



Investment Committee

Agenda Item 5b

June 13, 2022

Item Name: Revisions to the Total Fund and Global Fixed Income Policies – Second Reading

Program: Total Fund

Item Type: Action

Executive Summary

This item is seeking approval from the Investment Committee (Committee) regarding the proposed revisions to the Total Fund and Global Fixed Income Investment Policies resulting from the Asset Liability Management (ALM) adoption at the 2021 November Committee meeting. Staff has incorporated the feedback received from the March 2022 Committee meeting, which included consolidating the standalone program policies into the Total Fund Policy and reviewing the targets and ranges of the Private Debt program.

Strategic Plan

Supports the Fund Sustainability element of the CalPERS 2017-22 Strategic Plan by supporting strong governance and effective process to cultivate a risk-intelligent organization.

Investment Beliefs

This item supports the following Investment Beliefs:

- Investment Belief 5 – CalPERS must articulate its investment goals and performance measures and ensure clear accountability for their execution
- Investment Belief 6 – Strategic asset allocation is the dominant determinant of portfolio risk and return
- Investment Belief 7 – CalPERS will take risk only where we have a strong belief we will be rewarded for it
- Investment Belief 10 – Strong processes and teamwork and deep resources are needed to achieve CalPERS goals and objectives

Background

This item is being brought to the Committee in relation to the ALM adopted at the November Committee meeting and as part of staff's annual policy review. The proposed revisions will align with the Committee's adopted return rate, policy portfolio and strategic asset allocation (SAA), as well as strengthen and facilitate the Fund's governance and accountability to achieve the CalPERS goals and objectives.

Analysis

This year's policy review is centered on the implementation of the Strategic Asset Allocation adopted at the November 2021 Committee meeting. Additionally, as directed by the Committee during the 1st Reading of the policy changes, staff consolidated standalone program area policies into the Total Fund Policy and adjusted the ranges of the Private Debt program.

1. Total Fund (unchanged from 1st Reading)
 - a. Asset Allocation:
 - i. Add Private Debt, Emerging Markets Sovereign Debt, and Strategic Leverage
 - ii. Update target weights and ranges
 - iii. Update the Board approved benchmarks for new segments
 - b. Investment Leverage:
 - i. Reduce active leverage from 20% to 15% and introduce 5% strategic leverage (keeping effective limit at 20%)
 - ii. Clarify use and parameters of strategic and active leverage
 - iii. Move measurement details to policy related procedures (consistent with the level of detail throughout Policy)
2. Program Areas
 - a. Private Debt: Incorporate new section into Total Fund Policy with content based on core elements of the existing Opportunistic section of policy that has been built over last two years **(For 2nd Reading, the strategy ranges were adjusted based on discussions with the General Pension Consultant)**
 - b. Global Fixed Income: Update CalPERS Investment Policy for Global Fixed Income Program to reflect a more granular Income segment structure and incorporate the new EM Sovereign segment **(unchanged from 1st Reading)**
 - c. Opportunistic: Update Opportunistic section of the Total Fund Policy to remove Private Debt related content, define Opportunistic investments, and add language requiring CIO approval for new strategies **(unchanged from 1st Reading)**
3. Program Area Consolidation into the Total Fund Policy (New for 2nd Reading)
 - a. As directed by the Committee, the Global Equity, Global Fixed Income, Real Assets, and Private Equity standalone program policies have been incorporated into the Total Fund Policy. The core content in these policies was not changed, however, duplicative content was removed (e.g., Table of contents, Introduction paragraph, reference to appendices, etc.). See Attachment 7 (redline of standalone policies) and Attachment 3 (clean view post-incorporation).

Additional ministerial changes were made to reflect recent organizational changes, readability, clean-up, and formatting. For a more detailed summary of the proposed changes, refer to Attachment 2. **(unchanged from 1st Reading)**

Budget and Fiscal Impacts

Not Applicable.

Benefits and Risks

The changes support maintenance of a strong governance framework for the management of the System's assets. There are no anticipated risks.

Attachments

Attachment 1 – Policy Revisions Review – Second Read Presentation

Attachment 2 – Inventory of Policy Revisions

Attachment 3 – Proposed Total Fund Policy (clean view)

Attachment 4 – Proposed Total Fund Policy (mark-up view)

Attachment 5 – Proposed Global Fixed Income Policy (clean view)

Attachment 6 – Proposed Global Fixed Income Policy (mark-up view)

Attachment 7 – Program Policies Consolidated into the Total Fund (mark-up view)

Attachment 8 – Consultant Opinion Letter – Wilshire Associates (General Pension Consultant)

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Revisions to the Total Fund and Global Fixed Income Policies— Second Reading

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Introduction

Staff is seeking approval from the Investment Committee regarding the proposed revisions to the Total Fund and Global Fixed Income Investment Policies resulting from the new Strategic Asset Allocation (SAA) that the Board approved in the November 2021 Investment Committee meeting. This is the second read of the proposed changes presented in the March Committee meeting.

The proposed changes listed in this item are intended to facilitate the new SAA and include:

- Addition of Private Debt as a new asset class
- Increased allocations to Private Equity and Real Assets
- Introduction of total fund strategic leverage
- Adjustments to public market exposures

In addition, we received board direction in two areas and incorporated those changes, which included consolidating the standalone program policies into the Total Fund Policy and reviewing the targets and ranges of the Private Debt program.

All other content presented in the first read to the Committee in March is unchanged.

Total Fund Policy Changes

The following Total Fund Policy changes are designed to achieve the SAA set by the Board.

1. Asset Allocation

- Add Private Debt, Strategic Leverage, and allocation changes to the Fixed Income Segments (e.g. Emerging Markets Sovereign) - ***Unchanged from March IC***
- Update target weights and ranges - ***Unchanged from March IC***
- Update the Board approved benchmarks for new segments - ***Unchanged from March IC***

2. Investment Leverage

- Reduce active leverage from 20% to 15% and introduce 5% strategic leverage (keeping effective limit at 20%) - ***Unchanged from March IC***
- Clarify use and parameters of strategic and active leverage - ***Unchanged from March IC***
- Move measurement details to policy related procedures (consistent with the level of detail throughout Policy) - ***Unchanged from March IC***

Program Area Policy Changes

The following Program Area Policy changes are designed to achieve the SAA set by the Board.

1. Global Fixed Income Program Policy

- Updated to reflect a total of five segments (Treasury, Mortgage-Backed Securities, Investment Grade Corporates, Emerging Market Sovereign, & High Yield) - ***Unchanged from March IC***
- Updated the investment constraints and limitations to include duration management limits for each individual segment - ***Unchanged from March IC***

2. Private Debt (Total Fund Policy)

- New to Total Fund Policy, Private Debt has a new strategic asset allocation of 5% - ***Unchanged from March IC***
- The policy, like the strategy is based on core elements of the Opportunistic strategy, which is where it incubated in the last few years - ***Unchanged from March IC***
- Incorporated the same staff authority limits as Opportunistic - ***Unchanged from March IC***
- Defined the strategies and ranges for Private Debt – ***Adjusted per Committee direction in March IC***

March IC Board Direction

As directed by the Board, staff incorporated the following changes:

1. Consolidated the standalone asset class policies that were previously separate governance documents (Private Equity, Global Fixed Income, etc.) into the Total Fund Policy with the idea that it increases consistency and readability. Key highlights:
 - Core content in these policies was not changed
 - Redundant content was removed, such as the Table of Contents, Introduction paragraph, references to appendices, the Glossary, etc. See Attachment 7 (redline of standalone policies) and Attachment 3 (clean view post-incorporation).
2. The targets and ranges of the Private Debt program were reviewed with Wilshire, which resulted in narrowed strategy ranges to ensure an appropriate level of diversification and acknowledgment that specific targets for each strategy will be established once the new program has sufficiently increased in size.

Inventory of Policy Changes – SAA Implementation

1) Total Fund

a) Asset Allocation

- i) Revise table to reflect current and new asset allocation as well as ranges (See below for summary of changes) - **Attachment 4 pg. 48, 49 of 103**

Current

Asset Class	Asset Segment	Target Allocation	Range Relative to Target Allocation
Growth - Public Equity	Total Public Equity	50%	+/-7%
Public Equity Segment 1	Cap Weighted	35%	-
Public Equity Segment 2	Factor Weighted	15%	-
Growth - Private Equity	Private Equity	8%	+/-4%
Income	Total Income	28%	+/-6%
Income Segment 1	Long Treasury	10%	-
Income Segment 2	Long Spread	15%	-
Income Segment 3	High Yield	3%	-
Real Assets	N/A	13%	+/-5%
Inflation Assets	N/A	0%	+3%/0%
Liquidity	N/A	1%	+3%/-6%

Proposed

Asset Class	Asset Segment	Target Allocation	Range Relative to Target Allocation
Public Equity	Total Public Equity	42%	+/-7%
	Cap Weighted	30%	-
	Factor Weighted	12%	-
Private Equity	Private Equity	13%	+/-5%
Income	Total Income	30%	+/-6%
	Treasury	5%	-
	Mortgage-Backed Securities	5%	-
	Investment Grade Corporates	10%	-
	High Yield	5%	-
	Emerging Market Sovereign Bonds	5%	-
Real Assets	N/A	15%	+/-5%
Private Debt	N/A	5%	+/-5%
Total Asset Exposure	N/A	105%	
Strategic Leverage	N/A	-5%	
Total		100%	

- ii) Update language to account for potential breach of ranges due to market volatility and lagged accounting of private assets – **Attachment 4 pg. 8 of 103**
- iii) Add language describing how liquidity will be managed and how sufficient liquidity is maintained - **Attachment 4 pg. 8 of 103**
- b) Investment Benchmarks
- i) Revise PERF benchmark table to reflect Board approved SAA and benchmarks - **Attachment 4 pg. 51 of 103**
- ii) Remove benchmark table for investment programs with no strategic allocation - **Attachment 4 pg. 51, 52 of 103**
- c) Investment Leverage
- i) Reduce Active Leverage limit from 20% to 15% - **Attachment 4 pg. 14 of 103**
- ii) Updated collateral language to allow for other securities permitted under industry-standard collateral agreements for derivative usage in the Asset Allocation Program - **Attachment 4 pg. 9 of 103**
- iii) Simplify and more directly distinguish Active Leverage from Strategic Leverage to align with board reporting and prior communication regarding Financing and Liquidity while also moving certain technical measurement criteria to policy related procedures - **Attachment 4 pg. 14, 15, 16 of 103**
- iv) Added reference to the Leverage Section within the Securities Lending Program - **Attachment 4 pg. 25 of 103**

2) Program Areas

- a) Private Debt (New Program): Incorporate new section into TF Policy with content based on core elements of the existing Opportunistic section of policy that has been built over last two years (majority of today's Opportunistic Program assets and strategies will transfer to Private Debt). Additionally, based on discussions with the General Pension Consultant, the strategy ranges were adjusted - **Attachment 4 pg. 20, 21 of 103**
- b) Global Fixed Income (Existing Program): Revise existing GFI Policy to reflect the program becoming five distinct segments (Treasury, Mortgage-Backed, Investment Grade, Emerging Market Sovereign and High Yield) - **Attachment 6 pg. 2, 6, 7 of 8**
- c) Opportunistic (Existing Program): Private Debt related content removed, define Opportunistic investments, and added language requiring CIO approval for new strategies - **Attachment 4 pg. 57, of 103**

Inventory of Policy Changes – Administrative (Team reorganizations, Readability, Clean-up, Formatting) - **Attachment 4 pg. 35, 38, 52, 53, 54 of 103**

Policy Consolidation – Administrative (Board direction to incorporate standalone policies) – **Attachment 7**

California Public Employees' Retirement System Total Fund Investment Policy

Effective Date

This policy is effective [Month DD, YYYY] and supersedes the previous Total Fund Investment Policy.

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Total Fund Investment Policy Overarching Statements

A. Introduction

The California Public Employees' Retirement System (CalPERS) Total Fund Investment Policy (Policy), adopted by the CalPERS Investment Committee (Committee), sets forth CalPERS' investment beliefs and overarching investment purposes and objectives with respect to all its investment programs.

The purpose of this Policy, and each of CalPERS' other investment policies (collectively the Policies), is to provide a framework for the management of CalPERS assets. The Policies outline objectives, benchmarks, restrictions and responsibilities so that the Committee, staff, consultants, managers, members, and beneficiaries, and all other CalPERS stakeholders, clearly understand the objectives and policies of the CalPERS investment program. The Policies also encourage effective communication, facilitate transparency and compliance, and provide a framework for reporting back to the Committee, as appropriate.

The Policies set forth the guidelines that the Committee deems to be appropriate and prudent in consideration of the needs of and legal requirements applicable to the CalPERS investment program. The Policies provide criteria against which investment results will be measured and serve as a review document to guide ongoing operations and oversight. The Policies are also intended to ensure that the Committee is fulfilling its fiduciary responsibilities in the management of CalPERS' investments.

The Committee intends for the Policies to be dynamic documents and will review them from time to time. Policies will be modified periodically to reflect the changing nature of CalPERS assets and investment programs, benefit and structural changes, and economic conditions. This Policy applies to all CalPERS investments and supersedes any contrary or inconsistent provisions within asset-class and individual program policies.

B. Strategic Objective

The overall objective of the CalPERS investment program is to generate returns at an appropriate level of risk to provide members and beneficiaries with benefits as required by law. This will be accomplished through a carefully planned and executed long-term investment program that efficiently and effectively allocates and manages the assets of CalPERS.

The Policies have been designed to allow CalPERS to achieve a long-term total return. Accordingly, prudent risk-taking is appropriate within the context of overall diversification to meet CalPERS' long-term investment objectives. The assets of CalPERS will be broadly diversified to minimize the effect of short-term losses within any investment program. Consistent with California Constitution, Article XVI, section 17, all CalPERS investment activities, and all investment transactions, shall be designed and executed 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.

C. Program Specific Investment Policies

In addition to this overarching Policy, there are other policies that focus on program-specific aspects of the CalPERS investment program. It is intended that those policies be read in conjunction with this Policy.

D. Responsibilities

Details regarding various levels of responsibility for all programs are provided in the following appendices:

1. Reporting to the Committee
2. Investment Responsibilities

E. Performance Objectives

Specifically:

- A. The assets of CalPERS will be invested with the objective of achieving a long-term rate of return that meets or exceeds the CalPERS actuarial expected rate of return.
- B. CalPERS will seek to maximize returns for the level of risk taken;
- C. CalPERS will seek to achieve a return that exceeds the Policy Index; and
- D. CalPERS will seek to invest its assets efficiently, bearing in mind the impact of management and transaction costs on investment returns.

Policy benchmarks are listed in Appendix 5.

F. Investment Constraints & Limitations

Details regarding various investment constraints and limitations are provided in Appendix 6 for all Policy sections.

G. Glossary of CalPERS Specific Terms

Italicized terms appearing in the Policy are CalPERS specific in nature and are defined in the CalPERS Specific Glossary of Terms.

H. Policy Document History

Historical details of the Committee's adoption of and revisions to the Policy are provided in Appendix 8.

Total Fund Investment Policy Sections

I. Investment Beliefs

Purpose

This Policy requires that CalPERS develop and maintain a set of Investment Beliefs. Managing the CalPERS investment program requires exercising judgment in the face of considerable uncertainty. The Investment Beliefs provide a framework for exercising judgment and making investment decisions. Investment Beliefs:

- Provide a basis for strategic management of the investment portfolio
- Inform organizational priorities
- Ensure alignment between the Committee and staff
- Guide development of CalPERS culture

Investment Beliefs also provide context for CalPERS actions. They reflect CalPERS values and acknowledge CalPERS responsibility to sustain its ability to pay benefits for generations. The Investment Beliefs also acknowledge the critical importance of a strong and durable economy in achieving CalPERS' objectives.

The Investment Beliefs are not a checklist to be applied by rote to every decision. They are a guide for making judgmental decisions that often require balancing multiple, inter-related decision factors.

The Investment Beliefs are included as Appendix 3.

II. Asset Allocation Strategy

Purpose

Asset allocation involves establishing asset class allocation policy targets and ranges and managing those asset class allocations within their policy ranges. CalPERS recognizes that over 90% of the variation in investment returns of a large, well diversified pool of assets can typically be attributed to asset allocation decisions.

The performance objective is to achieve positive active asset allocation returns over rolling five-year periods.

The Asset Allocation Program shall be managed with the following objectives:

- A. A rate of total return sufficient to meet or exceed the actuarial expected rate of return within prudent levels of risk and liquidity;
- B. Sufficient diversification to minimize the risk of significant loss in any single investment and preserve capital to the extent possible;
- C. Adherence to the asset class policy ranges approved by the Committee, with any rebalancing being performed efficiently and prudently;
- D. Adequate liquidity to meet cash needs; and
- E. Positive returns through any active asset allocation decisions subject to policy ranges and risk limits.

Investment Approaches & Parameters

Strategic

- A. Asset Class Targets and Ranges
See Appendix 4, Table 1, for asset class allocation targets and ranges. Asset allocation targets and ranges for the Affiliate Funds are provided within the individual Statements of Investment Policy for each fund.
- B. Strategic Asset Allocation Process
Staff may recommend to the Committee changes in the policy asset allocation targets and ranges.
- C. Asset Class Criteria
A financial or real asset type shall be considered as an asset class if it has a risk, return, and correlation profile sufficiently different from existing CalPERS asset classes, and if its inclusion or exclusion materially affects the expected risk and return of the CalPERS total return.
 1. Criteria for consideration when evaluating an asset class shall include the following:
 - a. Strategic role of the asset class in the asset liability management (ALM) framework based on fundamental characteristics and risk and return drivers.

- b. Sufficient size, liquidity, and cost efficiency to permit CalPERS to invest meaningful amounts in that asset class, and have a material effect on CalPERS return.
 - c. Availability of sufficient internal or external investment and technical expertise to ensure prudent implementation of an investment in that asset class.
 - d. Presence of diversification, return enhancement, liquidity provision, or some other readily identifiable attribute that is sufficiently different from other asset classes and enhances CalPERS' ability to achieve the strategic objectives outlined above.
 - e. Acceptance by other large pension plan sponsors as a feasible and meaningful asset class, or in the absence of such acceptance, academic support for its inclusion.
 - f. Availability of sufficient data, history, or expertise to assess the feasibility and benefit of the asset class to CalPERS, by means of a measurable investment outcome. Further, the asset class must have a basis for developing expected investment returns, risks, and correlations for the purposes of the financial study.
2. An asset class may be approved for investment provided it meets the above criteria, and the Committee has had the opportunity for sufficient education to enable it to fulfill its fiduciary responsibility in giving such approval.
 3. Once CalPERS approves a new asset class, the new program may only be implemented in accordance with investment policies reviewed and approved by the Committee for that asset class.

Implementation

- A. Staff shall determine an asset allocation mix for each investment trust with targets and ranges based on a periodic ALM review.
- B. Following any action by the CalPERS Board of Administration (Board) having the potential to result in substantial changes to the forecasted benefits, contributions, premiums, or liabilities of a program, staff shall assess the potential impact and recommend to the Committee as soon as practicable following the board action whether the strategic asset allocation process for each program should be postponed pending completion of such board action.
- C. Asset class allocations shall be managed to seek compliance with existing policy ranges. Allocations may temporarily deviate from policy ranges due to extreme market volatility or to accommodate contributions, distributions, or other short-term cash needs. If an asset class allocation exceeds the policy range, staff shall return the asset allocation to within its policy range in a timely manner, with the exact time period primarily

dependent on transaction costs and liquidity and considering the impact of lagged and appraisal-based valuations on reported private asset exposures.

- D. Staff will maintain an operating cash reserve to cover short term liquidity needs, pension flows, and private asset capital calls. This reserve will be funded via total fund financing and invested in a short-term investment fund (STIF) pursuant to the parameters of the Liquidity Program.
- E. Accounts may be established and used to adjust asset class allocations within policy ranges, or to return asset allocations that have exceeded a policy range to within the policy range.
- F. Overlay portfolios may be established to manage currency risk within the parameters contained in Appendix 6.
- G. Managers may be retained for Asset Allocation Program implementation subject to policy asset allocation ranges and/or overlay portfolio constraints.
- H. **External Manager** Investment Guidelines for the Asset Allocation Program:
 - 1. Manager Selection
 - a. Managers retained in the Asset Allocation Program shall have recognized expertise in active asset allocation.
 - b. The selected managers shall be registered or appropriately exempt from registration, with the Securities and Exchange Commission (SEC) or an equivalent regulatory body, in the case of a manager based outside of the United States.
 - c. Managers shall be selected in accordance with the applicable California laws and regulations, and CalPERS policy.
 - 2. Investment Manager Guidelines

Managers shall operate under guidelines that describe their specific investment strategies, representative portfolio characteristics, permissible and non-permissible activities, restrictions on the purchase of certain securities, benchmark, and performance objectives.

Derivatives & Leverage

- A. Strategies

Financial futures contracts, forward contracts, swaps, options, combinations of these derivatives, exchange traded funds, and structured notes may be used in the Asset Allocation Program for only the following purposes:

 - 1. To adjust asset class allocations, within approved policy ranges;
 - 2. To minimize the investment effect of average cash balances held in cash equivalents accounts by overlaying with asset-class-specific derivatives.
- B. Risks

Any use of derivatives to adjust asset class allocations shall comply with this Policy.
- C. Leverage

In connection with any such use of derivatives, staff shall comply with the Investment Leverage section of this Policy.

D. Exposure Limit

Derivative exposure used in the Asset Allocation Program is limited to amounts that maintain all asset class allocations within their approved ranges.

E. Collateral

Collateral for all derivatives used in the Asset Allocation Program shall consist of cash, investment grade fixed income securities, or other securities allowed under industry-standard collateral agreements.

III. Benchmarks

Purpose

Benchmarks establish target investment exposures and provide a relative measure to gauge whether a particular investment strategy is meeting stated goals and objectives.

CalPERS' benchmarks shall be established to manage portfolio risk and return characteristics.

Benchmark Oversight

Policy benchmarks shall be set by the Committee for each asset class within the PERF and Affiliate Funds. Changes to the construction rules of any policy benchmark shall be reviewed and approved by the relevant Board Consultant, with any modifications deemed material by the Board Consultant requiring review and approval by the Committee. In preparation for any such review, staff and the appropriate Board Consultant shall analyze the expected effect of the benchmark modification on the total portfolio risk and return characteristics. See Appendix 5 for the current benchmarks as set by the Committee and additional methodology detail.

IV. Investment Risk Management

Purpose

Risk management is central to managing the assets of CalPERS and to achieving the strategic objectives. A framework for investment risk management is established through (a) the adoption of investment policies for total fund strategic asset allocation, (b) individual asset classes and portfolios with appropriate benchmarks and (c) reasonable risk limits.

Investment risk cannot be eliminated; therefore, CalPERS invests in a risk-aware manner in order to generate returns required to pay promised benefits, subject to its risk tolerance. Risk-aware investment management requires that CalPERS:

1. Clearly understand investment risks
2. Be adequately compensated for the risks taken

CalPERS investment risk management activities shall be managed so as to:

- A. Provide an integrated process for overall investment risk management at both the Total Fund and asset class level;
- B. Identify, measure, and communicate investment risks across the Total Fund and within each asset class;
- C. Monitor investment returns as well as risk to determine if risks taken are adequately compensated; and
- D. Ensure appropriate organizational independence of investment risk measurement systems and functions from investment decision-making functions.

Investment Approaches & Parameters

A. Investment Risk Management Framework

The CalPERS investment risk framework is expected to evolve over time in alignment with industry best practices. The framework shall address the identification, measurement, assessment, and ongoing monitoring of investment risk.

B. Active Risk Limits

A total fund active risk limit, expressed in terms of tracking error, shall be established to define staff discretion to deviate from the Total Fund policy benchmarks i.e. intended strategic investment exposures. The limit is specified in Appendix 6 of this document.

V. Global Derivatives and Counterparty Risk

Purpose

This section of the Policy is intended to provide a strategic framework for governance of the use of derivatives and derivatives strategies by the CalPERS Investment Office across both internally and externally managed portfolios. The Policy is intended to ensure that CalPERS has effective operational, risk management, and compliance controls in place governing the use of derivatives within the investment process.

This section outlines the issues that must be addressed for each derivatives strategy, whether internally or externally managed, in regard to guidelines, development of procedures, and operational requirements.

Policy Scope

A. Benefit Plans/Trusts Covered under the Policy

This section applies to the use of derivatives by CalPERS within all CalPERS trusts and benefit plans.

B. This section shall apply to the use of derivatives by investment staff and external managers operating under Investment Management Agreements (IMAs).

C. Limited liability entity or registered/commingled fund managers may be required to provide information to staff on derivatives trading activities within each entity in order for CalPERS to comply with applicable aggregation or position limit regulations and reporting requirements.

Investment Approaches & Parameters

A. Derivatives subject to this section include, without limitation:

1. Futures contracts
2. Options
3. Options on futures contracts
4. Forward contracts
5. Swap agreements
6. Security based swap agreements
7. Swap contracts with embedded options
8. Instruments or contracts intended to manage transaction or currency exchange risk in purchasing, selling, or holding investments

Spot Foreign Exchange transactions with settlement date up to T+5 shall be exempt from this section.

Cash transactions, in any asset class, are not derivatives. Collateralized Mortgage Obligations (CMOs) and convertible bonds and other investment instruments where the cash investment is similar to the market and notional exposure, are likewise excluded from the definition of derivative for purposes of this section.

B. Derivatives Application Permitted

Derivatives may be used to efficiently manage risk and return characteristics of the Public Employees' Retirement Fund (PERF) and/or individual sub-portfolios.

C. Derivatives Application Not Permitted

Derivatives may only be used to invest in asset classes that are consistent with this Policy and the Asset Allocation Program asset categories, implementation strategies, and risk-return characteristics.

Derivatives shall not be used to avoid or subvert existing delegated authorities or investment policy limits.

D. Derivatives Control Procedures

Staff shall adopt documented control procedures that cover the following areas:

1. Accounting and performance measurement for derivatives
2. Risk Management – procedures for evaluating the use of derivatives and monitoring market risk exposure, liquidity needs, and counterparty risk limits
3. Operational Risk – procedures that establish a process for evaluating operational activities associated with derivatives to ensure the use of proper systems, controls, staffing, and staff qualifications
4. Regulatory – procedures for ensuring adherence to any regulations in conjunction with derivatives activities undertaken by CalPERS

VI. Investment Leverage

Purpose

The purpose of this section is to set forth a framework for comprehensively identifying, measuring, managing, and reporting various forms of leverage.

This section is intended to place limits on and set standards for the use of leverage that reasonably balances investment flexibility with risk management.

This section is also intended to result in greater consistency across investment units, and in greater ability of the Committee to direct policies concerning leverage.

Leverage Parameters and Measurement

1. Leverage will be managed and monitored at the Total Fund level
2. Use of leverage is prohibited unless expressly permitted in this section
3. Strategic Leverage, implemented via Total Fund Financing, will be implemented as part of the asset allocation consistent with the target specified in appendix 4
4. Staff have leeway to implement an additional 15% leverage incremental to the Strategic Leverage target (“Active Leverage”)
5. Active Leverage can take two forms:
 - A. Total Fund leverage incremental to that required to implement Strategic Leverage
 - B. Program-level leverage incremental to that within the segment policy benchmarks or inherent in the asset class risk/return expectations
6. Leverage exposure will be calculated using the following formula:

$$\frac{\text{Gross Notional Exposure} - \text{Cash Equivalents}}{NAV}$$
7. Staff will maintain procedures detailing methodology to calculate Gross Notional Exposure and Cash Equivalents as well program specific parameters. These procedures will include definitions and criteria for derivatives netting, collateralized funding, and subscription financing. These procedures are subject to review and approval by Board General Pension Consultant.
8. The following standard methodology will apply:
 - A. Capital commitments are not counted as leverage
 - B. The use of currency derivatives for hedging or risk management purposes is not counted as leverage
 - C. Debt that is recourse to CalPERS is counted as leverage
9. In the event of a breach of the active leverage limit due to a market dislocation, staff will evaluate all exposures and develop a plan within 90 days, for moving active leverage exposure towards guideline parameters.

VII. Divestment

Purpose

This section sets forth CalPERS policy for responding to external or internal initiatives to cause CalPERS to sell investments or refrain from making additional investments (Divesting) for the purpose of achieving certain goals that do not appear to be primarily investment-related, such as promoting social justice (Divestment Initiatives). Typically, Divestment Initiatives focus on companies that do business in a specified country, are engaged in a specified industry, or in specific practices deemed undesirable by federal and state law (e.g., human rights violations) (Targeted Companies).

CalPERS' investment in a company does not necessarily signify that it approves of the company's policies, products, or actions. CalPERS, nevertheless, wants companies in which it invests to meet high corporate governance, ethical, and social standards of conduct. The Committee believes that this generally will promote superior long-term investment performance.

The Board and its Staff have fiduciary duties of loyalty and prudence, pursuant to the California Constitution, Article XVI, Section 17, and Government Code (GC) Section 20151, to invest "with the care, skill, prudence, and diligence under the circumstances then prevailing that a prudent person acting in a like capacity and familiar with those matters would use in the conduct of an enterprise of a like character and with like aims." (GC Section 20151(c)). The Board and Staff also have a fiduciary responsibility under the California Constitution to "diversify the investments of the system so as to minimize the risk of loss and to maximize the rate of return, unless under the circumstances it is clearly not prudent to do so." (Cal. Const., Art XVI, Sec. 17, subdiv. (d)).

These fiduciary obligations generally preclude CalPERS from sacrificing investment performance for the purpose of achieving goals that do not directly relate to CalPERS operations or benefits. Divesting appears to almost invariably harm investment performance, such as by causing transaction costs (e.g., the cost of selling assets and reinvesting the proceeds) and compromising investment strategies.

In addition, there appears to be considerable evidence that Divesting is an ineffective strategy for achieving social or political goals, since the usual consequence is often a mere transfer of ownership of divested assets from one investor to another. Investors that divest lose their ability as shareowners to influence the company to act responsibly.

This Policy, therefore, generally prohibits Divesting in response to Divestment Initiatives, but permits CalPERS to use constructive engagement, where consistent with fiduciary duties, to help Divestment Initiatives achieve their goals.

Approaches & Parameters

A. CalPERS' Preferred Approach is Engagement

As reflected by CalPERS Investment Belief 3, CalPERS uses the following prioritization framework in considering whether to engage on issues raised by stakeholders:

- Principles and Policy – to what extent is the issue supported by CalPERS Investment Beliefs, Governance and Sustainability Principles, or other Investment Policy?
- Materiality – does the issue have the potential for an impact on portfolio risk or return?
- Definition and Likelihood of Success – is success likely, in that CalPERS action will influence an outcome that can be measured? Can we partner with others to achieve success or would someone else be more suited to carry the issue?
- Capacity – does CalPERS have the expertise, resources, and standing to influence an outcome?

Consistent with the foregoing, CalPERS will undertake constructive engagement in support of Divestment Initiatives to the extent the Committee determines to be appropriate or as required by law, but CalPERS will not sell investments in Targeted Companies or refrain from investing in them in response to Divestment Initiatives except as follows:

1. CalPERS will sell Targeted Company investments or refrain from making them to the extent investment in the Targeted Company is imprudent and inconsistent with fiduciary duties. CalPERS recognizes that the prudence of an investment may depend on its purpose.
2. To the extent required by law and consistent with fiduciary duties, CalPERS will comply with federal and constitutional California state laws that require Divesting.

B. Divestment Review

The following processes will be used to ensure that prior divestment decisions remain supportive of the prudent stewardship of the System's assets consistent with the Committee's fiduciary obligations:

1. The Board's General Pension Consultant will monitor and provide reports to the Committee on the estimated performance and risk impacts of all then in-force divestments for the affected portfolios. (See Appendix 1.)
2. For so long as any divestments remain in effect for any of the portfolios, staff shall conduct a review of all such in-force divestments at least every five years, to include an economic analysis of the projected impact on the risk-return profile of the

affected portfolios, and present such analysis to the Committee for a determination whether continuation of the divestments is consistent with fiduciary duties.

C. Notice and Voting Protocol

For each divestment included in a regularly scheduled review as described above, continuation of the divestment will require an affirmative roll-call vote of the Committee.

In addition, any determination by the Committee that a divestment activity required pursuant to state legislative mandate would be, or, in the case of an in-force divestment, has become, inconsistent with the Committee's fiduciary duties, such that divestment is precluded or reinvestment is required, will include:

1. A presentation and discussion of relevant findings in open session at a properly noticed meeting of the Committee.
2. A roll-call vote of the Committee.

VIII. Global Equity

Strategic Objective

The Program has two strategies, the Market Capitalization Weighted Segment and the Factor Weighted Segment, each defined as an “Asset Segment”, and having the strategic objectives specified below.

- A. The Market Capitalization Weighted Segment of the Program has the following strategic objective:
 - To provide exposure to economic growth and be a reliable source of liquidity.
- B. The Factor Weighted Segment of the Program has the following strategic objective:
 - To provide exposure to economic growth with reduced overall volatility and some diversification of equity risk.

Investment Approaches & Parameters

A. Approach

In the management of the overall Global Equity portfolio, investments are made with a specific purpose. Included strategies may be index-oriented (which closely replicate an index selected as the benchmark) or active strategies (which permit **asset class tracking error** within specified parameters). All strategies shall be categorized as “index-oriented” or “active.”

Global Equity utilizes both internally managed and externally managed strategies to meet the Strategic Objective. The Program seeks to facilitate meaningful information transfer from the external investment managers to Staff to help Staff develop scalable, sustainable, and efficient methods of increasing the likelihood of meeting Global Equity’s investment return goals over the long term.

B. Investment Opportunity Set

The primary universe of allowable investment assets within Global Equity shall be publicly traded global equity securities and derivatives thereof as described in the Total Fund Policy, Global Derivatives and Counterparty Risk Section, and associated procedure.

C. Investment Selection

Global Equity has internal committees to select desired strategies and allocate capital. The Global Equity committees review and approve internal and external strategies forming the pool of eligible investment strategy alternatives and allocate capital to and from those eligible strategies.

D. Investment Parameters

All investment strategies shall have specific, written guidelines. The guidelines shall outline the investment philosophy and approaches, permissible and restricted activities and a performance objective that is commensurate with the strategy’s purpose.

Reporting to the Investment Committee

The following tables provide details regarding reporting to the Investment Committee:

- Investment Office Staff
- General Pension Consultant

Table 1: investment Office Staff Reporting Responsibilities

Ref #	Report Content	Frequency
1.	Staff shall provide an Annual Program Review that will include a program overview, investment review, and business review in general conformance with the Annual Program Review Template.	No less than annually

Table 2: General Pension Consultant Reporting Responsibilities

Ref #	Report Content	Frequency
1.	The Consultant shall monitor, evaluate, and report on the performance of the Program relative to the benchmarks and this Program Policy and other applicable CalPERS Policies.	No less than annually

Investment Responsibilities

The following sections provide details regarding investment related responsibilities for the:

- Investment Office Staff
- **General Pension Consultant**
- **External Manager**

Investment Office Staff Responsibilities

1. All aspects of portfolio management, including monitoring, trading, analyzing, evaluating performance relative to the appropriate benchmark, and selecting and contracting with managers.
2. Monitor internally and externally managed strategies in the implementation of, and compliance with, the Program Policy and the Total Fund Policy.
3. Develop and maintain investment procedures, program guidelines, and sub-program guidelines.
4. Design and implement a process for capital allocation within the asset class.

