CALSTRS

CALIFORNIA STATE
TEACHERS'
RETIREMENT SYSTEM

INVESTMENT POLICY AND MANAGEMENT PLAN

INVESTMENT BRANCH

JULY 2019

A. Investment Policy and Management Plan

EXECUTIVE SUMMARY

The California State Teachers' Retirement Board believes that to manage growth of assets in a prudent manner, it is necessary to establish Investment Beliefs and a clear investment policy and a planning statement under which the Investment Branch will operate. The Board has sole and exclusive fiduciary responsibility to administer the investment assets in a manner that will assure the prompt delivery of benefits and related services to the plan participants and their beneficiaries. As a public pension fund, the California State Teachers' Retirement System is not subject to ERISA, which governs corporate pension plans. The CalSTRS investment decision-making criteria are based on the "prudent expert" standard, for which the ERISA prudence standards serve as a basis. Additionally, the California Constitution, Article 16, Section 17, subsection (d) and Education Code Section 22250 (c) require diversification of risk across asset classes and minimization of employer costs.

The Investment Committee has established the core tenets in the form of an Investment Beliefs Statement, which precedes this Investment Policy. The Beliefs provide a broad guide and framework for the Investment Policy and Management Plan (IPMP) and all various Investment Policies. The Investment Policy and Management Plan has been developed within the context of the significant events that have occurred during CalSTRS history. The CalSTRS IPMP is updated to reflect the changes that have occurred in the investment policy and strategy as a result of implementing approved programs. In addition, the IPMP is updated to ensure that the factors that have impacted initial decisions are still relevant in the current environment.

This document addresses general objectives governing the policies of the investment function and the specific performance objectives. The general objectives are meant to provide a framework for the operation of the investment function. CalSTRS' performance objectives can be divided into objectives, one for the overall investment function and one for the objectives for the various asset classes and initiatives.

The asset allocation decision governs the allocation of CalSTRS assets between public, private and cash. Strategic allocation of CalSTRS assets is the most important factor in the determination of the realized total rate of return. The Board, Investments staff, and the general consultants worked together to create a variety of optimal asset allocation alternatives. The Board has adopted the desired targets and set tight ranges around those targets to control risk and ensure the proper allocation of the portfolio.

Strategic asset allocation targets are established within a variety of sub-asset categories to achieve the identified performance objectives. In conjunction with the overall asset allocation targets, sub-asset class level tactical ranges provide flexibility to adapt to changing market conditions.

Investment related issues addressed included:

1. The Funds' overall investment objectives, risk tolerance, and performance standards
2. The relative amount of active and passive management within each asset class
3. The relative amount of internal and external management
4. The appropriate direct and indirect costs of each asset category
5. The appropriate reporting standards and time horizons

Additionally, CalSTRS is committed to holding and managing securities investments in both the public and private markets and exercising the corporate governance rights that are a necessary part of that ownership. CalSTRS views these rights as plan assets and discharges its fiduciary duty solely in the interest of the plan participants and their beneficiaries.

STANDARD OF CARE

Under California Constitution, Article 16, Section 17, and the California Education Code, Part 13 Teachers Retirement Law, Chapter 4, Section 22250, the Board has the sole and exclusive fiduciary responsibility over the assets of the retirement system. The Board shall also have sole and exclusive responsibility to administer the system in a manner that will assure prompt delivery of benefits and related services to the members and their beneficiaries. The assets of the retirement system are trust funds and shall be held for the exclusive purposes of providing benefits to participants in the pension or retirement system and their beneficiaries, and defraying reasonable expenses of administering the system.

The members of the Board of the retirement system shall discharge their duties with respect to the system solely in the interest of, and for the exclusive purposes of, providing benefits to, participants and their beneficiaries, minimizing employer contributions thereto, and defraying reasonable expenses of administering the system. The Board's duty to its participants and their beneficiaries shall take precedence over any other duty.

The members of the CalSTRS Board shall discharge their duties with respect to the system with the care, skill, prudence, and diligence, under the circumstances then prevailing, that a prudent person acting in a like capacity and familiar with these matters would use in the conduct of an enterprise of a like character and with like aims.

GENERAL INVESTMENT OBJECTIVES

The main goal for The California State Teachers' Retirement System is to "maintain a financially sound retirement system". Within this context and in conjunction with the State Constitution and Education Code, the following general investment objectives are designed in consideration of the Investment Beliefs, to establish a framework for the operation of the investment portfolio.

1. **Provide for Present and Future Benefit Payments –** The CalSTRS Investment Program shall: provide liquidity to pay benefits to its participants and their beneficiaries in the amounts and at the times called for through the investment of contributions and other fund assets, strive to meet the assumptions built into the actuarial model and strive to maintain a fully funded pension system.
2. **Diversify the Assets –** Seek to diversify the assets to achieve the desired rate of return at a prudent level of risk. The asset structure must provide for diversification of risk between asset classes in order to manage the risk/return relationship through strategic asset allocation.
3. **The Reduction of CalSTRS' Funding Costs –** Within prudent levels of risk, the reduction of CalSTRS' funding costs shall be a consideration in the organization and structure of the investment portfolio.

4. **Maintain the Trust of the Participants and Public –** Manage the investment program in such a manner that will enhance the member and public's confidence in the CalSTRS Investment Program.

5. **Establish Policy and Objective Review Process** – A formal review of the CalSTRS Investment Policy and Management Plan will be conducted annually, with an updated financial projection developed every two years.

6. **Create Reasonable Pension Investments Relative to Other Pension Funds –** The selection of investment vehicles and policies will be judged against other private and public pension funds. Investment performance, asset management costs, staffing and overall expenses will be compared to other public and corporate pension plans, with special emphasis on comparisons with other large public funds.

7. **Minimize Costs –** Management fees, trading costs, and other expenses will be aggressively monitored and controlled.

8. **Compliance with State and Federal Laws –** The investment program must operate in compliance with all applicable State and Federal laws and regulations concerning the investment of pension assets.

INVESTMENT PERFORMANCE OBJECTIVES

The general investment objectives designed a framework for the operation of the investment function. The performance objectives can be divided into three components: (1) performance objectives for the overall Investment Portfolio, (2) performance objectives for each asset class, and (3) performance objectives for the individual investment managers within each asset class. CalSTRS incorporates all three levels of analysis in its monitoring of the investment portfolio performance.

In 2001, a survey of the Board members confirmed the Board's primary objective is to meet the actuarial assumptions and to strive to maintain a fully funded pension plan. Further, the Board reaffirmed its focus on a long-term investment horizon of ten years. As a long-term pension plan, the Board emphasizes that the primary time horizon for measuring investment performance will be over a three, five, and ten-year period rather than quarter to quarter or year to year.

There are five performance objectives identified for the overall Investment Portfolio:

1. Relative to the Actuarial Rate of Return
2. Relative to CalSTRS' Liabilities
3. Relative to Inflation
4. Relative to Strategic Asset Allocation Targets (Policy Benchmark Index)
5. Relative to the CalSTRS Reference Portfolio

The actuarial rate of return is an estimate of the long-term rate of growth of CalSTRS assets. Based upon various internal and consultant estimates, the actuarial rate of return is currently set at 7.0 percent, which represents an indicative multi-decade expected average return. When adopting the actuarial rate of return, the Board recognizes that it is highly likely the investment portfolio will produce higher returns in some years and realize lower returns in other years (and that such scenarios can unfold for multiple years).

