considered, and evaluated on a regular basis.

V. ASSET ALLOCATION

Strategic Asset Allocation

The Board, with advice from Investment Staff and Investment Consultant, is responsible for establishing the Strategic Asset Allocation (SAA) process and parameters for the Fund. SAA refers to the establishment of neutral weights and suitable ranges for the appropriate asset types (i.e., financial instruments sharing certain fundamental and risk-based characteristics) that determine the distribution of investments within the Fund. The SAA process will seek to optimize expected return net of fees for the Fund within the established risk budget over a long-term horizon by maintaining a highly efficient portfolio at all times. Key parameters of the SAA in this regard will include the Strategic Neutral Allocations, Strategic Rebalancing Ranges, and Tactical Rebalancing Ranges as described further below.

Since the Fund is designed to benefit both current and future generations of beneficiaries, its time horizon is long. More specifically, the Board should calibrate the SAA process toward the aim of meeting the System's investment objectives and risk budget over a time horizon of ten years or more. However, since the benefit payment obligations of the System must be met on a timely and regular basis, cash flow considerations (including the potential for a sustained period of net outflows) will generally be given precedence over the long-term liability stream when setting the SAA parameters and the associated risk budget.

At least every five years (or more frequently if warranted by a material event in either the liability structure of the Fund, the contribution policy, and/or the capital markets) the Board will conduct a formal Asset/Liability Study to review asset classes, risk-return assumptions, and correlation of returns, and implementation styles using applicable benchmarks and other relevant data. These periodic studies will provide the primary basis for significant changes to the Fund's strategic asset allocation parameters.

The primary objective of the Asset/Liability Study shall be the development, through statistical modeling techniques and the use of capital market assumptions, of a highly diversified portfolio structure that specifies a long-term neutral position for each asset class and sub-asset class (the "Strategic Neutral Allocation") as well as prudent maximum and minimum ranges ("Rebalancing Ranges") of portfolio exposures around those neutral weights. These SAA parameters represent the policy weights on a market value basis that, under current assumptions and when effectively implemented by Staff, are expected to maximize the probability of meeting the Board's investment objectives.

Experience has shown that the long-term performance of the SAA process depends greatly on the accuracy of the assumptions used to establish its key parameters. As such, this information should be monitored continually and revisited regularly by Investment Staff with the results reported to the Board each quarter via the Investment Committee. Formal reviews of the adopted SAA parameters using updated capital market assumptions and other market-related inputs shall also be conducted at least annually.

Asset Class Diversification

The Board has found it prudent to diversify both across and within the major asset classes in order to construct a highly efficient portfolio (i.e., one that delivers strong compound returns on a long-term, risk-adjusted basis). Each of the major asset classes outlined below provides a distinct and purposeful role within the Fund, and careful attention should be paid to the changing correlations between them. The sub-asset class categories within each major asset class and their proportion of the total are shown below.

Asset Class/Sub-Asset Class Policy Weights & Rebalancing Ranges

	Asset Class		Min^{S}	Min^{T}	Neutral	Max^{T}	Max^{S}
Growth-Oriented Assets	Global Equity		46.0%	51.0%	56.0%	61.0%	66.0%
		US Equity	21.0%	28.0%	33.0%	38.0%	46.0%
		DM Equity	10.0%	12.5%	15.0%	17.5%	19.0%
		EM Equity	3.0%	5.5%	8.0%	12.5%	15.0%
	Real Assets		10.0%	11.0%	15.0%	19.0%	20.0%
		Real Estate Equity	5.0%	7.0%	10.0%	13.0%	15.0%
		Infrastructure Equity	0.0%	1.0%	5.0%	7.0%	10.0%
Liquidity & Diversifying Assets	Fixed Income		16.0%	18.0%	21.0%	27.0%	33.0%
		US Treasuries	9.0%	11.0%	13.0%	21.0%	25.0%
		US Mortgages	2.0%	3.0%	4.0%	6.0%	8.0%
		US Credit	1.0%	2.5%	4.0%	7.0%	10.0%
	Multi-Asset		2.5%	4.5%	7.0%	12.5%	15.0%
		Asset Allocation	2.5%	3.5%	5.0%	7.5%	10.0%
		Commodities & Other	0.0%	1.0%	2.0%	5.0%	10.0%
	Cash & Equivalents		-10.0%	-5.0%	1.0%	5.0%	10.0%
		US Dollar instruments	-10.0%	-5.0%	1.0%	5.0%	10.0%
		Other currencies	0.0%	0.0%	0.0%	1.0%	2.0%

T: Tactical Rebalancing Range S: Strategic Rebalancing Range

While proper diversification is prudent and central to the System's investment strategy of bearing prudent levels of well-compensated risk, over-diversification can be detrimental to the Fund. Therefore, the Board will not typically consider a sub-asset class for inclusion in the SAA framework that does not warrant a maximum weight of least 4%, with cash being the standing exception.