General Pension Consultants Responsibilities

1. Provide independent perspective and counsel to the Committee, to include routine communication with the Investment Office Staff and periodic reviews of processes and procedures.

External Manager Responsibilities

1. Manage the fund in accordance with each manager's contract with CalPERS, the Total Fund Policy, and the Program Policy.
2. Communicate and cooperate with Investment Office Staff and authorized third parties regarding the management of the fund.

Investment Constraints/Limitations

The following table provides details regarding investment constraints/limitations related to the following Asset Segments:

- Market Capitalization Weighted Segment
- Factor Weighted Segment

Investment Constraints/Limitations by Global Equity Asset Segment
<p>Market Capitalization Weighted Segment</p> <ol style="list-style-type: none"> 1. Active risk will be managed using tracking error. On average, the aggregate forecasted tracking error is to be maintained between 0 and 50 basis points as measured by the CalPERS Risk Management system while allowing for slight deviations from this range depending on market conditions. 2. Further restrictions regarding concentration risk, out-of-benchmark bets, and use of derivatives are further outlined in the Policy-Related Procedures (PRP) for the Global Equity Program. <p>Factor Weighted Segment</p> <ol style="list-style-type: none"> 1. Active risk will be managed using tracking error. On average, the aggregate forecasted tracking error is to be maintained between 0 and 50 basis points as measured by the CalPERS Risk Management system while allowing for slight deviations from this range depending on market conditions. 2. Further restrictions regarding concentration risk, out-of-benchmark bets, and use of derivatives are outlined in the PRP for the Global Equity Program.

IX. Global Fixed Income

Strategic Objective

The Program has five strategies: Treasury, Mortgage-Backed Securities, Investment Grade Corporates, Emerging Markets Sovereign Bonds, and High Yield, each defined as an "Asset Segment" and having the strategic objectives outlined below.

- A. The Treasury Segment of the Program has the following strategic objective:
 - To serve as an economic diversifier to equity risk and be a reliable source of liquidity.

- B. The Mortgage-Backed Securities Segment of the Program has the following strategic objective:
 - To provide a reliable source of income and an additional source of liquidity.
- C. The Investment Grade Corporates Segment of the Program has the following strategic objective:
 - To provide a reliable source of income and an additional source of liquidity.
- D. The Emerging Markets Sovereign Bonds Segment of the Program has the following strategic objective:
 - To provide exposure to economic growth and be a reliable source of income.
- E. The High Yield Segment of the Program has the following strategic objective:
 - To provide exposure to economic growth and be a reliable source of income.

Investment Approaches & Parameters

All investment programs shall have specific written guidelines. The guidelines shall outline the investment approaches, permissible and restricted activities, and a performance objective that is commensurate with the program’s purpose.

Staff shall rely on short- or long-term ratings from authorized nationally recognized statistical rating organizations (NRSROs) only. Staff shall maintain and annually update internal ratings for securities that are not rated by any authorized NRSROs.

Reporting to the Investment Committee

The following tables provide details regarding reporting to the Investment Committee:

- Investment Office staff
- **General Pension Consultant**

Table 1: Investment Office Staff Reporting Responsibilities

Ref #	Report Content	Frequency
1.	Staff shall provide an Annual Program Review that will include a program overview, investment review, and business review in general conformance with the Annual Program Review Template.	No less than annually

Table 2: General Pension Consultant Reporting Responsibilities

Ref #	Report Content	Frequency
1.	The Consultant shall monitor, evaluate, and report on the performance of the Program relative to the benchmark and this Program Policy and other applicable CalPERS Policies.	No less than annually

Investment Responsibilities

The following sections provide details regarding investment related responsibilities for the:

- Investment Office staff
- **General Pension Consultant**
- **External Manager**

Investment Office Staff Responsibilities

1. All aspects of portfolio management, including monitoring, trading, analyzing, evaluating performance relative to the appropriate benchmark, and selecting and contracting with managers.
2. Monitor the internal and external managers in the implementation of, and compliance with, the Program Policy and the Total Fund Policy.
3. Develop and maintain investment procedures, program guidelines, and sub-program guidelines.

General Pension Consultant Responsibilities

1. Provide independent perspective and counsel to the Committee, to include routine communication with the Investment Office staff and periodic reviews of processes and procedures.

External Manager Responsibilities

1. Manage the fund in accordance with each manager's contract with CalPERS, the Total Fund Policy, and the Program Policy.
2. Communicate and cooperate with Investment Office staff and authorized third parties regarding the management of the fund.

Investment Constraints/Limitations

The following table provides details regarding investment constraints/limitations related to the following Asset Segments:

- Treasury Segment
- Mortgage-Backed Securities Segment
- Investment Grade Corporates Segment
- Emerging Markets Sovereign Bonds Segment
- High Yield Segment

Investment Constraints/Limitations by Global Fixed Income Asset Segment
<p>Treasury Segment</p> <ol style="list-style-type: none"> 1. Interest rate risk will be controlled using duration management. Duration will be maintained at +/-10% of the benchmark. 2. Further restrictions regarding liquidity and use of derivatives are outlined in the Policy-Related Procedures (PRP) for the Global Fixed Income Program. <p>Mortgage-Backed Securities Segment</p> <ol style="list-style-type: none"> 1. Interest rate risk will be controlled using duration management. Duration will be maintained within +/- 0.50 of the benchmark. 2. Further restrictions regarding ratings, concentration, currency, geography, and use of derivatives are outlined in the PRP for the Global Fixed Income Program. <p>Investment Grade Corporates Segment</p> <ol style="list-style-type: none"> 1. Interest rate risk will be controlled using duration management. Duration will be maintained within +/- 0.50 of the benchmark. 2. Further restrictions regarding ratings, concentration, currency, geography, and use of derivatives are outlined in the PRP for the Global Fixed Income Program. <p>Emerging Markets Sovereign Bonds Segment</p> <ol style="list-style-type: none"> 1. Interest rate risk will be controlled using duration management. Duration will be maintained within +/- 0.50 of the benchmark. 2. Further restrictions regarding ratings, concentration, currency, geography, and use of derivatives are outlined in the PRP for the Global Fixed Income Program. <p>High Yield Segment</p> <ol style="list-style-type: none"> 1. Interest rate risk will be controlled using duration management. Duration will be maintained within +/- 0.50 of the benchmark. 2. Further restrictions regarding ratings, concentration, currency, geography, and use of derivatives are outlined in the PRP for the Global Fixed Income Program.

Additional details regarding investment constraints/limitations and risks are outlined in each Program Segment specific written procedures.

X. Real Assets

Strategic Objective

The Program's strategic objective is to provide stable and predictable cash yield, diversification of equity risk, and inflation protection.

Investment Approaches and Parameters

1. Real Assets Program Allocations

Program allocation targets and ranges are listed in the Total Fund Investment Policy.

2. Diversification and Limits

To mitigate risk, staff shall maintain an appropriate level of diversification within the Program. Staff shall monitor the Program for adherence to the Key Policy Parameters specified in Appendix 3 to this Policy.

3. Infrastructure and Forestland Parameters

The Key Policy Parameters pertaining to risk classifications, geographic regions, and leverage will apply to (a) the Infrastructure portfolio only when the Net Asset Value (NAV) for that portfolio exceeds \$5.0 billion and (b) the Forestland portfolio only when the NAV for that portfolio exceeds \$3.0 billion.

Reporting to the Investment Committee

The following tables provide details regarding reporting to the Investment Committee:

1. Investment Office staff
2. **General Pension Consultant**

Table 1: Investment Office Staff Reporting Responsibilities

Ref #	Report Content	Frequency
1.	Staff shall provide an Annual Program Review that will include a program overview, investment review, and business review in general conformance with the Annual Program Review Template.	No less than annually
2.	Staff shall maintain a Strategic Plan approved by the Committee setting forth CalPERS' long-term objectives for investment and management of the Program. Changes to the Strategic Plan require Committee approval.	At a minimum every five years

Table 2: General Pension Consultant Reporting Responsibilities

Ref #	Report Content	Frequency
1.	The Consultant shall monitor, evaluate, and report on the performance of the Program relative to the benchmarks and this Program Policy and other applicable CalPERS policies.	No less than annually

Investment Responsibilities

The following sections provide details regarding investment-related responsibilities for the:

- Investment Committee
- **General Pension Consultant**
- **Private Asset Class Board Investment Consultants**
- Managers/Partners

As used in this Policy, the term “manager” refers to third-party managers under the Program, and the term “partner” includes managing members of Limited Liability Companies.

Investment Office Staff Responsibilities

1. Undertake all aspects of portfolio management including monitoring, trading, analyzing, and evaluating performance relative to the appropriate benchmark, and selecting and contracting with managers/partners consistent with all applicable policies and procedures.
2. Develop and maintain investment procedures, program guidelines, and portfolio guidelines.
3. Screen and evaluate investment proposals consistent with the Program’s Strategic Plan, Appendix 3, and applicable investment policies and procedures.
4. Execute approved investment transactions, including negotiating investment agreements, performing initial and ongoing due diligence, and closing transactions.

General Pension Consultant Responsibilities

1. Provide independent perspective and counsel to the Committee, to include routine communication with the Investment Office staff and periodic reviews of processes and procedures.

Private Asset Class Board Investment Consultants Responsibilities

The responsibilities of the respective board consultants are specified in the “Private Asset Class Board Investment Consultants” section of, and the reporting and responsibility appendices to, the Total Fund Investment Policy.

Manager/Partner Responsibilities

1. Manage its allocated portion of the Program in accordance with (a) each manager/partner’s contract or partnership/operating agreement with CalPERS and (b) applicable policies.
2. Communicate and cooperate with Investment Office staff and authorized third parties regarding the management of its allocated portion of the Program.

Investment Constraints/Limitations

Staff Authority Limits

Table 3 below outlines the NAV limits at which staff may undertake commitments and dispositions.

Commitment limits (i) include new commitments, additional commitments made for investments in existing assets, and debt pay-downs, and (ii) apply only to the amount committed or invested, excluding any leverage or fees.

Table 3: Staff Authority Limits - Real Assets Program

	Commitments (\$ billions)	Dispositions (\$ billions)
Managing Investment Director limit per: (Real Estate)	\$3	\$3
Chief Investment Officer limit per: (Real Estate)	\$6	\$6
Managing Investment Director limit per: (Infrastructure)	\$1	\$1
Chief Investment Officer limit per: (Infrastructure)	\$2	\$2
Managing Investment Director limit per: (Forestland)	\$1	\$1
Chief Investment Officer limit per: (Forestland)	\$2	\$2
Managing Investment Director Cumulative Fiscal Year Limit: (Real Assets)	\$15	\$15

Key Policy Parameters

1. Partner Relationship Exposure

The maximum Partner Relationship Exposure for the Program is 20%. Similarly, the maximum exposure to outstanding investments with no **External Manager** is also 20%. For purposes of this Appendix 3,

- a. "Partner Relationship Exposure" means, with reference to any given Partner Relationship, the ratio of (i) the NAV of assets under management with such Partner Relationship, plus total unfunded commitments, to (ii) the total NAV of the Program plus total unfunded commitments; and
- b. "Partner Relationship" means, collectively, the total investment allocation with any one manager or partner, or, in cases where the Program has investments

with multiple members of an affiliated group of managers and/or partners, the investment allocation with that affiliated group.

2. Risk Classifications

The Program will be divided into three risk classifications: core, value add, and opportunistic. Individual assets will be assigned to the appropriate risk classification.

The permitted NAV percentage ranges for each risk classification are outlined in Table 4.

Table 4: Risk Classifications

Risk Classification	Real Assets	Real Estate	Infrastructure	Forestland
Core	75-100%	75-100%	60-100%	75-100%
Value Add	0-25%	0-25%	0-25%	0-25%
Opportunistic*	0-25%	0-25%	0-25%	0-25%

*Development assets will have a limit of 10% of the Program and each portfolio. All Development assets will be assigned the “opportunistic” risk classification.

3. Geography

Staff will pursue a global real assets investment strategy, with emphasis in the United States. International markets are categorized as Developed, Emerging, and Frontier, based on FTSE classification of markets. The permitted NAV percentage ranges for each geographic region are outlined in Table 5.

Table 5: Geography

Region	Real Assets	Real Estate	Infrastructure	Forestland
United States	70-100%	75-100%	40-100%	50-100%
International Developed Markets	0-30%	0-25%	0-60%	0-50%
International Emerging Markets	0-15%	0-15%	0-15%	0-15%
International Frontier Markets	0-5%	0-5%	0-5%	0-5%

4. Public Securities

Public securities will not exceed 10% of the Program.

XI. Private Equity

Strategic Objective

The Private Equity Program's strategic objective is to maximize risk-adjusted rates of return and enhance the equity return to the Fund.

Investment Approaches & Parameters

A. Approach

1. Staff shall manage the Program as a whole with specific criteria appropriate to partnership investments, co- investments, and **Customized Investment Accounts**.
2. Top-down strategic assessments shall identify portfolio weightings and identify the most attractive segments of the market for investing.

B. Specific Risk Parameters

There are specific risks associated with private equity investments that shall be monitored and mitigated by CalPERS commensurate with the expected return as each investment proposal is considered, including but not limited to the following major risk categories:

1. Leverage: The increased volatility risk posed by the existence of non-recourse debt at the underlying investment level.
2. Operating and Business: The potential for certain investments to entail exceptional operating and business risks.
3. Liquidity: The liquidity risks inherent in private equity, given typical time horizons of 5-10 years and generally limited opportunities for sale in the secondary market.
4. Structural: The risks arising from a potential misalignment of interests between the general partner and the limited partners, which may be mitigated by, among other things, structuring fees and incentive payments and other key aspects of the business relationship so as to better align the interests of the partners.
5. Valuation: The risks associated with the valuation process for partnerships and co-investments, including whether the general partner employs an appropriate valuation discipline.

The investment approach for the portfolio shall seek to reduce risk through appropriate diversification by geography, industry, **Vintage Year** and investment strategy.

C. Investment Vehicle Parameters

Investment vehicles may take the form of limited partnerships, limited liability companies (LLCs), or other similar limited liability legal structures.

Reporting to the Investment Committee

The following tables provide details regarding reporting to the Investment Committee:

- Investment Office Staff
- **General Pension Consultant**
- **Private Asset Class Board Investment Consultant**

Table 1: Investment Office Staff Reporting Responsibilities

Ref #	Report Content	Frequency
1.	Staff shall provide an Annual Program Review that will include a program overview, investment review, and business review in general conformance with the Annual Program Review Template.	No less than annually
2.	Staff shall report regarding investment proposals it has received, the stage they are at in the pipeline, and their ultimate disposition.	Next Committee meeting, or sooner if deemed necessary

Table 2: General Pension Consultant Reporting Responsibilities

Ref #	Report Content	Frequency
1.	The Consultant shall monitor, evaluate, and report on the performance of the Program relative to the benchmarks and this Program Policy and other applicable CalPERS Policies.	No less than annually

Investment Responsibilities

The following sections provide details regarding investment-related responsibilities for the:

- Investment Office Staff
- ***Private Asset Class Board Investment Consultant***
- General Partner

Investment Office Staff Responsibilities

1. All aspects of program portfolio management, including monitoring, analyzing, evaluating performance relative to the appropriate benchmark, selecting investments, and contracting with general partners.
2. Monitor general partners in the implementation of, and compliance with, the Program Policy.
3. Develop and maintain selection guidelines for private equity investments.
4. Develop and maintain investment procedures, program guidelines, and sub-program guidelines.
5. Monitor non-recourse debt as a risk factor.

Private Asset Class Board Investment Consultant Responsibilities

1. Provide independent perspective and counsel to the Committee, to include routine communication with Investment Office staff and periodic reviews of processes and procedures.

General Partner Responsibilities

1. All aspects of portfolio management as set forth in each general partner's limited partnership agreement or contract with CalPERS and the Program Policy and Total Fund Policy.
2. Communicate and cooperate with Investment Office staff and authorized third parties regarding the management of the fund.

Investment Constraints/Limitations

A. Strategy Allocation Targets & Ranges:

Strategy	Target	Range
Buyouts	70%	60% - 80%
Credit Related	5%	0% - 10%
Venture Capital	1%	0% - 7%
Growth/Expansion	15%	5% - 20%
Opportunistic	10%	0% - 15%

B. Investment Parameters:

Staff Authority Limits

Net Asset Value (NAV) in billions

The Managing Investment Director (MID) and Chief Investment Officer (CIO) limits apply per commitment.	Funds	Co-Investments	Customized Investment Account	Secondary
MID	\$0.5	\$0.3	\$1.3	\$0.9
CIO	\$1	\$0.6	\$1.9	\$1.7
MID Fiscal Year Limit*	\$10	\$3	\$5	\$3

*Fiscal Year Limit applies to cumulative commitments.

1. Committee approval will be required for commitments beyond those authorized for the CIO. If there is a vacancy in the CIO position, Committee approval will be required for commitment authority otherwise delegated to the CIO.
2. The aggregate **Net Committed Capital** to any one general partner is limited to 10% or less of PE's total Net Committed Capital. Any exceptions to this must be specifically approved by the Committee. On August 18, 2014, the Committee approved three exceptions, increasing the maximum exposure from 10% to 15% for the following general partners: Blackstone, Carlyle and Apollo.
3. Co-Investments are subject to the further restriction that the co-investment must be made alongside a firm with which the PE Program has an active commitment.
4. Fund Investment Limitation - CalPERS commitments to any one fund cannot exceed 25% of the fund.

XII. Private Debt

Purpose

The Private Debt Program invests primarily in privately negotiated, non-traded debt or debt-like instruments typically issued to companies. The program is intended to provide diversification to the Total Fund while seeking to add value over equivalent public debt markets through exposure to risks including illiquidity and leverage as well as terms and characteristics available through private transactions.

Performance Objective & Benchmark

The performance objective is to outperform the program benchmark over rolling three-year periods, net of all program costs and fees.

Investment Approaches & Parameters

A. Investment Guidelines

Program investments may be managed internally, or by external managers, or by a combination of internal and external managers.

1. Manager Selection

The selected managers shall be registered, or appropriately exempt from registration, with the SEC.

2. Investment Manager Guidelines

Manager guidelines shall not conflict with any CalPERS investment policy.

B. Investment Parameters

1. The table below provides details regarding the strategy allocation ranges for the Private Debt program.

Strategy	Range*
Direct Lending	20% - 100%
Specialty Lending	5% - 40%
Liquidity Financing	0% - 25%
Real Estate Financing	5% - 40%
Private Structured Products	0% - 25%

*Evolving market opportunities preclude specifying target percentages. Given the illiquid and slow-moving nature of private investments, the ranges are considered levels for triggering a discussion and Board concurrence of the continued mix of exposures within the program.

2. The overall program risk will be managed through diversification across strategies and managers and aligned with achieving the long-term strategic allocation risk and return expectations of the asset class.

C. Staff Authority

Staff Authority Limits
Net Asset Value (NAV) in billions

MID, Deputy Chief Investment Officer (DCIO), and Chief Investment Officer (CIO) limits apply per each commitment to an external manager	Funds	Co-Investments	Customized Investment Account
MID	\$1.0	\$1.0	\$2.0
DCIO	\$2.0	\$2.0	\$4.0
CIO	\$3.0	\$3.0	\$6.0
MID Fiscal Year Limit*	\$7.0	\$5.0	\$6.0

*Fiscal Year Limit applies to cumulative commitments.

Implementation of this Program shall comply at all times with the manager guidelines and all CalPERS investment policies.

Additional Information

Additional information specific to the management of Private Debt is available in the following Appendices:

- 1 – Reporting to the Investment Committee
- 2 – Investment Responsibilities

XIII. Liquidity Program

Purpose

The purpose of the Liquidity Program is to provide high liquidity to fund the day-to-day liquidity requirements of the Total Fund.

Investment Approaches & Parameters

All investment programs shall have specific written guidelines. The guidelines shall outline the investment approaches, permissible and restricted activities, and a performance objective that is commensurate with the program's purpose.

Staff shall rely on short- or long-term ratings from authorized nationally recognized statistical rating organizations (NRSROs). Staff shall maintain and annually update internal ratings for securities that are not rated by any authorized NRSROs.

Additional Information

Additional information specific to the management of the Liquidity Program is available in the following Appendices:

- 1 – Reporting to the Investment Committee
- 2 – Investment Responsibilities
- 6 – Investment Constraints and Limitations

XIV. Low Duration Fixed Income Program

Purpose

The purpose of the Low Duration Fixed Income (LDFI) Program is to diversify CalPERS investment programs and enhance CalPERS returns, while dampening overall risk of CalPERS investment programs.

Investment Approaches & Parameters

The LDFI Program is managed through the Low Liquidity Enhanced Return (LLER) Program.

All investment programs shall have specific written guidelines. The guidelines shall outline the investment approaches, permissible and restricted activities, and a performance objective that is commensurate with the program's purpose.

Staff shall rely on short- or long-term ratings from authorized nationally recognized statistical rating organizations (NRSROs). Staff shall maintain and annually update internal ratings for securities that are not rated by any authorized NRSROs.

Additional Information

Additional information specific to the management of the LDFI Program is available in the following Appendices:

- 1 – Reporting to the Investment Committee
- 2 – Investment Responsibilities
- 6 – Investment Constraints and Limitations

XV. Opportunistic Program

Purpose

The Opportunistic Program enables greater investment in assets perceived to be substantially undervalued, and this section specifies guidelines to manage the concurrent risks. The program also permits the establishment of innovative portfolios.

Performance Objective & Benchmark

The performance objective is to outperform the program benchmark over rolling three-year periods, net of all program costs and fees.

Investment Approaches & Parameters

A. Investment Guidelines

Program investments may be managed internally, or by external managers, or by a combination of internal and external managers.

1. Manager Selection

The selected managers shall be registered, or appropriately exempt from registration, with the SEC.

2. Investment Manager Guidelines

Manager guidelines shall not conflict with any CalPERS investment policy. Implementation of this Program shall comply at all times with the manager guidelines and all CalPERS investment policies.

XVI. Securities Lending

Purpose

The Securities Lending Program is comprised of three functions: (1) lending both equity and fixed income securities to borrowers, (2) reinvesting the collateral posted by borrowers and (3) facilitating short-term liquidity needs of the Total Fund, through the use of leverage, subject to the limits and constraints of the Investment Leverage section of this policy. The program will be operated in a manner that maintains sufficient liquidity for the program and to adhere to the CalPERS Governance & Sustainability Principles.

Investment Approaches & Parameters

All investment programs shall have specific written guidelines. The guidelines shall outline the investment approaches, permissible and restricted activities, and a performance objective that is commensurate with the program's purpose.

XVII. Terminated Agency Pool

Purpose

This section governs the management of the assets supporting the Terminated Agency Pool Program (TAP Program).

Investment Approaches & Parameters

- A. The TAP Program shall be managed to closely match assets to the projected future benefit payments and to minimize the likelihood of the program becoming underfunded. Following the periodic recalculation of TAP Program liabilities by the CalPERS Actuarial Office, a segmented asset allocation process shall be utilized as follows:
 1. An immunization segment intended to:
 - a. Closely match, to the extent practicable, the cash flows of the assets to the forecasted benefit payment cash flows across a range of inflation scenarios;
 - b. Invest a portion of the program assets in such a way as to ensure that cash flows beyond 30 years can be met across a range of inflation scenarios;
 - c. Provide sufficient liquidity for two years of forecasted benefit payment cash flows;
 2. A surplus segment consisting of TAP Program assets in excess of those needed for the “immunization” segment described above, to be invested consistent with the asset allocation utilized for the PERF.
- B. Program Structure/Parameters

The CalPERS Custodian may employ a unitized fund structure to maintain separate and distinct historical records and to produce individual net asset values of all investments.
- C. Rebalancing

The Investment Office and Actuarial Office shall collaborate to monitor the funded status of the TAP Program and to rebalance the recommended portfolio as the forecasted benefit payment cash flows are updated.
- D. Restrictions, Prohibitions, and Authorized Securities

Authorized securities for the “immunization” and surplus segments are included in Appendix 6 of this Policy.

XVIII. Plan Level and Asset Class Transition Portfolios

Purpose

The purpose of this section of the Policy is to ensure that CalPERS staff takes prudent and careful action while performing transitions, and to establish appropriate controls and approvals governing transitions. Plan level and asset class transitions shall separate the cost and performance impacts on investment programs or asset classes related to cash or security movements and transactions not associated with the on-going investment management of affected portfolios. Transitions activity can be implemented using transition portfolios or an allocation costs capture system (ACCS).

- A. A plan level transition may be established for any asset class for the purpose of achieving asset allocation or Total Fund related investment objectives. Plan level transition portfolio usage may be initiated by the Committee or by the Chief Investment Officer or designated staff operating within their respective delegated authorities. All transaction costs and investment performance for these portfolios flows directly to the Total Fund, outside an individual asset class.

Plan level transition portfolios may only be used for one or more of the following purposes:

1. Rebalance of asset classes to achieve asset allocation objectives
2. Raise or invest cash at the Total Fund level
3. Trade to effectuate Total Fund investment objectives

- B. An asset class transition portfolio may be established within any asset class for the purpose of achieving asset-class-specific objectives. The Managing Investment Director (MID) from the specific asset class may initiate the use of an asset class transition portfolio after notification to the Chief Operating Investment Officer and Investment Servicing Division staff. This notification shall include a summary of the intended activity and the expected duration of the activity. All transaction costs and investment performance associated with the use of the asset class transition portfolio will flow to the asset class level.

Asset class transition portfolios may only be used for one or more of the following purposes:

1. To terminate and fund external asset managers within the asset class;
2. To rebalance strategies and investment managers within an asset class; or
3. To raise or invest cash within the asset class.

Asset class transitions may be accomplished through the use of designated asset class transitions portfolios or through the use of ACCS.

- C. Transition portfolios shall be subjected to oversight in order to:

1. Establish a control structure to ensure and validate that transition portfolio transactions are executed as intended; and,
2. Confirm that the transition portfolios are used for a permitted purpose and in the manner set forth by this and other related policies.

Investment Approaches & Parameters

All assets within the transition portfolios shall be held by the CalPERS Custodian and all transactions shall follow CalPERS' established execution and settlement procedures.

XIX. Role of Private Asset Class Board Investment Consultants

The roles of the ***Private Asset Class Board Investment Consultants*** are detailed in Appendix 2, Investment Responsibilities.

XX. Governance and Sustainability Strategy

Purpose

The CalPERS Governance and Sustainability Strategy (Strategy) shall be managed to accomplish the following objectives:

- A. Support the achievement of sustainable (including environmental, social, and governance factors), long-term target risk-adjusted returns for the Total Fund.
- B. Contribute to sustainable investment, advocacy, and engagement decision making across the Total Fund.

Approach & Parameters

The Strategy will be implemented through four channels, supported, where applicable, by the use of strategic partnerships, consultants, and data providers to advance CalPERS' investment and policy objectives. The four channels are:

- Research
- Integration
- Engagement
- Advocacy

Research

The Sustainable Investments Program will support asset-class integration of relevant environmental, social, and governance (ESG) topics into investment decision-making by exploring, monitoring, understanding, and communicating new research and information on ESG topics arising from academia, industry, and from Investment Office staff. Research will focus on:

- High value risks and opportunities for the PERF
- Implications and developments regarding ESG issues
- Best-in-class data and tools that facilitate integration of ESG risks and opportunities into decision-making
- Exploring opportunities to achieve market, risk-adjusted rates of returns along with positive and measurable environmental and social impacts

Integration

In investment decision-making the ESG risks and opportunities relevant to the investment decision should be considered, utilizing available data and tools, in support of conducting thorough investment analysis to improve long-term financial performance of the PERF.

Additional information on reporting and responsibilities is available in Appendices 1 and 2. CalPERS Governance & Sustainability Principles, which outline CalPERS' approach to engagement and advocacy, are included as Appendix 7.

Appendices

Appendix 1: Reporting to the Investment Committee

The following tables provide details regarding reporting to the Investment Committee by:

- Investment Office staff
- **General Pension Consultant**
- **Private Asset Class Board Investment Consultants**

Reporting to the Investment Committee - Investment Office Staff Responsibilities

Ref #	Program	Responsible Party	Report Content	Frequency
1.	Total Fund	All Programs	Staff shall report problems with, material changes to, and all violations of CalPERS' investment policies. These reports shall include explanations of any violations and appropriate recommendations for corrective action. Policy exceptions attributable to temporary mis-weights arising from the Committee's adoption of new program and/or subprogram asset allocation targets and the associated transition activity will not be subject to these reporting provisions provided that staff establishes a reasonable estimate of the timeframe for completion and so informs the Committee.	At the next Committee meeting or sooner if deemed necessary
2.	Investment Beliefs	All Programs	Staff shall report investment program strategy and its alignment with the Investment Beliefs.	No less than annually
3.	Governance and Sustainability Strategy	All Programs	Staff shall report investment program strategy and its alignment with the CalPERS Governance and Sustainability Strategy and associated in-force strategic plan.	No less than annually

Ref #	Program	Responsible Party	Report Content	Frequency
4.	Asset Allocation	Trust Level Portfolio Management	Staff shall provide a comprehensive Asset Allocation Strategy analysis coincident with the review of actuarial methods and assumptions to be presented for review and approval of policy target asset class allocations and ranges.	Every 4 years
5.	Asset Allocation	Trust Level Portfolio Management	Staff shall present a market-valuation-based analysis at the midpoint of the 4-year review cycle, or as needed in response to market conditions or changes affecting the capital market assumptions.	At midpoint of 4-year cycle or as needed
6.	Asset Allocation	Trust Level Portfolio Management	Staff shall notify the Committee of any allocation adjustment exceeding 50% of the approved policy range that is expected to increase the investment risk profile of the Total Fund.	At the next Committee meeting or sooner if deemed necessary.
7.	Asset Allocation	Trust Level Portfolio Management	The active asset allocation return will be measured and included in the Total Fund return and reported to the Committee.	No less than annually
8.	Benchmarks	Trust Level Portfolio Management	Staff shall report any Total Fund Policy Benchmark changes.	As needed.
9.	Risk Management	Investment Risk and Performance	Staff shall report CalPERS asset allocations relative to policy targets and ranges, as well as investment risks and performance.	No less than annually

Ref #	Program	Responsible Party	Report Content	Frequency
10.	Risk Management	Investment Risk and Performance	Quantitative Risk Metrics – Staff will report appropriate risk metrics, including volatility, for both forecasted total and forecasted active risk. These measures will include metrics required to monitor adherence to Board-approved investment policies. Measures will be reported for each asset class and the total fund. In addition, staff will provide commentary and analysis as appropriate on the interpretation and relative reliability of the provided metrics.	No less than annually
11.	Risk Management	Investment Risk and Performance	Leverage – Staff shall report portfolio leverage metrics for the Total Fund and asset classes, including the breakdown between recourse and non-recourse liabilities. The report shall include unfunded capital commitments for private asset classes.	No less than annually
12.	Risk Management	Investment Risk and Performance	Currency Risk – Staff will provide a report summarizing both actual portfolio and benchmark currency exposures of the Total Fund.	No less than annually
13.	Risk Management	Investment Risk and Performance	Counterparty Risk – Staff will report on counterparty exposure, summarizing net amounts owed to or due from CalPERS investment counterparties.	No less than annually
14.	Risk Management	Investment Risk and Performance	Concentration Risk – Staff will aggregate exposures across asset classes to create measures of concentration including industries, countries, and security issuer. This information will be presented for both the Total Fund portfolio and policy benchmark.	No less than annually

Ref #	Program	Responsible Party	Report Content	Frequency
15.	Risk Management	Investment Risk and Performance	Stress Testing/Scenario Analysis – Staff will be responsible for the specification of stress testing/scenario analysis and provide a periodic report that estimates the potential loss of market value to the Total Fund portfolio if certain economic events or historical scenarios were to occur.	No less than annually
16.	Risk Management	Investment Risk and Performance	Liquidity Risk – Staff will report appropriate liquidity risk metrics, including estimates for normal and market stress conditions. Measures will be reported for each asset class and the total fund.	No less than annually
17.	Divestment	Investment Controls and Operational Risk	Staff shall report to the Committee on (a) implementation activities undertaken pursuant to statutory divestment mandates from the state legislature, as applicable, and (b) any corresponding divestment decisions that may be required.	No less than annually
18.	Divestment	Investment Controls and Operational Risk	Staff shall prepare and submit to the Committee any divestment activity reports required by statute to be submitted to the California Legislature (e.g., Iran, Sudan etc.).	No less than annually
19.	Opportunistic	Opportunistic Strategies	Staff shall report on program investments, returns, risks, and activity.	No less than annually
20.	Terminated Agency Pool	Trust Level Portfolio Management	Staff shall report the current market value of assets and an analysis of the adequacy of the current program allocation to meet the forecasted benefit payment cash flows based on available data from CalPERS actuarial staff.	No less than annually

Ref #	Program	Responsible Party	Report Content	Frequency
21.	Total Fund	Investment Controls & Operational Risk	Staff shall document CalPERS Total Fund investment presence in California via a comprehensive examination of CalPERS California-based investments across asset classes and the resulting ancillary benefits from these investments. The report will assess local jobs created or supported, investments in communities of interest such as low- to moderate-income communities, areas with high unemployment, and rural communities, and the broader economic impacts resulting from CalPERS investments statewide.	No less than annually

Reporting to the Investment Committee - General Pension Consultant Responsibilities

Ref #	Program	Report Content	Frequency
1.	Total Fund	Consultant shall report on the effectiveness of the Risk Management and Asset Allocation Programs, as well as use of benchmarks relative to the Policy.	No less than annually
2.	Total Fund	Consultant shall monitor, evaluate, and report on the performance of the programs (relative to the benchmarks and other applicable CalPERS policies) within this Policy, including the: <ul style="list-style-type: none"> a. Liquidity program b. Low Duration Fixed Income program c. Securities Lending program d. Opportunistic program 	No less than annually
3.	Global Derivatives & Counterparty Risk	Consultant shall report the performance of portfolios to ensure that any derivative use does not have a long-term harmful effect on the portfolio.	No less than annually
4.	Divestment	Consultant shall present to the Committee a comprehensive review and analysis of divestment activities to date.	No less than annually

Ref #	Program	Report Content	Frequency
5.	Governance and Sustainability Strategy	The Consultant shall monitor, evaluate, and report on the progress of the CalPERS Governance and Sustainability Strategy for applicable programs, corresponding with the Annual Program Review process.	No less than annually

Reporting to the Investment Committee - Private Asset Class Board Investment Consultants Responsibilities

Ref #	Report Content (regarding CalPERS' private asset classes)	Frequency
1.	Review and provide an opinion letter to the Committee on investment policies and delegations of authority.	As needed
2.	Review and provide an opinion letter to the Committee on strategic and annual plans.	As needed
3.	Provide a report to the Committee on forecasts of asset class returns for total fund asset allocation purposes.	No less than annually
4.	Provide a report to the Committee that includes an analysis of market developments, market conditions, and macro-level view of market opportunities.	No less than annually
5.	Provide a report to the Committee regarding investment performance and portfolio risk and attribution analysis; monitor and report on deviations from policy benchmark performance and long-term expected performance.	No less than annually
6.	Review and provide an opinion letter to the Committee on appropriateness of asset class benchmarks.	No less than annually
7.	Provide an opinion letter to the Committee on investments above staff's delegation of authority.	As needed
8.	Perform annual review of program(s), including any sub-components, and provide an opinion letter to the Committee on performance, risk, manager selection and monitoring processes, and on internal control processes and staffing.	No less than annually
9.	Monitor, evaluate, and report on the progress of the CalPERS Governance and Sustainability Strategy for applicable program(s).	No less than annually

Appendix 2: Investment Program Related Responsibilities

The following tables provide details regarding investment related responsibilities for the:

- Investment Committee
- Investment Office staff
- Actuarial Office staff
- **General Pension Consultant**
- **Private Asset Class Board Investment Consultants**

Investment Program Related Responsibilities - Investment Committee

Ref #	Program	Responsibility
1.	Total Fund	Approve adoption of and oversee compliance with Investment Policies designed to achieve CalPERS strategic objectives.
2.	Total Fund	Review policy recommendations made by staff.
3.	Total Fund	Approve asset classes for investment and set a policy target allocation, permissible range, and benchmark for each asset class, expressed as a percentage of total assets.
4.	Total Fund	Set the Total Fund policy benchmarks.
5.	Divestment	If necessary, engage an independent consultant to provide an analysis of the economic impact on the portfolio of any contemplated divestment activity, to include one-time transaction costs, predicted tracking error, and risk-return trade-offs, in order to aid the Committee in determining whether divestment is both appropriate and consistent with the Board's fiduciary duties. Staff can help facilitate this process as requested.
6.	Investment Beliefs	Conduct a periodic review of the Investment Beliefs in conjunction with the cyclical 4-year Asset Liability Management process. Staff will consult with the Chair of the Committee to help facilitate this process.