The liability-related performance objective recognizes that liabilities must be paid in full and in a timely manner. The liabilities are future claims of the CalSTRS participants. The actuarial rate of return is used to discount the future value of the CalSTRS liabilities to calculate the funded ratio.

The inflation related objective compares the investment performance against the rate of inflation as measured by the Consumer Price Index plus 3.5 percent. The Consumer Price Index is used in the calculation of the estimated salary increases for the members (teachers). The inflation measure provides a link to CalSTRS' liabilities.

A comparative benchmark reflects CalSTRS' unique asset allocation policy. This performance objective is a composite of the target weighting for each asset category multiplied by the performance benchmark's return for that category. This performance number is compared to the actual asset allocation and actual total rate of return. This comparison identifies the contribution or detriment to performance caused by manager performance, market timing, and tactical asset allocation decisions.

PERFORMANCE BENCHMARKS

To facilitate the periodic reporting to the Investment Committee and to provide a relative measure to gauge success, custom performance benchmarks are approved by the Investment Committee. The approved custom performance benchmarks for each asset class are shown below:

Total Public Global Equity	Weighted blend[1&2] of the Russell 3000 Custom Index + MSCI All Country World Index (ACWI) ex-U.S Custom Investable Market Index (IMI), MSCI World ex-U.S. Custom Min Vol (USD) index, MSCI ACWI ex-U.S. Index and MSCI World Custom Low Carbon Target Net Index
Total Public Debt	(95%) Bloomberg Barclays U.S. Aggregate Custom Index[1] + (5%) Bloomberg Barclays U.S. High Yield 2% Issuer Capped Custom Index[1]
Inflation Sensitive	Weighted blend of the Bloomberg Barclays U.S. Treasury Inflation Linked-Bond Index (Series L), NCREIF Timberland Fund Index, Bloomberg Commodity Index, Alerian MLP Daily index, CPI+3% (quarter lagged) and CPI+4% (quarter lagged)[2]
Real Estate	NCREIF ODCE Value Weighted index Net of fees (quarter lagged)
Private Equity	Weighted blend of the CalSTRS Custom Private Equity Traditional and Non-Traditional Indices, comprised of the customized Buyout, Debt-Related and Venture Capital segments of the State Street Global Exchange Private Equity Index (quarter lagged)[2], further detailed in the Private Equity Policy. () [2]
Cash / Liquidity	90-day Treasury Bill Index

Risk Mitigating Strategies	Weighted blend of: Bloomberg Barclays U.S. Treasury 20+year Total Return Index, SG Trend Index, HFRI Macro: Discretionary Thematic Index, and Eurekahedge Multi-Factor Risk Premia Index. Once the asset class is fully implemented, target weights of each underlying strategy will be applied to the custom benchmark, as described in the RMS policy.[2]

[1] Custom public indices are updated quarterly in accordance with the CalSTRS restricted securities list, Committee on Responsible Investments mandates and Divestment Policy.

[2] As new strategies are added, the future benchmark shall be a dynamic blend comprised of the weightings of each of the underlying strategies within the portfolio, multiplied by their respective benchmarks. The Investment Policy and Management Plan will be updated accordingly through a schedule set forth by the Board.

Blended indices are weighted based upon CalSTRS target allocations to each respective index. Each investment manager, in all asset classes, has an individualized benchmark designed to measure its performance relative to the objective identified in each manager's respective investment guidelines.

TOTAL FUND BENCHMARK

To measure the performance of the Total Fund, CalSTRS utilizes two benchmarks as described below. One primarily for members and the public and one customized for internal performance attribution and risk management.

Policy Benchmark Index – This measure is used for performance attribution and risk measurement. It is developed by taking each of the respective asset classes' custom benchmarks weighted by the policy target asset allocation at the end of the specific time period. Since almost all of the asset class benchmarks are customized for CalSTRS exclusions and special mandates, they are not publicly available. Additionally, because the Total Fund utilizes long term illiquid securities, benchmark comparisons become difficult over shorter time periods. Many of the illiquid asset classes are not investible options for the members and public.

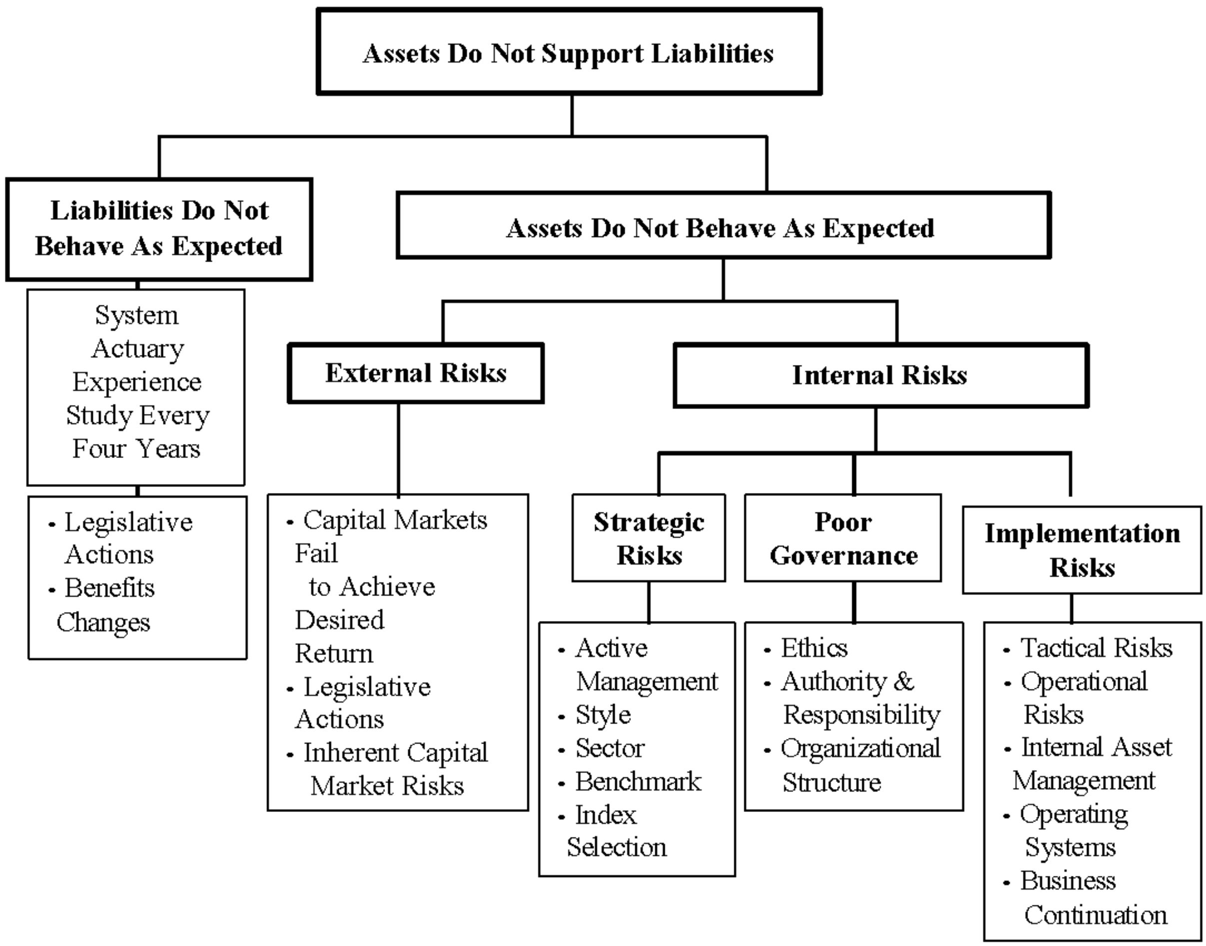
Reference Portfolio – The reference portfolio is the Morningstar Moderate Target Risk index which is designed to help measure Target date mutual funds with a long investment horizon and risk level very similar to that of the CalSTRS total fund. This measure is designed to allow members and the public compare the CalSTRS total fund Investment performance to a similar risk level portfolio they could utilize within the personal retirement accounts. This measure will be used in external publications to provide comparison that is publicly available and clearly defined. The Reference Portfolio is also the most appropriate performance measurement tool to measure the performance success of the over long time periods.