Based on its most current determination of the appropriate risk tolerance of the Fund and its long-term return expectations, the Board in consultation with the Staff and Investment Consultant has established the Strategic Neutral Allocations, Strategic Rebalancing Ranges, and Tactical Rebalancing Ranges as percentages of the Fund's asset classes and sub-asset classes shown below. These prescribed ranges for the policy weights allow for the fluctuations in Fund positioning that are inherent in market values of portfolio investments and for prudent risk management for the Fund in pursuit of an efficient portfolio.

These rebalancing ranges are established according to the following philosophy and criteria:

- Tactical Rebalancing Ranges are calibrated to reflect the diversity of asset mix among peers with second or third quartile allocations as determined by investment consultant data. These ranges aim to delineate the typical operating range of the actual positioning of the Fund under normal market conditions.

- Strategic Rebalancing Ranges are calibrated to reflect the diversity of asset mix among peers with first quartile and fourth quartile allocations excluding those peers in the top or bottom five percent as determined by investment consultant data. These ranges aim to delineate the less typical operating range of the actual positioning of the Fund under unusual market conditions.

Fund positioning shall in all cases conform to the prescribed ranges unless otherwise authorized at a regular or called meeting of the Board.

Rebalancing

The goal of rebalancing is to ensure that the long-term investment objectives of the System are achieved by allowing Investment Staff the flexibility to adjust for market movements and to adapt Fund positioning to current market conditions. The Board has chosen to adopt a rebalancing policy that allows Investment Staff to rebalance the portfolio between major asset classes as well as within the sub-asset classes, a framework that is governed by the Board-approved risk budget and ranges rather than fixed allocations or time periods. These ranges are specified in the table above and are a function of the volatility of each asset class and sub-asset class relative to the proportion of the Fund allocated to each.

The Strategic Rebalancing Ranges serve to establish the outer bounds for the allocation of the Fund and to allow for flexibility during times of market stress or dislocation. The Tactical Rebalancing Ranges allow for routine fluctuations that are inherent in market values of portfolio investments and establish Board-approved parameters for management of the Fund's risk exposures and overall diversification level by Investment Staff.

Staff is authorized to effect rebalancing under any of the following three conditions:

- **Market drift:** Market movements and cash draws for benefit payments may cause current Fund positioning to drift away from neutral positioning and potentially beyond the prescribed ranges above.
    - o When a month-end report shows that Fund positioning has drifted outside the Strategic Rebalancing Ranges at either the asset class or sub-asset class level, rebalancing shall be effected to increase its positioning to the midpoint of the Strategic Minimum and the Tactical Minimum (if the allocation has fallen below the Strategic Minimum) or to reduce its positioning to the midpoint of the Strategic Maximum and the Tactical Maximum (if the allocation has increased above the Strategic Maximum) by the end of the next month.
    - o When two consecutive month end reports show that Fund positioning has drifted from within to outside the Tactical Rebalancing Ranges at either the asset class or sub-asset class level, rebalancing shall be effected to increase its positioning to the Tactical Minimum (if the allocation has fallen below the prescribed minimum) or to reduce the positioning to the Tactical Maximum (if the allocation has increased above the prescribed maximum) by the end of the next month unless a

temporary deviation until the next Investment Committee meeting is granted in writing by the Executive Director.

  - Determinations made under this authority shall include adjustments as needed to account for notional exposures beyond the market values shown in reports from the custodian and/or investment consultant. Any rebalancing under this authority shall be carried out by Investment Staff after prior notification to the Executive Director and in consultation with the Investment Consultant.

- **Risk management:** Changing market conditions may cause the risk-return profile of the Fund to deviate from the risk budget prescribed in this document. Changing market conditions may also cause the near-term risk/return characteristics of one or more asset classes or sub-asset classes to diverge from its long-term absolute fundamentals or from its peers on a relative basis. In such cases, one or more deviations from neutral positioning may be desirable to improve the risk-return profile (i.e., the diversification level) of the Fund overall.