Investment Program Related Responsibilities - Investment Office Staff

Ref #	Program	Responsible Party	Responsibility
1.	Total Fund	All Programs	Periodically review the policies and make recommendations to the Committee regarding new policy development, policy revisions, repeals, and any other aspect that the staff considers pertinent.
2.	Total Fund	All Programs	Engage with other asset class staff, consultants, and other pertinent parties to seek advice and counsel regarding investment strategy and investment results.
3.	Total Fund	All Programs	Develop and maintain investment procedures, program guidelines, and sub-program guidelines.

Ref #	Program	Responsible Party	Responsibility
4.	Total Fund	All Programs	Develop and maintain all procedures, investment program guidelines, and sub-program guidelines required for the management and implementation of the CalPERS Governance and Sustainability Strategy, consistent with board-approved policy.
5.	Total Fund	All Programs	Implement and adhere to all policies.
6.	Total Fund	All Programs	Undertake all aspects of program portfolio management, including investment transactions, use of leverage, and monitoring, analyzing, and evaluating performance relative to the appropriate benchmark.
7.	Total Fund	All Programs	Manage CalPERS allocations within policy ranges approved by the Committee, in accordance with policy guidelines.
8.	Total Fund	All Programs	Modify benchmarks as applicable.
9.	Asset Allocation	Trust Level Portfolio Management	Provide recommendations to the Committee concerning the identification of asset classes and selection of asset class benchmarks and policy targets and ranges based on periodic asset liability management (ALM) review.
10.	Asset Allocation	Trust Level Portfolio Management	Determine adjustments in asset class allocations, and direct rebalancing account activity and fund transfers across asset classes.
11.	Asset Allocation	Investment Risk and Performance	Staff will evaluate active risk at the Total Fund and asset class levels. Staff's evaluation will include realized five-year tracking error, and, for the PERF, forward looking tracking error, estimated with an industry-accepted risk model.
12.	Benchmarks	Investment Controls & Operational Risk	Develop and maintain procedures for the assignment and modification of benchmarks.
13.	Risk Management	Investment Risk and Performance	Select, maintain, and enhance the Total Fund risk management tools used to provide analyses that inform and support the investment actions of the entire CalPERS investment staff.
14.	Risk Management	Investment Risk and Performance	Provide analysis, such as stress testing and scenario analysis, to Investment Office staff regarding risk and performance measurement considerations for contemplated investments or strategies that could materially affect the Total Fund.
15.	Risk Management	Investment Risk and Performance	Provide consulting on the development of Investment Office Policies, procedures and guidelines with respect to the measurement, assessment, and management of investment risk.
16.	Risk Management	Investment Risk and Performance	Develop and maintain methodologies for the effective measurement of investment risk for the Total Fund.

Ref #	Program	Responsible Party	Responsibility
17.	Global Derivatives & Counterparty Risk	Trust Level Portfolio Management	Monitor the implementation of and adherence to the policy including due diligence and oversight of derivatives activities by External Managers, limited liability entities, or registered/commingled fund vehicles.
18.	Global Derivatives & Counterparty Risk	Trust Level Portfolio Management	Monitor and evaluate the use of derivatives and counterparty risk exposures across CalPERS to ensure the appropriate investment risk controls are in place.
19.	Global Derivatives & Counterparty Risk	Trust Level Portfolio Management/Asset Class Staff	Exercise thorough due diligence in assessing the scope of each LLE limited liability entity or registered/commingled fund manager's use of derivatives, their purpose, experience of the fund manager's staff in managing these positions, inherent leverage, and the manager's systems, controls, and operations for determining appropriateness of these entities for CalPERS investment.
20.	Global Derivatives & Counterparty Risk	Trust Level Portfolio Management/Asset Class Staff	Evaluate periodically (no less than annually) for any changes in the use of derivatives at each LLE limited liability entity or registered/commingled fund to reaffirm the appropriateness of these investments at inception.
21.	Divestment	Trust Level Portfolio Management and/or Asset Class/ Program Areas	Provide the Committee with an analysis of the economic impact on the portfolio of any contemplated divestment activity, or of any in-force divestments subject to review pursuant to the Divestment Section, to include one-time transaction costs, predicted tracking error, and risk-return trade-offs, in order to aid the Committee in determining whether divestment is both appropriate and consistent with the Board's fiduciary duties.
22.	Divestment	Trust Level Portfolio Management and/or Asset Class/ Program Areas	Implement any required divestments or prohibitions on future investments.
23.	Divestment	Investment Controls & Operational Risk	Staff shall present to the Committee a comprehensive review and recommendation, consistent with the Divestment Section, on all in-force divestments for the Committee's consideration and action at a minimum every five years.
24.	Divestment	Investment Controls & Operational Risk	Maintain the lists of companies subject to potential divestment.

Ref #	Program	Responsible Party	Responsibility
25.	Divestment	Investment Controls & Operational Risk	Monitor the implementation, or required reconsideration, of any divestments or prohibitions on future investments as required by the Policy.
26.	Divestment	Investment Controls & Operational Risk	As applicable in connection with a given divestment mandate, and with any proposed reinvestment in previously divested securities, implement an appropriate plan of engagement with the targeted portfolio companies.
27.	Leverage	Trust Level Portfolio Management	Develop and maintain leverage management guidelines that address allocation of Total Fund leverage across asset classes and programs, methodology for calculating and aggregating leverage including definition of cash equivalents, and permissible leverage types and strategies for asset classes and programs where investments are made.
28.	Opportunistic	Opportunistic Strategies	Responsible for management of the Opportunistic Program.
29.	Opportunistic	Trust Level Portfolio Management	Pre-approve all terms of any transfer of assets between a program account and another CalPERS account.
30.	Terminated Agency Pool	Trust Level Portfolio Management	Ensure that program rebalancing and restructuring is performed as soon as practicable following the receipt of updated forecasted benefit payment cash flows from the CalPERS Actuarial Office.
31.	Plan Level & Asset Class Transition Portfolios	Investment Servicing Division	Establish and maintain procedures regarding the use and monitoring of transition portfolios.
32.	Governance and Sustainability Strategy	Sustainable Investment Program	Support asset classes and program areas to integrate relevant sustainability and governance issues into investment, advocacy, and engagement decision making. This shall include the preparation of an annual review of systemic sustainable investment risks, such as climate change. The results of the review shall be presented to the senior leadership of the Investment Office to support investment decision-making across the fund.
33.	Governance and Sustainability Strategy	Sustainable Investment Program	Staff shall maintain a Total Fund-level Governance and Sustainability Strategic Plan approved by the Committee setting forth CalPERS' long-term objectives for the Strategy. Changes to the Strategic Plan require Committee approval.

Ref #	Program	Responsible Party	Responsibility
34.	Governance and Sustainability Strategy	Sustainable Investment Program	Obtain annual Committee approval of the Governance & Sustainability Principles.
35.	Governance and Sustainability Strategy	Global Equity	Execute all publicly traded company proxies and voting instructions in alignment with the Governance & Sustainability Principles.

Investment Program Related Responsibilities - Actuarial Office Staff

Ref #	Program	Responsibility
1.	Terminated Agency Pool	Provide a forecast of benefit payment cash flow.
2.	Terminated Agency Pool	Recalculate pool benefit payment cash flow when new agencies are added to the program.

Investment Program Related Responsibilities - General Pension Consultant

Ref #	Program	Responsibility
1.	Total Fund	Provide independent review, analysis, and recommendations regarding the development and revision of policies to ensure overall consistency, use of best practices, a system-wide approach, and implementation of CalPERS policies.
2.	Total Fund	Provide independent perspective and counsel to the Committee, to include routine communication with the Investment Office staff and periodic review of processes and procedures.
3.	Benchmarks	Monitor and evaluate the appropriate use of benchmarks related to performance of the Total Fund and Programs relative to the policy.
4.	Benchmarks	For benchmark changes and material construction rule changes that require Committee approval, review and make a recommendation regarding approval. For benchmark construction rule changes that are not material, review and approve all requests.
5.	Opportunistic	Provide oversight on behalf of the Committee for investment activities within the Opportunistic Program.

Investment Program Related Responsibilities - Private Asset Class Board Investment Consultant

1. Except as noted in number 2 below, the Private Asset Class Board Investment Consultants (PACBIC) shall not:
 - a. Manage assets for CalPERS
 - b. Perform work for staff on special projects
 - c. Provide opinions to staff regarding specific investment transactions
2. In limited circumstances, the PACBIC may be engaged for roles enumerated in number 1 above if the PACBIC possesses unique knowledge or expertise that is not available through other providers. Such an arrangement must be approved by the Committee prior to engagement. In situations where adequate time is not available to request Committee approval, staff may request approval from the Chair of the Committee. Upon approval of the request, staff will notify the other Committee members.

Additional information on responsibilities specific to the Private Equity Program and Real Assets Program is available in the tables below.

Private Equity Program Related Responsibilities

Ref #	Transaction Type/Size	Independent Due Diligence Report (not PACBIC)	Prudent Person Opinion (not PACBIC)	PACBIC Transaction Role	Opinion to the Board
1.	Fund Investments	MID discretion	Not required **	MID discretion	Not required
2.1	Co-Investment ≤\$200 million	MID discretion	MID discretion***	MID discretion	Not required
2.2	Co-Investment >\$200 million	MID discretion	Required	MID discretion	Not required
3.	Customized Investment Accounts	MID discretion	Required	MID discretion	Not required
4.	>Staff Delegated Authority	Not required	Required	Required	Required

** A **Prudent Person Opinion** is required for fund investments in the third or fourth quartile.

***For transactions between \$101 million and \$200 million the MID must receive either CIO approval or a **Prudent Person Opinion**.

Real Assets Program Related Responsibilities

Ref #	Transaction Type/Size	Independent Due Diligence Report (not PACBIC)	<i>Prudent Person Opinion</i> (not PACBIC)	PACBIC Transaction Role	Opinion to the Board
1.	≤ \$100 million	Not required	MID discretion	MID discretion	Not required
2.	>\$100 million	Not required	Required	MID discretion	Not required
3.	>Staff Delegated Authority	Not required	Required	Required	Required

Appendix 3: Investment Beliefs

The Investment Beliefs were adopted by the Committee on September 13, 2013.

1. Liabilities must influence the asset structure.

- Ensuring the ability to pay promised benefits by maintaining an adequate funding status is the primary measure of success for CalPERS.
- CalPERS has a large and growing cash requirement and inflation-sensitive liabilities; assets that generate cash and hedge inflation should be an important part of the CalPERS investment strategy.
- CalPERS cares about both income and appreciation components of total return.
- Concentrations of illiquid assets must be managed to ensure sufficient availability of cash to meet obligations to beneficiaries.

2. A long time investment horizon is a responsibility and an advantage.

Long time horizon requires that CalPERS:

- Consider the impact of its actions on future generations of members and taxpayers.
- Encourage investee companies and external managers to consider the long-term impact of their actions.
- Favor investment strategies that create long-term, sustainable value and recognize the critical importance of a strong and durable economy in the attainment of funding objectives.
- Advocate for public policies that promote fair, orderly and effectively regulated capital markets.

Long time horizon enables CalPERS to:

- Invest in illiquid assets, provided an appropriate premium is earned for illiquidity risk.
- Invest in opportunistic strategies, providing liquidity when the market is short of it.
- Take advantage of factors that materialize slowly such as demographic trends.
- Tolerate some volatility in asset values and returns, as long as sufficient liquidity is available.

3. CalPERS investment decisions may reflect wider stakeholder views, provided they are consistent with its fiduciary duty to members and beneficiaries.

- As a public agency, CalPERS has many stakeholders who express opinions on investment strategy or ask CalPERS to engage on an issue. CalPERS preferred means of responding to issues raised by stakeholders is engagement.
- CalPERS primary stakeholders are members / beneficiaries, employers and California taxpayers as these stakeholders bear the economic consequences of CalPERS investment decisions.

- In considering whether to engage on issues raised by stakeholders, CalPERS will use the following prioritization framework:
 - Principles and Policy – to what extent is the issue supported by CalPERS Investment Beliefs, Governance and Sustainability Principles or other Investment Policy?
 - Materiality – does the issue have the potential for an impact on portfolio risk or return?
 - Definition and Likelihood of Success – is success likely, in that CalPERS action will influence an outcome which can be measured? Can we partner with others to achieve success or would someone else be more suited to carry the issue?
 - Capacity – does CalPERS have the expertise, resources and standing to influence an outcome?

4. Long-term value creation requires effective management of three forms of capital: financial, physical and human.

- Governance is the primary tool to align interests between CalPERS and managers of its capital, including investee companies and external managers.
- Strong governance, along with effective management of environmental and human capital factors, increases the likelihood that companies will perform over the long-term and manage risk effectively.
- CalPERS may engage investee companies and external managers on their governance and sustainability issues, including:
 - Governance practices, including but not limited to alignment of interests.
 - Risk management practices.
 - Human capital practices, including but not limited to fair labor practices, health and safety, responsible contracting and diversity.
 - Environmental practices, including but not limited to climate change and natural resource availability.

5. CalPERS must articulate its investment goals and performance measures and ensure clear accountability for their execution.

- A key success measure for the CalPERS investment program is delivery of the long-term target return for the fund.
- The long time horizon of the fund poses challenges in aligning interests of the fund with staff and external managers.
- Staff can be measured on returns relative to an appropriate benchmark, but staff performance plans should include additional objectives or key performance indicators to align staff with the fund's long-term goals.
- Each asset class should have explicit alignment of interest principles for its external managers.

6. Strategic asset allocation is the dominant determinant of portfolio risk and return.

- CalPERS strategic asset allocation process transforms the fund's targeted rate of return to the market exposures that staff will manage.
- CalPERS will aim to diversify its overall portfolio across distinct risk factors / return drivers.
- CalPERS will seek to add value with disciplined, dynamic asset allocation processes, such as mean reversion. The processes must reflect CalPERS characteristics, such as time horizon and size of assets.
- CalPERS will consider investment strategies if they have the potential to have a material impact on portfolio risk and return.

7. CalPERS will take risk only where we have a strong belief we will be rewarded for it.

- An expectation of a return premium is required to take risk; CalPERS aims to maximize return for the risk taken.
- Markets are not perfectly efficient, but inefficiencies are difficult to exploit after costs.
- CalPERS will use index tracking strategies where we lack conviction or demonstrable evidence that we can add value through active management.
- CalPERS should measure its investment performance relative to a reference portfolio of public, passively managed assets to ensure that active risk is being compensated at the Total Fund level over the long-term.

8. Costs matter and need to be effectively managed.

- CalPERS will balance risk, return and cost when choosing and evaluating investment managers and investment strategies.
- Transparency of the total cost to manage the CalPERS portfolio is required of CalPERS business partners and itself.
- Performance fee arrangements and incentive compensation plans should align the interests of the fund, staff and external managers.
- CalPERS will seek to capture a larger share of economic returns by using our size to maximize our negotiating leverage. We will also seek to reduce cost, risk and complexity related to manager selection and oversight.
- When deciding how to implement an investment strategy, CalPERS will implement in the most cost effective manner.

9. Risk to CalPERS is multi-faceted and not fully captured through measures such as volatility or tracking error.

- CalPERS shall develop a broad set of investment and actuarial risk measures and clear processes for managing risk.
- The path of returns matters, because highly volatile returns can have unexpected impacts on contribution rates and funding status.

- As a long-term investor, CalPERS must consider risk factors, for example climate change and natural resource availability that emerge slowly over long time periods, but could have a material impact on company or portfolio returns.

10. Strong processes and teamwork and deep resources are needed to achieve CalPERS goals and objectives.

- Diversity of talent (including a broad range of education, experience, perspectives and skills) at all levels (Board, staff, external managers, corporate boards) is important.
- CalPERS must consider the government agency constraints under which it operates (e.g., compensation, civil service rules, contracting, transparency) when choosing its strategic asset allocation and investment strategies.
- CalPERS will be best positioned for success if it:
 - Has strong governance.
 - Operates with effective, clear processes.
 - Focuses resources on highest value activities.
 - Aligns interests through well designed compensation structures.
 - Employs professionals who have intellectual rigor, deep domain knowledge, a broad range of experience and a commitment to implement CalPERS Investment Beliefs.

Appendix 4: Public Employees' Retirement Fund Asset Allocation Targets & Ranges

The PERF strategic asset allocation policy targets and ranges are listed in Table 1 below.

Asset allocation target weight changes will be implemented following a Funding Risk Mitigation Event as provided in the Funding Risk Mitigation Policy.

During transitions to committee-approved policy target weights, ranges will be applied relative to interim target weights.

Table 1: Strategic Asset Allocation Targets and Ranges

Asset Class	Asset Segment	Target Allocation	Range Relative to Target Allocation
Public Equity	Total Public Equity	42%	+/-7%
	<i>Cap Weighted</i>	30%	-
	<i>Factor Weighted</i>	12%	-
Private Equity	Private Equity	13%	+/-5%
Income	Total Income	30%	+/-6%
	<i>Treasury</i>	5%	-
	<i>Mortgage-Backed Securities</i>	5%	-
	<i>Investment Grade Corporates</i>	10%	-
	<i>High Yield</i>	5%	-
	<i>Emerging Market Sovereign Bonds</i>	5%	-
Real Assets	N/A	15%	+/-5%
Private Debt	N/A	5%	+/-5%
Total Asset Exposure	N/A	105%	
Strategic Leverage	N/A	-5%	
Total		100%	

Appendix 5: Investment Benchmarks

Public Employees' Retirement Fund Policy Benchmarks

The PERF Policy Benchmark is the aggregation of the asset class and asset segment benchmarks approved by the Board. The PERF Policy Benchmark is rebalanced quarterly. The return of this benchmark is calculated by weighting each of the asset class and asset segment benchmark returns by the respective asset class policy target weight or interim target weight, provided that, for purposes of calculating the PERF Policy Benchmark return, only, the weights for the private asset classes will be adjusted to reflect actual portfolio weights with offsetting adjustments applied systematically to a combination of public market asset segments having similar long-term expected returns. The foregoing systematic adjustments will be outlined in Policy-Related Procedures (PRPs) and implemented with oversight of the General Pension Consultant and/or applicable Private Asset Class Board Investment Consultant.

Adjustments to the foregoing benchmark calculation methodology will follow a review and approval process consistent with that described in the Benchmarks section for "Benchmark Oversight."

During transitions to committee-approved policy target weights, interim target weights will be used to calculate the PERF Policy Benchmark.

Table 1: PERF Policy Benchmark

Asset Class	Asset Segment	Benchmark
Public Equity	Cap Weighted	Custom FTSE All World, All Cap Equity
Public Equity	Factor Weighted	MSCI ACWI Select Factor Weighted Index
Private Equity	N/A	Custom FTSE All World, All Cap Equity + 150bps, Quarter Lag
Income	Treasury	Custom Bloomberg Government
Income	Mortgage-Backed Securities	Custom Bloomberg Mortgage
Income	Investment Grade Corporates	Custom Bloomberg Corporate ex Sov
Income	High Yield	Custom Bloomberg High Yield
Income	Emerging Market Sovereign Bonds	Custom JP Morgan EMBIG Diversified
Real Assets	N/A	MSCI/PREA U.S. ACOE Quarterly Property Fund Index (Unfrozen)
Private Debt	N/A	S&P/LSTA U.S. Leveraged Loan 100 Index + 125 bps, Quarter Lag
Strategic Leverage	N/A	ICE BofA US 3-Month Treasury Bill Index + 50 bps

Affiliate Fund Policy Benchmarks

Affiliate Fund policy benchmarks are calculated by weighting the return of each of the asset class benchmarks by its policy target weight. Additional information on the asset allocation targets for CalPERS' Affiliate Funds is available in the statement of investment policy for each Affiliate Fund.

Table 2: California Employers' Retiree Benefit Trust Policy Benchmark

Asset Class	Benchmark
Global Equity	MSCI ACWI IMI (Net)
U.S. Fixed Income	Bloomberg Long Liability Index
Treasury Inflation-Protected Securities (TIPS)	Bloomberg U.S. TIPS Index, Series L
Commodities	S&P GSCI Total Return Daily
Real Estate Investment Trusts (REITs)	FTSE EPRA/NAREIT Developed (Net)
Liquidity	BofA Merrill Lynch U.S. 3-Month Treasury Bill Index (asset class utilized for operating cash)

Table 3: Judges' Retirement System Fund Policy Benchmark

Asset Class	Benchmark
Cash Equivalents	BofA Merrill Lynch U.S. 3-Month Treasury Bill Index

Table 4: Judges' Retirement System II Fund Policy Benchmark

Asset Class	Benchmark
Global Equity	MSCI ACWI IMI (Net)
U.S. Fixed Income	Bloomberg Long Liability Index
Treasury Inflation-Protected Securities (TIPS)	Bloomberg U.S. TIPS Index, Series L
Commodities	S&P GSCI Total Return Daily
Real Estate Investment Trusts (REITs)	FTSE EPRA/NAREIT Developed Index
Liquidity	BofA Merrill Lynch U.S. 3-Month Treasury Bill Index (asset class utilized for operating cash)

Table 5: Legislators' Retirement System Fund Policy Benchmark

Asset Class	Benchmark
Global Equity	MSCI ACWI IMI (Net)
U.S. Fixed Income	Bloomberg Long Liability Index
Treasury Inflation-Protected Securities (TIPS)	Bloomberg U.S. TIPS Index, Series L
Commodities	S&P GSCI Total Return Daily
Real Estate Investment Trusts (REITs)	FTSE EPRA/NAREIT Developed Index
Liquidity	BofA Merrill Lynch U.S. 3-Month Treasury Bill Index (asset class utilized for operating cash)

Table 6: Long-Term Care Fund Policy Benchmark

Asset Class	Benchmark
Global Equity	MSCI ACWI IMI (Net)
U.S. Fixed Income	Bloomberg Long Liability Index
Treasury Inflation-Protected Securities (TIPS)	Bloomberg U.S. TIPS Index, Series L
Commodities	S&P GSCI Total Return Daily
Real Estate Investment Trusts (REITs)	FTSE EPRA/NAREIT Developed (Net)
Liquidity	BofA Merrill Lynch U.S. 3-Month Treasury Bill Index (asset class utilized for operating cash)

Table 7: Public Employees' Health Care Fund Policy Benchmark

Asset Class	Benchmark
U.S. Fixed Income	Bloomberg U.S. Aggregate Bond Index

Table 8: Supplemental Income Plans Target Retirement Date Funds Policy Benchmark

The performance of each individual investment fund will be evaluated against its appropriate asset class benchmark.

Asset Class	Benchmark
U.S. Equity	Russell 3000 Index
International Equity	MSCI ACWI ex-USA IMI Index (Net)
U.S. Fixed Income	Bloomberg U.S. Aggregate Bond Index
U.S. Fixed Income	Bloomberg U.S. 1-3 Year Government/Credit Bond Index
Real Assets*	The benchmark is a weighted benchmark consisting of: <ul style="list-style-type: none"> ○ Dow Jones U.S. Select REIT Index ○ Bloomberg Roll Select Commodity Index ○ S&P Global Large MidCap Commodity and Resources Index ○ S&P Global Infrastructure Index ○ Bloomberg US Govt Inflation-Linked 1-10 Year Bond Index
Cash Equivalents	BofA Merrill Lynch U.S. 3-Month Treasury Bill Index

*Target weights for the Real Asset sub-strategies (commodities, natural resources, infrastructure, REITs, and TIPS) are evaluated regularly by SSgA to improve performance or address key risks. As such, the target weights can shift over time, and are expected to continue to provide strategic real asset exposure for participants.

Table 9: California Employers' Pension Prefunding Trust Policy Benchmark

Asset Class	Benchmark
Global Equity	MSCI ACWI IMI (Net)
U.S. Fixed Income	Bloomberg U.S. Aggregate Bond Index
Treasury Inflation-Protected Securities (TIPS)	Bloomberg U.S. TIPS Index, Series L
Real Estate Investment Trusts (REITs)	FTSE EPRA/NAREIT Developed (Net)
Liquidity	BofA Merrill Lynch U.S. 3-Month Treasury Bill Index (asset class utilized for operating cash)

Appendix 6: Investment Constraints & Limitations for Public Employees' Retirement Fund *Asset Allocation Strategy*

Overlay portfolios may be established to manage currency risk within the following parameters:

1. Currency overlay portfolio risk will be managed within the Total Fund Actionable Tracking Error Limit.
2. Currency overlay portfolios may only be utilized to hedge currency risk and will not decrease the net notional exposure to any one non USD underlying developed market currency (either in the portfolio or in the Policy benchmark) by more than 25%. The foregoing percentage limit restrictions do not apply to currency derivatives used to settle security transactions denominated in those foreign currencies and any authorized instrument or contract intended to manage transaction or currency exchange risk within an asset class implementation.

Total Fund Actionable Tracking Error Limit

The CalPERS Total Fund shall be managed with an active risk target consistent with forecast tracking error up to 1% relative to the Policy benchmark, inclusive of active asset allocation and other active management decisions, as calculated by the CalPERS Total Fund Risk Management System. The tracking error calculation methodology will neutralize the effect of differences between private asset holdings and their respective components in the policy benchmark.

The tracking error will be monitored regularly, and in the event of a breach, staff will inform the Board of the cause and develop a plan to move the tracking error within the target range, if deemed advisable, taking into account strategy horizon, transaction costs, and liquidity conditions.

Benchmarks

See Appendix 5

Global Derivatives & Counterparty Risk

Derivatives Risk Limitations

- A. Staff must reference the Investment Office Derivatives and Counterparty Risk Procedures Manual, and asset class investment policies for additional limitations specific to their portfolios inclusive of cash and derivatives instruments.
- B. Managers should reference their Investment Management Agreements (IMAs) including Investment Guidelines for risk limitations specific to their portfolio or to the asset class or trust for which that they are managing investments.

Investment Leverage

See the Investment Leverage section of the Policy for leverage-related constraints.

Liquidity Program

1. All securities purchased shall have a maximum final stated maturity of 15 months unless specified otherwise within Investment Policy Procedures & Guidelines for the Program.
2. Authorized nationally recognized statistical rating organizations (NRSROs) are limited to:
 - Standard & Poor's (S&P)
 - Moody's Investors Service, Inc. (Moody's)
 - Fitch Ratings (Fitch)
3. Credit Risk will be controlled by requiring minimum ratings outlined in the table below.

Asset	Minimum Credit Rating
All securities, except sovereign securities (at time of purchase)	Short Term: A2/P2/F2, or Long Term: A-/A3/A-
Sovereign securities (at the time of purchase)	Short Term: A2/P2/F2, or Long Term: Baa2/BBB/BBB

Note: In the case of a split-rated security, staff may rely upon the highest rating. If a security is not rated by an authorized NRSRO, staff's equivalent rating would apply.

Low Duration Fixed Income Program

Investment constraints/ limitations related to the Low Liquidity Enhanced Return (LLER) component of the LDFI Program are as follows:

1. Authorized NRSROs are limited to:
 - Standard & Poor's (S&P)
 - Moody's Investors Service, Inc. (Moody's)
 - Fitch Ratings (Fitch)
2. Interest Rate Risk must be controlled by limiting the LLER Program's duration to not exceed 270 days.
3. Credit Risk will be controlled by requiring minimum ratings for all securities of Baa3/BBB-/ BBB- at the time of purchase.
 - a. Credit Risk shall be actively managed on a risk/return basis.
 - b. A downgrading of a security that causes a violation in the guidelines shall not require an immediate sale if the MID of the Opportunistic Strategies Program believes that no further risk of credit deterioration exists or the sale diminishes the total return to

CalPERS. The CalPERS internal research staff shall analyze such situations to ensure that an informed decision is made.

- c. Staff shall rely on short- or long-term ratings from authorized NRSROs. In the case of a split-rated security, staff may rely upon the highest rating. If a security is not rated by authorized NRSROs, staff's equivalent rating would apply. Staff shall maintain and annually update internal ratings for securities that are not rated by any authorized NRSROs.

Opportunistic Program

A. Investment Parameters

1. The market value of program investments shall not exceed 5% of the Total Fund. Given the often illiquid and/or idiosyncratic nature of opportunistic investments, any violation of this limit due to a market dislocation in strategic policy asset classes will be assessed based on market liquidity and transaction costs when determining the time period for restoring program exposure within the limit.
2. Opportunistic investments are defined as tactical or non-traditional investment opportunities that may be short-term or may not fit within the generally accepted risk/return parameters of specific asset classes or strategy groupings. Such opportunities may involve capitalizing on short-term market dislocations or other unique situations. Investments may include strategies with allocations to single assets or across multiple asset types or other innovative approaches
3. Entry of a new strategy or liquidation of strategy (as a whole) in the Opportunistic Program will require the approval of the CIO

B. Staff Authority

Staff Authority Limits

Net Asset Value (NAV) in billions

MID, Deputy Chief Investment Officer (DCIO), and Chief Investment Officer (CIO) limits apply per each commitment to an external manager	Funds	Co-Investments	Customized Investment Account
MID	\$1.0	\$1.0	\$2.0
DCIO	\$2.0	\$2.0	\$4.0
CIO	\$3.0	\$3.0	\$6.0
MID Fiscal Year Limit*	\$7.0	\$5.0	\$6.0

*Fiscal Year Limit applies to cumulative commitments.

Securities Lending

Lending Guidelines

1. Initial Margin: The proper amount of collateralization shall be market value times the appropriate percentage for each security type.
 - a. Domestic securities – 102%
 - b. Matching currency investment for G10 domiciled issuers – 102%
 - c. All other international securities – 105%

2. Maintenance Margin: Loan collateral below these specified maintenance levels must be adjusted within the next business day and before the securities being re-lent to the same borrowers.
 - a. The maintenance margin is 102% for securities with an initial margin of 102%
 - b. The maintenance margin is 105% for securities with an initial margin of 105%

3. Non-material Margin Call: Despite the maintenance margin percentages above, non-material margin calls of \$100,000 or less need not be made as long as collateral is 101.5% or more for securities with an initial maintenance margin of 102% and 104.5% or more for securities with an initial maintenance margin of 105%.

Cash Collateral Re-Investment Guidelines

1. The duration of the collateral investment portfolio shall not differ from the duration of the outstanding loans by more than 60 days.

Liquidity Guidelines

1. A minimum of 10% of the Securities Lending cash collateral pool must be invested in securities that mature or are subject to a demand feature exercisable within one business day.
2. A minimum of 20% of the Securities Lending cash collateral pool must be invested in securities that mature or are subject to a demand feature exercisable within seven business days.*
3. A minimum of 30% of the Securities Lending cash collateral pool must be invested in securities that mature or are subject to a demand feature exercisable within thirty days.*

*The liquidity constraint includes the preceding requirement(s) as cumulative.

Terminated Agency Pool

Authorized securities for the “immunization” and surplus segments are indicated in the following table.

Segment	Authorized Securities
“Immunization”	U.S. Treasury STRIPS U.S. Treasury TIPS Cash or cash equivalents
Surplus	All securities included within the rest of the PERF

Appendix 7: CalPERS Governance & Sustainability Principles

Revised: September 16, 2019

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I. Introduction

Our mission is to “deliver retirement and health care benefits to members and their beneficiaries.” The California Public Employees’ Retirement System (CalPERS, System) is the nation's largest defined benefit public pension fund with a duty to deliver the retirement and health benefits promised to our members. This responsibility applies not just to our current beneficiaries, but also to future members who may not retire for several decades. We therefore need to ensure that our commitments can be honored over the long-term.

A vital part of this is ensuring that our investments, which fund around two-thirds of our pension payments every year, generate the highest possible returns at an acceptable level of risk. This is a task managed by the CalPERS Investment Office, overseen by the CalPERS Board of Administration, and guided by our Investment Beliefs¹ and Core Values². This responsibility is known as our Fiduciary Duty³.

Over the years the CalPERS Principles have evolved from a guide to proxy voting in public markets, to a broader statement of our views on best practices guiding our engagement with companies, advocacy agenda with policy makers, and expectations for both our internal and external managers across the total fund.

As the governance and sustainability agenda has developed, so too have the CalPERS Principles. An important area of development has been integrating consideration of environmental and social factors alongside our governance agenda. We have given an economic framework to what is often called ESG in investing. As reflected in our Investment Beliefs, CalPERS considers that long-term value creation requires the effective management of three forms of capital – Financial, Physical, and Human. This economic approach grounds our sustainable investment agenda in our fiduciary duty to generate risk-adjusted returns for our beneficiaries.