RISK CONSTRAINTS

The CalSTRS Investment Portfolio will be invested to maximize return at a prudent level of risk in accordance with the CalSTRS Investment Policy and Management Plan, the California Constitution and the California Education Code.

RISK STANDARDS

With a few enhancements, CalSTRS has utilized the risk matrix *Statements of Key Investment Risk and Common Practices to Address Those Risks*, *June 2000*, which is endorsed by the NCTR[1], GFOA[2], and APPFA[3]. These standards promulgate the CalSTRS risk framework which is listed below:



[1] National Council on Teacher Retirement;
[2] Government Finance Officers Association
[3] Association of Public Pension Fund Auditors

External Risk – External risks are embedded and inherent within the capital markets. This policy defines CalSTRS strategy and process to capture or, in turn, mitigate these risks.

Governance Risk – Governance risk is mitigated within the Board's governance policy and the individual asset class policies. Roles and assignments are clearly stated in each policy.

Strategic Investment Risks & Implementation Risks – These particular risks have increased significantly over time, as a result, the Investment Committee has revised the strategies to tactically manage the risks of the portfolio. CalSTRS has adopted six key risk measures to help identify potential deviations in global risk levels.

Global Economic Growth Risk	Interest Rate Risk	Inflation Risk	Liquidity – Fluid Market Risk	Leverage Financing Risk	Global Investment Governance Risk

These risks overlay the total portfolio and touch almost each asset class in one way or another. Management of these risks requires comprehensive strategies across the portfolio.

This policy is designed to mitigate the strategic investment risks and implementation risks of the investment activity. A critical element to mitigate these risks is the asset allocation and sub-asset structure of each asset class. The Board has adopted target allocations and tight ranges to control and limit the strategic and tactical risks in the portfolio. To control the active manager style, sector, index and benchmark risks, the Board has delineated guidelines and structure through the asset allocation plan and the asset class policies and guidelines.

Environmental, Social and Governance Risks, ESG – CalSTRS Investment Portfolio operates in a unique and complex social-economic milieu, and the Board expects its staff and investment managers to select investments after a careful investigation and deliberation of the risks versus the potential return. To assist staff and investment managers, the Board has promulgated a Policy that delineates principles and risks to be considered in all investment decisions. This ESG Policy is included as Attachment A to this policy.

RISK BUDGET

The CalSTRS Asset Allocation Plan is developed within the concept of a risk budget. In CalSTRS' view, the public markets of U.S. equity, U.S. fixed income and, to a lesser extent, non-U.S. equity, are fairly efficient markets. Information is disseminated quickly and new information is quickly absorbed into the market prices of a given security. As a result, CalSTRS utilizes a more passive management style. The less efficient the investment the greater exposure to active management and hence the larger exposure to style, sector and management risk.

In the less liquid and inefficient asset classes of high yield fixed income, private equity, infrastructure and real estate, CalSTRS utilizes a complex active management style to capture the greater opportunity set offered by the larger risks.

TOTAL FUND RISK

Liquidity Risk

No more than 35 percent of the total fund shall be invested in instruments that are not regularly publicly traded on a daily basis.

Maximum Investment

No more than 3 percent of the total fund shall be invested or exposed to any one security or corporation, with the exception of the United States Treasury or Agency Obligations. No more than 15 percent of any asset class maybe invested in any one security, with the exception of United States Treasury or Agency Obligations.

Trading Limits

Attachment B defines transaction limits for the internally managed public portfolios and approval limits of outgoing cash transactions for all private asset portfolios. Any transaction or cash approval limits defined within an asset class policy are superseded by the limits that are defined in Attachment B.

ASSET ALLOCATION

The Asset Allocation Process

The key goal of the asset allocation process is to develop an asset allocation policy that maximizes the likelihood that an investment portfolio's assets will, over the planning horizon, fund plan benefits.

Steps Involved in Setting Asset Allocation Policy

Overview and Planning Steps

1. Review the current investment policy and asset allocation history.
2. Review financial condition of the Defined Benefit plan
   A. Assets versus projected liabilities (balance sheet)
   B. Long-term funding plan and current status
   C. Projected contributions versus projected benefits

Investment Related Steps

3. Review rationale for investment asset classes in light of plan financial requirements
4. Develop expectations for asset class investment performance (returns, risks, correlations)
5. Identify CalSTRS specific constraints that might limit investment strategies (e.g., liquidity, divestment)
6. Create model portfolios, incorporating objectives, assumptions, and constraints
7. Perform additional sensitivity analyses to quantify impact of specific issues
   A. Adjustments to required rate of return
   B. Shift in financial condition of the plan due to funding
8. Isolate investor-specific model portfolio to represent an investor's asset allocation policy

CalSTRS will conduct an asset/liability study on a four year cycle in conjunction with the review of the liability assumptions or more frequently if there is a significant change in the liabilities or assets. During the asset allocation study, a comprehensive review of the financial condition of the plan becomes imperative. A key component of reviewing the plan's financial condition is studying the actuarial requirements of the plan. These include the future liabilities and expected cash flow of contributions less benefit payments. For example, as a mature defined benefit plan, CalSTRS will have a negative cash flow as more participants retire. These requirements represent CalSTRS' long-term liabilities and, when combined with the CalSTRS Investment Portfolio, constitute the pension plan's balance sheet.

Understanding what factors (such as changes in interest rates, benefit structures, and plan demographics) influence these liabilities is important. Changes in these and other underlying factors may, in fact, alter a plan's liability structure. Such shifts could, in turn, impact the plan's financial condition. CalSTRS' factors were studied and considered as part of this asset allocation review.

Selecting Asset Classes for Portfolio Investment

As discussed earlier, there are three components required to model investment returns: (1) asset class expected returns, (2) asset class risks, and (3) correlations among asset classes. Investment consultants develop these components, which are then used to develop efficient frontiers quantitatively.