  When the analytical framework employed by Investment Staff, which for the purposes of this Policy shall be referred to as the Investment Risk Framework (IRF), leads to a determination that one or more deviations is likely to be advantageous to the Fund's risk-return profile, Staff is authorized to rebalance the Fund within the Tactical Rebalancing ranges for both asset class and sub-asset classes. Such rebalancing authority under this provision shall be distinct from any authority to reallocate between managers granted by this Policy or the IIP.

  The IRF, including its underlying philosophy and key inputs, will be approved by the Board prior to deployment and its outputs reported at regular meetings of the Investment Committee and more frequently if market conditions warrant. The Executive Director shall be responsible for ensuring that rebalancing undertaken under this authority is based on the consistent application of the IRF.

  Rebalancing activities under this authority shall result in Fund positioning that falls within the Tactical Rebalancing ranges and conforms to the risk guidelines set forth elsewhere in this Policy unless otherwise authorized by a regular or called meeting of the Board.

- **Phased transition:** During times of phased transition to a new set of SAA parameters, interim rebalancing weights and procedures may be chosen until the implementation of the new parameters can be prudently completed. In addition, Staff and Consultant may each recommend to the Board temporary deviations from these weights if it is believed that doing so can be reasonably expected to further the investment objectives set forth in this Policy or to more effectively implement the program. During the transition towards the new parameters, certain asset classes may exceed prescribed limits and will serve as either a funding source for new strategies or portfolios, or as a proxy pending implementation of certain allocations.

Investment Staff is responsible for developing and overseeing all portfolio rebalancing activities, and is authorized to carry out these activities in accordance with this section. All rebalancing activities permitted by this section must be authorized by the Executive Director in the form of approved instructions to the investment manager(s) and/or custodial bank.

In all cases the potential benefits of rebalancing must be weighed against the costs, including explicit transaction costs such as commissions and market impact as well as opportunity costs such as Staff time and focus. Investment Staff will report the results of rebalancing activity to the Executive Director and Investment Consultant upon completion of the rebalance. The Board shall be notified of any such changes (1) by email within one business day of initiating the rebalancing with the Custodian and/or Manager(s) and (2) in writing at the next regular meeting of the Investment Committee.

VI. OPERATIONAL GUIDELINES

For the purposes of operational risk management, investment activities shall also be subject to the following guidelines:

- **Diversification.** Fund investments will be broadly diversified in order to minimize the risk of large losses from individual securities. The Fund will have beneficial ownership (as determined pursuant to Rule 13d-3 of the Securities Exchange Act of 1934) of no more than:
  - 3% of its investments at market value in the securities of any one corporation;
  - 5% of any class of voting securities of any one public corporation; and
  - 20% of a single commingled investment vehicle, based on market values, except as explicitly approved by the Board as a seed investment.
- **Counterparty Requirements.** Counterparty creditworthiness will be monitored closely, and the following restrictions shall apply:
  - The Custodian(s) shall maintain a credit rating of at least A+ or equivalent
  - Futures Commission Merchants shall maintain a credit rating of at least A+ or equivalent
  - Broker/dealers shall be selected by Investment Managers in accordance with their internal trading policies as reviewed during the due diligence process

  Credit ratings criteria should be met on both a long-term and short-term basis as rated by at least one nationally recognized rating services organizations (NRSROs) such as Moody's, S&P, and Fitch.
- **Leverage.** In addition to gross notional exposure, net exposure levels will be monitored at the asset class level and at the Fund level. Financial leverage is restricted at the Fund level to risk management purposes as described further in this section. Financial leverage is permitted under this Policy as a result of the following permissible activities:
  - Derivative overlay strategies used to carry out the System's investment strategy and deployed within the parameters of the Strategic Asset Allocation;
  - Derivative overlay strategies used to implement currency hedging;
  - Embedded leverage within commingled fund structures; and
  - Collateralized funding including securities lending activities.

- **Derivative Instruments.** The only authorized uses of derivative instruments are (1) to efficiently manage portfolios and risk and (2) to implement investment strategies authorized by this Policy more effectively and at a lower cost. The following derivative instruments are allowable, subject to the constraints listed below: futures, forwards, structured notes, and options. At the Fund level, purchases or short sales, or both, of appropriate derivatives may be used to:

  - Manage the total Fund more efficiently by altering its market (systematic) exposure in lieu of trading the underlying cash market securities;
  - Hedge and control risks so that the risk-return profile of the total Fund is more closely aligned with its target risk-return profile; and
  - Facilitate transition trading when rebalancing or reallocating among permissible investments as a result of policy changes.