A further important area of development has been the recognition that financial markets’ safety and soundness are vitally important to CalPERS ability to achieve its risk adjusted returns. This focus on financial markets is also reflected in CalPERS’ Investment Beliefs, which recognize that a long-term investment horizon is both an advantage and a responsibility. That

¹ In September 2013, CalPERS adopted a set of ten Investment Beliefs intended to guide decision-making, facilitate the management of a complex portfolio, and enhance consistency. The Investment Beliefs can be found at www.calpers-governance.org

² Quality, Respect, Accountability, Integrity, Openness, and Balance.

³ CalPERS’ Board and its Staff have fiduciary duties of loyalty and prudence, pursuant to the [California Constitution](#), Article XVI, Section 17, to invest “with the care, skill, prudence, and diligence under the circumstances then prevailing that a prudent person acting in a like capacity and familiar with those matters would use in the conduct of an enterprise of a like character and with like aims.”

responsibility requires that CalPERS advocate for policies that support the long-term with policy makers, companies, and investment managers.

The current edition distills some 20 years of experience in governance and sustainability. We continue to develop our approach on new issues which are emerging and to refresh our thinking as we learn from experience.

CalPERS expects all internal and external managers of CalPERS capital to integrate the Principles into investment decision making, including proxy voting, consistent with CalPERS' fiduciary duty to seek the highest possible returns at an acceptable level of risk to fulfill our pension obligations. CalPERS recognizes that countries and companies are in different developmental stages. We are mindful of differing laws and practices in jurisdictions – of governance outcomes and need to be carefully addressed. CalPERS' investment managers will need to exercise their best judgment after taking all relevant factors into account.

We have learned that company managers want to perform well, in both an absolute sense and as compared to their peers. They also want to adopt long-term strategies and vision, but often do not feel that their shareowners are patient enough. Our experience has shown all companies – whether governed under a structure of full accountability or not – will inevitably experience both ascents and descents along the path of profitability.

We have also learned, and firmly embrace the belief that strong, accountable corporate governance means the difference between long periods of failure in the depths of the performance cycle, and responding quickly to correct the corporate course.

This work has been integrated into CalPERS Investment Beliefs which address sustainable investment, risk management, and CalPERS engagement with companies, regulators, managers, and stakeholders.

We recognize that much of our experience in this area comes from investments in public equities but that our evolution to a "Total Fund" approach means these Principles may need to be suitably adapted to work across other asset classes. We continue to listen and learn in this area.

We encourage and welcome feedback on these Principles from companies, fellow investors and other stakeholders. You can submit your feedback here:

<https://www.calpers.ca.gov/page/contact/questions-comments-complaints>.

II. Purpose

These Principles have been adopted by the CalPERS Board, through its Investment Committee, in order to create the framework for considerations that must be taken into account when we participate in any of the following actions:

- Executes our shareowner proxy voting responsibilities

- Engage investee companies to achieve long-term sustainable risk-adjusted returns
- Requests internal and external managers of our capital to make investment decisions on our behalf
- Advocate with policy-makers and international organizations on financial market reform.

Proxy Voting

We implement our proxy voting responsibility in a manner that is consistent with these Principles unless such action may result in long-term harm to the company that outweighs all reasonably likely long-term benefit; or unless such a vote is contrary to the interests of the beneficiaries of the System.

It is therefore important for shareowners such as CalPERS to exercise their rights to participate and make their voting decisions based on a full understanding of the information and legal documentation presented to them. Our proxy voting responsibilities cover a wide range of corporate governance issues centered around various management and shareowner proposals. Specific voting topics may include board quality, investor rights, executive compensation, corporate reporting, capital structure, environmental and social related issues. When exercising our voting rights, we will cast votes “for” or “against”, individual management and shareowner proposals consistent with the interest of our beneficiaries and consistent with the Principles.

We will vote “against”, an individual or slate of director nominees at companies that do not effectively oversee these interests. We will also withhold our vote in limited circumstances where a company has consistently demonstrated long-term economic underperformance.

As part of our commitment to transparency, we publish our proxy voting activities at over 11,000 companies’ annual general meetings.

Shareowner Engagement

We have a long history of constructively engaging companies confidentially through in-person meetings, correspondence, and by telephone. In instances where companies fail to meet the standards of conduct defined by our Principles, we may file shareowner proposals to achieve governance reforms.

We prefer constructive engagement to divesting as a means of affecting the conduct of the entities in which we invest. This is because investors that divest lose their ability as shareowners to positively influence the company’s strategy and governance.

Advocacy

We engage policy makers on regulatory and legislative reforms which support the Principles. We work directly and through our federal representatives and also partner with organizations, both domestically and internationally, to further our goals.

III. Governance & Sustainability Principles

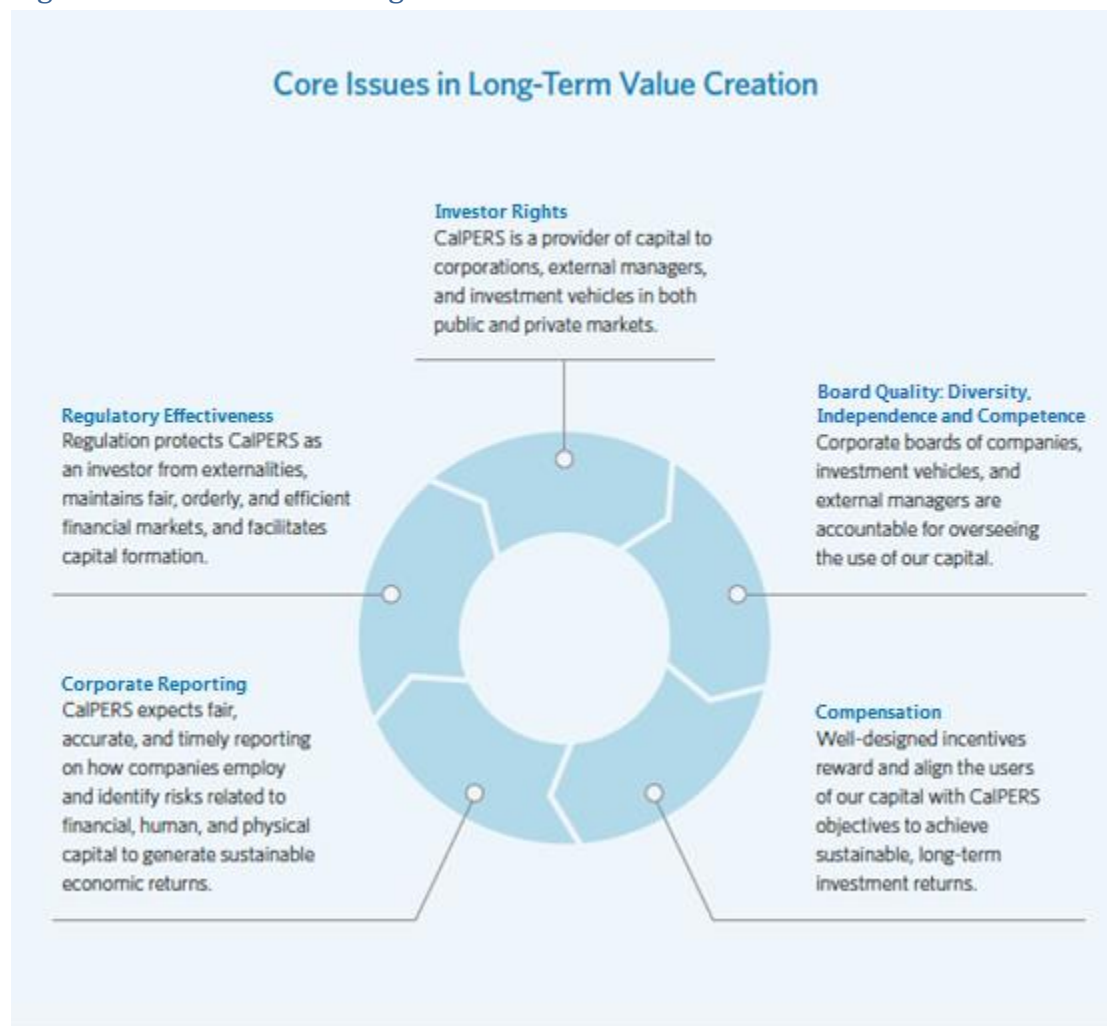
We believe that fully accountable governance structures produce, over the long term, the best returns to shareowners. So while we recognize that governance best practices are constantly evolving, we believe the following accountable governance structures provide the underlying tenets that should be adopted by all companies and markets – both developed and emerging – to establish the foundation for achieving long-term sustainable investment returns.

In particular we have identified five core issues that we believe have a long-term impact on risk and return:

- A. Investor Rights
- B. Board Quality: Diversity, Independence and Competence
- C. Executive, Director and Employee Compensation
- D. Corporate Reporting
- E. Regulatory Effectiveness

As demonstrated in Figure 1 below, it is important to recognize that we believe that managing these five issues is mutually reinforcing. Approaches that only tackle some areas and not others would not be compatible with these Principles.

Figure 1: Core Issues in Long-Term Value Creation



A. Investor Rights

CalPERS is a provider of capital to corporations, external managers, and investment vehicles in both public and private markets – investor rights protect CalPERS interests.

We recommend that corporations adopt the following shareowner rights:

1. **One-share/one-vote:** A shareowner's right to vote is irrevocable and cannot be reduced. All investors must be treated equitably and upon the principle of one-share/one-vote.
 - a. **Redress:** Minority shareowners should be protected from abusive actions by, or in the interest of, controlling shareowners acting either directly or indirectly, and should have effective means of redress. Proper remedies and procedural rules should be put in place to make the protection effective and affordable. Where

national legal remedies are not afforded the board is encouraged to ensure that sufficient shareowner protections are provided in the company's bylaws.

2. **Access to Director Nominations:** Shareowners should have effective access to the director nomination process. Companies should provide access to management proxy materials for a long-term investor or group of long-term investors owning in aggregate at least three percent of a company's voting stock, to nominate up to 25 percent of the board. Eligible investors must have owned the stock for at least three years. Company proxy materials and related mailings should provide equal space and equal treatment of nominations by qualifying investors.

To allow for informed voting decisions, it is essential that investors have full and accurate information about access mechanism users and their director nominees. Therefore, shareowners nominating director candidates under an access mechanism should adhere to the same SEC rules governing disclosure requirements and prohibitions on false and misleading statements that currently apply to proxy contests for board seats.

3. **Shareowner Approval Rights:** The board should ensure that shareowners have the right to vote on major decisions which may change the nature of the company in which they have invested. Such rights should be clearly described in the company's governing documents and include:
 - a. **Sale or Pledge of Corporate Assets:** Major corporate decisions concerning the sale or pledge of corporate assets that would have a material effect on shareowner value. Such a transaction will automatically be deemed to have a material effect if the value of the assets exceeds 10 percent of the assets of the company and its subsidiaries on a consolidated basis.
 - b. **Mergers and Acquisitions:** Material and extraordinary transactions such as material mergers and acquisitions.
 - c. **Debt Issuance:** Issuing debt to a degree that would excessively leverage the company and endanger its long-term viability.
 - d. **Share Repurchases (buy-backs):** The corporation's acquisition of five percent or more of its common shares at above-market prices other than by tender offer to all shareowners.
 - e. **Issuance of New Shares:** The board should be mindful of dilution of existing shareowners and provide full explanations where pre-emption rights are not offered.
 - f. **Poison Pill Approval:** No board should enact nor amend a poison pill (shareowner rights plan) except with shareowner approval or other structures that act as anti-takeover mechanisms. Only non-conflicted shareowners should

be entitled to vote on such plans and the vote should be binding. Plans should be time limited and put periodically to shareowners for re-approval.

- i. **Continuing Directors:** Corporations should not adopt so-called “continuing director” provisions (also known as “dead-hand” or “no-hand” provisions, which are most commonly seen in connection with a potential change in control of the company) that allow board actions to be taken only by: (1) those continuing directors who were also in office when a specified event took place or (2) a combination of continuing directors plus new directors who are approved by such continuing directors.
- g. **Significant Related Party Transaction:** Shareowners should have the right to approve significant related party transactions and this should be based on the approval of a majority of disinterested shareowners. The board should submit the transaction for shareowner approval and disclose (both before concluding the transaction and in the company’s annual report):
 - a. the identity of the ultimate beneficiaries including, any controlling owner and any party affiliated with the controlling owner with any direct / indirect ownership interest in the company
 - b. other businesses in which the controlling shareowner has a significant interest
 - c. Shareowner agreements (e.g. commitments to related party payments such as license fees, service agreements and loans).

The board should disclose the process for reviewing and monitoring related party transactions which, for significant transactions, includes establishing a committee of independent directors. This can be a separate committee or an existing committee comprised of independent directors, for example the Audit Committee. The committee should review significant related party transactions to determine whether they are in the best interests of the company and, if so, to determine what terms are fair and reasonable. The conclusion of committee deliberations on significant related party transactions should be disclosed in the company’s annual report to shareowners.

- 4. **Majority Vote Requirements:** Shareowner voting rights should not be subject to supermajority voting requirements, except in situations where they are intended to protect minority shareowners; especially in situations where there are unequal voting rights. A majority of proxies cast should be able to accomplish the following:
 - a. **Bylaw and Charter Amendments:** Amend the company’s governing documents such as the Bylaws and Charter by shareowner resolution.
 - b. **Director Removal:** Remove a director with or without cause.

- c. **Director Elections:** In an uncontested director election, a majority of proxies cast should be required to elect a director. In a contested election, a plurality of proxies cast should be required to elect a director. Resignation for any director that receives a withhold vote greater than 50 percent of the votes cast should be required. Unless the incumbent director receiving less than a majority of the votes cast has earlier resigned, the term of the incumbent director should not exceed 90 days after the date on which the voting results are determined.
 - d. **Auditor Ratification by Shareowners:** The selection of the independent external auditor should be ratified by shareowners annually.
5. **Corporate Proxy and Voting Mechanisms:** The board should promote efficient and accessible voting mechanisms that allow shareowners to participate in general meetings either in person or remotely, preferably by electronic means or by post, and should not impose unnecessary hurdles.
- a. **Universal Proxy:** To facilitate the shareowner voting process in contested elections – opposing sides engaged in the contest should utilize a proxy card naming all management nominees and all dissident nominees, providing every nominee equal prominence on the proxy card.
 - b. **Sponsoring and Implementation of Shareowner Resolutions:** Shareowners should have the right to sponsor resolutions. A shareowner resolution that is approved by a majority of proxies cast should be implemented by the board.
 - c. **Proxy Confidentiality:** Proxies should be kept confidential from the company, except at the express request of shareowners.
 - d. **Cumulative Voting Rights:** Shareowners should have the right to combine votes in a contested election of directors. Such a right gives shareowners the ability to combine their votes for directors and either cast all of those votes for one candidate or distribute those votes for any number of candidates.
 - e. **Shareholder Identification:** The board should ensure that the company maintains a record of the registered owners of its shares or those holding voting rights over its shares. Registered shareowners, or their agents, should provide the company (where anonymity rules do not preclude this) with the identity of beneficial owners or holders of voting rights when requested in a timely manner. Shareowners should be able to review this record of registered owners of shares or those holding voting rights over shares.
 - f. **Bundled Voting:** Shareowners should be allowed to vote on unrelated issues separately. Individual voting issues (particularly those amending a company’s charter), bylaws or anti-takeover provisions should not be bundled.

- g. **Broker Votes:** Uninstructed broker votes and abstentions should be counted only for purposes of a quorum, or the minimum number of members necessary to make a decision.
 - h. **Advance Notice, Holding Requirements and Other Provisions:** Advance notice bylaws, holding requirements, disclosure rules, and any other company imposed regulations on the ability of shareowners to solicit proxies beyond those required by law should not be so onerous as to deny sufficient time, limit the pool of eligible candidates, or otherwise make it impractical for shareowners to submit nominations or proposals and distribute supporting proxy materials.
6. **Special Meetings and Written Consent:** Shareowners should be able to call special meetings or act by written consent.
 7. **Judicial Forum:** Companies should not attempt to restrict the venue for shareowner claims by adopting charter or bylaw provisions that seek to establish an exclusive forum. Nor should companies attempt to bar shareowners from the courts through the introduction of forced arbitration clauses.

B. Board Quality: Diversity, Independence and Competence

Corporate boards of companies, investment vehicles and external managers must be accountable for overseeing the use of our capital.

1. **Director Accountability:** As a fiduciary, a director owes a duty of loyalty to the corporation and its shareowners and must exercise reasonable care in relation to his or her duties as a director. Directors should be accountable to shareowners, and management accountable to directors.
 - a. **Long-term Vision:** Corporate directors and management should have a long-term strategic vision that, at its core, emphasizes sustained shareowner value and effective management of both risk and opportunities in the oversight of financial, physical, and human capital. In turn, despite differing investment strategies and tactics, shareowners should encourage corporate management to resist short-term behavior by supporting and rewarding long-term superior returns.
 - b. **Accessibility to Shareowner Inquiry:** To ensure this accountability, directors must be accessible to shareowner inquiry concerning their key decisions affecting the company's strategic direction.
 - c. **Annual Director Elections:** Every director should be elected annually. Accountability mechanisms may require directors to stand for election on an annual basis or to stand for election at least once every three years.
 - d. **Board Size:** The board periodically reviews its own size, and determines the size that is most effective toward future operations.

- e. **Director Attendance:** Without compelling and stated reasons, directors should be expected to attend at least 75 percent of the board and key committee meetings on which they sit.
 - f. **Director Time Commitment:** The board adopts and discloses guidelines in the company's proxy statement to address competing time commitments that are faced when directors, especially acting CEOs, serve on multiple boards.
2. **Informed Directors:** Directors should receive training from independent sources on their fiduciary responsibilities and liabilities. Directors have an affirmative obligation to become and remain independently familiar with company operations; they should not rely exclusively on information provided to them by the CEO to do their jobs. Directors should be provided meaningful information in a timely manner prior to board meetings and should be allowed reasonable access to management to discuss board issues.
- a. **Board Access to Management:** The board should have a process in place by which all directors can have access to senior management.
 - b. **New Director Induction:** The board should have in place a formal process of induction for all new directors so that they are well-informed about the company as soon as possible after their appointment. Directors should also be enabled to regularly refresh their skills and knowledge to discharge their responsibilities.
3. **Board Independence:** Independence is the cornerstone of accountability. It is now widely recognized that independent boards are essential to a sound governance structure. Nearly all corporate governance commentators agree that boards should be comprised of at least a majority of "independent directors." But the definitional independence of a majority of the board may not be enough in some instances. The leadership of the board must embrace independence, and it must ultimately change the way in which directors interact with management. Independence also requires a lack of conflict between the director's personal, financial, or professional interests, and the interests of shareowners.
- a. **Majority of Independent Directors:** At a minimum, a majority of the board consists of directors who are independent. Boards should strive to obtain board composition made up of a substantial majority of independent directors.
 - b. **Independent Executive Session:** Independent directors should meet periodically (at least once a year) alone in an executive session, without the CEO. The independent board chair or lead (or presiding) independent director should preside over this meeting.
 - c. **Board Role of Retiring CEO:** Generally, a company's retiring CEO should not continue to serve as a director on the board and at the very least be prohibited from sitting on any of the board committees.

4. **Board Committee Independence:** The full board is responsible for the oversight function on behalf of shareowners. Should the board decide to have other committees (e.g. an executive committee) in addition to those required by law, the duties and membership of such committees should be fully disclosed. Committees who perform the audit, director nomination and executive compensation functions should consist entirely of independent directors. The board (not the CEO) should appoint the committee chairs and members. Committees should be able to select their own service providers to access independent sources of knowledge and experience. Some regularly scheduled committee meetings should be held with only the committee members (and, if appropriate, the committee's independent consultants) present. The process by which committee members and chairs are selected should be disclosed to shareowners.
5. **Board Chairperson Independence and Leadership:** The board should be chaired by an independent director. The chair is responsible for leadership of the board and ensuring its effectiveness. The chair should ensure a culture of openness and constructive debate that allows a range of views to be expressed. The CEO and chair roles should only be combined in very limited circumstances; in these situations, the board should provide a written statement in the proxy materials discussing why the combined role is in the best interest of shareowners, and it should name a lead independent director to fulfill the following duties:
 - a. Coordinate the scheduling of board meetings and preparation of agenda material for board meetings and executive sessions of the board's independent or non-management directors.
 - b. Lead board meetings in addition to executive sessions of the board's independent or non-management directors.
 - c. When selecting a new CEO, boards should re-examine the traditional combination of the "chief executive" and "chair" positions.
 - d. Define the scope, quality, quantity and timeliness of the flow of information between company management and the board that is necessary for the board to effectively and responsibly perform their duties.
 - e. Oversee the process of hiring, firing, evaluating, and compensating the CEO.
 - f. Approve the retention of consultants who report directly to the board.
 - g. Advise the independent board committee chairs in fulfilling their designated roles and responsibilities to the board.
 - h. Interview, along with the chair of the nominating committee, all board candidates, and make recommendations to the nominating committee and the board.

- i. Assist the board and company officers in assuring compliance with and implementation of the company's Governance Principles.
 - j. Act as principal liaison between the independent directors and the CEO on sensitive issues.
 - k. Coordinate performance evaluations of the CEO, the board, and individual directors.
 - l. Recommend to the full board the membership of the various board committees, as well as selection of the committee chairs.
 - m. Be available for communication with shareowners.
6. **Director Independence:** The board should ensure that policies and procedures on conflicts of interest are established, understood and implemented by directors, management, employees and other relevant parties. If a director has an interest in a matter under consideration by the board, then the director should promptly declare such an interest and be precluded from voting on the subject or exerting influence. Each company should disclose in its annual proxy statement the definition of "independence" relied upon by its board. The board's definition of "independence" should address, at a minimum, a director who:
- a. Is not currently, or within the last five years has not been, employed by the Company in an executive capacity.
 - b. Has not received more than \$50,000 in direct compensation from the Company during any 12-month period in the last three years other than:
 - i. Director and committee fees including bona fide expense reimbursements.
 - ii. Payments arising solely from investments in the company's securities.
 - c. Is not affiliated with a company that is an adviser or consultant to the Company or a member of the Company's senior management during any 12-month period in the last three years that has received more than \$50,000 from the Company.
 - d. Is not a current employee of a company (customer or supplier) that has made payments to, or received payments from the Company that exceed the greater of \$200,000 or 2 percent of such other company's consolidated gross revenues.
 - e. Is not affiliated with a not-for-profit entity (including charitable organizations) that receives contributions from the Company that exceed the greater of \$200,000 or 2 percent of consolidated gross revenues of the recipient for that year.
 - f. Is not part of an interlocking directorate in which the CEO or other employee of the Company serves on the board of another company employing the director.
 - g. Has not had any of the relationships described above with any parent or subsidiary of the Company.
 - h. Is not a member of the immediate family of any person described in 6a-h.

7. **Board Responsibilities:** The board responsibilities should include the following:
 - a. **CEO Performance:** Independent directors establish CEO performance criteria focused on optimizing operating performance, profitability and shareowner value creation; and regularly review the CEO's performance against those criteria.
 - b. **Corporate Strategy:** Review, approve and guide corporate strategy, capital discipline and allocation, major plans of action, risk policies, and business plans.
 - a. **Capital Allocation Discipline:** Boards should provide shareowners with robust oversight and disclosure surrounding capital allocation decisions, including optimizing the capital structure to ensure discipline in prioritizing the most productive use of capital over the long-term. We recommend the following:
 - i. **Policy:** The board should develop and disclose its policy on capital allocation that outlines the application of discretionary cash flows for organic growth projects, investments, strategic mergers and acquisitions, cash and scrip dividends, debt repayment, and share repurchases. The board should also communicate its philosophy on the use of debt leverage.
 - ii. **Board Monitoring and Assessment:** The board should monitor capital allocation decisions and the range of capital allocation alternatives and their corresponding risks.
 - iii. **Disclosure:** The board should disclose the following details in regulatory filings:
 - i. The board's role in overseeing capital allocation decisions and how each decision aligns with the company's strategic priorities for investment to ensure long-term value creation
 - ii. The controls and metrics in place to monitor capital allocation decisions
 - iii. The impact on performance targets in executive compensation plans
 - iv. The board's measures to address potential conflicts of interest with incentives impacted by capital allocation decisions, such as share buybacks.
 - c. **Corporate Performance:** Set performance objectives, monitor implementation and corporate performance, and oversee major capital expenditures, and acquisitions/divestitures.
 - d. **Corporate Culture:** Boards should have an active role in setting a high-performance corporate culture, which includes: respectful treatment of

employees; efforts to promote diversity, inclusion and innovation; providing a workplace free of sexual harassment and other forms of harassment; fostering trust between employees and management; and promoting ownership and accountability for an ethical corporation.

- i. **Policy:** The board should develop and disclose its efforts towards establishing effective corporate culture, including its anti-harassment policy, and the mechanisms through which the board learns about employee complaints, how the claims are addressed, and the actions taken. CalPERS supports voluntary arbitration in company policies.
- ii. **Board Oversight:** Boards should have oversight of the following:
 - a) Review of the company's policies, practices and executive responsibilities related to corporate culture
 - b) Review of the potential risks related to corporate culture, including all forms of harassment
 - c) Implementation of effective corporate culture
- iii. **Disclosure:** Companies should ensure all settlements are reported to the Board. Financial-reporting standard setters generally require disclosure of material settlements, including those involving sexual harassment. CalPERS supports disclosure of settlements, including those related to sexual harassment, involving an executive or member of the board or at any level within the company when a pattern of behavior is demonstrated.
- e. **Corporate Annual Report and Accounts:** Affirm that the company's annual report and accounts present a true and fair view of the company's position and prospects. As appropriate, taking into account statutory and regulatory obligations in each jurisdiction, the information provided in the annual report and accounts should comply with the following:
 - i. be relevant to investment decisions, enabling shareowners to evaluate risks, past and present performance, and to draw inferences regarding future performance;
 - ii. enable shareowners, who put up the risk capital, to fulfill their responsibilities as owners to assess company management and the strategies adopted
 - iii. be a faithful representation of the events it purports to represent
 - iv. generally be neutral and report activity in a fair and unbiased way except where there is uncertainty (prudence should prevail such that assets and income are not overstated and liabilities and expenses are not understated; there should be substance over form; any off-balance sheet items should be appropriately disclosed)

- v. be verifiable so that when a systematic approach and methodology is used the same conclusion is reached
- vi. be presented in a way that enables comparisons to be drawn of both the entity's performance over time and against other entities
- vii. recognize the 'matching principle', which requires that expenses are matched with revenues.
- viii. recognize the establishment and maintenance of an effective system of internal control which should be measured against internationally accepted standards of internal audit and tested periodically for its adequacy (where an internal audit function has not been established, full reasons for this should be disclosed in the annual report, as well as an explanation of how adequate assurance of the effectiveness of the system of internal controls has been obtained)
- f. **Reincorporation:** When considering reincorporation, corporations should analyze shareowner protections, company economic, capital market, macro-economic, and corporate governance considerations. Companies should not reincorporate to offshore locations where corporate governance structures are weaker, which reduces management accountability to shareowners.
- g. **Charitable and Political Contributions:** Robust board oversight and disclosure of corporate charitable and political activity is needed to ensure alignment with business strategy and to protect assets on behalf of shareowners. We recommend the following:
 - i. **Policy:** The board should develop and disclose a policy that outlines the board's role in overseeing corporate charitable and political contributions (including direct or indirect⁴ lobbying and grassroots lobbying communications⁵), the terms and conditions under which charitable and political contributions are permissible, and the process for disclosing charitable and political contributions annually.
 - ii. **Board Monitoring, Assessment and Approval:** The board of directors should monitor charitable and political contributions (including direct or indirect lobbying and grassroots lobbying communications) made at the local, state, and federal levels by the company. The board should ensure that only

⁴ "Indirect lobbying" is lobbying activities engaged in by a trade association or other organization of which the company is a member or a financial contributor.

⁵ "Grassroots lobbying communication" is a communication directed to the general public that (a) refers to specific legislation or regulation, (b) reflects a view on the legislation or regulation and (c) encourages the recipient of the communication to take action with respect to the legislation or regulation.

contributions consistent with and aligned to the interests of the company and its shareowners are approved.

- iii. **Disclosure:** The board should disclose on an annual basis the amounts and recipients of monetary and non-monetary contributions made by the company at the local, state, and federal levels during the prior fiscal year. If any expenditure earmarked or used for political or charitable activities were provided to or through a third-party to influence elections of candidates or ballot measures or governmental action, then those expenditures should be included in the report.

- 8. **Board, Committee, and Director Evaluation:** No board can truly perform its function of overseeing a company's strategic direction and monitoring management's success without a system of evaluating itself. The board should establish preparation, participation and performance expectations for itself (acting as a collective body), for the key committees and each of the individual directors. A process by which these established board, key committee and individual director expectations are evaluated on an annual basis should be disclosed to shareowners. Directors must satisfactorily perform based on the established expectations with re-nomination based on any other basis being neither expected nor guaranteed.
- 9. **Board Talent Assessment and Diversity:** The board should facilitate a process that ensures a thorough understanding of the diverse characteristics necessary to effectively oversee management's execution of a long-term business strategy. Board diversity should be thought of in terms of skill sets, gender, age, nationality, race, sexual orientation, gender identity, disability, and historically under-represented groups. Consideration should go beyond the traditional notion of diversity to include a more broad range of experience, thoughts, perspectives, and competencies to help enable effective board leadership. A robust process for how diversity is considered when assessing board talent and diversity should be adequately disclosed and include the following:
 - a. **Director Talent Evaluation:** To focus on the evolving global capital markets, a board should disclose its process for evaluating the diverse talent and skills needed on the board and its key committees.
 - b. **Director Attributes:** Board attributes should include a range of skills and experience which provide a diverse and dynamic team to oversee business strategy, risk mitigation and senior management performance. The board should establish and disclose a diverse mix of director attributes, experiences, perspectives and skill sets that are most appropriate for the company. Collectively, director attributes should include expertise in at least the following areas: accounting or finance, international markets, business, human capital

management, industry knowledge, governance, customer-base experience or perspective, crisis response, leadership, strategic planning, and competence managing multifaceted risk – including expertise and experience in climate change and other environmental risk management strategies, where material to business model or operations. Additionally, existing directors should receive continuing education regarding a company’s activities and operations to ensure the board maintains the necessary skill sets and knowledge to meet its fiduciary responsibilities.

- c. **Director Nominations:** With each qualified director nomination recommendation, the board should consider the issue of competence, independence, continuing director tenure, as well as board diversity, and take steps as necessary to ensure that the board maintains openness to new ideas, a willingness to re-examine the status quo, and ability to exercise judgment in the best interests of the corporation free of any external influence that may attempt to be or may appear to be exerted upon them.
 - d. **Director Tenure:** Boards should consider all relevant facts and circumstances to determine whether a director should be considered independent – these considerations include the director’s years of service on the board – extended periods of service may adversely impact a director’s ability to bring an objective perspective to the boardroom. We believe director independence can be compromised at 12 years of service – in these situations a company should carry out rigorous evaluations to either classify the director as non-independent or provide a detailed annual explanation of why the director can continue to be classified as independent. Additionally, there should be routine discussions as part of a rigorous evaluation and succession planning process surrounding director refreshment to ensure boards maintain the necessary mix of skills, diversity, and experience to meet strategic objectives.
 - e. **Diversity Disclosure:** Boards should annually disclose their demographic information including race, ethnicity and gender. Ideally, companies should disclose their Employer Information Report, known as the EEO-1 report, or similar workforce demographic data to enable shareowners to assess the board’s diversity relative to its workforce and compare companies in similar industries.
10. **Role of the Audit Committee:** At least one member of the Audit Committee should have recent and relevant financial experience. The main role and responsibilities of the Audit Committee should be described in the committee’s terms of reference including the following:

- a. **Auditor Liability:** To strengthen the auditor's objective and unbiased audit of financial reporting, audit committees should ensure that contracts with the auditor do not contain specific limits to the auditor's liability to the company for consequential damages or require the corporation to use alternative dispute resolution.
- b. **Auditor Selection:** Audit committees should promote expanding the pool of auditors considered for the annual audit to help improve market competition and thereby minimize the concentration of only a small number of audit firms from which to engage for audit services. To allow audit committees a robust foundation to determine audit firm independence, auditors should provide three prior years of activities, relationships, and services (including tax services) with the company, affiliates of the company and persons in financial reporting oversight roles that may impact the independence of the audit firm.
- c. **Auditor Rotation:** Audit committees should promote rotation of the auditor to ensure a fresh perspective and review of the financial reporting framework.
- d. **Audit Committee Communication with Auditor:** The auditor should articulate to the Audit Committee, risks and other matters arising from the audit that are significant to the oversight of the financial reporting process, including situations where the auditor is aware of disputes or concerns raised regarding accounting or auditing matters. The Audit Committee should consider providing to investors a summary document of its discussions with auditors to enhance investor confidence in the audit process.
- e. **Monitoring the integrity of the accounts:** And any formal announcements relating to the company's financial performance, and reviewing significant financial reporting judgments contained in them.
- f. **Oversight of key accounting policies and accounting judgments:** Which should be in accordance with generally accepted international accounting standards, and disclosing such policies in the notes to the company's accounts.
- g. **Audit Scope:** Agreeing to the minimum scope of the audit as prescribed by applicable law and any further assurance that the company needs. Shareowners (who satisfy a reasonable threshold shareholding) should have the opportunity to expand the scope of the forthcoming audit or discuss the results of the completed audit should they wish to.
- h. **Auditor Independence:** Assuring itself of the quality of the audit carried out by the external auditors and assessing the effectiveness and independence of the auditor each year. This includes overseeing the appointment, reappointment and, if necessary, the removal of the external auditor and the remuneration of the auditor. There should be transparency in advance when the audit is to be

tendered so that shareowners can engage with the company in relation to the process should they so wish.

- i. **Auditor Dialogue:** Having appropriate dialogue with the external auditor without management present and overseeing the interaction between management and the external auditor, including reviewing the management letter provided by the external auditors and overseeing management's response; and reporting on its work and conclusions in the annual report.
- j. **Assertion of Internal Financial Controls:** The Audit Committee should require the auditor's opinion to include commentary on any management assertion that the system of internal financial controls is operating effectively and efficiently, that assets are safeguarded, and that financial information is reliable as of a specific date, based on a specific integrated framework of internal controls.
- k. **Audit Committee Expertise:** Audit Committee financial expertise at a minimum should include skill-sets as outlined by Section 407(d)(5)(i) of Regulation S-K and the Exchange listing requirements. Boards should consider the effectiveness of the Audit Committee and designated financial expert(s) in its annual assessment. Firms may be able to reduce their cost of capital as related to the quality of its financial reporting. The quality of financial reporting can be increased by appropriately structuring the Audit Committee with effective financial expertise.
- l. **Annual Reporting:** Disclosures in the annual reporting must include the following:
 - i. Assessment of the independence and objectivity of the external auditor to assure the auditors and their staff have no financial, business, employment or family and other personal relationships with the company
 - ii. Assessment of the appropriateness of total fees charged by the auditors;
 - iii. Assessment of non-audit services and fees charged including limitations or restrictions tied to the provision of non-audit services
 - iv. Explanation of why non-audit services were provided by the auditor rather than by another party and how the auditor's independence has been safeguarded;
 - v. Rational for recommending the appointment, reappointment or removal of the external auditor, including information on tendering frequency, tenure, and any contractual obligations that acted to restrict the choice of external auditors
 - vi. Auditor rotation period
 - vii. Assessment of issues which resulted in an auditor resignation
 - viii. Assessment of all relationships between the registered public accounting firm or any affiliates of the firm and the potential audit clients or persons in

a financial reporting oversight role that may have a bearing on independence.