Total Return and Risk Estimates

*** Assumed inflation level: 2.75% per year Adopted in May 2019**

Asset Class	**Expected Geometric Return**	**Expected Risk (Annualized SD)[4]**
Cash/Liquidity	2.4	1.0
Fixed Income	4.0	6.2
Inflation Sensitive	6.0	12.3
Global Equity	7.5	17.6
Private Equity	9.0	24.0
Real Estate	6.3	14.9
Risk Mitigating Strategies (RMS)	4.5	10.0
TOTAL FUND	7.2	12.1

Correlation Among the Asset Classes: **Adopted in May 2019**

	Global Equity	**Private Equity**	**Real Estate**	**Inflation Sensitive**	**Fixed Income**	**RMS**	**Liquidity**
Global Equity	1.00	0.70	0.37	0.55	0.13	-0.18	0.00
Private Equity		1.00	0.49	0.54	0.05	-0.12	0.00
Real Estate			1.00	0.62	0.13	0.07	0.20
Inflation Sensitive				1.00	0.36	0.11	0.10
Fixed Income					1.00	0.58	0.25
RMS						1.00	0.00
Liquidity							1.00

**These return and volatility estimates are only for asset allocation modeling purposes.*

[4] SD – Standard Deviation

These returns and volatility estimates reflect several basic relationships:

1. Investors or lenders of capital require an incremental real return premium as a reward for making capital available
2. Equity-oriented investments should, over long periods, produce return premiums that are higher than their fixed income counterparts
3. The return assumptions for the publicly traded asset classes do not account for added value opportunities within each asset class

Review of Asset Allocation Policy

Over the last 30 years, CalSTRS' asset allocation policy has shifted modestly.

CalSTRS Asset Allocation Policy Trends (in %)

Strategic Class	Asset Class/Strategy	Long-Term*	2015	2013	2008	1999	1993	1986
Economic Growth	Total Public Equity	47%	55%	51%	60%	63%	51%	55%
	Private Equity	13%	13%	13%	9%	5%	7%	5%
Real Assets	Real Estate	13%	13%	13%	11%	5%	10%	10%
	Inflation Sensitive	4%	1%	6%	0%	0%	0%	0%
Diversifying	Innovative Strategies	0%	0%	0%	0%	0%	0%	0%
	Risk Mitigating Strategies	9%	0%	0%	0%	0%	0%	0%
	Global TAA	0%	0%	0%	0%	0%	1%	0%
	Fixed Income	12%	17%	16%	20%	26%	30%	30%
	Cash / Liquidity	2%	1%	1%	0%	1%	1%	0%
	Total Equity	73%	81%	77%	80%	73%	68%	70%
	Total Diversifying	27%	19%	23%	20%	27%	32%	30%
	Total Asset Allocation	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

** The long-term target was established in November 2015. Total Equity includes Global Equity, Real Estate and Private Equity. Supplemental strategies are included in Total Diversifying.*

CalSTRS' investment policy has remained consistent from an equity/stable asset allocation viewpoint. In 1986, CalSTRS had a strategic allocation of 70 percent equities and 30 percent stable assets. In 1997, CalSTRS' board adopted and reaffirmed a policy of 73 percent equity and 27 percent stable assets. During the 2006 Asset Liability Study, the Investment Committee approved a shift to a long-term plan of 80 percent equity and 20 percent stable assets to optimize the likelihood of success in meeting the investment goals listed at the beginning of the policy. In 2009, the Investment Committee added a new asset group, Inflation Sensitive, to help improve the overall diversification and reduce volatility. Lastly, in 2015, the Committee added Risk Mitigating Strategies to reduce the risk of decline in significant negative investment periods.

STRATEGIC ASSET ALLOCATION

CalSTRS' asset allocation strategy utilizes a design for today's needs, while anticipating the future capacity and growth of the investment portfolio. A strategic asset allocation target for each asset class was first established in 2001, and has been revised with each subsequent asset allocation study based upon a comprehensive asset allocation analysis completed by the Investment Committee's independent external Investment Consultant. In conjunction with the strategic target, a range for each asset category has been established to provide flexibility designed to reduce rebalancing costs and to allow flexibility to adapt to changing market conditions.

To control the risk and return relationship, each asset category should be rebalanced to the strategic target. Rebalancing latitude is important and can significantly affect the performance of the portfolio. Blind adherence to narrow ranges increases transaction costs without a documented increase in performance. A rebalancing range that is too wide may cause undesired changes in the asset allocation. The ranges are based upon the allowed variation in the overall risk profile of the entire portfolio.

CalSTRS Long-term Policy Target and Ranges, Adopted November 2015

Strategic Class	Asset Class/Strategy	Long-Term Target	Range
Economic Growth	Global Equity	47%	+/- 6%
	Private Equity	13%	+/- 3%
Real Assets	Real Estate	13%	+/- 3%
	Inflation Sensitive	4%	+/- 3%
Diversifying	Innovative Strategies	0%	+/- 2.5%
	Risk Mitigating Strategies	9%	+/- 3%
	Fixed Income	12%	+/- 3%
	Cash / Liquidity	2%	+/- 3%
Total Asset Allocation		**100%**	

Please note that the allocated, but not funded, portion of Private Equity and Real Estate will be invested in accordance with the Strategic Asset Allocation Plan.

With the creation of the Inflation Sensitive asset class in 2010, and the Risk Mitigating Strategies asset class in 2015, CalSTRS will build up these new portfolios as attractive investment opportunities and time permit. To integrate the new asset classes, CalSTRS has adopted the following implementation plan commencing in 2016. Every six months the asset mix will be revisited and the policy benchmark/allocation may be shifted to the next step if warranted and approved by the Investment Committee.

Revised CalSTRS Long-term Policy Target and Ranges

Strategic Class	Asset Class/Strategy	Effective 1/1/17 Step 1	Effective 6/30/17 Step 2	Effective 1/1/18 Step 3	Effective 4/1/19 Step 4	Potential next Step 5	Long-Term Target
Economic Growth	Global Equity	56%	55%	54%	51%	51%	47%
	Private Equity	9%	8%	8%	9%	10%	13%
Real Assets	Real Estate	13%	12%	12%	13%	13%	13%
	Inflation Sensitive	1%	2%	2%	3%	3%	4%
Diversifying	Innovative Strategies	0%	0%	0%	0%	0%	0%
	Risk Mitigating Strategies	3%	6%	9%	9%	9%	9%
	Fixed Income	16%	15%	13%	13%	12%	12%
	Cash / Liquidity	2%	2%	2%	2%	2%	2%
	Total Asset Allocation	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Rebalancing Procedure: The asset mix may deviate from the target as shown above. Deviations greater than described may require rebalancing within the range. The range around the allocation targets is intended to keep the actual allocation close to the target while minimizing the transaction costs that result from rebalancing.

1. The Board delegates to the chief investment officer authority to rebalance the asset allocation across asset classes/strategies when market values of assets fall outside policy ranges and to shift allocations within the ranges. Rebalancing and shifts will be accomplished first to meet adequate cash flow demands and second through reallocation of assets across asset classes. The timing of the rebalancing and shifts will be based on market opportunities and the consideration of transaction costs, and therefore need not occur immediately. The global financial markets and fund conditions are dynamic, not static. The optimum shift in assets will depend on market volatility and costs. The above policy ranges are long-term and may deviate in the short-term as a result of funding schedules, interim market movements and market impact costs of implementation.
2. Idle cash, in excess of the cash flow needs, will be allocated to asset classes and investment managers based on target allocations.
3. The Board authorizes the chief investment officer to shift assets in a timely, prudent and cost-efficient manner within the policy ranges and in order to maintain the policy ranges established by the Board. The Board further authorizes the chief investment officer to utilize futures, forward contracts, and options for a temporary period, in order to maintain target range exposure in asset classes and to reduce transaction costs that would otherwise be incurred by the buying and selling of actual securities. Rebalancing can occur to bring asset classes within their target ranges or when there is transition between investment managers. The CIO will promptly report any re-balancing to the Board at the next

Investment Committee meeting.