  Managers may only engage in derivatives transactions that are consistent with their investment guidelines as well as applicable laws and regulations. Specifically, these instruments may be used for constructing portfolios with risk and return characteristics that could not be created with cash market securities consistently with the objectives in this Policy and in compliance with applicable law.

- **Cash Management.** As a mature pension plan, cash disbursements of the System are expected to exceed cash receipts for the medium term. As such, sufficient funds must be made available for transfer from the System's investments to meet the operating needs of the System. On at least a quarterly basis, Finance Staff will project the cash flow needs of the System based on the amount budgeted for administrative expenses and projected benefit payments, including retiree payroll. Cash draws should generally be made from asset classes and individual portfolios that are overweight relative to their strategic neutral weight, with those funds then transferred to the System's cash account at the Custodian Bank. A standing direction may be issued for monthly transfers from managed investments to address projected cash flow needs.

  Each month, the Chief Financial Officer will review the anticipated disbursements, and will compare the disbursement requirements to funds available at the Operating Bank. A recommendation of the amount of cash draw required from the Custodian Bank will be made to the Executive Director, who will authorize the Custodian Bank to transfer the required funds to the Operating Bank on a specified date. Each quarter Staff will provide to the Board via the Investment Committee a report detailing all cash movements from the prior quarter that are related to investment program operations.

- **Securities Lending:** The Board may select a Securities Lending Agent(s) to generate incremental income by making term loans of eligible securities. Any such program shall not inhibit the trading activities of Managers and should not run counter to the investment strategy of the Fund overall. The agent(s) or its parent organization must:

  - be experienced in the operation of a fully secured securities lending program;
  - indemnify the System against any loss resulting from borrower default or from its own failure to properly execute its responsibilities under the lending agreement;
  - maintain a SSAE16 or ISAE 3402 report reflecting appropriate risk controls;

- maintain a rating of at least “A” by two NRSROs; and
- maintain Tier 1 and Total Capital Ratios of at least 7% and 10%, respectively.

The agent(s) shall have full discretion over the selection of borrowers and shall continually review credit worthiness of potential borrowers through adequate analysis of all relevant information. The agent must act as a fiduciary in the management of the account and manage the market risk of the reinvestment of cash collateral through careful monitoring and consideration of the maturity structure of the reinvested cash collateral relative to the System’s outstanding loans.

The securities lending program shall utilize a high-quality and reasonably conservative cash collateral re-investment program that safeguards the return of principal and maintains adequate daily liquidity to support trade settlement activity and portfolio restructuring activities. Cash collateral or US Government securities must be received by the Securities Lending Agent, and should be held in a fully paid segregated account invested according to approved guidelines described below:

- All loans shall be fully collateralized with cash, government securities or irrevocable bank letters of credit. Collateralization of such loans shall be at least 102% domestic/105% international of the market value of the loaned securities plus accrued income for U.S. and non-U.S. loans, respectively. Such collateralization procedures should be marked-to-market daily by the agent.
- The securities lending agent must have written/internal guidelines for the investment of cash collateral, which shall be reviewed and incorporated into the System’s agreement with the securities lending agent. A copy of the agent’s cash collateral investment policy shall be sent to the System at least annually and any other time a material change is made to the document.
- Income earned from securities lending in separate accounts will be deposited monthly in an account specified by Staff and invested in short-term instruments until allocated or used as needed to meet the liquidity requirements of the System.
- The agent will be responsible for in-depth ongoing credit review of borrowers, independent of the agent’s securities lending decision-makers. Staff may work with the securities lending agent to create and maintain a custom approved borrower list.

Should a violation of these guidelines occur, the Agent will notify Investment Staff within 3 business days who will promptly notify the CIO of the guidelines breach and appropriate steps to remedy the breach (if any), accompanied by a recommendation. However, a breach will not in itself cause the suspension or termination of the lending program.

Cash collateral may also be reinvested through a pooled fund managed by the Securities Lending Agent. Investment Staff shall evaluate and may recommend the use of a commingled pool by considering any liquidity benefits a pooled structure may offer along with its investment objectives, guidelines, restrictions, and strategy. Such analysis will also consider transparency of the investment process and internal controls.

For commingled funds where securities lending is performed by the Manager, Staff is authorized to adjust the allocation between lending and non-lending share classes to manage the risk profile of the program. The Board shall be notified of any such changes (1) by email within one business day of initiating the transaction with the Custodian and/or Manager(s) and (2) in writing at the next regular meeting of the Investment Committee.