11. **Role of the Nomination Committee:** The main role and responsibilities of the nomination committee should be described in the committee's terms of reference including the following:
- a. **Skills Matrix:** Developing a skills matrix, by preparing a description of the desired roles, experience and capabilities required for each appointment, and then evaluating the composition of the board.
 - b. **Board Appointments:** Leading the process for board appointments and putting forward recommendations to shareowners on directors to be elected and re-elected.
 - c. **Director Conflicts of Interest:** Upholding the principle of director independence by addressing conflicts of interest (and potential conflicts of interest) among committee members and between the committee and its advisors during the nomination process.
 - d. **Independent Consultants:** Considering and being responsible for the appointment of independent consultants for recruitment or evaluation including their selection and terms of engagement and publicly disclosing their identity and consulting fees.
 - e. **Shareowner Dialogue:** Entering into dialogue with shareowners on the subject of board nominations either directly or via the board
 - f. **Board Succession Planning:** The board should implement and disclose a board succession plan that involves preparing for future board retirements, committee assignment rotations, committee chair nominations and overall implementation of the company's long-term business plan. Boards should establish clear procedures to encourage and consider board nomination suggestions from long-term shareowners. The board should respond positively to shareowner requests seeking to discuss incumbent and potential directors.
12. **Role of the Compensation Committee:** The main role and responsibilities of the compensation committee should be described in the committee terms of reference including the following:
- a. **Compensation Philosophy:** Determining and recommending to the board the remuneration philosophy and policy of the company.
 - b. **Oversight of Plan Design, Implementation, Monitoring and Evaluation:** Short-term and long-term share-based incentives and other benefits schemes including pension arrangements, for all executive officers.
 - c. **Director Conflicts of Interest:** Ensuring that conflicts of interest among committee members and between the committee and its advisors are avoided.

- d. **Independent Consultants:** Appointing any independent remuneration consultant including their selection and terms of engagement and disclosing their identity and consulting fees; and
 - e. **Shareowner Dialogue:** Maintaining appropriate communication with shareowners on the subject of remuneration, either directly or via the board.
13. **Risk Oversight:** In response to the turmoil in the financial markets and economic uncertainties, CalPERS has elevated the importance of risk oversight and management. The primary goal is to ensure companies adopt policies, operating procedures, internal controls, federal and state law compliance programs, reporting, and decision-making protocols to effectively manage, evaluate, and mitigate risk. The ultimate outcome is to ensure that companies function as “risk intelligent” organizations. We recommend the following:
- a. The board is ultimately responsible for a company’s risk management philosophy, organizational risk framework and oversight. The board should be comprised of skilled directors with a balance of broad business experience and extensive industry expertise to understand and question the breadth of risks faced by the company. Risk management should be considered a priority and sufficient time should be devoted to oversight.
 - b. The company should promote a risk-focused culture and a common risk management framework should be used across the entire organization. Frequent and meaningful communication should be considered the “cornerstone” for an effective risk framework. A robust risk framework will facilitate communication across business units, up the command chain and to the board. The company’s culture with regard to risk and the process by which issues are escalated and de-escalated within the company should be evaluated at intervals as appropriate to the situation.
 - c. The board should set out specific risk tolerances and implement a dynamic process that continuously evaluates and prioritizes risks. An effective risk oversight process considers both internal company related risks such as operational, financial, credit, solvency, liquidity, corporate governance, cyber-security, environmental, reputational, social, product safety and external risks such as geopolitical, industry related, systemic, and macro-economic.
 - d. Compensation practices should be evaluated to ensure alignment with the company’s risk tolerances and that compensation structures do not encourage excessive risk taking.
 - e. At least annually, the board should approve a documented risk management plan and disclose sufficient information to enable shareowners to assess whether the board is carrying out its risk oversight responsibilities. Disclosure

should also include the role of external parties such as third-party consultants in the risk management process. While ultimate responsibility for a company's risk management approach rests with the full board, having a risk committee (be it a stand-alone risk committee, a combined risk committee with nomination and governance, strategy, audit or other) can be an effective mechanism to bring the transparency, focus and independent judgment needed to oversee the company's risk management approach.

- f. While the board is ultimately responsible for risk oversight, executive management should be charged with designing, implementing and maintaining an effective risk program. Roles and reporting lines related to risk management should be clearly defined. At a minimum, the roles and reporting lines should be explicitly set out for the board, board risk committees, Chief Executive Officer, Chief Financial Officer, the Chief Risk Officer, and business unit heads. The board and risk related committees should have appropriate transparency and visibility into the organization's risk management practices to carry out their responsibilities.

14. CEO Succession Plan: The board should proactively lead and be accountable for the development, implementation, and continual review of a CEO succession plan. Board members should be required to have a thorough understanding of the characteristics necessary for a CEO to execute on a long-term strategy that optimizes operating performance, profitability and shareowner value creation. At a minimum, the CEO succession planning process should include the following:

- a. Become a routine topic of discussion by the board.
- b. Extend down throughout the company emphasizing the development of internal CEO candidates and senior managers while remaining open to external recruitment.
- c. Require all board members be given exposure to internal candidates.
- d. Encompass both a long-term perspective to address expected CEO transition periods and a short-term perspective to address crisis management in the event of death, incapacitation or untimely departure of the CEO.
- e. Provide for open and ongoing dialogue between the CEO and board while incorporating an opportunity for the board to discuss CEO succession planning without the CEO present.
- f. Be disclosed to shareowners on an annual basis and in a manner that would not jeopardize the implementation of an effective and timely CEO succession plan.

15. Director Succession Plan: The board should proactively lead and be accountable for the development, implementation, and continual review of a director succession plan. Board members should be required to have a thorough understanding of the

characteristics necessary to effectively oversee management's execution of a long-term strategy that optimizes operating performance, profitability, and shareowner value creation. At a minimum, the director succession planning process should include the following:

- a. Become a routine topic of discussion by the board.
- b. Encompass how expected future board retirements or the occurrence of unexpected director turnover as a result of death, incapacitation or untimely departure is addressed in a timely manner.
- c. Encompass how director turnover either through transitioning off the board or as a result of rotating committee assignments and leadership is addressed in a timely manner.
- d. Provide for a mechanism to solicit shareowner input.
- e. Be disclosed to shareowners on an annual basis and in a manner that would not jeopardize the implementation of an effective and timely director succession plan.

16. Human Capital Management Practices: Corporations should adopt maximum progressive practices toward the elimination of human rights violations in all countries or environments in which the company operates. Additionally, these practices should emphasize and focus on preventing discrimination, harassment of any kind including sexual harassment, and/or violence based on race, color, religion, national origin, age, disability, sexual orientation, gender identity, marital status, or any other status protected by laws or regulations in areas of a company's operation. Boards should be accountable for companies to develop and implement company policies, procedures, integrated financial reporting, training and internal reporting structures to ensure commitment to the following:

- a. **Universal Human Rights:** Express our support for universal human rights and, particularly, those of our employees, the communities within which we operate, and parties with whom we do business. This includes free, prior, and informed consent as a standard in relation to Indigenous Peoples' rights.
- b. **Equal Employment Opportunity:** Promote equal opportunity for our employees at all levels of the company with respect to issues such as color, race, gender, age, disability, ethnicity or religious beliefs, and operate without unacceptable worker treatment such as the exploitation of children, physical punishment, female abuse, involuntary servitude, or other forms of abuse.
- c. **Freedom of Association:** Respect our employees' voluntary freedom of association.
- d. **Eliminate all Forms of Forced and Compulsory Labor:** Compensate our employees to enable them to meet at least their basic needs and provide the

opportunity to improve their skill and capability in order to raise their social and economic opportunities.

- e. **Provide a safe and healthy workplace:** Protect human health and the environment; and promote sustainable development.
- f. **Promote fair competition:** This includes respect for intellectual and other property rights, and not offer, pay or accept bribes.
- g. **Strategic Social Investment:** Work with governments and communities in which we do business to improve the quality of life in those communities – including their educational, cultural, economic and social well-being – and seek to provide training and opportunities for workers from disadvantaged backgrounds.
- h. **Application to Supply Chain:** Promote the application of these principles by those with whom we do business

C. Executive, Director, and Employee Compensation

CalPERS believes well-designed compensation programs can be a powerful and effective tool to reward value-creating executives and employees and appropriately align their interests with those of providers of capital (shareowners) to achieve sustainable, long-term investment returns.

CalPERS recognizes that having a one-size-fits-all compensation program may not be appropriate for companies of different sizes, locations, and industries. Therefore, we believe companies should have flexibility in designing and structuring their compensation programs, given their disparate operating business models.

Our compensation principles are intended to provide a framework for companies to consider in designing and implementing their compensation programs.

The following summarizes our compensation principles:

1. **Compensation Philosophy:** Companies that demonstrate sustainable long-term performance should be able to properly reward their executives and employees for contributing to the success of the business and creating long-term shareowner value. The board, through its Compensation Committee, has the core function to ensure compensation programs are:
 - a. **Aligned with Providers of Capital:** Compensation programs should symmetrically align the interests of the companies' executives and employees with the providers of capital, that is, both sides should participate in good and bad times. Incentive pay should be tied to shareowner experience.
 - b. **Linked to Performance:** Compensation programs should have an appropriate pay-for-performance alignment where pay is directly linked to company performance. Executives and employees should be rewarded for focusing on and generating sustainable long-term

performance.

- c. **Risk Aware:** Compensation programs should incentivize prudent risk taking by executives and employees. The rationale for the appropriateness of the metrics used to promote long-term shareowner value creation should be adequately disclosed and explained in the compensation programs.
 - d. **Aligned with Business Strategy:** Compensation programs should provide a clear and well-articulated philosophy that links compensation and performance metrics to the company's long-term business strategy.
 - e. **Supportive of Sustainability Objectives:** Compensation programs should be designed to support relevant sustainability performance objectives.
 - f. **Cost Effective & Equitable:** Compensation programs should not result in unwarranted transfer of wealth from shareowners to company executives and employees. Compensation should be reasonable and equitable, and the quantum should be determined within the context of the company's workforce as a whole.
 - g. **Free from Discrimination & Bias:** Compensation programs should actively incentivize fairness and structurally avoid discrimination and bias that may unfairly affect the compensation of any employee, such as discrimination and bias related to gender, age, nationality, race, sexual orientation, gender identity and disability. Through an active approach to bias and discrimination elimination, companies should strive to attract and retain the best employees and mitigate risk of legal challenges.
 - h. **Transparent:** Compensation programs should be transparent and provide clear, comprehensive, and relevant disclosures necessary to allow shareowners to evaluate a company's compensation practices.
2. **Compensation Elements:** Compensation programs should have an appropriate mix of fixed and variable pay elements, and a significant portion of the plans should be performance-based.
- a. **Salary:** Salary is one of the few components of compensation not "at risk," therefore it should be set at a reasonable level and appropriately reflect the responsibilities at the company.
 - b. **Incentive Compensation:** Incentive compensation, whether short-term or long-term, should be demonstrably linked to company performance and enhance long-term shareowner value. We believe incentive compensation should be primarily long-term and performance-based. Companies should disclose and discuss the relevance and appropriateness of the award structures, such as performance metrics, peer groups, performance periods, and/or any other performance

conditions, in the context of how they relate to company's specific strategy, business or industry. Rationale should be provided for performance metrics chosen and why the performance targets are relevant and challenging. We believe performance targets should be challenging, and except in rare and extraordinary situation, the Compensation Committee should not "lower the bar" by changing the performance targets. The Compensation Committee should fully disclose revised performance targets and provide sufficient justification if significant changes are made to initial or prior year ones. Additionally, compensation programs should disclose equity ownership and retention guidelines. It is important for the executive's financial interests to be aligned with those of shareowners and the company's long-term success, so we believe executives should attain and continuously hold a significant equity investment in the company they are managing. Furthermore, all equity awards, whether subject to equity ownership requirements or not, should not be hedged, pledged, or otherwise encumbered.

- c. **Other Forms of Compensation:** We believe that additional compensation awards granted outside of the company's incentive plans may potentially undermine the integrity of its regular incentive plans or the link between pay and performance, or both. While we are wary of such awards, we recognize that additional compensation awards, such as supplemental or one-off awards, may be appropriate if companies provide a thorough description as well as an explanation of how they align with long-term company performance and shareowner value creation.
- d. **Retirement Plans and Other Post-Employment Benefits:** We believe post-employment benefits, including retirement plans, can be an important part of overall compensation. Companies should clearly articulate and disclose post-employment benefits, which may include defined contribution/benefit plans, supplemental executive retirement plans (SERPs), health care benefits, pensions or other retirement benefits, and provide an explanation demonstrating how these align with long-term shareowners' interests.

- 3. **Compensation Structure:** We believe it is in the best interests of companies to have well-structured compensation programs that properly incentivize executives and employees, appropriately align the interests of executives and shareowners, and create long-term shareowner value. Compensation plan structures, including the quantitative and qualitative components, should be thoroughly disclosed in the compensation programs for shareowners to evaluate the compensation practices.

- a. **Shareowner Advisory Vote on Executive Compensation:** Companies should submit executive compensation policies to shareowners for

approval on an annual basis.

- b. **CEO Pay Ratio:** Companies should disclose the ratio of CEO compensation to the median annual total compensation of all other employees, and the methodology used to determine the ratio. CEO pay should be consistent with internal wage structures (CEO to median employee, and CEO to named executive officers) rather than be driven by external benchmarking. Internal pay equity is important for recognizing and incentivizing the contribution of the general employee base to the company's success as well as attracting and retaining employees.
- c. **Peer Benchmarking:** Companies should disclose the companies in peer groups used for benchmarking and/or other comparisons. We believe companies should not use peer groups to ratchet up pay that is seemingly unrelated to company performance. Where peer benchmarking is used, target pay percentile levels should be set after considering the company's historic financial performance relative to its chosen peers. Companies should provide a rationale if the peer group used for compensation purposes differs from that used to compare overall company performance. We believe companies should provide sufficient justification for any award of compensation for below median performance.
- d. **Vesting Period/Post-Vesting Holding Requirements:** Companies should disclose and clearly articulate the rationale for vesting periods and any mandatory holding periods on vested awards. The post-vesting holding requirements should ensure the executive's interests are properly aligned with those of long-term shareowners. To achieve this alignment, we believe equity compensation should be subject to a minimum vesting and/or holding period of 5 years from grant date, with the provision that no more than 20% of the equity can be sold annually starting in the sixth year from grant date.
- e. **Post-Separation Holding Period:** Companies should disclose any holding period requirements for executives after retirement or separation of service. We believe the equity compensation earned by executives should be held for a minimum of 2 years after they retire or separate from the company.
- f. **Excise Tax Gross-Ups:** We believe excise tax gross-ups should not be permitted in compensation programs. If tax gross-up provisions are used, companies should disclose them and provide justifications for having such arrangements in the compensation programs.
- g. **Clawback Policy:** Companies should develop and disclose policies to recoup compensation made to executives during periods of fraudulent activity, inadequate oversight, misconduct including harassment of any kind such as sexual harassment, or gross negligence, which impacted or is reasonably expected to impact financial results or cause

create a potential conflict with the directors' primary role as an independent representative of shareowners. Companies should fully disclose director equity ownership and holding requirements and guidelines. To demonstrate alignment with shareowners, directors should attain and continuously maintain an equity ownership in the company that is meaningful given their particular financial context. Also, directors should repay compensation to the company in the event of malfeasance or a breach of fiduciary duty involving the director.

D. Corporate Reporting

CalPERS expects fair, accurate and timely reporting on how companies employ and identify risks related to financial, human and physical capital, in order to generate sustainable economic returns.

1. **Integrated Financial Reporting:** Financial reporting plays an integral role in the capital markets by providing transparent and relevant information about the economic performance and condition of businesses. Effective financial reporting depends on high quality accounting standards, as well as consistent application, rigorous independent audit and enforcement of those standards. Companies should provide for the integrated representation of operational, financial, human capital management practices, environmental, social, and governance performance in terms of both financial and non-financial results in order to offer investors better information for assessing risk. The board should provide an integrated report that puts historical performance into context, and portrays the risks, opportunities and prospects for the company in the future, helping shareowners understand a company's strategic objectives and its progress towards meeting them. Such disclosures should:
 - a. be linked to the company's business model
 - b. be genuinely informative and include forward-looking elements where this will enhance understanding
 - c. describe the company's strategy, and associated risks and opportunities, and explain the board's role in assessing and overseeing strategy and the management of risks and opportunities
 - d. be accessible and appropriately integrated with other information that enables shareowners to obtain a picture of the whole company
 - e. use key performance indicators (KPIs) that are linked to strategy and facilitate comparisons, including human capital KPIs such as:
 - total workforce cost
 - stability of the workforce, including voluntary and involuntary turnover and internal hire rates

- average hours of training per employee per year
 - safety of workforce, including frequency, severity and lost-time due to injuries, illness and fatalities
 - diversity data including race, ethnicity and gender by level such as an Employer Information Report, known as the EEO-1 report, or similar demographic data
 - standardized measures of employee satisfaction
- f. use objective metrics where they apply and evidence-based estimates where they do not
- g. be strengthened where possible by independent assurance that is carried out annually and with regard to established disclosure standards
2. **Transparency:** Operational, financial, and governance information about companies must be readily transparent to permit accurate market comparisons; this includes disclosure and transparency of objective globally accepted minimum accounting standards, such as the International Financial Reporting Standards (IFRS).
- a. **Comprehensive Disclosure:** The board should present a balanced and understandable assessment of the company's position and prospects in the annual report and accounts in order for shareowners to be able to assess the company's performance, business model and strategy (including human capital management, and climate change strategy) and long-term prospects. Additionally, to provide for efficient analysis and comparison of corporations by shareowners, corporations should adopt well-known reporting standards⁶ and tools to disclose industry-relevant environmental, social, and governance risks and opportunities that can affect the performance of the company.
- b. **Materiality:** The board should disclose relevant and material information on a timely basis so as to allow shareowners to take into account information which assists in identifying risks and sources of wealth creation. Issues material to shareowners should be set out succinctly in the annual report, or equivalent disclosures, and approved by the board itself.
- c. **Board Governance Principles:** The board should adopt and disclose a written statement of its own governance principles, and re-evaluate them on at least an annual basis.
3. **Proxy Materials:** Proxy materials should be written in a manner designed to provide shareowners with the information necessary to make informed voting decisions. Similarly, proxy materials should be distributed in a manner designed to encourage

⁶ The Task Force on Climate-Related Financial Disclosures ([TCFD](#)), the Sustainability Accounting Standards Board ([SASB](#)), Global Reporting Initiative Standards ([GRI](#)), International Integrated Reporting Council ([IIRC](#)) and Carbon Disclosure Project ([CDP](#)) offer useful investor endorsed disclosure guidance.

shareowner participation. All shareowner votes, whether cast in person or by proxy, should be formally counted with vote outcomes formally announced.

4. **Auditor's Enhanced Reporting to Investors:** Auditors should provide independent assurance and attestation to the quality of financial statements to instill confidence in the providers of capital. Auditors should bring integrity, independence, objectivity, and professional competence to the financial reporting process. The audit opinion should state whether the financial statements and disclosures are complete, materially accurate, and free of material misstatement, whether caused by error or fraud. Auditors should provide a reasonable and balanced assurance on financial reporting matters to investors in narrative reports such as an Auditor's Discussion and Analysis (AD&A) or a Letter to the Shareowners. Enhanced reporting should include:
 - a. Business, operational and other risks believed to exist and considered.
 - b. Assumptions used in judgments that materially affect the financial statements, and whether those assumptions are at the low or high end of the range of possible outcomes.
 - c. Appropriateness of the accounting policies adopted by the company.
 - d. Changes to accounting policies that have a significant impact on the financial statements.
 - e. Methods and judgments made in valuing assets and liabilities.
 - f. Unusual transactions.
 - g. Accounting applications and practices that are uncommon to the industry.
 - h. Identification of any matters in the Annual Report that the auditors believe are incorrect or inconsistent with the information contained in the financial statements or obtained in the course of their audit.
 - i. Audit issues and their resolutions, which the audit partner documents in a final audit memo to the Audit Committee.
 - j. Quality and effectiveness of the governance structure and risk management.
 - k. Completeness and reasonableness of the Audit Committee report.
5. **Stakeholder Relations:** CalPERS believes that corporations should strive for active cooperation with stakeholders. This cooperation will be most likely to create wealth, employment and sustainable economies. With adequate, accurate and timely data disclosure of environmental, social, and governance practices, shareowners are able to more effectively make investment decisions by taking into account those practices of the companies in which the System invests.
6. **Environmental Management Practices:** CalPERS' believes companies' long-term value creation requires effective management of environmental risks and opportunities. Companies should identify, manage, and disclose material environmental risks and

opportunities that are relevant to their short and long-term success. Environmental issues may include the following:

- i. **Environmental effects on company:** change, volatility or deterioration in the environment that may impact business operations, such as:
 - climate change, extreme weather
 - loss or degradation of ecosystem services (e.g., pollination), decline of biodiversity
 - change in access to clean, affordable and adequate sources of water and other critical natural resources (e.g., natural food supplies)
- ii. **Company impact on the environment:** Potential regulatory change, liability, license to operate, reputational or market access risks posed by the company's environmental impacts, including:
 - emissions, pollution, waste, loss of biodiversity, degradation of natural ecosystems (e.g., deforestation)
- iii. **Transition:** Transition of company's industry and/or customers toward more sustainable products, services or practices, such as:
 - low carbon economy, technologies improving environmental outcomes
 - sustainability certifications, restoration, adaptation and risk mitigation business models

With regard to material environmental risk and opportunities, good practices include:

a. Board Oversight:

- i. The board identifies and oversees management of material environmental risks and opportunities and sets robust and relevant environmental strategy, time-bound goals and/or targets⁷.
- ii. Board member(s), board committee(s), or full board have pertinent environmental knowledge and experience, or have a designated committee or other such body with the ability to access independent sources of such knowledge and experience.
- iii. Alignment of lobbying (including direct or indirect lobbying and grassroots lobbying communications) activities and company expenditures with environmental strategy.

b. Management Execution

- i. Senior executives manage the development and execution of science-based and time-bound environmental strategies, goals, and/or targets.

⁷ The global climate change agreement reached at the 21st Conference of the Parties (COP21), "The Paris Agreement", provides globally agreed, and CalPERS endorsed, targets related to climate change.

- ii. Risk and opportunity management throughout the value chain, strategic planning and general business activities integrate environmental considerations.
 - iii. Executive officers' compensation is linked to attainment of environmental goals and targets.
 - iv. The company calculates environmental metrics relevant to its business operations annually, including, but not limited to, greenhouse gas emissions.
- c. **Disclosure on Environmental Risks and Opportunities⁸:**
- i. **Governance:** Company's governance around environmental risks and opportunities.
 - ii. **Strategy:** Actual and potential impacts on the company's businesses, strategy and financial planning.
 - i. Risks and opportunities the company has identified over the short, medium, and long-term.
 - ii. Environmental commitments the company has made including timelines, targets, and impact on financial statements, and business strategy.
 - iii. Engagement with policy makers regarding environmental risks and opportunities material to the company (including related expenditures).
 - iii. **Risk Management:** How the company identifies, assesses, and manages environmental risks and opportunities including the following:
 - i. How company works to ensure its business models and supply chain are robust, responsive, and/or resilient.
 - ii. If and how company uses internal pricing for carbon, water, or other natural resources.
 - iii. How company manages traceability issues in its supply chain.
 - iv. How company identifies and manages impacts, or potential impacts, on local environments and communities including company's approach to material human capital issues (e.g., public health, land rights, and just transition in relation to workers).
 - iv. **Metrics and Targets:** Environmental metrics⁴ used to assess and manage relevant environmental risks and opportunities, noting where third-party verification has been used. These metrics should be decision-useful, for both the company and investors. Performance relative to targets and commitments should also be disclosed.
7. **Codes of Conduct/Ethics:** The board should adopt high standards of business ethics through codes of conduct/ethics (or similar instrument) and oversee a culture of

⁸ The Task Force on Climate-Related Financial Disclosures ([TCFD](#)), the Sustainability Accounting Standards Board ([SASB](#)), [GRESB](#) and [CDP](#) offer useful investor endorsed disclosure guidance pertaining to climate impacts, deforestation, water and other potentially material environmental factors.

integrity, notwithstanding differing ethical norms and legal standards in various countries. This should permeate all aspects of the company's operations, ensuring that its vision, mission and objectives are ethically sound and demonstrative of its values. Codes should be effectively communicated and integrated into the company's strategy and operations, including risk management systems and compensation structures.

- a. **Behavior and Conduct:** The board should foster a corporate culture which ensures that employees understand their responsibilities for appropriate behavior. There should be appropriate board level and staff training in all aspects relating to corporate culture and ethics. Due diligence and monitoring programs should be in place to enable staff to understand relevant codes of conduct and apply them effectively to avoid company involvement in inappropriate behavior.
 - b. **Bribery and Corruption:** The board should ensure that management has implemented appropriately stringent policies and procedures to mitigate the risk of bribery and corruption or other malfeasance. Such policies and procedures should be communicated to shareowners and other interested parties.
 - c. **Whistleblowing:** The board should ensure that the company has in place an independent, confidential mechanism whereby an employee, supplier or other stakeholder can (without fear of retribution) raise issues of particular concern with regard to potential or suspected breaches of a company's code of ethics or local law.
 - d. **Prohibit Greenmail:** Every company should prohibit greenmail.
8. **Company General Meetings:** The general meeting agenda should be posted on the company's website at least one month prior to the meeting taking place. The agenda should be clear and properly itemized and include the date and location of the meeting as well as information regarding the issues to be decided at the meeting.
- a. **Vote Deadline:** The board should clearly publicize a date by which shareowners should cast their voting instructions.
 - b. **Share Blocking:** The practice of share blocking or requirements for lengthy share holdings should be discontinued.
 - c. **Selection and Notification of Meeting Time and Location:** Corporations should make shareowners' expense and convenience primary criteria when selecting the time and location of shareowner meetings. Appropriate notice of shareowner meetings, including notices concerning any change in meeting date, time, place or shareowner action, should be given to shareowners in a manner and within time frames that will ensure that shareowners have a reasonable opportunity to exercise their franchise.
 - d. **Record Date and Ballot Item Disclosure:** To promote the ability of shareowners to make informed decisions regarding whether to recall loaned shares: (1) shareowner meeting record dates should be disclosed as far in advance of the

record date as possible, and (2) proxy statements should be disclosed before the record date passes whenever possible.

- e. **Timely Disclosure of Voting Results:** A company should broadly and publicly disclose in a timely manner the final results of votes cast at annual and special meetings of shareowners. Whenever possible, preliminary results should be announced at the annual or special meeting of shareowners. If a board-endorsed resolution has been opposed by a significant proportion of votes, the company should explain subsequently what actions were taken to understand and respond to the concerns that led shareowners to vote against the board's recommendation.
- f. **Election Polls:** Polls should remain open at shareowner meetings until all agenda items have been discussed and shareowners have had an opportunity to ask and receive answers to questions concerning them.
- g. **Meeting Adjournment and Extension:** Companies should not adjourn a meeting for the purpose of soliciting more votes to enable management to prevail on a voting item. A meeting should only be extended for compelling reasons such as vote fraud, problems with the voting process or lack of a quorum.
- h. **Electronic Meetings:** Companies should hold shareowner meetings by remote communication (so-called "virtual" meetings) only as a supplement to traditional in-person shareowner meetings, not as a substitute. Companies incorporating virtual technology into their shareowner meeting should use it as a tool for broadening, not limiting, shareowner meeting participation. With this objective in mind, a virtual option, if used, should facilitate the opportunity for remote attendees to participate in the meeting to the same degree as in-person attendees.
- i. **Director Attendance:** All directors should attend the annual shareowners' meeting and be available, when requested by the chair, to respond directly to oral or written questions from shareowners.
- j. **Broker Non-Votes:** Broker non-votes should be counted for quorum purposes only.

E. Regulatory Effectiveness

It is important to have effective regulation as it protects CalPERS as an investor from externalities, maintains fair, orderly and efficient financial markets, and facilitates capital formation. In order to fulfill their vital functions, regulators need to have funding which is independent, sufficient, and multi-year.

1. **Code of Best Practices:** Each capital market in which shares are issued and traded should adopt its own Code of Best Practices to promote transparency of information, prevention of harmful labor practices, investor protection, and corporate social responsibility. Where such a code is adopted, companies should disclose to their shareowners whether they are in compliance.
2. **Financial Markets:** Policy makers and standards setters who impact investment portfolio risk and return should promote fair, orderly, and effectively regulated financial markets through addressing the following:
 - a. **Transparency:** To promote full disclosure so that the financial markets provide incentives that price risk and opportunity.
 - b. **Governance:** To foster alignment of interest, protect investor rights and independence of regulators.
 - c. **Systemic Risks:** To identify issues that give rise to risks that threaten global markets and work to foster action that mitigates those risks.
3. **Global Accounting Standards:** It is critical to maintain high-quality accounting standards in jurisdictions where we invest.
4. **Political Stability:** Progress toward the development of basic democratic institutions and principles, including such things as: a strong and impartial legal system and respect and enforcement of property and shareowner rights. Political stability encompasses the following:
 - a. **Political risk:** Internal and external conflict, corruption, the military and religion in politics, law and order, ethnic tensions, democratic accountability, and bureaucratic quality.
 - b. **Civil liberties:** Freedom of expression, association and organization rights; rule of law and human rights; free trade unions and effective collective bargaining; personal autonomy and economic rights.
 - c. **Independent judiciary and legal protection:** An absence of irregular payments made to the judiciary, the extent to which there is a trusted legal framework that honors contracts, clearly delineates ownership and protects financial assets.
5. **Transparency:** Financial transparency, including elements of a free press, is necessary for investors to have truthful, accurate and relevant information. Transparency encompasses the following:

- a. **Freedom of the press:** Structure of the news delivery system in a country, laws and their promulgation with respect to the influence of the news, the degree of political influence and control, economic influences on the news, and the degree to which there are violations against the media with respect to physical violations and censorship.
 - b. **Monetary and fiscal transparency:** The extent to which governmental monetary and fiscal policies and implementation are publicly available in a clear and timely manner, in accordance with international standards.
 - c. **Stock exchange listing requirements:** Stringency of stock exchange listing requirements with respect to frequency of financial reporting, the requirement of annual independent audits, and minimal financial viability.
 - d. **Accounting standards:** The extent to which U.S. Generally Accepted Accounting Principles, or International Accounting Standards are used in financial reporting and whether the country is a member of the International Accounting Standards Council.
6. **Sustainable Policy Framework:** Sound regulation should be based on scientific and transparent analysis of social and environmental issues. Regulation should be long-term focused and stable, providing the certainty for innovation, smart investment, and global competitiveness.
- a. **Productive Labor Practices:** No harmful labor practices or use of child labor. In compliance, or moving toward compliance, with the International Labor Organization (ILO) Declaration on the Fundamental Principles and Rights at Work. Productive Labor Practices encompasses:
 - i. **ILO ratification:** Whether the convention is ratified, not ratified, pending ratification or denounced.
 - ii. **Quality of enabling legislation:** The extent to which the rights described in the ILO convention are protected by law.
 - iii. **Institutional capacity:** The extent to which governmental administrative bodies with labor law enforcement responsibility exist at the national, regional and local levels.
 - iv. **Effectiveness of implementation:** Evidence that enforcement procedures exist and are working effectively and evidence of a clear grievance process that is utilized and provides penalties that have deterrence value.

- b. **Transaction costs:** The costs associated with trading in a particular market, including stamp taxes and duties, amount of dividends and income taxes and capital gains taxes.

APPENDIX A

United Nations Supported Principles for Responsible Investment

Launched in April 2006, The Principles for Responsible Investment (PRI) provides the framework for investors to give appropriate consideration to environment, social and corporate governance (ESG) issues. The PRI was created as an initiative of the UN Secretary-General and coordinated by the UNEP Finance Initiative and the UN Global Compact. An international working group of 20 institutional investors was supported by a 70-person multi-stakeholder group of experts from the investment industry, intergovernmental and governmental organizations, civil society and academia.

CalPERS is one of the original signatories.

The Principles

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

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

We encourage other investors to adopt the Principles. Additional information can be found at www.unpri.org.