4. Rebalance Within Asset Classes: the Board authorizes the chief investment officer to rebalance within each asset class by first using normal cash flows and second through the reallocation of assets within asset classes. This reallocation will be based on individual policies and guidelines for each asset class.
5. Because of appraisal valuation and the illiquid market nature of Partnership Investments, exceeding the maximum policy range allocation in those asset classes will trigger a conscious review by the chief investment officer, the specialty and general consultants, and the Investment Committee rather than an automatic rebalancing.

INVESTMENT STRUCTURE

Investment structure guides and directs present and future investment decisions in a prudent manner. The structure is also used by CalSTRS to mitigate the strategic investment risk within the portfolio. Investment related issues addressed include:

1. The relative amount of active and passive management
2. The relative amount of internal and external management
3. The appropriate direct and indirect costs of each asset category
4. The appropriate reporting standards and time horizons

ASSET ALLOCATION STRUCTURE

1. Based on academic studies, a vast majority of the total return is attributable to the asset allocation decision. Consequently, each asset category shall remain within the tactical range approved in the strategic asset allocation adopted by the Board.
2. Control of the cash flow is critical to the success of long-term investment strategies. Estimated cash flows shall be provided to the Investment Committee in conjunction with the biennial actuarial study.
3. No less than quarterly, the chief investment officer will complete a report identifying the salient aspects of the investments, including a section on compliance with approved asset allocation targets.

SUSTAINABLE INVESTMENT & STEWARDSHIP STRATEGIES

1. CalSTRS has developed robust policies and standards for fair and open governance of corporations. As long-term owners and lenders to corporations around the world, it is CalSTRS' duty to protect those assets through the pursuit of good governance and operational accountability.
2. More detailed information about the program can be found in the CalSTRS Sustainable Investment & Stewardship Strategies Policy.

GLOBAL EQUITY STRUCTURE

1. The equity portfolio is a full global portfolio comprised of U.S.; non-U.S. developed countries, and emerging markets. Each segment is managed under a different structure and the Global Equity Policy has set forth targets and ranges for each area.
2. The U.S. segment of the Global Equity Portfolio will be managed using both passive (70% target) and active (30% target) strategies. The structure of the active portfolio will follow the general percentage breakout of the Russell 3000 Index between large and small capitalization and value and growth characteristics.
3. The non-U.S. segment of the Global Equity Portfolio is assumed to be more inefficient, allowing active management to add value. The target for the non-U.S. developed markets segment of the portfolio will be an equal amount of active management (50%) and passive management (50%) strategies.
4. Emerging markets segment will be utilized to enhance return and diversification and will be 100 percent actively managed in accordance with the Global Equity Policy. This portfolio is benchmarked to an MSCI Emerging Markets Free Custom Index. The target allocation to emerging markets will be based on its weight in the overall benchmark (ACWI ex-U.S. Custom Investable Market Index).
5. More detailed information and standards about the asset class can be found in the CalSTRS Global Equity Investment Policy.

FIXED INCOME STRUCTURE

1. The Fixed Income Portfolio shall be comprised of investment grade and non-investment grade securities, U.S. dollar based and non-U.S. dollar based securities. The portfolio will target 80 percent using an enhanced indexing strategy, while 20 percent will be externally actively managed using a broader universal fixed income and high-yield securities opportunity set. The internally managed portfolio will emphasize tracking the risk characteristics of the performance benchmark.
2. Short term fixed income/liquidity and cash securities, including the cash portion of equity portfolios, shall be managed internally with emphasis on safety and liquidity. The portfolio shall be comprised of investment grade securities; and other appropriate securities as approved in the policies and procedures.
3. More detailed information and standards for the asset class can be found in the CalSTRS Fixed Income Investment Policy.

CURRENCY MANAGEMENT STRUCTURE

1. The Currency Management Program overlays CalSTRS total exposure to foreign currencies from the U.S. equity and the Real Estate portfolios. The program structure is approximately 80 percent internally managed, with a primary focus on defensive hedging in periods of a strong dollar, with opportunity for cross hedging to add value. External active currency overlay managers will be used for approximately 20 percent of the overall currency exposure. These managers may actively shift currency exposure to add value to the portfolio.

2. More detailed information about the program and structure can be found in the CalSTRS Currency Management Program Policy.

PRIVATE EQUITY STRUCTURE

1. The Private Equity Portfolio can include limited partnerships, (and other limited liability vehicles), direct investments in general partnerships, co-investments, and secondary interests in the following market segments: Buyouts, Venture Capital, Debt Related, Core Private Equity, and Private Equity Special Mandates. The primary objective for the Private Equity Portfolio is to provide enhanced investment returns over those available in the public market.
2. Private Equity has substantial fees and costs; consequently, emphasis will be placed on negotiating, monitoring, and controlling the direct and indirect costs of each limited partnership investment.
3. More detailed information and standards for the asset class can be found in the CalSTRS Private Equity Investment Policy.

REAL ESTATE STRUCTURE

1. The Real Estate Portfolio will be comprised of direct real estate investments, joint venture/value added investments, and commingled funds (opportunistic funds) with adopted targets of 60 percent to core, 20 percent value added and 20 percent to higher-risk tactical investments. Leverage maybe applied within the constraints set forth in the CalSTRS Real Estate Investment Policy.
2. To more closely align the interests of the plan sponsor and real estate manager, emphasis will be placed on negotiating, monitoring, and controlling the cash flow (both income and expense) associated with each property.
3. More detailed information and standards for the asset class can be found in the CalSTRS Real Estate Investment Policy.

INFLATION SENSITIVE STRUCTURE

1. This asset class consists of several asset types that, when combined, should produce a relatively stable return stream, with a return level between equities and fixed income, and an overall higher correlation to inflation than equity or fixed income. The initial portfolio was comprised of global inflation linked bonds/securities and infrastructure investments. Additional investment areas and strategies have been added upon the Investment Committee's approval.
2. Infrastructure investments are governed by the CalSTRS Infrastructure Investment Policy, initially adopted in July 2008.
3. More detailed information and standards for the asset class can be found in the CalSTRS Inflation Sensitive Investment Policy.

INNOVATIVE STRATEGIES

1. These strategies will invest in a diversified portfolio of assets that generally fall outside of the traditional asset classes currently used by the Board. The purpose is to provide the Board with the opportunity to invest in a wide spectrum of investment opportunities that will be required to demonstrate success before committing larger dollar amounts to a specified strategy.

2. Discretionary separate account relationships may be entered into, subject to pre-approved investment guidelines. The Chief Investment Officer must approve any deviations from the approved guidelines. For this reason, investments shall be structured to facilitate alignment of interests between management and CalSTRS, management accountability, investment monitoring, and liquidity.

3. More detailed information and standards for these strategies can be found in the CalSTRS Innovation Portfolio Investment Policy.

RISK MITIGATING STRATEGIES (RMS) STRUCTURE

1. The purpose of RMS is to help diversify CalSTRS portfolio large exposure to global economic growth within the overall investment portfolio. This class will contain assets and investment strategies with structural aspects that provide improved diversification and potential protection in negative equity markets.