- **Securities Litigation:** As a large institutional investor, the Fund frequently holds securities that are the subject of individual and class action securities litigation. The Custodian and other parties may be appointed by the Board to monitor such lawsuits, report to the Executive Director, and file notice of claim as necessary. The Custodian shall notify Managers of any potential or pending legal action.

  In its role as a fiduciary, the Board may, with the advice and assistance of the System's General Counsel, determine that the Fund should pursue litigation where it has been harmed due to securities fraud or other bad acts. In most cases, the Funds' interest in securities litigation claims will be adequately addressed solely through participation as a class member, rather than taking a lead plaintiff role in such litigation. In such event, the filing of any claim shall be prepared, processed, and managed by the Custodian on behalf of the Fund, at the direction and with the oversight and approval of Staff.

  In those rare cases it may be determined that the materiality of the financial loss to the Fund is exceptional and/or that the Trustee's fiduciary obligation requires active participation or separate prosecution of claims. If so, the Executive Director may refer the case to appropriate legal counsel for evaluation and recommendation to the Board.

VI. REPORTING, EVALUATION AND REVIEW

Regular performance evaluation of the Fund by the Board is designed to monitor the effectiveness of the investment process in meeting the long-term objectives of the System. The purpose is to test the continued validity of the associated decisions and to prompt a review of underperformance or excessive risk. All performance measurement should be based on total returns, net of fees, adjusted for risk, as measured over a sufficient time period to reflect the benefits of any active decisions (typically a minimum of three years and preferably over five or more years and/or a full market cycle).

Investment Staff and Consultant, in consultation with the Executive Director, shall provide to the Board via the Investment Committee a written summary of the Fund's performance each quarter. This report shall include a comparison to performance benchmark objectives as well as the investment performance of other appropriate funds. The Consultant will conduct an in-depth performance attribution analysis, which will quantify the extent to which specific allocations, strategies, and/or managers added or detracted from overall Fund performance.

Strategic Objectives

The central strategic criteria for Fund performance will be the ability of the Fund's returns to fully fund the liabilities of the System over time. That is, the investment program overall should be oriented toward the outcome of achieving a long-term, annualized absolute rate of return that meets or exceeds the assumed actuarial rate of return for the System.

On a regular basis (typically quarterly but not less than annually) the Board will review actual investment results achieved and the attribution of those results to determine whether:

- the Fund meets or exceeds its long-term target rates of return;
- the extent to which Fund risk remains within budget in the pursuit of these objectives;
- the Fund's Strategic Asset Allocation process and parameters remain reasonable and appropriate in light of the long-term goals of the system (including its funding objectives and projected liabilities) and the prevailing conditions in the capital markets.

These assessments should also regularly consider the potential effects of past realized returns on future expected performance, such as whether high recent returns imply lower returns in the future or vice versa. Investment Staff shall report annually to the Investment Committee on the status and performance of delegated responsibilities including rebalancing, manager selection, and risk management.

Investment Risk

Widely accepted quantitative measures of risk such as volatility (i.e., standard deviation of returns) shall be regularly measured and monitored. The risk management efforts of the program are also to consider other statistical measures of historical and projected absolute risk such as Value-at-Risk (VaR) and maximum drawdown. While acknowledging that investment risk cannot be eliminated but can instead be managed through appropriate diversification, the Board seeks to ensure that investment risks are adequately rewarded over time and that return expectations are consistent with the risk budget established by the SAA process. <u>The program should target a long-term Sharpe Ratio of at least 0.5 for the Fund overall to ensure a level of investment efficiency in risk taking that is on par with its best-in-class peers.</u>

Risk monitoring activities should also consider downside risk, which for these purposes is considered to be the permanent impairment of capital. However, since many risk models assume normality of returns and thus often fail to anticipate the severity of drawdowns, it is imperative to monitor the Fund's downside risk using forward-looking techniques such as scenario analysis and stress testing. These techniques can provide insight into potential future downside risks by utilizing historical market dislocations and potential future events to consider the resulting impacts on the portfolio. As such, these approaches will be incorporated into the Asset/Liability Studies and should also be incorporated into regular reporting where possible.

<u>For actively managed strategies, the investment program should target an Information Ratio of at least 0.5 to ensure that the associated risk is adequately compensated.</u> However, when relying on relative measures of risk such as tracking error, it is critical to note that the tracking error calculation does not distinguish between strategies that increase absolute risk from those that reduce it. As such, relative measures should be evaluated in conjunction with the absolute level of risk borne by that asset class or investment strategy. For example, when an asset class or investment strategy is outperforming its stated benchmark, if it does so with substantially more absolute risk than the benchmark that investment may in some cases be deemed unsuccessful. Likewise, the underperformance of a stated benchmark with substantially less risk may in some cases be deemed a success.