APPENDIX B

LIST OF MEMBERSHIPS AND ENDORSEMENTS SUPPORTED BY CALPERS

1. The Global Sullivan Principles
<https://www.sullivanprinciples.html/>
2. UN Global Compact Principles
<https://www.unglobalcompact.org/>
3. Council of Institutional Investors (CII)
<http://www.cii.org/>
4. International Corporate Governance Network Principles (ICGN)
<https://www.icgn.org/>
5. Ceres
<http://www.ceres.org/>
6. Sustainability Accounting Standards Board (SASB)
<https://www.sasb.org>
7. Taskforce for Climate-related Financial Disclosures (TCFD)
<https://www.fsb-tcf.org/>

Appendix 8: Total Fund Investment Policy Document History

Summary of Change	Date
<p>Adopted by the Investment Committee.</p> <p>Fourteen policies were incorporated into the Total Fund Investment Policy and repealed 1) Total Fund Statement of Investment Policy, 2) Investment Beliefs, 3) Asset Allocation Strategy, 4) Benchmarks, 5) Risk Management Program, 6) Global Derivatives and Counterparty Risk, 7) Leverage, 8) Divestment, 9) Opportunistic Program, 10) Plan Level and Asset Class Transition Portfolios, 11) Role of Private Asset Class Board Investment Consultants, 12) Custody Management, 13) Economically Targeted Investments, 14) Terminated Agency Pool</p>	March 16, 2015
<p>Administrative Changes to Appendix 5, Investment Benchmarks, to reflect closure of State Peace Officer & Firefighters (POFF) Fund</p>	April 14, 2015
<p>Approved by the Investment Committee</p> <p>Revisions relevant to the strategic asset allocation process and the Long-Term Care Fund</p>	June 15, 2015
<p>Approved by the Investment Committee</p> <p>Revisions relevant to Liquidity Program changes to ensure enough liquidity is available to meet obligations; and benchmark change to cash-only</p>	June 15, 2015, Effective July 1, 2015
<p>Approved by the Investment Committee</p> <p>Revisions relevant to the 2015 Investment Policy Revision Project, including revisions to current policy content, new policy content, and general changes to enhance clarity and address non-material inconsistencies and formatting. Five policies were incorporated into the Total Fund Investment Policy and repealed 1) Currency Overlay Program, 2) Liquidity Program, 3) Low Duration Fixed Income Program, 4) Multi-Asset Class Partners Program, 5) Securities Lending</p>	April 18, 2016
<p>Approved by the Investment Committee</p> <p>Revisions to the Liquidity and Divestment sections, and establishment of a new section, Governance and Sustainability Strategy. The Global Governance Policy, Including CalPERS Governance and Sustainability Principles, was repealed and incorporated into the Total Fund Investment Policy.</p>	April 17, 2017
<p>Approved by the Investment Committee</p> <p>Revisions to the Liquidity Program to expand the investable universe for sovereign securities, and Low Duration sections, including removal of references to the High Quality Libor and Short Duration sub-programs, and corresponding benchmark references.</p>	November 13, 2017

Summary of Change	Date
<p>Approved by the Investment Committee</p> <p>Revisions to the Governance and Sustainability Principles, strategic asset allocation targets, ranges, and policy benchmarks. Additional revisions were made to reflect organizational and business process changes.</p>	June 18, 2018
<p>Approved by the Investment Committee</p> <p>Additional changes to reflect organizational as business process changes, as well as changes to several benchmarks for the Affiliate Funds.</p>	November 13, 2018
<p>Administrative changes made to migrate policy into an accessible template.</p>	February 11, 2019
<p>Administrative changes made to reflect California Employers' Pension Prefunding Trust benchmarks as approved at the June 17, 2019 meeting of the Investment Committee.</p>	June 17, 2019
<p>Approved by the Investment Committee</p> <p>Revisions to the Governance and Sustainability Principles, strategic asset allocations and leverage management. Additional revisions were made to reflect organizational and business process changes.</p>	September 16, 2019
<p>Approved by the Investment Committee and ratified by the Board of Administration.</p> <p>Revisions related to the Opportunistic Program and to the benchmark methodology to reflect business process change.</p>	June 17, 2020
<p>Administrative changes made to reflect the benchmark update for several Affiliate Funds.</p>	July 10, 2020
<p>Approved by the Investment Committee</p> <p>Revisions related to the Asset Allocation Strategy and additional conforming changes for organization and business process changes.</p>	September 13, 2021
<p>[Approved by the Investment Committee]</p> <p>[Description of changes]</p>	[Month DD, YYYY]

California Public Employees' Retirement System Total Fund Investment Policy

Effective Date

This policy is effective [Month DD, YYYY]~~September 13, 2021~~ and supersedes the previous Total Fund Investment Policy.

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Total Fund Investment Policy Overarching Statements

A. Introduction

The California Public Employees' Retirement System (CalPERS) Total Fund Investment Policy (Policy), adopted by the CalPERS Investment Committee (Committee), sets forth CalPERS' investment beliefs and overarching investment purposes and objectives with respect to all its investment programs.

The purpose of this Policy, and each of CalPERS' other investment policies (collectively the Policies), is to provide a framework for the management of CalPERS assets. The Policies outline objectives, benchmarks, restrictions and responsibilities so that the Committee, staff, consultants, managers, members, and beneficiaries, and all other CalPERS stakeholders, clearly understand the objectives and policies of the CalPERS investment program. The Policies also encourage effective communication, facilitate transparency and compliance, and provide a framework for reporting back to the Committee, as appropriate.

The Policies set forth the guidelines that the Committee deems to be appropriate and prudent in consideration of the needs of and legal requirements applicable to the CalPERS investment program. The Policies provide criteria against which investment results will be measured and serve as a review document to guide ongoing operations and oversight. The Policies are also intended to ensure that the Committee is fulfilling its fiduciary responsibilities in the management of CalPERS' investments.

The Committee intends for the Policies to be dynamic documents and will review them from time to time. Policies will be modified periodically to reflect the changing nature of CalPERS assets and investment programs, benefit and structural changes, and economic conditions. This Policy applies to all CalPERS investments and supersedes any contrary or inconsistent provisions within asset-class and individual program policies.

B. Strategic Objective

The overall objective of the CalPERS investment program is to generate returns at an appropriate level of risk to provide members and beneficiaries with benefits as required by law. This will be accomplished through a carefully planned and executed long-term investment program that efficiently and effectively allocates and manages the assets of CalPERS.

The Policies have been designed to allow CalPERS to achieve a long-term total return. Accordingly, prudent risk-taking is appropriate within the context of overall diversification to meet CalPERS' long-term investment objectives. The assets of CalPERS will be broadly diversified to minimize the effect of short-term losses within any investment program. Consistent with California Constitution, Article XVI, section 17, all CalPERS investment activities, and all investment transactions, shall be designed and executed 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.

C. Program Specific Investment Policies

In addition to this overarching Policy, there are other policies that focus on program-specific aspects of the CalPERS investment program. It is intended that those policies be read in conjunction with this Policy.

D. Responsibilities

Details regarding various levels of responsibility for all programs are provided in the following appendices:

1. Reporting to the Committee
2. Investment Responsibilities

E. Performance Objectives

Specifically:

- A. The assets of CalPERS will be invested with the objective of achieving a long-term rate of return that meets or exceeds the CalPERS actuarial expected rate of return.
- B. CalPERS will seek to maximize returns for the level of risk taken;
- C. CalPERS will seek to achieve a return that exceeds the Policy Index; and
- D. CalPERS will seek to invest its assets efficiently, bearing in mind the impact of management and transaction costs on investment returns.

Policy benchmarks are listed in Appendix 5.

F. Investment Constraints & Limitations

Details regarding various investment constraints and limitations are provided in Appendix 6 for all Policy sections.

G. Glossary of CalPERS Specific Terms

Italicized terms appearing in the Policy are CalPERS specific in nature and are defined in the CalPERS Specific Glossary of Terms.

H. Policy Document History

Historical details of the Committee's adoption of and revisions to the Policy are provided in Appendix 8.

Total Fund Investment Policy Sections

I. Investment Beliefs

Purpose

This Policy requires that CalPERS develop and maintain a set of Investment Beliefs. Managing the CalPERS investment program requires exercising judgment in the face of considerable uncertainty. The Investment Beliefs provide a framework for exercising judgment and making investment decisions. Investment Beliefs:

- Provide a basis for strategic management of the investment portfolio
- Inform organizational priorities
- Ensure alignment between the Committee and staff
- Guide development of CalPERS culture

Investment Beliefs also provide context for CalPERS actions. They reflect CalPERS values and acknowledge CalPERS responsibility to sustain its ability to pay benefits for generations. The Investment Beliefs also acknowledge the critical importance of a strong and durable economy in achieving CalPERS' objectives.

The Investment Beliefs are not a checklist to be applied by rote to every decision. They are a guide for making judgmental decisions that often require balancing multiple, inter-related decision factors.

The Investment Beliefs are included as Appendix 3.

II. Asset Allocation Strategy

Purpose

Asset allocation involves establishing asset class allocation policy targets and ranges and managing those asset class allocations within their policy ranges. CalPERS recognizes that over 90% of the variation in investment returns of a large, well diversified pool of assets can typically be attributed to asset allocation decisions.

The performance objective is to achieve positive active asset allocation returns over rolling five-year periods.

The Asset Allocation Program shall be managed with the following objectives:

- A. A rate of total return sufficient to meet or exceed the actuarial expected rate of return within prudent levels of risk and liquidity;
- B. Sufficient diversification to minimize the risk of significant loss in any single investment and preserve capital to the extent possible;
- C. Adherence to the asset class policy ranges approved by the Committee, with any rebalancing being performed efficiently and prudently;
- D. Adequate liquidity to meet cash needs; and
- E. Positive returns through any active asset allocation decisions subject to policy ranges and risk limits.

Investment Approaches & Parameters

Strategic

- A. Asset Class Targets and Ranges
See Appendix 4, Table 1, for asset class allocation targets and ranges. Asset allocation targets and ranges for the Affiliate Funds are provided within the individual Statements of Investment Policy for each fund.
- B. Strategic Asset Allocation Process
Staff may recommend to the Committee changes in the policy asset allocation targets and ranges.
- C. Asset Class Criteria
A financial or real asset type shall be considered as an asset class if it has a risk, return, and correlation profile sufficiently different from existing CalPERS asset classes, and if its inclusion or exclusion materially affects the expected risk and return of the CalPERS total return.
 1. Criteria for consideration when evaluating an asset class shall include the following:
 - a. Strategic role of the asset class in the asset liability management (ALM) framework based on fundamental characteristics and risk and return drivers.

- b. Sufficient size, liquidity, and cost efficiency to permit CalPERS to invest meaningful amounts in that asset class, and have a material effect on CalPERS return.
 - c. Availability of sufficient internal or external investment and technical expertise to ensure prudent implementation of an investment in that asset class.
 - d. Presence of diversification, return enhancement, liquidity provision, or some other readily identifiable attribute that is sufficiently different from other asset classes and enhances CalPERS' ability to achieve the strategic objectives outlined above.
 - e. Acceptance by other large pension plan sponsors as a feasible and meaningful asset class, or in the absence of such acceptance, academic support for its inclusion.
 - f. Availability of sufficient data, history, or expertise to assess the feasibility and benefit of the asset class to CalPERS, by means of a measurable investment outcome. Further, the asset class must have a basis for developing expected investment returns, risks, and correlations for the purposes of the financial study.
2. An asset class may be approved for investment provided it meets the above criteria, and the Committee has had the opportunity for sufficient education to enable it to fulfill its fiduciary responsibility in giving such approval.
 3. Once CalPERS approves a new asset class, the new program may only be implemented in accordance with investment policies reviewed and approved by the Committee for that asset class.

Implementation

- A. Staff shall determine an asset allocation mix for each investment trust with targets and ranges based on a periodic ALM review.
- B. Following any action by the CalPERS Board of Administration (Board) having the potential to result in substantial changes to the forecasted benefits, contributions, premiums, or liabilities of a program, staff shall assess the potential impact and recommend to the Committee as soon as practicable following the board action whether the strategic asset allocation process for each program should be postponed pending completion of such board action.
- C. Asset class allocations shall be managed to seek compliance with existing policy ranges. Allocations may temporarily deviate from policy ranges due to extreme market volatility or to accommodate contributions, distributions, or other short-term cash needs. If an asset class allocation exceeds the policy range, staff shall return the asset allocation to within its policy range in a timely manner, with the exact time period primarily

dependent on transaction costs and liquidity and considering the impact of lagged and appraisal-based valuations on reported private asset exposures.

D. Staff will maintain an operating cash reserve to cover short term liquidity needs, pension flows, and private asset capital calls. This reserve will be funded via total fund financing and invested in a short-term investment fund (STIF) pursuant to the parameters of the Liquidity Program.

~~D.E.~~ Accounts may be established and used to adjust asset class allocations within policy ranges, or to return asset allocations that have exceeded a policy range to within the policy range.

~~E.F.~~ Overlay portfolios may be established to manage currency risk within the parameters contained in Appendix 6.

~~F.G.~~ Managers may be retained for Asset Allocation Program implementation subject to policy asset allocation ranges and/or overlay portfolio constraints.

~~G.H.~~ **External Manager** Investment Guidelines for the Asset Allocation Program:

1. Manager Selection

- a. Managers retained in the Asset Allocation Program shall have recognized expertise in active asset allocation.
- b. The selected managers shall be registered or appropriately exempt from registration, with the Securities and Exchange Commission (SEC) or an equivalent regulatory body, in the case of a manager based outside of the United States.
- c. Managers shall be selected in accordance with the applicable California laws and regulations, and CalPERS policy.

2. Investment Manager Guidelines

Managers shall operate under guidelines that describe their specific investment strategies, representative portfolio characteristics, permissible and non-permissible activities, restrictions on the purchase of certain securities, benchmark, and performance objectives.

Derivatives & Leverage

A. Strategies

Financial futures contracts, forward contracts, swaps, options, combinations of these derivatives, exchange traded funds, and structured notes may be used in the Asset Allocation Program for only the following purposes:

1. To adjust asset class allocations, within approved policy ranges;
2. To minimize the investment effect of average cash balances held in cash equivalents accounts by overlaying with asset-class-specific derivatives.

B. Risks

Any use of derivatives to adjust asset class allocations shall comply with this Policy.

C. Leverage

In connection with any such use of derivatives, staff shall comply with the Investment Leverage section of this Policy.

D. Exposure Limit

Derivative exposure used in the Asset Allocation Program is limited to amounts that maintain all asset class allocations within their approved ranges.

E. Collateral

Collateral for all derivatives used in the Asset Allocation Program shall consist of cash, ~~or~~ investment grade fixed income securities, or other securities allowed under industry-standard collateral agreements.

III. Benchmarks

Purpose

Benchmarks establish target investment exposures and provide a relative measure to gauge whether a particular investment strategy is meeting stated goals and objectives.

CalPERS' benchmarks shall be established to manage portfolio risk and return characteristics.

Benchmark Oversight

Policy benchmarks shall be set by the Committee for each asset class within the PERF and Affiliate Funds. Changes to the construction rules of any policy benchmark shall be reviewed and approved by the relevant Board Consultant, with any modifications deemed material by the Board Consultant requiring review and approval by the Committee. In preparation for any such review, staff and the appropriate Board Consultant shall analyze the expected effect of the benchmark modification on the total portfolio risk and return characteristics. See Appendix 5 for the current benchmarks as set by the Committee and additional methodology detail.

IV. Investment Risk Management

Purpose

Risk management is central to managing the assets of CalPERS and to achieving the strategic objectives. A framework for investment risk management is established through (a) the adoption of investment policies for total fund strategic asset allocation, (b) individual asset classes and portfolios with appropriate benchmarks and (c) reasonable risk limits.

Investment risk cannot be eliminated; therefore, CalPERS invests in a risk-aware manner in order to generate returns required to pay promised benefits, subject to its risk tolerance. Risk-aware investment management requires that CalPERS:

1. Clearly understand investment risks
2. Be adequately compensated for the risks taken

CalPERS investment risk management activities shall be managed so as to:

- A. Provide an integrated process for overall investment risk management at both the Total Fund and asset class level;
- B. Identify, measure, and communicate investment risks across the Total Fund and within each asset class;
- C. Monitor investment returns as well as risk to determine if risks taken are adequately compensated; and
- D. Ensure appropriate organizational independence of investment risk measurement systems and functions from investment decision-making functions.

Investment Approaches & Parameters

A. Investment Risk Management Framework

The CalPERS investment risk framework is expected to evolve over time in alignment with industry best practices. The framework shall address the identification, measurement, assessment, and ongoing monitoring of investment risk.

B. Active Risk Limits

A total fund active risk limit, expressed in terms of tracking error, shall be established to define staff discretion to deviate from the Total Fund policy benchmarks i.e. intended strategic investment exposures. The limit is specified in Appendix 6 of this document.

V. Global Derivatives and Counterparty Risk

Purpose

This section of the Policy is intended to provide a strategic framework for governance of the use of derivatives and derivatives strategies by the CalPERS Investment Office across both internally and externally managed portfolios. The Policy is intended to ensure that CalPERS has effective operational, risk management, and compliance controls in place governing the use of derivatives within the investment process.

This section outlines the issues that must be addressed for each derivatives strategy, whether internally or externally managed, in regard to guidelines, development of procedures, and operational requirements.

Policy Scope

A. Benefit Plans/Trusts Covered under the Policy

This section applies to the use of derivatives by CalPERS within all CalPERS trusts and benefit plans.

B. This section shall apply to the use of derivatives by investment staff and external managers operating under Investment Management Agreements (IMAs).

C. Limited liability entity or registered/commingled fund managers may be required to provide information to staff on derivatives trading activities within each entity in order for CalPERS to comply with applicable aggregation or position limit regulations and reporting requirements.

Investment Approaches & Parameters

A. Derivatives subject to this section include, without limitation:

1. Futures contracts
2. Options
3. Options on futures contracts
4. Forward contracts
5. Swap agreements
6. Security based swap agreements
7. Swap contracts with embedded options
8. Instruments or contracts intended to manage transaction or currency exchange risk in purchasing, selling, or holding investments

Spot Foreign Exchange transactions with settlement date up to T+5 shall be exempt from this section.

Cash transactions, in any asset class, are not derivatives. Collateralized Mortgage Obligations (CMOs) and convertible bonds and other investment instruments where the cash investment is similar to the market and notional exposure, are likewise excluded from the definition of derivative for purposes of this section.

B. Derivatives Application Permitted

Derivatives may be used to efficiently manage risk and return characteristics of the Public Employees' Retirement Fund (PERF) and/or individual sub-portfolios.

C. Derivatives Application Not Permitted

Derivatives may only be used to invest in asset classes that are consistent with this Policy and the Asset Allocation Program asset categories, implementation strategies, and risk-return characteristics.

Derivatives shall not be used to avoid or subvert existing delegated authorities or investment policy limits.

D. Derivatives Control Procedures

Staff shall adopt documented control procedures that cover the following areas:

1. Accounting and performance measurement for derivatives
2. Risk Management – procedures for evaluating the use of derivatives and monitoring market risk exposure, liquidity needs, and counterparty risk limits
3. Operational Risk – procedures that establish a process for evaluating operational activities associated with derivatives to ensure the use of proper systems, controls, staffing, and staff qualifications
4. Regulatory – procedures for ensuring adherence to any regulations in conjunction with derivatives activities undertaken by CalPERS

VI. Investment Leverage

Purpose

The purpose of this section is to set forth a framework for comprehensively identifying, measuring, managing, and reporting various forms of leverage.

This section is intended to place limits on and set standards for the use of leverage that reasonably balances investment flexibility with risk management.

This section is also intended to result in greater consistency across investment units, and in greater ability of the Committee to direct policies concerning leverage.

Investment Approaches & Parameters

- ~~A. Use of leverage is prohibited unless expressly permitted in this section.~~
- ~~B. A capital commitment does not represent leverage or direct debt as these are considered contingent liabilities.~~
- ~~C. The use of currency derivatives for hedging or risk management purposes does not count as leverage.~~

Total Fund Leverage Parameters and Measurement

1. Leverage will be managed and monitored at the Total Fund level against the following parameters:
2. Use of leverage is prohibited unless expressly permitted in this section
3. Strategic Leverage, implemented via Total Fund Financing, will be implemented as part of the asset allocation consistent with the target specified in appendix 4
4. Staff have leeway to implement an additional 15% leverage incremental to the Strategic Leverage target ("Active Leverage")
5. Active Leverage can take two forms:
 - A. Total Fund leverage incremental to that required to implement Strategic Leverage
 - B. Program-level leverage incremental to that within the segment policy benchmarks or inherent in the asset class risk/return expectations
- ~~1. Aggregate leverage where staff exercise direct control of the exposure will not exceed 20% of the Total Fund.~~
- ~~2. Leverage will be considered to be directly controlled where internal staff:

 - ~~a. have authority over external manager or Limited Partnership application of leverage exposure, or~~
 - ~~b. directly control the application of leverage through staff-managed portfolios.~~~~
- ~~3. The criteria below outline what will be included in, or excluded from, the calculation of aggregate leverage exposure:~~

- ~~a. Exposure will be included in the aggregate leverage calculation where staff directly control the application of leverage or leverage is recourse in nature:~~
- ~~i. Derivative strategies including notional leverage applied to public market exposure and in accordance with the risk parameters established by the asset allocation ranges of this Policy~~
 - ~~ii. Collateralized funding including securities lending activities, pledges, repurchase and reverse repurchase agreements, and other synthetic funding mechanisms~~
 - ~~iii. Directly controlled embedded leverage within the Total Fund's Private Market asset classes or limited partnerships including debt applied to Real Assets~~
 - ~~iv. Subscription financing in Private Equity or other recourse debt exposure~~
- ~~b. Exposure will not be included in the aggregate leverage calculation for embedded leverage within Private Markets or limited partnerships where irrevocable authority has been given to a third party to invest on CalPERS' behalf and the leverage is non-recourse in nature.~~

~~4.6. _____ Leverage exposure will be calculated using the following formula reported using the following framework:~~

- ~~a. Leverage will be aggregated using the following calculation formula:~~

$$\frac{\text{Gross Notional Exposure} - \text{Cash Equivalents}}{\text{NAV}}$$

~~NAV~~

~~7. Staff will maintain procedures detailing methodology to calculate Gross Notional Exposure and Cash Equivalents as well program specific parameters. These procedures will include definitions and criteria for derivatives netting, collateralized funding, and subscription financing. These procedures are subject to review and approval by Board General Pension Consultant.~~

~~7. Staff will maintain guidelines for calculating and aggregating leverage including the definition of cash equivalents, and~~

- ~~a. Calculation of the aggregate leverage exposure for monitoring purposes will be on a relative basis vs. SAA policy benchmarks (including any leverage already applied within the benchmark).~~

~~8. The following standard methodology will apply:~~

- ~~A. Capital commitments are not counted as leverage~~
- ~~B. The use of currency derivatives for hedging or risk management purposes is not counted as leverage~~
- ~~C. Debt that is recourse to CalPERS is counted as leverage~~

~~8.9. _____ In the event of a breach of the aggregate active leverage limit due to a market dislocation, staff will evaluate all exposures and develop a plan within 90 days, for~~

moving active aggregate leverage exposure towards guideline parameters ~~within 90~~
~~days.~~

VII. Divestment

Purpose

This section sets forth CalPERS policy for responding to external or internal initiatives to cause CalPERS to sell investments or refrain from making additional investments (Divesting) for the purpose of achieving certain goals that do not appear to be primarily investment-related, such as promoting social justice (Divestment Initiatives). Typically, Divestment Initiatives focus on companies that do business in a specified country, are engaged in a specified industry, or in specific practices deemed undesirable by federal and state law (e.g., human rights violations) (Targeted Companies).

CalPERS' investment in a company does not necessarily signify that it approves of the company's policies, products, or actions. CalPERS, nevertheless, wants companies in which it invests to meet high corporate governance, ethical, and social standards of conduct. The Committee believes that this generally will promote superior long-term investment performance.

The Board and its Staff have fiduciary duties of loyalty and prudence, pursuant to the California Constitution, Article XVI, Section 17, and Government Code (GC) Section 20151, to invest "with the care, skill, prudence, and diligence under the circumstances then prevailing that a prudent person acting in a like capacity and familiar with those matters would use in the conduct of an enterprise of a like character and with like aims." (GC Section 20151(c)). The Board and Staff also have a fiduciary responsibility under the California Constitution to "diversify the investments of the system so as to minimize the risk of loss and to maximize the rate of return, unless under the circumstances it is clearly not prudent to do so." (Cal. Const., Art XVI, Sec. 17, subdiv. (d)).

These fiduciary obligations generally preclude CalPERS from sacrificing investment performance for the purpose of achieving goals that do not directly relate to CalPERS operations or benefits. Divesting appears to almost invariably harm investment performance, such as by causing transaction costs (e.g., the cost of selling assets and reinvesting the proceeds) and compromising investment strategies.

In addition, there appears to be considerable evidence that Divesting is an ineffective strategy for achieving social or political goals, since the usual consequence is often a mere transfer of ownership of divested assets from one investor to another. Investors that divest lose their ability as shareowners to influence the company to act responsibly.

This Policy, therefore, generally prohibits Divesting in response to Divestment Initiatives, but permits CalPERS to use constructive engagement, where consistent with fiduciary duties, to help Divestment Initiatives achieve their goals.

Approaches & Parameters

A. CalPERS' Preferred Approach is Engagement

As reflected by CalPERS Investment Belief 3, CalPERS uses the following prioritization framework in considering whether to engage on issues raised by stakeholders:

- Principles and Policy – to what extent is the issue supported by CalPERS Investment Beliefs, Governance and Sustainability Principles, or other Investment Policy?
- Materiality – does the issue have the potential for an impact on portfolio risk or return?
- Definition and Likelihood of Success – is success likely, in that CalPERS action will influence an outcome that can be measured? Can we partner with others to achieve success or would someone else be more suited to carry the issue?
- Capacity – does CalPERS have the expertise, resources, and standing to influence an outcome?

Consistent with the foregoing, CalPERS will undertake constructive engagement in support of Divestment Initiatives to the extent the Committee determines to be appropriate or as required by law, but CalPERS will not sell investments in Targeted Companies or refrain from investing in them in response to Divestment Initiatives except as follows:

1. CalPERS will sell Targeted Company investments or refrain from making them to the extent investment in the Targeted Company is imprudent and inconsistent with fiduciary duties. CalPERS recognizes that the prudence of an investment may depend on its purpose.
2. To the extent required by law and consistent with fiduciary duties, CalPERS will comply with federal and constitutional California state laws that require Divesting.

B. Divestment Review

The following processes will be used to ensure that prior divestment decisions remain supportive of the prudent stewardship of the System's assets consistent with the Committee's fiduciary obligations:

1. The Board's General Pension Consultant will monitor and provide reports to the Committee on the estimated performance and risk impacts of all then in-force divestments for the affected portfolios. (See Appendix 1.)
2. For so long as any divestments remain in effect for any of the portfolios, staff shall conduct a review of all such in-force divestments at least every five years, to include an economic analysis of the projected impact on the risk-return profile of the

affected portfolios, and present such analysis to the Committee for a determination whether continuation of the divestments is consistent with fiduciary duties.

C. Notice and Voting Protocol

For each divestment included in a regularly scheduled review as described above, continuation of the divestment will require an affirmative roll-call vote of the Committee.

In addition, any determination by the Committee that a divestment activity required pursuant to state legislative mandate would be, or, in the case of an in-force divestment, has become, inconsistent with the Committee's fiduciary duties, such that divestment is precluded or reinvestment is required, will include:

1. A presentation and discussion of relevant findings in open session at a properly noticed meeting of the Committee.
2. A roll-call vote of the Committee.

VIII. Global Equity (See Attachment 6 for consolidation redline)

IX. Global Fixed Income (See Attachment 6 for consolidation redline)

X. Real Assets (See Attachment 6 for consolidation redline)

XI. Private Equity (See Attachment 6 for consolidation redline)

XII. Private Debt

Purpose

The Private Debt Program invests primarily in privately negotiated, non-traded debt or debt-like instruments typically issued to companies. The program is intended to provide diversification to the Total Fund while seeking to add value over equivalent public debt markets through exposure to risks including illiquidity and leverage as well as terms and characteristics available through private transactions.

Performance Objective & Benchmark

The performance objective is to outperform the program benchmark over rolling three-year periods, net of all program costs and fees.

Investment Approaches & Parameters

A. Investment Guidelines

Program investments may be managed internally, or by external managers, or by a combination of internal and external managers.

1. Manager Selection

The selected managers shall be registered, or appropriately exempt from registration, with the SEC.

2. Investment Manager Guidelines

Manager guidelines shall not conflict with any CalPERS investment policy.

B. Investment Parameters

1. The table below provides details regarding the strategy allocation ranges for the Private Debt program.

<u>Strategy</u>	<u>Range*</u>
<u>Direct Lending</u>	<u>020% - 100%</u>
<u>Specialty Lending</u>	<u>05% - 5040%</u>
<u>Liquidity Financing</u>	<u>0% - 5025%</u>
<u>Real Estate Financing</u>	<u>05% - 5040%</u>
<u>Private Structured Products</u>	<u>0% - 5025%</u>

*Evolving market opportunities preclude specifying target percentages.

Given the illiquid and slow-moving nature of private investments, the ranges are

considered levels for triggering a discussion and Board concurrence of the continued mix of exposures within the program.

2. The overall program risk will be managed through diversification across strategies and managers and aligned with achieving the long-term strategic allocation risk and return expectations of the asset class.

C. Staff Authority

Staff Authority Limits

Net Asset Value (NAV) in billions

<u>MID, Deputy Chief Investment Officer (DCIO), and Chief Investment Officer (CIO) limits apply per each commitment to an external manager</u>	<u>Funds</u>	<u>Co-Investments</u>	<u>Customized Investment Account</u>
<u>MID</u>	<u>\$1.0</u>	<u>\$1.0</u>	<u>\$2.0</u>
<u>DCIO</u>	<u>\$2.0</u>	<u>\$2.0</u>	<u>\$4.0</u>
<u>CIO</u>	<u>\$3.0</u>	<u>\$3.0</u>	<u>\$6.0</u>
<u>MID Fiscal Year Limit*</u>	<u>\$7.0</u>	<u>\$5.0</u>	<u>\$6.0</u>

*Fiscal Year Limit applies to cumulative commitments.

Implementation of this Program shall comply at all times with the manager guidelines and all CalPERS investment policies.

Additional Information

Additional information specific to the management of Private Debt is available in the following Appendices:

- 1 – Reporting to the Investment Committee
- 2 – Investment Responsibilities

VIII.XIII. Liquidity Program

Purpose

The purpose of the Liquidity Program is to provide high liquidity to fund the day-to-day liquidity requirements of the Total Fund.

Investment Approaches & Parameters

All investment programs shall have specific written guidelines. The guidelines shall outline the investment approaches, permissible and restricted activities, and a performance objective that is commensurate with the program's purpose.

Staff shall rely on short- or long-term ratings from authorized nationally recognized statistical rating organizations (NRSROs). Staff shall maintain and annually update internal ratings for securities that are not rated by any authorized NRSROs.

Additional Information

Additional information specific to the management of the Liquidity Program is available in the following Appendices:

- 1 – Reporting to the Investment Committee
- 2 – Investment Responsibilities
- 6 – Investment Constraints and Limitations

IX.XIV. Low Duration Fixed Income Program

Purpose

The purpose of the Low Duration Fixed Income (LDFI) Program is to diversify CalPERS investment programs and enhance CalPERS returns, while dampening overall risk of CalPERS investment programs.

Investment Approaches & Parameters

The LDFI Program is managed through the Low Liquidity Enhanced Return (LLER) Program.

All investment programs shall have specific written guidelines. The guidelines shall outline the investment approaches, permissible and restricted activities, and a performance objective that is commensurate with the program's purpose.

Staff shall rely on short- or long-term ratings from authorized nationally recognized statistical rating organizations (NRSROs). Staff shall maintain and annually update internal ratings for securities that are not rated by any authorized NRSROs.

Additional Information

Additional information specific to the management of the LDFI Program is available in the following Appendices:

- 1 – Reporting to the Investment Committee
- 2 – Investment Responsibilities
- 6 – Investment Constraints and Limitations

XV. Opportunistic Program

Purpose

The Opportunistic Program enables greater investment in assets perceived to be substantially undervalued, and this section specifies guidelines to manage the concurrent risks. The program also permits the establishment of innovative portfolios.

Performance Objective & Benchmark

The performance objective is to outperform the program benchmark over rolling three-year periods, net of all program costs and fees.

Investment Approaches & Parameters

A. Investment Guidelines

Program investments may be managed internally, or by external managers, or by a combination of internal and external managers.

1. Manager Selection

The selected managers shall be registered, or appropriately exempt from registration, with the SEC.

2. Investment Manager Guidelines

Manager guidelines shall not conflict with any CalPERS investment policy. Implementation of this Program shall comply at all times with the manager guidelines and all CalPERS investment policies.

XI.XVI. Securities Lending

Purpose

The Securities Lending Program is comprised of three functions: (1) lending both equity and fixed income securities to borrowers, (2) reinvesting the collateral posted by borrowers and (3) facilitating short-term liquidity needs of the Total Fund, through the use of leverage, subject to the limits and constraints of the Investment Leverage section of this policy~~Liquidity Program~~. The program will be operated in a manner that maintains sufficient liquidity for the program and to adhere to the CalPERS Governance & Sustainability Principles.

Investment Approaches & Parameters

All investment programs shall have specific written guidelines. The guidelines shall outline the investment approaches, permissible and restricted activities, and a performance objective that is commensurate with the program's purpose.

XII.XVII. Terminated Agency Pool

Purpose

This section governs the management of the assets supporting the Terminated Agency Pool Program (TAP Program).

Investment Approaches & Parameters

- A. The TAP Program shall be managed to closely match assets to the projected future benefit payments and to minimize the likelihood of the program becoming underfunded. Following the periodic recalculation of TAP Program liabilities by the CalPERS Actuarial Office, a segmented asset allocation process shall be utilized as follows:
 1. An immunization segment intended to:
 - a. Closely match, to the extent practicable, the cash flows of the assets to the forecasted benefit payment cash flows across a range of inflation scenarios;
 - b. Invest a portion of the program assets in such a way as to ensure that cash flows beyond 30 years can be met across a range of inflation scenarios;
 - c. Provide sufficient liquidity for two years of forecasted benefit payment cash flows;
 2. A surplus segment consisting of TAP Program assets in excess of those needed for the “immunization” segment described above, to be invested consistent with the asset allocation utilized for the PERF.
- B. Program Structure/Parameters
The CalPERS Custodian may employ a unitized fund structure to maintain separate and distinct historical records and to produce individual net asset values of all investments.
- C. Rebalancing
The Investment Office and Actuarial Office shall collaborate to monitor the funded status of the TAP Program and to rebalance the recommended portfolio as the forecasted benefit payment cash flows are updated.
- D. Restrictions, Prohibitions, and Authorized Securities
Authorized securities for the “immunization” and surplus segments are included in Appendix 6 of this Policy.

XIII.XVIII. Plan Level and Asset Class Transition Portfolios

Purpose

The purpose of this section of the Policy is to ensure that CalPERS staff takes prudent and careful action while performing transitions, and to establish appropriate controls and approvals governing transitions. Plan level and asset class transitions shall separate the cost and performance impacts on investment programs or asset classes related to cash or security movements and transactions not associated with the on-going investment management of affected portfolios. Transitions activity can be implemented using transition portfolios or an allocation costs capture system (ACCS).

- A. A plan level transition may be established for any asset class for the purpose of achieving asset allocation or Total Fund related investment objectives. Plan level transition portfolio usage may be initiated by the Committee or by the Chief Investment Officer or designated staff operating within their respective delegated authorities. All transaction costs and investment performance for these portfolios flows directly to the Total Fund, outside an individual asset class.

Plan level transition portfolios may only be used for one or more of the following purposes:

1. Rebalance of asset classes to achieve asset allocation objectives
2. Raise or invest cash at the Total Fund level
3. Trade to effectuate Total Fund investment objectives

- B. An asset class transition portfolio may be established within any asset class for the purpose of achieving asset-class-specific objectives. The Managing Investment Director (MID) from the specific asset class may initiate the use of an asset class transition portfolio after notification to the Chief Operating Investment Officer and Investment Servicing Division staff. This notification shall include a summary of the intended activity and the expected duration of the activity. All transaction costs and investment performance associated with the use of the asset class transition portfolio will flow to the asset class level.

Asset class transition portfolios may only be used for one or more of the following purposes:

1. To terminate and fund external asset managers within the asset class;
2. To rebalance strategies and investment managers within an asset class; or
3. To raise or invest cash within the asset class.

Asset class transitions may be accomplished through the use of designated asset class transitions portfolios or through the use of ACCS.

- C. Transition portfolios shall be subjected to oversight in order to:

1. Establish a control structure to ensure and validate that transition portfolio transactions are executed as intended; and,
2. Confirm that the transition portfolios are used for a permitted purpose and in the manner set forth by this and other related policies.