2. The investments exhibit a low to negative correlation to the Global Equity asset class. It is expected that during economic recessions and periods of negative global equity market returns, this asset class will provide diversification and produce a positive or less negative relative return. Correspondingly, it is understood that in periods of strong economic growth and / or strong global equity returns, this asset class will exhibit a very low return to slightly negative return.

3. This class will consist of four core strategies; long-term U.S. Government Bonds, Trend Following, Global Marco, and Systematic Risk Premia. Because this class is a collection of diverse investments in total, it will not have a single benchmark, but rather an aggregate benchmark consisting of the individual benchmarks assigned to each core strategy. At the inception of the RMS class, the blended benchmark will be based on a dynamic weighting of each of the strategies. When all of the individual strategies achieve their target weights, the blended benchmark will utilize the target weights of each strategy.

4. More detailed information and standards for these strategies can be found in the CalSTRS RMS Policy.

ADDITIONAL INVESTMENT PROGRAMS & POLICIES

CalSTRS also maintains programs and policy statements for the following additional investment programs:

1. California Investments
2. Securities Lending
3. Divestment Policy
4. Special Mandates
5. Pension2® Investment Policy
6. Responsible Contractor Policy

Additional information and standards for each can be found in their respective investment policies statements.

VALUATION OF INVESTMENTS

1. CalSTRS Investment portfolio assets are to be priced, invested, administered and managed in a prudent manner for the sole benefit of its participants and beneficiaries, in accordance with the California Constitution, the Teacher's Retirement Law, and other applicable statutes.

2. CalSTRS seeks to value the assets of the Total Fund consistent with best practices and in alignment to policies set forth by CalSTRS Board of Trustees. The Investment branch shall establish processes by which pricing vendors are selected, prioritized and reviewed for such valuations and ensure these processes are followed through regular oversight.

3. CalSTRS considers a number of significant measures such as data accuracy, reliability, integration, and comprehensive coverage, when determining a pricing source hierarchy. Pricing vendors are selected, prioritized and reviewed for the most appropriate and accurate valuations.

4. CalSTRS performs reviews of the pricing source hierarchy, methodology, and tolerances for the purpose of evaluating reasonability of security valuation and to mitigate risk of mis-priced investments relating to the Fund's assets. The pricing source hierarchy is implemented by the master custodian and the oversight is under the purview of the Director of Investment Operations.

REPORTING

On at least a semi-annual basis, the investment office and the chief investment officer will prepare a comprehensive set of reports on the Investment program to include the asset allocation, movement of assets, cash flow, and the market value and changes to each asset class. Semi-annually, the general consultant and CIO will preview and present the investment performance of the CalSTRS Investment Portfolio.

Link to INVESTMENT TERMS GLOSSARY at CalSTRS.com

Approved July 2002
Revised Capital Market Assumptions December 2002
Revised Asset Allocation Plan November 2003
Revised November 2003
Revised December 2003
Revised December 2005
Revised Capital Market Assumptions February 2006
Revised June and July 2006
Revised for new asset allocation targets September 2006
Revised for new asset allocation targets September 2007
Revised for new Asset Allocation targets and ESG Policy July 2008
Revised to add 21st Risk Factor for Human health to the ESG Policy, Attachment A September 2008
Expand Asset Class ranges November 2008
Revised asset allocation targets March 2009
Revised for new asset allocation targets August 2009
Revised for asset allocation targets July 2010
Revised for new asset allocation targets and to change the name of the Absolute Return Asset Class to Inflation Sensitive, July 2011
Revised to create the Overlay Asset Class, April 2012
Revised for new asset allocation ranges, Absolute Return Asset Class and benchmark adjustments, September 2013
Revised for Global Equity, Inflation Sensitive, Real Estate and Private Equity policy November 2014
Revised for the new 2015 asset allocation mix and inclusion of the new Risk Mitigating Strategies Asset Class which will replace the Absolute Return Asset Class, April 2016
Revised for new asset allocation targets, Valuation Statement and to reflect the new Innovative Strategies, July 2016
Revised to update equity benchmark and asset allocation ranges effective January 1, 2017, November 2016
Revised for new asset allocation targets effective June 30, 2017, June 2017
Revised for housekeeping and to match the Asset Class Policy changes approved in FY 16-17, July 2017
Revised for new interim asset allocation targets effective January 1, 2018, November 2017
Revised to reference Investment Beliefs and update asset allocation process, September 20, 2018
Revised for benchmark update and new asset allocation targets effective April 1, 2019, March 28, 2019
Revised for housekeeping, benchmark updates, addition of attachment B, strategic class structure added to tables and inclusion of Investment Glossary link, July 11, 2019.

Attachment A: Investment Policy for Mitigating Environmental, Social, and Governance Risks (ESG)

POLICY

The fiduciary responsibility of the Board, as described in detail within the overall Investment Policy and Management Plan, is to discharge its responsibility in a manner that is in the sole and exclusive interest of the participants and beneficiaries and will assure the prompt delivery of benefits and related services.

CalSTRS invests a multi-billion dollar fund in a unique and complex social-economic milieu and recognizes it can neither operate nor invest in a vacuum. As a significant investor with a very long-term investment horizon, the success of CalSTRS is linked to global economic growth and prosperity. The System's investments impact other facets of the global economy and actions and activities that detract from the likelihood and potential of global growth are not in the long-term interests of the Fund.

Consistent with its fiduciary responsibilities to CalSTRS members, the Board has an obligation to ensure that the corporations and entities in which CalSTRS invests strive for long-term sustainability in their operations. Managers of our investments who do not strive for sustainability jeopardize achieving the long-term expected rate of return we expect. Therefore, CalSTRS incorporates ESG considerations into its analysis of the riskiness of its investment decisions and its ownership policies and practices, to the extent that ESG factors are material to the long-term success of an investment.

Since CalSTRS is a long-term investor and may hold an investment in a corporation or entity for many decades, short-term gains at the expense of long-term gains are not in the best interest of the Fund. Sustainable returns over long periods are in the economic interest of the Fund. Conversely, unsustainable practices that hurt long-term profits are risks to the System.

Since CalSTRS must invest huge sums of moneys for long periods of time to pay for future benefits promised to California Teachers, our decision to invest in corporations and other entities predominately reflects a judgment that the ownership will produce a sustainable rate of return which will make it an attractive investment and help CalSTRS meet its long-term obligations. It is important to note that CalSTRS ownership of a security in a company does not signify that CalSTRS approves of all of the company's practices or its products or that CalSTRS believes a particular company is an attractive investment since the security may be owned due to its membership in a particular index. CalSTRS utilizes "index" investing due to its low cost and efficient structure. These "index" investments are broadly diversified and composed of thousands of individual companies.

Since 1978, CalSTRS has used a written policy, the Statement of Investment Responsibility, SIR, to navigate the complex landscape of ESG issues. The long history of this document is testimony to the national leadership of CalSTRS among pension funds in addressing ESG matters through a written policy. The SIR will continue to guide CalSTRS proxy voting; however his ESG Policy is CalSTRS' preeminent policy on ESG matters and will guide active investment decisions and passive index strategy engagements.

PROCEDURES

To help manage the risk of investing a global portfolio in a complex governance environment, CalSTRS has developed a series of procedures to follow when faced with any major environmental, social or governance issue as identified by the ESG risk factors.