Fund/Asset Class/Sub-Asset Class Performance

Each asset class is to be benchmarked by an associated index that describes, in general terms, the opportunity set and return characteristics associated with the asset class. For certain private or more complex asset classes the index should serve as a proxy for expected returns rather than an approximation of the actual investments that will characterize that component of the portfolio. Within each asset class, the Chief Investment Officer, in consultation with the Executive Director, shall adopt portfolio implementation strategies and investment styles to meet the overall investment objective of each asset class. Investment Staff shall report to the Board via the Investment Committee quarterly on the current status and historical performance of these implementation decisions.

The primary performance objective for the Fund is to obtain risk adjusted net returns equal to or greater than the stated benchmark, including incremental returns that are proportionate to the amount of additional risk (tracking error or other appropriate risk metric) assumed. Benchmark returns for composite allocations are weighted according to the Neutral Weights set forth in the SAA parameters. Specifically, the Fund's net return shall aim to meet or exceed the:

- **Passive Benchmark:** This benchmark is intended to reflect the investment mix prevailing among institutional peer portfolios as implemented via low-cost passive investable indices. Outperformance relative to this benchmark should represent the value added through decisions made in the Strategic Asset Allocation process and should be evaluated on a risk-adjusted basis. The Passive Benchmark will be set as outlined below.

Major Asset Classes			
Asset Class	Weight	Benchmark Index	Bloomberg Ticker
Global Equities	60%	MSCI All Country World Net Total Return USD Unhedged	NDUEACWF
Global Fixed Income	40%	Bloomberg Global Aggregate Total Return USD Unhedged	LEGATRUU

- **Policy Benchmark**: This benchmark is intended to reflect a passive implementation of the neutral weights established by the Board during the SAA process, and outperformance should represent the value added by investment implementation and risk management activities. The Policy Benchmark is a neutral weighted composite of the benchmarks selected to track the major asset classes in the Strategic Asset Allocation and as such shall also be known as the Fund's Strategic Benchmark. The Strategic Benchmark will be set as outlined below.

Asset Class/Sub-Asset Class Benchmarks		
Asset Class	Benchmark Index	Bloomberg Ticker
Global Equity	MSCI All Country World IMI Net TR	MIMUAWON
US Equity	MSCI USA Net TR	NDDUUS
DM Equity	MSCI World ex-US Net TR	M1WOU
EM Equity	MSCI Emerging Markets Net TR	NDUEEGF
Real Assets	Neutral weighted blend of sub-asset class benchmarks	.COAERSSRA

	Real Estate	FTSE NAREIT Equity REITS TR	FNRETR
	Infrastructure	S&P Global Infrastructure Net TR	SPGTINNT
Fixed Income		Bloomberg Global Aggregate Bond TR	LEGATRUU
	US Treasuries	Bloomberg US Treasuries TR USD	LUATTRUU
	US Mortgages	Bloomberg US MBS TR USD	LUMSTRUU
	US Credit	Bloomberg US Credit TR USD	LUACTRUU
Multi-Asset		COAERS Passive Benchmark	.COAERSPAS
	Asset Allocation	COAERS Passive Benchmark	.COAERSPAS
	Commodities & Other	Bloomberg Commodity Index	BCOMT
Cash		Bloomberg 1-3 Month US T-Bill	LD12TRUU
	US Dollars	Bloomberg 1-3 Month US T-Bill	LD12TRUU
	Other currencies	Bloomberg 1-3 Month US T-Bill	LD12TRUU

- **top quartile** of peers, which is to be used as a measure of the performance realized from the prevailing opportunity set within the global capital markets.

The baseline time period for achieving these objectives is three years, though shorter and longer time periods should also be considered. These benchmarks should be reviewed annually for potential adjustment, with attention paid to the selection of the constituent indices for continued relevance, applicability, and investability. These benchmarks are not expected to change except to reflect substantial changes in either long-term market opportunities and/or asset allocations by the System or its institutional peers.

Similar to the total Fund, the performance objective for asset class and sub-asset class composites is to obtain risk-adjusted returns in excess of those of stated objectives and peer results. Active returns relative to the adopted benchmark returns are expected to exceed the cost of management and be proportionate to the amount of risk assumed.