Investment Approaches & Parameters

All assets within the transition portfolios shall be held by the CalPERS Custodian and all transactions shall follow CalPERS' established execution and settlement procedures.

~~XIV.XIX.~~ Role of Private Asset Class Board Investment Consultants

The roles of the ***Private Asset Class Board Investment Consultants*** are detailed in Appendix 2, Investment Responsibilities.

~~XV~~XX. Governance and Sustainability Strategy

Purpose

The CalPERS Governance and Sustainability Strategy (Strategy) shall be managed to accomplish the following objectives:

- A. Support the achievement of sustainable (including environmental, social, and governance factors), long-term target risk-adjusted returns for the Total Fund.
- B. Contribute to sustainable investment, advocacy, and engagement decision making across the Total Fund.

Approach & Parameters

The Strategy will be implemented through four channels, supported, where applicable, by the use of strategic partnerships, consultants, and data providers to advance CalPERS' investment and policy objectives. The four channels are:

- Research
- Integration
- Engagement
- Advocacy

Research

The Sustainable Investments Program will support asset-class integration of relevant environmental, social, and governance (ESG) topics into investment decision-making by exploring, monitoring, understanding, and communicating new research and information on ESG topics arising from academia, industry, and from Investment Office staff. Research will focus on:

- High value risks and opportunities for the PERF
- Implications and developments regarding ESG issues
- Best-in-class data and tools that facilitate integration of ESG risks and opportunities into decision-making
- Exploring opportunities to achieve market, risk-adjusted rates of returns along with positive and measurable environmental and social impacts

Integration

In investment decision-making the ESG risks and opportunities relevant to the investment decision should be considered, utilizing available data and tools, in support of conducting thorough investment analysis to improve long-term financial performance of the PERF.

Additional information on reporting and responsibilities is available in Appendices 1 and 2. CalPERS Governance & Sustainability Principles, which outline CalPERS' approach to engagement and advocacy, are included as Appendix 7.

Appendices

Appendix 1: Reporting to the Investment Committee

The following tables provide details regarding reporting to the Investment Committee by:

- Investment Office staff
- **General Pension Consultant**
- **Private Asset Class Board Investment Consultants**

Reporting to the Investment Committee - Investment Office Staff Responsibilities

Ref #	Program	Responsible Party	Report Content	Frequency
1.	Total Fund	All Programs	Staff shall report problems with, material changes to, and all violations of CalPERS' investment policies. These reports shall include explanations of any violations and appropriate recommendations for corrective action. Policy exceptions attributable to temporary mis-weights arising from the Committee's adoption of new program and/or subprogram asset allocation targets and the associated transition activity will not be subject to these reporting provisions provided that staff establishes a reasonable estimate of the timeframe for completion and so informs the Committee.	At the next Committee meeting or sooner if deemed necessary
2.	Investment Beliefs	All Programs	Staff shall report investment program strategy and its alignment with the Investment Beliefs.	No less than annually
3.	Governance and Sustainability Strategy	All Programs	Staff shall report investment program strategy and its alignment with the CalPERS Governance and Sustainability Strategy and associated in-force strategic plan.	No less than annually

Ref #	Program	Responsible Party	Report Content	Frequency
4.	Asset Allocation	Trust Level Portfolio Management	Staff shall provide a comprehensive Asset Allocation Strategy analysis coincident with the review of actuarial methods and assumptions to be presented for review and approval of policy target asset class allocations and ranges.	Every 4 years
5.	Asset Allocation	Trust Level Portfolio Management	Staff shall present a market-valuation-based analysis at the midpoint of the 4-year review cycle, or as needed in response to market conditions or changes affecting the capital market assumptions.	At midpoint of 4-year cycle or as needed
6.	Asset Allocation	Trust Level Portfolio Management	Staff shall notify the Committee of any allocation adjustment exceeding 50% of the approved policy range that is expected to increase the investment risk profile of the Total Fund.	At the next Committee meeting or sooner if deemed necessary.
7.	Asset Allocation	Trust Level Portfolio Management	The active asset allocation return will be measured and included in the Total Fund return and reported to the Committee.	No less than annually
8.	Benchmarks	Trust Level Portfolio Management	Staff shall report any Total Fund Policy Benchmark changes.	As needed.
9.	Risk Management	Investment Risk and Performance	Staff shall report CalPERS asset allocations relative to policy targets and ranges, as well as investment risks and performance.	No less than annually

Ref #	Program	Responsible Party	Report Content	Frequency
10.	Risk Management	Investment Risk and Performance	Quantitative Risk Metrics – Staff will report appropriate risk metrics, including volatility, for both forecasted total and forecasted active risk. These measures will include metrics required to monitor adherence to Board-approved investment policies. Measures will be reported for each asset class and the total fund. In addition, staff will provide commentary and analysis as appropriate on the interpretation and relative reliability of the provided metrics.	No less than annually
11.	Risk Management	Investment Risk and Performance	Leverage – Staff shall report portfolio leverage metrics for the Total Fund and asset classes, including the breakdown between recourse and non-recourse liabilities. The report shall include unfunded capital commitments for private asset classes.	No less than annually
12.	Risk Management	Investment Risk and Performance	Currency Risk – Staff will provide a report summarizing both actual portfolio and benchmark currency exposures of the Total Fund.	No less than annually
13.	Risk Management	Investment Risk and Performance	Counterparty Risk – Staff will report on counterparty exposure, summarizing net amounts owed to or due from CalPERS investment counterparties.	No less than annually
14.	Risk Management	Investment Risk and Performance	Concentration Risk – Staff will aggregate exposures across asset classes to create measures of concentration including industries, countries, and security issuer. This information will be presented for both the Total Fund portfolio and policy benchmark.	No less than annually

Ref #	Program	Responsible Party	Report Content	Frequency
15.	Risk Management	Investment Risk and Performance	Stress Testing/Scenario Analysis – Staff will be responsible for the specification of stress testing/scenario analysis and provide a periodic report that estimates the potential loss of market value to the Total Fund portfolio if certain economic events or historical scenarios were to occur.	No less than annually
16.	Risk Management	Investment Risk and Performance	Liquidity Risk – Staff will report appropriate liquidity risk metrics, including estimates for normal and market stress conditions. Measures will be reported for each asset class and the total fund.	No less than annually
17.	Divestment	Investment Controls and Operational Risk	Staff shall report to the Committee on (a) implementation activities undertaken pursuant to statutory divestment mandates from the state legislature, as applicable, and (b) any corresponding divestment decisions that may be required.	No less than annually
18.	Divestment	Investment Controls and Operational Risk	Staff shall prepare and submit to the Committee any divestment activity reports required by statute to be submitted to the California Legislature (e.g., Iran, Sudan etc.).	No less than annually
19.	Opportunistic	Opportunistic Strategies	Staff shall report on program investments, returns, risks, and activity.	No less than annually
20.	Terminated Agency Pool	Trust Level Portfolio Management	Staff shall report the current market value of assets and an analysis of the adequacy of the current program allocation to meet the forecasted benefit payment cash flows based on available data from CalPERS actuarial staff.	No less than annually

Ref #	Program	Responsible Party	Report Content	Frequency
21.	<u>Total Fund</u> Investment Manager Engagement Programs	Investment Controls & Operational Risk	Staff shall document CalPERS Total Fund investment presence in California via a comprehensive examination of CalPERS California-based investments across asset classes and the resulting ancillary benefits from these investments. The report will assess local jobs created or supported, investments in communities of interest such as low- to moderate-income communities, areas with high unemployment, and rural communities, and the broader economic impacts resulting from CalPERS investments statewide.	No less than annually

Reporting to the Investment Committee - General Pension Consultant Responsibilities

Ref #	Program	Report Content	Frequency
1.	Total Fund	Consultant shall report on the effectiveness of the Risk Management and Asset Allocation Programs, as well as use of benchmarks relative to the Policy.	No less than annually
2.	Total Fund	Consultant shall monitor, evaluate, and report on the performance of the programs (relative to the benchmarks and other applicable CalPERS policies) within this Policy, including the: <ul style="list-style-type: none"> a. Liquidity program b. Low Duration Fixed Income program c. Securities Lending program d. Opportunistic program 	No less than annually
3.	Global Derivatives & Counterparty Risk	Consultant shall report the performance of portfolios to ensure that any derivative use does not have a long-term harmful effect on the portfolio.	No less than annually
4.	Divestment	Consultant shall present to the Committee a comprehensive review and analysis of divestment activities to date.	No less than annually
5.	Governance and	The Consultant shall monitor, evaluate, and report on the progress of the CalPERS Governance and Sustainability Strategy for applicable programs, corresponding with the Annual Program Review process.	No less than annually

Ref #	Program	Report Content	Frequency
	Sustainability Strategy		

Reporting to the Investment Committee - Private Asset Class Board Investment Consultants Responsibilities

Ref #	Report Content (regarding CalPERS' private asset classes)	Frequency
1.	Review and provide an opinion letter to the Committee on investment policies and delegations of authority.	As needed
2.	Review and provide an opinion letter to the Committee on strategic and annual plans.	As needed
3.	Provide a report to the Committee on forecasts of asset class returns for total fund asset allocation purposes.	No less than annually
4.	Provide a report to the Committee that includes an analysis of market developments, market conditions, and macro-level view of market opportunities.	No less than annually
5.	Provide a report to the Committee regarding investment performance and portfolio risk and attribution analysis; monitor and report on deviations from policy benchmark performance and long-term expected performance.	No less than annually
6.	Review and provide an opinion letter to the Committee on appropriateness of asset class benchmarks.	No less than annually
7.	Provide an opinion letter to the Committee on investments above staff's delegation of authority.	As needed
8.	Perform annual review of program(s), including any sub-components, and provide an opinion letter to the Committee on performance, risk, manager selection and monitoring processes, and on internal control processes and staffing.	No less than annually
9.	Monitor, evaluate, and report on the progress of the CalPERS Governance and Sustainability Strategy for applicable program(s).	No less than annually

Appendix 2: Investment Program Related Responsibilities

The following tables provide details regarding investment related responsibilities for the:

- Investment Committee
- Investment Office staff
- Actuarial Office staff
- **General Pension Consultant**
- **Private Asset Class Board Investment Consultants**

Investment Program Related Responsibilities - Investment Committee

Ref #	Program	Responsibility
1.	Total Fund	Approve adoption of and oversee compliance with Investment Policies designed to achieve CalPERS strategic objectives.
2.	Total Fund	Review policy recommendations made by staff.
3.	Total Fund	Approve asset classes for investment and set a policy target allocation, permissible range, and benchmark for each asset class, expressed as a percentage of total assets.
4.	Total Fund	Set the Total Fund policy benchmarks.
5.	Divestment	If necessary, engage an independent consultant to provide an analysis of the economic impact on the portfolio of any contemplated divestment activity, to include one-time transaction costs, predicted tracking error, and risk-return trade-offs, in order to aid the Committee in determining whether divestment is both appropriate and consistent with the Board's fiduciary duties. Staff can help facilitate this process as requested.
6.	Investment Beliefs	Conduct a periodic review of the Investment Beliefs in conjunction with the cyclical 4-year Asset Liability Management process. Staff will consult with the Chair of the Committee to help facilitate this process.

Investment Program Related Responsibilities - Investment Office Staff

Ref #	Program	Responsible Party	Responsibility
1.	Total Fund	All Programs	Periodically review the policies and make recommendations to the Committee regarding new policy development, policy revisions, repeals, and any other aspect that the staff considers pertinent.
2.	Total Fund	All Programs	Engage with other asset class staff, consultants, and other pertinent parties to seek advice and counsel regarding investment strategy and investment results.
3.	Total Fund	All Programs	Develop and maintain investment procedures, program guidelines, and sub-program guidelines.

Ref #	Program	Responsible Party	Responsibility
4.	Total Fund	All Programs	Develop and maintain all procedures, investment program guidelines, and sub-program guidelines required for the management and implementation of the CalPERS Governance and Sustainability Strategy, consistent with board-approved policy.
5.	Total Fund	All Programs	Implement and adhere to all policies.
6.	Total Fund	All Programs	Undertake all aspects of program portfolio management, including investment transactions, use of leverage, and monitoring, analyzing, and evaluating performance relative to the appropriate benchmark.
7.	Total Fund	All Programs	Manage CalPERS allocations within policy ranges approved by the Committee, in accordance with policy guidelines.
8.	Total Fund	All Programs	Modify benchmarks as applicable.
9.	Asset Allocation	Trust Level Portfolio Management	Provide recommendations to the Committee concerning the identification of asset classes and selection of asset class benchmarks and policy targets and ranges based on periodic asset liability management (ALM) review.
10.	Asset Allocation	Trust Level Portfolio Management	Determine adjustments in asset class allocations, and direct rebalancing account activity and fund transfers across asset classes.
11.	Asset Allocation	Investment Risk and Performance	Staff will evaluate active risk at the Total Fund and asset class levels. Staff's evaluation will include realized five-year tracking error, and, for the PERF, forward looking tracking error, estimated with an industry-accepted risk model.
12.	Benchmarks	<u>Investment Controls & Operational Risk</u> Investment Risk and Performance	Develop and maintain procedures for the assignment and modification of benchmarks.
13.	Risk Management	Investment Risk and Performance	Select, maintain, and enhance the Total Fund risk management tools used to provide analyses that inform and support the investment actions of the entire CalPERS investment staff.
14.	Risk Management	Investment Risk and Performance	Provide analysis, such as stress testing and scenario analysis, to Investment Office staff regarding risk and performance measurement considerations for contemplated investments or strategies that could materially affect the Total Fund.
15.	Risk Management	Investment Risk and Performance	Provide consulting on the development of Investment Office Policies, procedures and guidelines with respect to the measurement, assessment, and management of investment risk.
16.	Risk Management	Investment Risk and Performance	Develop and maintain methodologies for the effective measurement of investment risk for the Total Fund.

Ref #	Program	Responsible Party	Responsibility
17.	Global Derivatives & Counterparty Risk	Trust Level Portfolio Management	Monitor the implementation of and adherence to the policy including due diligence and oversight of derivatives activities by External Managers, limited liability entities, or registered/commingled fund vehicles.
18.	Global Derivatives & Counterparty Risk	Trust Level Portfolio Management	Monitor and evaluate the use of derivatives and counterparty risk exposures across CalPERS to ensure the appropriate investment risk controls are in place.
19.	Global Derivatives & Counterparty Risk	Trust Level Portfolio Management/Asset Class Staff	Exercise thorough due diligence in assessing the scope of each LLE limited liability entity or registered/commingled fund manager's use of derivatives, their purpose, experience of the fund manager's staff in managing these positions, inherent leverage, and the manager's systems, controls, and operations for determining appropriateness of these entities for CalPERS investment.
20.	Global Derivatives & Counterparty Risk	Trust Level Portfolio Management/Asset Class Staff	Evaluate periodically (no less than annually) for any changes in the use of derivatives at each LLE limited liability entity or registered/commingled fund to reaffirm the appropriateness of these investments at inception.
21.	Divestment	Trust Level Portfolio Management and/or Asset Class/ Program Areas	Provide the Committee with an analysis of the economic impact on the portfolio of any contemplated divestment activity, or of any in-force divestments subject to review pursuant to the Divestment Section, to include one-time transaction costs, predicted tracking error, and risk-return trade-offs, in order to aid the Committee in determining whether divestment is both appropriate and consistent with the Board's fiduciary duties.
22.	Divestment	Trust Level Portfolio Management and/or Asset Class/ Program Areas	Implement any required divestments or prohibitions on future investments.
23.	Divestment	Investment Controls & Operational Risk	Staff shall present to the Committee a comprehensive review and recommendation, consistent with the Divestment Section, on all in-force divestments for the Committee's consideration and action at a minimum every five years.
24.	Divestment	Investment Controls & Operational Risk	Maintain the lists of companies subject to potential divestment.

Ref #	Program	Responsible Party	Responsibility
25.	Divestment	Investment Controls & Operational Risk	Monitor the implementation, or required reconsideration, of any divestments or prohibitions on future investments as required by the Policy.
26.	Divestment	Investment Controls & Operational Risk	As applicable in connection with a given divestment mandate, and with any proposed reinvestment in previously divested securities, implement an appropriate plan of engagement with the targeted portfolio companies.
27.	Leverage	Trust Level Portfolio Management	Develop and maintain leverage management guidelines that address allocation of Total Fund leverage across asset classes and programs, methodology for calculating and aggregating leverage including definition of cash equivalents, and permissible leverage types and strategies for asset classes and programs where investments are made.
28.	Opportunistic	Opportunistic Strategies	Responsible for management of the Opportunistic Program.
29.	Opportunistic	Trust Level Portfolio Management	Pre-approve all terms of any transfer of assets between a program account and another CalPERS account.
30.	Terminated Agency Pool	Trust Level Portfolio Management	Ensure that program rebalancing and restructuring is performed as soon as practicable following the receipt of updated forecasted benefit payment cash flows from the CalPERS Actuarial Office.
31.	Plan Level & Asset Class Transition Portfolios	Investment Servicing Division	Establish and maintain procedures regarding the use and monitoring of transition portfolios.
32.	Governance and Sustainability Strategy	Sustainable Investment Program	Support asset classes and program areas to integrate relevant sustainability and governance issues into investment, advocacy, and engagement decision making. This shall include the preparation of an annual review of systemic sustainable investment risks, such as climate change. The results of the review shall be presented to the senior leadership of the Investment Office to support investment decision-making across the fund.
33.	Governance and Sustainability Strategy	Sustainable Investment Program	Staff shall maintain a Total Fund-level Governance and Sustainability Strategic Plan approved by the Committee setting forth CalPERS' long-term objectives for the Strategy. Changes to the Strategic Plan require Committee approval.

Ref #	Program	Responsible Party	Responsibility
34.	Governance and Sustainability Strategy	Sustainable Investment Program	Obtain annual Committee approval of the Governance & Sustainability Principles.
35.	Governance and Sustainability Strategy	Global Equity	Execute all publicly traded company proxies and voting instructions in alignment with the Governance & Sustainability Principles.

Investment Program Related Responsibilities - Actuarial Office Staff

Ref #	Program	Responsibility
1.	Terminated Agency Pool	Provide a forecast of benefit payment cash flow.
2.	Terminated Agency Pool	Recalculate pool benefit payment cash flow when new agencies are added to the program.

Investment Program Related Responsibilities - General Pension Consultant

Ref #	Program	Responsibility
1.	Total Fund	Provide independent review, analysis, and recommendations regarding the development and revision of policies to ensure overall consistency, use of best practices, a system-wide approach, and implementation of CalPERS policies.
2.	Total Fund	Provide independent perspective and counsel to the Committee, to include routine communication with the Investment Office staff and periodic review of processes and procedures.
3.	Benchmarks	Monitor and evaluate the appropriate use of benchmarks related to performance of the Total Fund and Programs relative to the policy.
4.	Benchmarks	For benchmark changes and material construction rule changes that require Committee approval, review and make a recommendation regarding approval. For benchmark construction rule changes that are not material, review and approve all requests.
5.	Opportunistic	Provide oversight on behalf of the Committee for investment activities within the Opportunistic Program.

Investment Program Related Responsibilities - Private Asset Class Board Investment Consultant

1. Except as noted in number 2 below, the Private Asset Class Board Investment Consultants (PACBIC) shall not:
 - a. Manage assets for CalPERS
 - b. Perform work for staff on special projects
 - c. Provide opinions to staff regarding specific investment transactions
2. In limited circumstances, the PACBIC may be engaged for roles enumerated in number 1 above if the PACBIC possesses unique knowledge or expertise that is not available through other providers. Such an arrangement must be approved by the Committee prior to engagement. In situations where adequate time is not available to request Committee approval, staff may request approval from the Chair of the Committee. Upon approval of the request, staff will notify the other Committee members.

Additional information on responsibilities specific to the Private Equity Program and Real Assets Program is available in the tables below.

Private Equity Program Related Responsibilities

Ref #	Transaction Type/Size	Independent Due Diligence Report (not PACBIC)	Prudent Person Opinion (not PACBIC)	PACBIC Transaction Role	Opinion to the Board
1.	Fund Investments	MID discretion	Not required **	MID discretion	Not required
2.1	Co-Investment ≤\$200 million	MID discretion	MID discretion***	MID discretion	Not required
2.2	Co-Investment >\$200 million	MID discretion	Required	MID discretion	Not required
3.	Customized Investment Accounts	MID discretion	Required	MID discretion	Not required
4.	>Staff Delegated Authority	Not required	Required	Required	Required

** A **Prudent Person Opinion** is required for fund investments in the third or fourth quartile.

***For transactions between \$101 million and \$200 million the MID must receive either CIO approval or a **Prudent Person Opinion**.

Real Assets Program Related Responsibilities

Ref #	Transaction Type/Size	Independent Due Diligence Report (not PACBIC)	<i>Prudent Person Opinion</i> (not PACBIC)	PACBIC Transaction Role	Opinion to the Board
1.	≤ \$100 million	Not required	MID discretion	MID discretion	Not required
2.	>\$100 million	Not required	Required	MID discretion	Not required
3.	>Staff Delegated Authority	Not required	Required	Required	Required

Appendix 3: Investment Beliefs

The Investment Beliefs were adopted by the Committee on September 13, 2013.

1. Liabilities must influence the asset structure.

- Ensuring the ability to pay promised benefits by maintaining an adequate funding status is the primary measure of success for CalPERS.
- CalPERS has a large and growing cash requirement and inflation-sensitive liabilities; assets that generate cash and hedge inflation should be an important part of the CalPERS investment strategy.
- CalPERS cares about both income and appreciation components of total return.
- Concentrations of illiquid assets must be managed to ensure sufficient availability of cash to meet obligations to beneficiaries.

2. A long time investment horizon is a responsibility and an advantage.

Long time horizon requires that CalPERS:

- Consider the impact of its actions on future generations of members and taxpayers.
- Encourage investee companies and external managers to consider the long-term impact of their actions.
- Favor investment strategies that create long-term, sustainable value and recognize the critical importance of a strong and durable economy in the attainment of funding objectives.
- Advocate for public policies that promote fair, orderly and effectively regulated capital markets.

Long time horizon enables CalPERS to:

- Invest in illiquid assets, provided an appropriate premium is earned for illiquidity risk.
- Invest in opportunistic strategies, providing liquidity when the market is short of it.
- Take advantage of factors that materialize slowly such as demographic trends.
- Tolerate some volatility in asset values and returns, as long as sufficient liquidity is available.

3. CalPERS investment decisions may reflect wider stakeholder views, provided they are consistent with its fiduciary duty to members and beneficiaries.

- As a public agency, CalPERS has many stakeholders who express opinions on investment strategy or ask CalPERS to engage on an issue. CalPERS preferred means of responding to issues raised by stakeholders is engagement.
- CalPERS primary stakeholders are members / beneficiaries, employers and California taxpayers as these stakeholders bear the economic consequences of CalPERS investment decisions.

- In considering whether to engage on issues raised by stakeholders, CalPERS will use the following prioritization framework:
 - Principles and Policy – to what extent is the issue supported by CalPERS Investment Beliefs, Governance and Sustainability Principles or other Investment Policy?
 - Materiality – does the issue have the potential for an impact on portfolio risk or return?
 - Definition and Likelihood of Success – is success likely, in that CalPERS action will influence an outcome which can be measured? Can we partner with others to achieve success or would someone else be more suited to carry the issue?
 - Capacity – does CalPERS have the expertise, resources and standing to influence an outcome?

4. Long-term value creation requires effective management of three forms of capital: financial, physical and human.

- Governance is the primary tool to align interests between CalPERS and managers of its capital, including investee companies and external managers.
- Strong governance, along with effective management of environmental and human capital factors, increases the likelihood that companies will perform over the long-term and manage risk effectively.
- CalPERS may engage investee companies and external managers on their governance and sustainability issues, including:
 - Governance practices, including but not limited to alignment of interests.
 - Risk management practices.
 - Human capital practices, including but not limited to fair labor practices, health and safety, responsible contracting and diversity.
 - Environmental practices, including but not limited to climate change and natural resource availability.

5. CalPERS must articulate its investment goals and performance measures and ensure clear accountability for their execution.

- A key success measure for the CalPERS investment program is delivery of the long-term target return for the fund.
- The long time horizon of the fund poses challenges in aligning interests of the fund with staff and external managers.
- Staff can be measured on returns relative to an appropriate benchmark, but staff performance plans should include additional objectives or key performance indicators to align staff with the fund's long-term goals.
- Each asset class should have explicit alignment of interest principles for its external managers.

6. Strategic asset allocation is the dominant determinant of portfolio risk and return.

- CalPERS strategic asset allocation process transforms the fund's targeted rate of return to the market exposures that staff will manage.
- CalPERS will aim to diversify its overall portfolio across distinct risk factors / return drivers.
- CalPERS will seek to add value with disciplined, dynamic asset allocation processes, such as mean reversion. The processes must reflect CalPERS characteristics, such as time horizon and size of assets.
- CalPERS will consider investment strategies if they have the potential to have a material impact on portfolio risk and return.

7. CalPERS will take risk only where we have a strong belief we will be rewarded for it.

- An expectation of a return premium is required to take risk; CalPERS aims to maximize return for the risk taken.
- Markets are not perfectly efficient, but inefficiencies are difficult to exploit after costs.
- CalPERS will use index tracking strategies where we lack conviction or demonstrable evidence that we can add value through active management.
- CalPERS should measure its investment performance relative to a reference portfolio of public, passively managed assets to ensure that active risk is being compensated at the Total Fund level over the long-term.

8. Costs matter and need to be effectively managed.

- CalPERS will balance risk, return and cost when choosing and evaluating investment managers and investment strategies.
- Transparency of the total cost to manage the CalPERS portfolio is required of CalPERS business partners and itself.
- Performance fee arrangements and incentive compensation plans should align the interests of the fund, staff and external managers.
- CalPERS will seek to capture a larger share of economic returns by using our size to maximize our negotiating leverage. We will also seek to reduce cost, risk and complexity related to manager selection and oversight.
- When deciding how to implement an investment strategy, CalPERS will implement in the most cost effective manner.

9. Risk to CalPERS is multi-faceted and not fully captured through measures such as volatility or tracking error.

- CalPERS shall develop a broad set of investment and actuarial risk measures and clear processes for managing risk.
- The path of returns matters, because highly volatile returns can have unexpected impacts on contribution rates and funding status.

- As a long-term investor, CalPERS must consider risk factors, for example climate change and natural resource availability that emerge slowly over long time periods, but could have a material impact on company or portfolio returns.

10. Strong processes and teamwork and deep resources are needed to achieve CalPERS goals and objectives.

- Diversity of talent (including a broad range of education, experience, perspectives and skills) at all levels (Board, staff, external managers, corporate boards) is important.
- CalPERS must consider the government agency constraints under which it operates (e.g., compensation, civil service rules, contracting, transparency) when choosing its strategic asset allocation and investment strategies.
- CalPERS will be best positioned for success if it:
 - Has strong governance.
 - Operates with effective, clear processes.
 - Focuses resources on highest value activities.
 - Aligns interests through well designed compensation structures.
 - Employs professionals who have intellectual rigor, deep domain knowledge, a broad range of experience and a commitment to implement CalPERS Investment Beliefs.

Appendix 4: Public Employees' Retirement Fund Asset Allocation Targets & Ranges

The PERF strategic asset allocation policy targets and ranges are listed in Table 1 below.

Asset allocation target weight changes will be implemented following a Funding Risk Mitigation Event as provided in the Funding Risk Mitigation Policy.

During transitions to committee-approved policy target weights, ranges will be applied relative to interim target weights.

Table 1: Strategic Asset Allocation Targets and Ranges

Asset Class	Asset Segment	Target Allocation	Range Relative to Target Allocation
Growth—Public Equity	Total Public Equity	50 <u>42%</u>	+/-7%
<i>Public Equity Segment 1</i>	<i>Cap Weighted</i>	35 <u>30%</u>	-
<i>Public Equity Segment 2</i>	<i>Factor Weighted</i>	15 <u>12%</u>	-
Growth—Private Equity	Private Equity	8 <u>13%</u>	+/-4 <u>+/-5%</u>
Income	Total Income	28 <u>30%</u>	+/-6%
<i>Income Segment 1</i>	<i>Long-Treasury</i>	10 <u>5%</u>	-
<i>Income Segment 2</i>	<i>Long Spread</i>	15	-
	<u>Mortgage-Backed Securities</u>	<u>5%</u>	=
	<u>Investment Grade Corporates</u>	<u>10%</u>	=
<i>Income Segment 3</i>	<i>High Yield</i>	3 <u>5%</u>	-
	<u>Emerging Market Sovereign Bonds</u>	<u>5%</u>	=
Real Assets	N/A	13 <u>15%</u>	+/-5%
Private Debt	N/A	5%	+/-5%
Inflation Assets	N/A	0%	+3%/0%
Liquidity	N/A	1%	+3%/-6%
<u>Total Asset Exposure</u>	<u>N/A</u>	<u>105%</u>	

<u>Strategic Leverage</u>	<u>N/A</u>	<u>-5%</u>	
<u>Total</u>		<u>100%</u>	

Appendix 5: Investment Benchmarks

Public Employees' Retirement Fund Policy Benchmarks

The PERF Policy Benchmark is the aggregation of the asset class and asset segment benchmarks approved by the Board. The PERF Policy Benchmark is rebalanced quarterly. The return of this benchmark is calculated by weighting each of the asset class and asset segment benchmark returns by the respective asset class policy target weight or interim target weight, provided that, for purposes of calculating the PERF Policy Benchmark return, only, the weights for the private asset classes will be adjusted to reflect actual portfolio weights with offsetting adjustments applied systematically to a combination of public market asset segments having similar long-term expected returns. The foregoing systematic adjustments will be outlined in Policy-Related Procedures (PRPs) and implemented with oversight of the General Pension Consultant and/or applicable Private Asset Class Board Investment Consultant.

Adjustments to the foregoing benchmark calculation methodology will follow a review and approval process consistent with that described in the Benchmarks section for "Benchmark Oversight."

During transitions to committee-approved policy target weights, interim target weights will be used to calculate the PERF Policy Benchmark.

Table 1: PERF Policy Benchmark

Asset Class	Asset Segment	Benchmark
Growth—Public Equity Segment 1	Cap Weighted	Custom FTSE All World, All Cap Equity
Growth—Public Equity Segment 2	Factor Weighted	MSCI ACWI Select Factor Weighted Index
Growth—Private Equity	N/A	Custom FTSE All World, All Cap Equity + 150bps, Quarter Lag
Income Segment 1	Long-Treasury	Custom Bloomberg Barclays Long Government
Income Segment 2	Long Spread	Custom Bloomberg Barclays Long Spread
<u>Income</u>	<u>Mortgage-Backed Securities</u>	<u>Custom Bloomberg Mortgage</u>
<u>Income</u>	<u>Investment Grade Corporates</u>	<u>Custom Bloomberg Corporate ex Sov</u>
Income Segment 3	High Yield	Custom Bloomberg Barclays High Yield
<u>Income</u>	<u>Emerging Market Sovereign Bonds</u>	<u>Custom JP Morgan EMBIG Diversified</u>
Real Assets	N/A	MSCI/PREA U.S. ACOE Quarterly Property Fund Index (Unfrozen)
<u>Private Debt</u>	<u>N/A</u>	<u>S&P/LSTA U.S. Leveraged Loan 100 Index + 125 bps, Quarter Lag</u>
Inflation Assets	N/A	50% Bloomberg Barclays Inflation Linked U.S. + 25% Universal Government Inflation Linked Index ex-U.S. + 25% S&P GSCI TR
Liquidity	N/A	30-day Treasury Bill
<u>Strategic Leverage</u>	<u>N/A</u>	<u>ICE BofA US 3-Month Treasury Bill Index + 50 bps</u>

Table 2: Public Employees' Retirement Fund Program Benchmarks

PERF Program Benchmarks are benchmarks for CalPERS investment programs with no strategic allocation.

Ref #	Total Fund Policy Section	Program	Benchmark
1.—	Opportunistic	Opportunistic	Custom benchmarks
2.—	Securities Lending	Securities Lending	Not Applicable
3.—	Low Duration Fixed Income	Low Liquidity Enhanced Return Program	LIBOR based Index
4.—	Terminated Agency Pool	Terminated Agency Pool	Not Applicable

Ref #	Other	Program	Benchmark
5.—	Absolute Return Strategies Program Policy	Absolute Return Strategies Program	One-year Treasury Note + 5%

Affiliate Fund Policy Benchmarks

Affiliate Fund policy benchmarks are calculated by weighting the return of each of the asset class benchmarks by its policy target weight. Additional information on the asset allocation targets for CalPERS' Affiliate Funds is available in the statement of investment policy for each Affiliate Fund.

Table 23: California Employers' Retiree Benefit Trust Policy Benchmark

Asset Class	Benchmark
Global Equity	MSCI ACWI IMI (Net)
U.S. Fixed Income	Bloomberg Barclays-Long Liability Index
Treasury Inflation-Protected Securities (TIPS)	Bloomberg Barclays-U.S. TIPS Index, Series L
Commodities	S&P GSCI Total Return Daily
Real Estate Investment Trusts (REITs)	FTSE EPRA/NAREIT Developed (Net)
Liquidity	<u>BofA Merrill Lynch U.S. 3-Month Treasury Bill Index</u> 91-day Treasury Bill (asset class utilized for operating cash)

Table 34: Judges' Retirement System Fund Policy Benchmark

Asset Class	Benchmark
Cash Equivalents	<u>BofA Merrill Lynch U.S. 3-Month Treasury Bill Index</u> 91-day Treasury Bill

Table 45: Judges' Retirement System II Fund Policy Benchmark

Asset Class	Benchmark
Global Equity	MSCI ACWI IMI (Net)
U.S. Fixed Income	Bloomberg Barclays-Long Liability Index
Treasury Inflation-Protected Securities (TIPS)	Bloomberg Barclays-U.S. TIPS Index, Series L
Commodities	S&P GSCI Total Return Daily
Real Estate Investment Trusts (REITs)	FTSE EPRA/NAREIT Developed Index
Liquidity	<u>BofA Merrill Lynch U.S. 3-Month Treasury Bill Index</u> 91-day Treasury Bill (asset class utilized for operating cash)

Table 56: Legislators' Retirement System Fund Policy Benchmark

Asset Class	Benchmark
Global Equity	MSCI ACWI IMI (Net)
U.S. Fixed Income	Bloomberg Barclays-Long Liability Index
Treasury Inflation-Protected Securities (TIPS)	Bloomberg Barclays-U.S. TIPS Index, Series L
Commodities	S&P GSCI Total Return Daily
Real Estate Investment Trusts (REITs)	FTSE EPRA/NAREIT Developed Index
Liquidity	BofA Merrill Lynch U.S. 3-Month Treasury Bill Index <u>91-day Treasury Bill</u> (asset class utilized for operating cash)

Table 67: Long-Term Care Fund Policy Benchmark

Asset Class	Benchmark
Global Equity	MSCI ACWI IMI (Net)
U.S. Fixed Income	Bloomberg Barclays-Long Liability Index
Treasury Inflation-Protected Securities (TIPS)	Bloomberg Barclays-U.S. TIPS Index, Series L
Commodities	S&P GSCI Total Return Daily
Real Estate Investment Trusts (REITs)	FTSE EPRA/NAREIT Developed (Net)
Liquidity	BofA Merrill Lynch U.S. 3-Month Treasury Bill Index <u>91-day Treasury Bill</u> (asset class utilized for operating cash)

Table 78: Public Employees' Health Care Fund Policy Benchmark

Asset Class	Benchmark
U.S. Fixed Income	Bloomberg Barclays-U.S. Aggregate Bond Index

Table 89: Supplemental Income Plans Target Retirement Date Funds Policy Benchmark

The performance of each individual investment fund will be evaluated against its appropriate asset class benchmark.