When faced with a decision or other activity that potentially violates CalSTRS ESG Policy; the Investment Staff, CIO and Investment Committee will undertake the following actions:

A. The CIO will assess the potential ESG policy violation both as an ESG risk and as an impact to the System. The extent of the responsibility of the System to devote resources to address these issues will be determined by: 1) the size of the investment, and 2) the gravity of the violation of CalSTRS ESG Policies.

B. At the CIO's direction, the Investment Staff will directly engage corporate management or other appropriate parties to seek information and understanding concerning the ESG policy violation and its ramifications on the System.

C. The CIO and investment staff will provide a report to the Investment Committee of the findings associated with an ESG policy violation engagement and recommend any further action of engagement or need to commit further System resources. The Investment Committee can marshal further resources given the gravity of the situation.

To assist CalSTRS Staff and external investment managers in their investment analysis and decision-making, CalSTRS has developed a list of ESG risk factors that should be considered as part of the financial analysis of any active investment decision. For passive index strategies, CalSTRS uses the ESG risk factors to guide engagement activities. This ESG list is not exhaustive and does not attempt to identify all forms of risk that are appropriate to consider in a given investment transaction or engagement; however, they do provide a framework of other factors that might be overlooked. These risk factors should be reviewed for any CalSTRS investment or engagement in any asset class.

CalSTRS expects all investment managers, both internal and external to assess the risk of each of the following factors when making an active investment. The manager needs to balance the rate of return with all the risks including consideration of the specific investments exposure to each factor in each country in which that investment or company operates.

CALSTRS ESG RISK FACTORS
Monetary Transparency The investment's long-term profitability by whether or not a country or company has free and open monetary and financial data, and its observance of applicable laws.
Data Dissemination The investment's long-term profitability by whether or not a country is a member of the IMF (or similar organization) and satisfies the conditions for access, integrity, and quality for most data categories.
Accounting The investment's long-term profitability by whether or not the accounting standards are formulated in accordance with International Accounting Standards or the U.S. Generally Accepted Accounting Principles.
Payment System: Central Bank The investment's long-term profitability by whether the activities of a country's central bank encompass implementing and ensuring compliance with principles and standards which are established to promote safe, sound, and efficient payment and settlement.
Securities Regulation The investment's long-term profitability by exposure to operations in countries that have not complied with IOSCO objectives, which provide investor protection against manipulation and fraudulent practices.
Auditing The investment's long-term profitability by whether or not the country uses International Standards on Auditing in setting national standards.
Fiscal Transparency The investment's long-term profitability by its exposure or business operations in countries that do not have some level of fiscal transparency such as publication of financial statistics, sound standards for budgeting, accounting, and reporting.
Corporate Governance The investment's long-term profitability by whether or not the government recognizes and supports good corporate governance practices and whether it generally adheres to OECD principles.
Banking Supervision The investment's long-term profitability from its exposure to countries that have not endorsed/complied with the Basel Core Principles. An endorsement includes an agreement to review supervisory arrangements against the principles and bring legislation in line with the principles where necessary.

Payment System: Principles

The investment's long-term profitability by whether a country complies with the 10 Core Principles for Systemically Important Payment Systems, which includes operational reliability, efficiency, real time settlement, final settlement in central bank money; and whether rules and procedures are clear and permit participants to understand the financial risks resulting from participation in the system.

Insolvency Framework

The investment's long-term profitability from its business operations and activities in specific countries with regard to bankruptcy reform or insolvency legislation.

Money Laundering

The investment's long-term profitability from exposure and whether or not a country has implemented an anti-money laundering regime in line with international standards; consideration should be given to compliance with the 40 recommendations in the Financial Action Task Force, FATF, on Money Laundering; and whether it is a member of FATF.

Insurance Supervision

The investment's long-term profitability from whether or not a country has a regulatory framework in line with International Association of Insurance Supervisors, IAIS, Principles.

Respect for Human Rights

The investment's long-term profitability from its business operations and activities in countries that lack or have a weak judicial System. Assess the risk to an investment's long-term profitability from its business operations and activities in a country that engages in or facilitates the following: arbitrary or unlawful deprivation of life, disappearance, torture and other cruel, inhuman, or degrading treatment or punishment, arbitrary arrest, detention, or exile, arbitrary interference with privacy, family, home, or correspondence, use of excessive force and violations of humanitarian law in internal conflicts. Consideration should be given to governmental attitude regarding international and non-governmental investigation of alleged violations of human rights.

Respect for Civil Liberties

The investment's long-term profitability from operations, activities, and business practices in countries or regions that do not allow freedom of speech and press, freedom of peaceful assembly and association, freedom of religion, freedom of movement within the country, allowance for foreign travel, emigration, and repatriation.

Respect for Cultural and Ethnic Identities

The investment's long-term profitability from operations, activities and business practices that do not adequately respect cultural values and ethnic identities.

Respect for Property Rights The investment's long-term profitability from operations, activities and business practices that dispossesses or degrades peoples' lands, territories or resources, or does not adequately respect established property rights.
Respect for Political Rights The investment's long-term profitability from business practices and activities in countries that do not allow their citizens the right to advocate for change to their government.
Discrimination Based on Race, Sex, Disability, Language, or Social Status The investment's long-term profitability from business practices and activities on discrimination, such as discrimination against women, children, and persons with disabilities, national/racial/ethnic minorities, or indigenous people.
Worker Rights The investment's long-term profitability from management and practices globally in the area of worker's rights; specifically the right of association, the right to organize and bargain collectively, prohibition of forced or bonded labor, status of child labor practices and minimum age for employment, acceptable work conditions, or human trafficking.
Environmental The investment's long-term profitability from activities and exposure to environmental matters such as; depleting or reducing air quality, water quality, land protection and usage, without regard for remediation.
Climate Change The investment's long-term profitability from inadequate attention to the impacts of climate change, including attention to relevant climate policy considerations and emerging climate risk mitigating technologies.
Resource Efficiency The investment's long-term profitability from inadequately managing resource usage in a resource-constrained environment amid growing resource demand.
War/Conflicts/Acts of Terrorism The investment's long-term profitability from business exposure to a country or region that has an internal or external conflict, war, acts of terrorism or involvement in acts of terrorism, and whether the country is a party to international conventions and protocols.
Human Health The investment's long-term profitability from business exposure to an industry or company that makes a product which is highly detrimental to human health so that it draws significant product liability lawsuits, government regulation, United Nations sanctions and focus, and avoidance by other institutional investors.

Attachment B: Investment Policy for Approval of Internally Managed Public Portfolio Trading, and Externally Managed Private Portfolio Transactions

Public Asset Approval Policy

Approval limits for transactions within internally managed portfolios trading public assets will use the respective trading parameters by investment type**.** The following limits apply with respect to non-cumulative daily trade limits. Non-cumulative refers to individual limits that cannot be combined with the limits of other Investment Staff.

Global Equity	
Investment Officer I	**Up to 1% per internally managed portfolio**
Investment Officer II	**Up to 2% per internally managed portfolio**
Investment Officer III	**Up to 2.5% per internally managed portfolio**
Associate Portfolio Manager	**Up to 3% per internally managed portfolio**
Portfolio Manager	**Up to 4% per internally managed portfolio**
Director of Global Equity	**Up to 5% of Total Global Equity portfolio**
Deputy Chief Investment Officer	**Up to 10% of Total Global Equity portfolio**
Chief Investment Officer	**Up to 10% of Total Global Equity portfolio**

For derivatives and transition management portfolios, the above risk-based trading parameters are non-cumulative and are applied to the market value of the U.S. or Non-U.S. segments of the Global Equity portfolio.

Fixed Income	
Investment Officer I	**Up to 2% of internally managed portfolio**
Investment Officer II	**Up to 4% of internally managed portfolio**
Investment Officer III	**Up to 6% of internally managed portfolio**
Associate Portfolio Manager	**Up to 8% of internally managed portfolio**
Portfolio Manager	**Up to 10% of internally managed portfolio**
Director of Fixed Income	**Up to 5% of Total Fixed Income portfolio**
Deputy Chief Investment Officer	**Up to 10% of Total Fixed Income portfolio**
Chief Investment Officer	**Up to 10% of Total Fixed Income portfolio**

Short-term Assets: No daily limits with respect to the approval of trade activity within the liquidity portfolio shall be established.

For derivative instruments, overlay and transition management portfolios, tighter trading parameters may be applied.

Currency Management	
Investment Officer I	**Up to 1% of the core (notional) program**
Investment Officer II	**Up to 2% of the core (notional) program**
Investment Officer III	**Up to 3% of the core (notional) program**
Associate Portfolio Manager	**Up to 4% of the core (notional) program**
Portfolio Manager	**Up to 5% of the core (notional) program**
Director of Fixed Income	**Up to 5% of the total non-USD holdings**
Deputy Chief Investment Officer	**Up to 10% of the total non-USD holdings**
Chief Investment Officer	**Up to 10% of the total non-USD holdings**

Note: Notional amount parameters are intended to take into account the position range referenced in the Currency Management Program Policy.

Securities Lending

Given that the trade activity for this program is governed by the investment and securities lending markets, no daily limits with respect to the approval of trade activity within CalSTRS' internally managed Cash Collateral portfolio shall be established.

Home Loan Program	
Investment Officer I	**$5 million**
Investment Officer II	**$10 million**
Investment Officer III	**$20 million**
Associate Portfolio Manager	**$30 million**
Portfolio Manager	**$35 million**
Director of Fixed Income	**$50 million**
Deputy Chief Investment Officer	**$100 million**
Chief Investment Officer	**$100 million**

Credit Enhancement Program	
Investment Officer I	**$50 million**
Investment Officer II	**$75 million**
Investment Officer III	**$100 million**
Associate Portfolio Manager	**$200 million**
Portfolio Manager	**$300 million**
Director of Private Equity	**$400 million**
Deputy Chief Investment Officer	**$600 million**
Chief Investment Officer	**$600 million**

Private Asset Approval Policy

Private investment portfolios will use a single approval structure to approve the outgoing cash transactions of previously approved investment commitments and does not include the authorization of new investments, which are approved through the existing delegation of authority.

The receipt of cash to private investment portfolios does not require approval limits.

The following non-cumulative daily approval limits apply with respect to outgoing cash transactions for private asset investment portfolio activity by approval date.

Investment Officer I	**$15 million**
Investment Officer II	**$50 million**
Investment Officer III	**$100 million**
Associate Portfolio Manager	**$150 million**
Portfolio Manager	**$250 million**
Director of Applicable Asset Class	**$750 million**
Deputy Chief Investment Officer	**$1.5 billion**
Chief Investment Officer	**$1.5 billion**

CALIFORNIA STATE TEACHERS' RETIREMENT SYSTEM
INVESTMENT RESOLUTION

WHEREAS, the Electorate of the State of California in November 1992 amended Section 17 of Article XVI of the State Constitution by approval of Proposition 162; and

WHEREAS, the Teachers' Retirement Board embraces the concepts of the revised Section 17 of Article XVI of the State Constitution, which states that the Retirement System shall have sole and exclusive fiduciary responsibility over the assets of the public pension or retirement system; and

WHEREAS, the Teachers' Retirement Board has approved the Investment Plan which provides for wider diversification of the System's investment assets; and

WHEREAS, the Teachers' Retirement Board on the advice of its consulting actuary and the pension fund consultant has adopted the objective of achieving a long-term annualized investment return of 3.50% in excess of the rate of inflation; and

WHEREAS, in the exercise of its fiduciary responsibilities the Board has considered and approved various classes of investments for the Teachers' Retirement Fund; therefore, it is

RESOLVED, that the following investment classes are authorized if deemed prudent at the time of purchase:

Fixed-Income Securities

Fixed Income investments as authorized by the Investment Management Plan and Fixed Income Policies and Guidelines and as authorized by the Investment Committee.

Equity Securities

Equity investments as authorized by the Investment Management Plan and Global Equity Policies and Guidelines and as authorized by the Investment Committee.

Real Estate

Real Property investments as authorized by the Investment Management Plan and Real Estate Policies and Procedures and as authorized by the Investment Committee.

Private Equity

Limited partnership investments in equity of fixed income securities as defined in the Private Equity Policies and Procedures and as authorized by the Investment Committee.

Inflation Sensitive

Inflation linked fixed income securities and Infrastructure investments as defined by the Infrastructure Policy and Procedures, and as authorized by the Investment Committee.

Risk Mitigating Strategies

Investments as authorized by the Investment Policy and Management Plan and the Risk Mitigating Strategies Policies, Procedures, and Guidelines.

Other Investments

Purchase of other types of investments may be made only with advance approval of the Investment Committee of the Teachers' Retirement Board.

Advance approval of the Investment Committee or its designates may be obtained by authorization for individual securities, or for a particular class of investments, or for specified investment managers of the Teachers' Retirement Fund.

RESOLVED further that all investments shall be made with the standards of care, skill, prudence and diligence prescribed in the revised Section 17 of Article XVI of the State Constitution. These tests will involve, importantly, full consideration of proper diversification of investments, adequacy of reliable information for analysis of investments, and suitability for the requirements of the Teachers' Retirement Fund. The Board endorses the principle that prudency of individual investments shall be judged in the context of the total Retirement Fund portfolio;

RESOLVED further, that cash reserves of the System are to be managed for the safety and convenience of the Teachers' Retirement Fund, in investments which are considered to be prudent money market instruments by internal investment managers;

RESOLVED further, that the services of at least one external independent organization (performance evaluator) will be retained to assess the investment results of portfolio managers and to compare such results with those of similarly situated institutions and such other standards of measurement as the Investment Committee deems appropriate;

RESOLVED further, that investments now held which no longer qualify for purchase under this Resolution may be retained if qualified under the Resolutions existing at their respective dates of acquisition;

RESOLVED further, that this Investment Resolution rescinds and replaces all previously adopted Investment Resolutions.

Adopted by the Teachers' Retirement Board on October 19, 1984
Revised to include foreign issuers within the S&P 500 Stock Index on April 19, 1985
Revised to reflect legislation prohibiting investment within South Africa on December 19, 1986
Revised to reflect passage of Proposition 162 and implementation of Global Tactical Asset

Allocation Program on September 9, 1993
Revised to remove reference to South Africa investment restriction on May 11, 1994
Revised to broaden Fixed Income and Equity reference on July 10, 2008
Revised to include the Fixed Asset class, August 13, 2009
Revised to change the name of the "Fixed Asset" class to Inflation Sensitive, July 7, 2011
Revised to incorporate the Risk Mitigating Asset Class, April 2016