Asset Class	Benchmark
U.S. Equity	Russell 3000 Index
International Equity	MSCI ACWI ex-USA IMI Index (Net)
U.S. Fixed Income	Bloomberg Barclays-U.S. Aggregate Bond Index
U.S. Fixed Income	Bloomberg Barclays-U.S. 1-3 Year Government/Credit Bond Index
Real Assets*	The benchmark is a weighted benchmark consisting of:

Asset Class	Benchmark
	<ul style="list-style-type: none"> ○ Dow Jones-U.S. Select REIT Index ○ Bloomberg Roll Select Commodity Index ○ S&P Global Large MidCap Commodity and Resources Index ○ Bloomberg Barclays U.S. TIPS Bond Index ○ S&P Global Infrastructure Equity Index ○ <u>Bloomberg US Govt Inflation-Linked 1-10 Year Bond Index</u>
Cash Equivalents	BofA Merrill Lynch U.S. 3-Month Treasury Bill Index

*Target weights for the Real Asset sub-strategies (commodities, natural resources, infrastructure, REITs, and TIPS) are evaluated regularly by SSgA to improve performance or address key risks. As such, the target weights can shift over time, and are expected to continue to provide strategic real asset exposure for participants.

Table 910: California Employers' Pension Prefunding Trust Policy Benchmark

Asset Class	Benchmark
Global Equity	MSCI ACWI IMI (Net)
U.S. Fixed Income	Bloomberg Barclays -U.S. Aggregate Bond Index
Treasury Inflation-Protected Securities (TIPS)	Bloomberg Barclays -U.S. TIPs Index, Series L
Real Estate Investment Trusts (REITs)	FTSE EPRA/NAREIT Developed (Net)
Liquidity	<u>BofA Merrill Lynch U.S. 3-Month Treasury Bill Index</u> 91-day Treasury Bill (asset class utilized for operating cash)

Appendix 6: Investment Constraints & Limitations for Public Employees' Retirement Fund *Asset Allocation Strategy*

Overlay portfolios may be established to manage currency risk within the following parameters:

1. Currency overlay portfolio risk will be managed within the Total Fund Actionable Tracking Error Limit.
2. Currency overlay portfolios may only be utilized to hedge currency risk and will not decrease the net notional exposure to any one non USD underlying developed market currency (either in the portfolio or in the Policy benchmark) by more than 25%. The foregoing percentage limit restrictions do not apply to currency derivatives used to settle security transactions denominated in those foreign currencies and any authorized instrument or contract intended to manage transaction or currency exchange risk within an asset class implementation.

Total Fund Actionable Tracking Error Limit

The CalPERS Total Fund shall be managed with an active risk target consistent with forecast tracking error up to 1% relative to the Policy benchmark, inclusive of active asset allocation and other active management decisions, as calculated by the CalPERS Total Fund Risk Management System. The tracking error calculation methodology will neutralize the effect of differences between private asset holdings and their respective components in the policy benchmark.

The tracking error will be monitored regularly, and in the event of a breach, staff will inform the Board of the cause and develop a plan to move the tracking error within the target range, if deemed advisable, taking into account strategy horizon, transaction costs, and liquidity conditions.

Benchmarks

See Appendix 5

Global Derivatives & Counterparty Risk

Derivatives Risk Limitations

- A. Staff must reference the Investment Office Derivatives and Counterparty Risk Procedures Manual, and asset class investment policies for additional limitations specific to their portfolios inclusive of cash and derivatives instruments.
- B. Managers should reference their Investment Management Agreements (IMAs) including Investment Guidelines for risk limitations specific to their portfolio or to the asset class or trust for which that they are managing investments.

Investment Leverage

See the Investment Leverage section of the Policy for leverage-related constraints.

Liquidity Program

1. All securities purchased shall have a maximum final stated maturity of 15 months unless specified otherwise within Investment Policy Procedures & Guidelines for the Program.
2. Authorized nationally recognized statistical rating organizations (NRSROs) are limited to:
 - Standard & Poor's (S&P)
 - Moody's Investors Service, Inc. (Moody's)
 - Fitch Ratings (Fitch)
3. Credit Risk will be controlled by requiring minimum ratings outlined in the table below.

Asset	Minimum Credit Rating
All securities, except sovereign securities (at time of purchase)	Short Term: A2/P2/F2, or Long Term: A-/A3/A-
Sovereign securities (at the time of purchase)	Short Term: A2/P2/F2, or Long Term: Baa2/BBB/BBB

Note: In the case of a split-rated security, staff may rely upon the highest rating. If a security is not rated by an authorized NRSRO, staff's equivalent rating would apply.

Low Duration Fixed Income Program

Investment constraints/ limitations related to the Low Liquidity Enhanced Return (LLER) component of the LDFI Program are as follows:

1. Authorized NRSROs are limited to:
 - Standard & Poor's (S&P)
 - Moody's Investors Service, Inc. (Moody's)
 - Fitch Ratings (Fitch)
2. Interest Rate Risk must be controlled by limiting the LLER Program's duration to not exceed 270 days.
3. Credit Risk will be controlled by requiring minimum ratings for all securities of Baa3/BBB-/ BBB- at the time of purchase.
 - a. Credit Risk shall be actively managed on a risk/return basis.
 - b. A downgrading of a security that causes a violation in the guidelines shall not require an immediate sale if the MID of the Opportunistic Strategies Program believes that no further risk of credit deterioration exists or the sale diminishes the total return to

CalPERS. The CalPERS internal research staff shall analyze such situations to ensure that an informed decision is made.

- c. Staff shall rely on short- or long-term ratings from authorized NRSROs. In the case of a split-rated security, staff may rely upon the highest rating. If a security is not rated by authorized NRSROs, staff’s equivalent rating would apply. Staff shall maintain and annually update internal ratings for securities that are not rated by any authorized NRSROs.

Opportunistic Program

A. ~~Strategy Allocation~~ Investment Parameters

1. The market value of program investments shall not exceed 5% of the Total Fund. A ~~violation of this limit shall be restored in a timely manner not to exceed three months, with the exact time period primarily dependent on transaction costs and liquidity.~~ Given the often illiquid and/or idiosyncratic nature of opportunistic investments, any violation of this limit due to a market dislocation in strategic policy asset classes will be assessed based on market liquidity and transaction costs when determining the time period for restoring program exposure within the limit.
2. Opportunistic investments are defined as tactical or non-traditional investment opportunities that may be short-term or may not fit within the generally accepted risk/return parameters of specific asset classes or strategy groupings. Such opportunities may involve capitalizing on short-term market dislocations or other unique situations. Investments may include strategies with allocations to single assets or across multiple asset types or other innovative approaches
3. Entry of a new strategy or liquidation of strategy (as a whole) in the Opportunistic Program will require the approval of the CIO
2. ~~The table below provides details regarding the allocation ranges for the Opportunistic Program.~~

Strategy	Range [±]
Bank Loans and CLO	0% – 40%
Public Market Dislocation	0% – 50%
Middle Market Direct Lending	0% – 80%
Specialty Lending	0% – 40%
Liquidity Financing	0% – 40%
Real Estate Financing	0% – 40%
Structured Products and Whole Loans	0% – 20%

~~*Evolving market opportunities preclude specifying target percentages.~~

B. ~~Investment Parameters~~ Staff Authority

Staff Authority Limits
Net Asset Value (NAV) in billions

MID, Deputy Chief Investment Officer (DCIO), and Chief Investment Officer (CIO) limits apply per each commitment to an external manager	Funds	Co-Investments	Customized Investment Account
MID	\$1.0	\$1.0	\$2.0
DCIO	\$2.0	\$2.0	\$4.0
CIO	\$3.0	\$3.0	\$6.0
MID Fiscal Year Limit*	\$7.0	\$5.0	\$6.0

*Fiscal Year Limit applies to cumulative commitments.

Securities Lending

Lending Guidelines

1. Initial Margin: The proper amount of collateralization shall be market value times the appropriate percentage for each security type.
 - a. Domestic securities – 102%
 - b. Matching currency investment for G10 domiciled issuers – 102%
 - c. All other international securities – 105%
2. Maintenance Margin: Loan collateral below these specified maintenance levels must be adjusted within the next business day and before the securities being re-lent to the same borrowers.
 - a. The maintenance margin is 102% for securities with an initial margin of 102%
 - b. The maintenance margin is 105% for securities with an initial margin of 105%
3. Non-material Margin Call: Despite the maintenance margin percentages above, non-material margin calls of \$100,000 or less need not be made as long as collateral is 101.5% or more for securities with an initial maintenance margin of 102% and 104.5% or more for securities with an initial maintenance margin of 105%.

Cash Collateral Re-Investment Guidelines

1. The duration of the collateral investment portfolio shall not differ from the duration of the outstanding loans by more than 60 days.

Liquidity Guidelines

1. A minimum of 10% of the Securities Lending cash collateral pool must be invested in securities that mature or are subject to a demand feature exercisable within one business day.
2. A minimum of 20% of the Securities Lending cash collateral pool must be invested in securities that mature or are subject to a demand feature exercisable within seven business days.*
3. A minimum of 30% of the Securities Lending cash collateral pool must be invested in securities that mature or are subject to a demand feature exercisable within thirty days.*

*The liquidity constraint includes the preceding requirement(s) as cumulative.

Terminated Agency Pool

Authorized securities for the “immunization” and surplus segments are indicated in the following table.

Segment	Authorized Securities
“Immunization”	U.S. Treasury STRIPS U.S. Treasury TIPS Cash or cash equivalents
Surplus	All securities included within the rest of the PERF

Appendix 7: CalPERS Governance & Sustainability Principles

Revised: September 16, 2019

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I. Introduction

Our mission is to “deliver retirement and health care benefits to members and their beneficiaries.” The California Public Employees’ Retirement System (CalPERS, System) is the nation's largest defined benefit public pension fund with a duty to deliver the retirement and health benefits promised to our members. This responsibility applies not just to our current beneficiaries, but also to future members who may not retire for several decades. We therefore need to ensure that our commitments can be honored over the long-term.

A vital part of this is ensuring that our investments, which fund around two-thirds of our pension payments every year, generate the highest possible returns at an acceptable level of risk. This is a task managed by the CalPERS Investment Office, overseen by the CalPERS Board of Administration, and guided by our Investment Beliefs¹ and Core Values². This responsibility is known as our Fiduciary Duty³.

Over the years the CalPERS Principles have evolved from a guide to proxy voting in public markets, to a broader statement of our views on best practices guiding our engagement with companies, advocacy agenda with policy makers, and expectations for both our internal and external managers across the total fund.

As the governance and sustainability agenda has developed, so too have the CalPERS Principles. An important area of development has been integrating consideration of environmental and social factors alongside our governance agenda. We have given an economic framework to what is often called ESG in investing. As reflected in our Investment Beliefs, CalPERS considers that long-term value creation requires the effective management of three forms of capital – Financial, Physical, and Human. This economic approach grounds our sustainable investment agenda in our fiduciary duty to generate risk-adjusted returns for our beneficiaries.

A further important area of development has been the recognition that financial markets’ safety and soundness are vitally important to CalPERS ability to achieve its risk adjusted returns. This focus on financial markets is also reflected in CalPERS’ Investment Beliefs, which recognize that a long-term investment horizon is both an advantage and a responsibility. That

¹ In September 2013, CalPERS adopted a set of ten Investment Beliefs intended to guide decision-making, facilitate the management of a complex portfolio, and enhance consistency. The Investment Beliefs can be found at www.calpers-governance.org

² Quality, Respect, Accountability, Integrity, Openness, and Balance.

³ CalPERS’ Board and its Staff have fiduciary duties of loyalty and prudence, pursuant to the [California Constitution](#), Article XVI, Section 17, to invest “with the care, skill, prudence, and diligence under the circumstances then prevailing that a prudent person acting in a like capacity and familiar with those matters would use in the conduct of an enterprise of a like character and with like aims.”

responsibility requires that CalPERS advocate for policies that support the long-term with policy makers, companies, and investment managers.

The current edition distills some 20 years of experience in governance and sustainability. We continue to develop our approach on new issues which are emerging and to refresh our thinking as we learn from experience.

CalPERS expects all internal and external managers of CalPERS capital to integrate the Principles into investment decision making, including proxy voting, consistent with CalPERS' fiduciary duty to seek the highest possible returns at an acceptable level of risk to fulfill our pension obligations. CalPERS recognizes that countries and companies are in different developmental stages. We are mindful of differing laws and practices in jurisdictions – of governance outcomes and need to be carefully addressed. CalPERS' investment managers will need to exercise their best judgment after taking all relevant factors into account.

We have learned that company managers want to perform well, in both an absolute sense and as compared to their peers. They also want to adopt long-term strategies and vision, but often do not feel that their shareowners are patient enough. Our experience has shown all companies – whether governed under a structure of full accountability or not – will inevitably experience both ascents and descents along the path of profitability.

We have also learned, and firmly embrace the belief that strong, accountable corporate governance means the difference between long periods of failure in the depths of the performance cycle, and responding quickly to correct the corporate course.

This work has been integrated into CalPERS Investment Beliefs which address sustainable investment, risk management, and CalPERS engagement with companies, regulators, managers, and stakeholders.

We recognize that much of our experience in this area comes from investments in public equities but that our evolution to a "Total Fund" approach means these Principles may need to be suitably adapted to work across other asset classes. We continue to listen and learn in this area.

We encourage and welcome feedback on these Principles from companies, fellow investors and other stakeholders. You can submit your feedback here:

<https://www.calpers.ca.gov/page/contact/questions-comments-complaints>.

II. Purpose

These Principles have been adopted by the CalPERS Board, through its Investment Committee, in order to create the framework for considerations that must be taken into account when we participate in any of the following actions:

- Executes our shareowner proxy voting responsibilities

- Engage investee companies to achieve long-term sustainable risk-adjusted returns
- Requests internal and external managers of our capital to make investment decisions on our behalf
- Advocate with policy-makers and international organizations on financial market reform.

Proxy Voting

We implement our proxy voting responsibility in a manner that is consistent with these Principles unless such action may result in long-term harm to the company that outweighs all reasonably likely long-term benefit; or unless such a vote is contrary to the interests of the beneficiaries of the System.

It is therefore important for shareowners such as CalPERS to exercise their rights to participate and make their voting decisions based on a full understanding of the information and legal documentation presented to them. Our proxy voting responsibilities cover a wide range of corporate governance issues centered around various management and shareowner proposals. Specific voting topics may include board quality, investor rights, executive compensation, corporate reporting, capital structure, environmental and social related issues. When exercising our voting rights, we will cast votes “for” or “against”, individual management and shareowner proposals consistent with the interest of our beneficiaries and consistent with the Principles.

We will vote “against”, an individual or slate of director nominees at companies that do not effectively oversee these interests. We will also withhold our vote in limited circumstances where a company has consistently demonstrated long-term economic underperformance.

As part of our commitment to transparency, we publish our proxy voting activities at over 11,000 companies’ annual general meetings.

Shareowner Engagement

We have a long history of constructively engaging companies confidentially through in-person meetings, correspondence, and by telephone. In instances where companies fail to meet the standards of conduct defined by our Principles, we may file shareowner proposals to achieve governance reforms.

We prefer constructive engagement to divesting as a means of affecting the conduct of the entities in which we invest. This is because investors that divest lose their ability as shareowners to positively influence the company’s strategy and governance.

Advocacy

We engage policy makers on regulatory and legislative reforms which support the Principles. We work directly and through our federal representatives and also partner with organizations, both domestically and internationally, to further our goals.

III. Governance & Sustainability Principles

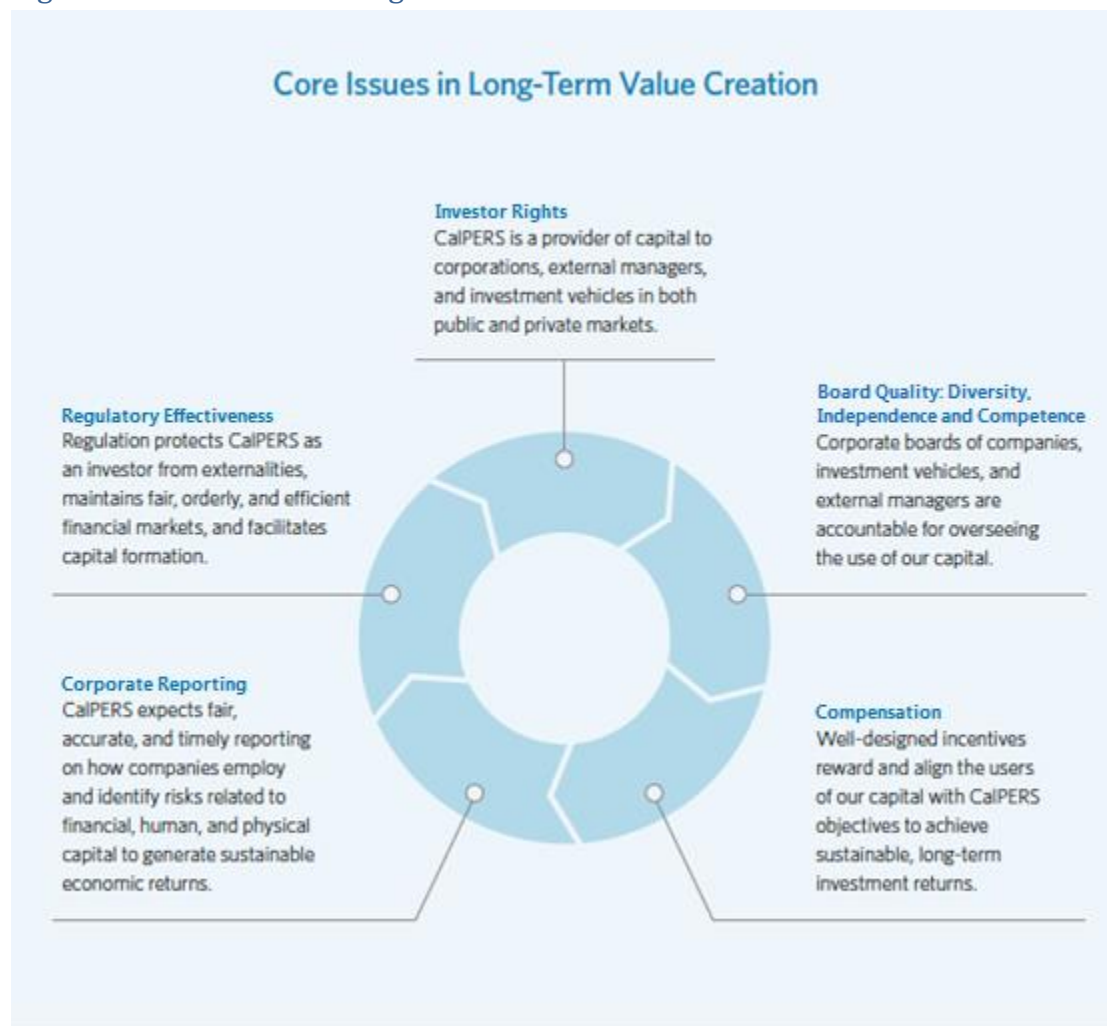
We believe that fully accountable governance structures produce, over the long term, the best returns to shareowners. So while we recognize that governance best practices are constantly evolving, we believe the following accountable governance structures provide the underlying tenets that should be adopted by all companies and markets – both developed and emerging – to establish the foundation for achieving long-term sustainable investment returns.

In particular we have identified five core issues that we believe have a long-term impact on risk and return:

- A. Investor Rights
- B. Board Quality: Diversity, Independence and Competence
- C. Executive, Director and Employee Compensation
- D. Corporate Reporting
- E. Regulatory Effectiveness

As demonstrated in Figure 1 below, it is important to recognize that we believe that managing these five issues is mutually reinforcing. Approaches that only tackle some areas and not others would not be compatible with these Principles.

Figure 1: Core Issues in Long-Term Value Creation



A. Investor Rights

CalPERS is a provider of capital to corporations, external managers, and investment vehicles in both public and private markets – investor rights protect CalPERS interests.

We recommend that corporations adopt the following shareowner rights:

1. **One-share/one-vote:** A shareowner's right to vote is irrevocable and cannot be reduced. All investors must be treated equitably and upon the principle of one-share/one-vote.
 - a. **Redress:** Minority shareowners should be protected from abusive actions by, or in the interest of, controlling shareowners acting either directly or indirectly, and should have effective means of redress. Proper remedies and procedural rules should be put in place to make the protection effective and affordable. Where

national legal remedies are not afforded the board is encouraged to ensure that sufficient shareowner protections are provided in the company's bylaws.

2. **Access to Director Nominations:** Shareowners should have effective access to the director nomination process. Companies should provide access to management proxy materials for a long-term investor or group of long-term investors owning in aggregate at least three percent of a company's voting stock, to nominate up to 25 percent of the board. Eligible investors must have owned the stock for at least three years. Company proxy materials and related mailings should provide equal space and equal treatment of nominations by qualifying investors.

To allow for informed voting decisions, it is essential that investors have full and accurate information about access mechanism users and their director nominees. Therefore, shareowners nominating director candidates under an access mechanism should adhere to the same SEC rules governing disclosure requirements and prohibitions on false and misleading statements that currently apply to proxy contests for board seats.

3. **Shareowner Approval Rights:** The board should ensure that shareowners have the right to vote on major decisions which may change the nature of the company in which they have invested. Such rights should be clearly described in the company's governing documents and include:
 - a. **Sale or Pledge of Corporate Assets:** Major corporate decisions concerning the sale or pledge of corporate assets that would have a material effect on shareowner value. Such a transaction will automatically be deemed to have a material effect if the value of the assets exceeds 10 percent of the assets of the company and its subsidiaries on a consolidated basis.
 - b. **Mergers and Acquisitions:** Material and extraordinary transactions such as material mergers and acquisitions.
 - c. **Debt Issuance:** Issuing debt to a degree that would excessively leverage the company and endanger its long-term viability.
 - d. **Share Repurchases (buy-backs):** The corporation's acquisition of five percent or more of its common shares at above-market prices other than by tender offer to all shareowners.
 - e. **Issuance of New Shares:** The board should be mindful of dilution of existing shareowners and provide full explanations where pre-emption rights are not offered.
 - f. **Poison Pill Approval:** No board should enact nor amend a poison pill (shareowner rights plan) except with shareowner approval or other structures that act as anti-takeover mechanisms. Only non-conflicted shareowners should

be entitled to vote on such plans and the vote should be binding. Plans should be time limited and put periodically to shareowners for re-approval.

- i. **Continuing Directors:** Corporations should not adopt so-called “continuing director” provisions (also known as “dead-hand” or “no-hand” provisions, which are most commonly seen in connection with a potential change in control of the company) that allow board actions to be taken only by: (1) those continuing directors who were also in office when a specified event took place or (2) a combination of continuing directors plus new directors who are approved by such continuing directors.
- g. **Significant Related Party Transaction:** Shareowners should have the right to approve significant related party transactions and this should be based on the approval of a majority of disinterested shareowners. The board should submit the transaction for shareowner approval and disclose (both before concluding the transaction and in the company’s annual report):
 - a. the identity of the ultimate beneficiaries including, any controlling owner and any party affiliated with the controlling owner with any direct / indirect ownership interest in the company
 - b. other businesses in which the controlling shareowner has a significant interest
 - c. Shareowner agreements (e.g. commitments to related party payments such as license fees, service agreements and loans).

The board should disclose the process for reviewing and monitoring related party transactions which, for significant transactions, includes establishing a committee of independent directors. This can be a separate committee or an existing committee comprised of independent directors, for example the Audit Committee. The committee should review significant related party transactions to determine whether they are in the best interests of the company and, if so, to determine what terms are fair and reasonable. The conclusion of committee deliberations on significant related party transactions should be disclosed in the company’s annual report to shareowners.

- 4. **Majority Vote Requirements:** Shareowner voting rights should not be subject to supermajority voting requirements, except in situations where they are intended to protect minority shareowners; especially in situations where there are unequal voting rights. A majority of proxies cast should be able to accomplish the following:
 - a. **Bylaw and Charter Amendments:** Amend the company’s governing documents such as the Bylaws and Charter by shareowner resolution.
 - b. **Director Removal:** Remove a director with or without cause.

- c. **Director Elections:** In an uncontested director election, a majority of proxies cast should be required to elect a director. In a contested election, a plurality of proxies cast should be required to elect a director. Resignation for any director that receives a withhold vote greater than 50 percent of the votes cast should be required. Unless the incumbent director receiving less than a majority of the votes cast has earlier resigned, the term of the incumbent director should not exceed 90 days after the date on which the voting results are determined.
 - d. **Auditor Ratification by Shareowners:** The selection of the independent external auditor should be ratified by shareowners annually.
5. **Corporate Proxy and Voting Mechanisms:** The board should promote efficient and accessible voting mechanisms that allow shareowners to participate in general meetings either in person or remotely, preferably by electronic means or by post, and should not impose unnecessary hurdles.
- a. **Universal Proxy:** To facilitate the shareowner voting process in contested elections – opposing sides engaged in the contest should utilize a proxy card naming all management nominees and all dissident nominees, providing every nominee equal prominence on the proxy card.
 - b. **Sponsoring and Implementation of Shareowner Resolutions:** Shareowners should have the right to sponsor resolutions. A shareowner resolution that is approved by a majority of proxies cast should be implemented by the board.
 - c. **Proxy Confidentiality:** Proxies should be kept confidential from the company, except at the express request of shareowners.
 - d. **Cumulative Voting Rights:** Shareowners should have the right to combine votes in a contested election of directors. Such a right gives shareowners the ability to combine their votes for directors and either cast all of those votes for one candidate or distribute those votes for any number of candidates.
 - e. **Shareholder Identification:** The board should ensure that the company maintains a record of the registered owners of its shares or those holding voting rights over its shares. Registered shareowners, or their agents, should provide the company (where anonymity rules do not preclude this) with the identity of beneficial owners or holders of voting rights when requested in a timely manner. Shareowners should be able to review this record of registered owners of shares or those holding voting rights over shares.
 - f. **Bundled Voting:** Shareowners should be allowed to vote on unrelated issues separately. Individual voting issues (particularly those amending a company’s charter), bylaws or anti-takeover provisions should not be bundled.

- g. **Broker Votes:** Uninstructed broker votes and abstentions should be counted only for purposes of a quorum, or the minimum number of members necessary to make a decision.
 - h. **Advance Notice, Holding Requirements and Other Provisions:** Advance notice bylaws, holding requirements, disclosure rules, and any other company imposed regulations on the ability of shareowners to solicit proxies beyond those required by law should not be so onerous as to deny sufficient time, limit the pool of eligible candidates, or otherwise make it impractical for shareowners to submit nominations or proposals and distribute supporting proxy materials.
6. **Special Meetings and Written Consent:** Shareowners should be able to call special meetings or act by written consent.
 7. **Judicial Forum:** Companies should not attempt to restrict the venue for shareowner claims by adopting charter or bylaw provisions that seek to establish an exclusive forum. Nor should companies attempt to bar shareowners from the courts through the introduction of forced arbitration clauses.

B. Board Quality: Diversity, Independence and Competence

Corporate boards of companies, investment vehicles and external managers must be accountable for overseeing the use of our capital.

1. **Director Accountability:** As a fiduciary, a director owes a duty of loyalty to the corporation and its shareowners and must exercise reasonable care in relation to his or her duties as a director. Directors should be accountable to shareowners, and management accountable to directors.
 - a. **Long-term Vision:** Corporate directors and management should have a long-term strategic vision that, at its core, emphasizes sustained shareowner value and effective management of both risk and opportunities in the oversight of financial, physical, and human capital. In turn, despite differing investment strategies and tactics, shareowners should encourage corporate management to resist short-term behavior by supporting and rewarding long-term superior returns.
 - b. **Accessibility to Shareowner Inquiry:** To ensure this accountability, directors must be accessible to shareowner inquiry concerning their key decisions affecting the company's strategic direction.
 - c. **Annual Director Elections:** Every director should be elected annually. Accountability mechanisms may require directors to stand for election on an annual basis or to stand for election at least once every three years.
 - d. **Board Size:** The board periodically reviews its own size, and determines the size that is most effective toward future operations.

- e. **Director Attendance:** Without compelling and stated reasons, directors should be expected to attend at least 75 percent of the board and key committee meetings on which they sit.
 - f. **Director Time Commitment:** The board adopts and discloses guidelines in the company's proxy statement to address competing time commitments that are faced when directors, especially acting CEOs, serve on multiple boards.
2. **Informed Directors:** Directors should receive training from independent sources on their fiduciary responsibilities and liabilities. Directors have an affirmative obligation to become and remain independently familiar with company operations; they should not rely exclusively on information provided to them by the CEO to do their jobs. Directors should be provided meaningful information in a timely manner prior to board meetings and should be allowed reasonable access to management to discuss board issues.
- a. **Board Access to Management:** The board should have a process in place by which all directors can have access to senior management.
 - b. **New Director Induction:** The board should have in place a formal process of induction for all new directors so that they are well-informed about the company as soon as possible after their appointment. Directors should also be enabled to regularly refresh their skills and knowledge to discharge their responsibilities.
3. **Board Independence:** Independence is the cornerstone of accountability. It is now widely recognized that independent boards are essential to a sound governance structure. Nearly all corporate governance commentators agree that boards should be comprised of at least a majority of "independent directors." But the definitional independence of a majority of the board may not be enough in some instances. The leadership of the board must embrace independence, and it must ultimately change the way in which directors interact with management. Independence also requires a lack of conflict between the director's personal, financial, or professional interests, and the interests of shareowners.
- a. **Majority of Independent Directors:** At a minimum, a majority of the board consists of directors who are independent. Boards should strive to obtain board composition made up of a substantial majority of independent directors.
 - b. **Independent Executive Session:** Independent directors should meet periodically (at least once a year) alone in an executive session, without the CEO. The independent board chair or lead (or presiding) independent director should preside over this meeting.
 - c. **Board Role of Retiring CEO:** Generally, a company's retiring CEO should not continue to serve as a director on the board and at the very least be prohibited from sitting on any of the board committees.

4. **Board Committee Independence:** The full board is responsible for the oversight function on behalf of shareowners. Should the board decide to have other committees (e.g. an executive committee) in addition to those required by law, the duties and membership of such committees should be fully disclosed. Committees who perform the audit, director nomination and executive compensation functions should consist entirely of independent directors. The board (not the CEO) should appoint the committee chairs and members. Committees should be able to select their own service providers to access independent sources of knowledge and experience. Some regularly scheduled committee meetings should be held with only the committee members (and, if appropriate, the committee's independent consultants) present. The process by which committee members and chairs are selected should be disclosed to shareowners.
5. **Board Chairperson Independence and Leadership:** The board should be chaired by an independent director. The chair is responsible for leadership of the board and ensuring its effectiveness. The chair should ensure a culture of openness and constructive debate that allows a range of views to be expressed. The CEO and chair roles should only be combined in very limited circumstances; in these situations, the board should provide a written statement in the proxy materials discussing why the combined role is in the best interest of shareowners, and it should name a lead independent director to fulfill the following duties:
 - a. Coordinate the scheduling of board meetings and preparation of agenda material for board meetings and executive sessions of the board's independent or non-management directors.
 - b. Lead board meetings in addition to executive sessions of the board's independent or non-management directors.
 - c. When selecting a new CEO, boards should re-examine the traditional combination of the "chief executive" and "chair" positions.
 - d. Define the scope, quality, quantity and timeliness of the flow of information between company management and the board that is necessary for the board to effectively and responsibly perform their duties.
 - e. Oversee the process of hiring, firing, evaluating, and compensating the CEO.
 - f. Approve the retention of consultants who report directly to the board.
 - g. Advise the independent board committee chairs in fulfilling their designated roles and responsibilities to the board.
 - h. Interview, along with the chair of the nominating committee, all board candidates, and make recommendations to the nominating committee and the board.

- i. Assist the board and company officers in assuring compliance with and implementation of the company's Governance Principles.
 - j. Act as principal liaison between the independent directors and the CEO on sensitive issues.
 - k. Coordinate performance evaluations of the CEO, the board, and individual directors.
 - l. Recommend to the full board the membership of the various board committees, as well as selection of the committee chairs.
 - m. Be available for communication with shareowners.
6. **Director Independence:** The board should ensure that policies and procedures on conflicts of interest are established, understood and implemented by directors, management, employees and other relevant parties. If a director has an interest in a matter under consideration by the board, then the director should promptly declare such an interest and be precluded from voting on the subject or exerting influence. Each company should disclose in its annual proxy statement the definition of "independence" relied upon by its board. The board's definition of "independence" should address, at a minimum, a director who:
- a. Is not currently, or within the last five years has not been, employed by the Company in an executive capacity.
 - b. Has not received more than \$50,000 in direct compensation from the Company during any 12-month period in the last three years other than:
 - i. Director and committee fees including bona fide expense reimbursements.
 - ii. Payments arising solely from investments in the company's securities.
 - c. Is not affiliated with a company that is an adviser or consultant to the Company or a member of the Company's senior management during any 12-month period in the last three years that has received more than \$50,000 from the Company.
 - d. Is not a current employee of a company (customer or supplier) that has made payments to, or received payments from the Company that exceed the greater of \$200,000 or 2 percent of such other company's consolidated gross revenues.
 - e. Is not affiliated with a not-for-profit entity (including charitable organizations) that receives contributions from the Company that exceed the greater of \$200,000 or 2 percent of consolidated gross revenues of the recipient for that year.
 - f. Is not part of an interlocking directorate in which the CEO or other employee of the Company serves on the board of another company employing the director.
 - g. Has not had any of the relationships described above with any parent or subsidiary of the Company.
 - h. Is not a member of the immediate family of any person described in 6a-h.

7. **Board Responsibilities:** The board responsibilities should include the following:
- a. **CEO Performance:** Independent directors establish CEO performance criteria focused on optimizing operating performance, profitability and shareowner value creation; and regularly review the CEO's performance against those criteria.
 - b. **Corporate Strategy:** Review, approve and guide corporate strategy, capital discipline and allocation, major plans of action, risk policies, and business plans.
 - a. **Capital Allocation Discipline:** Boards should provide shareowners with robust oversight and disclosure surrounding capital allocation decisions, including optimizing the capital structure to ensure discipline in prioritizing the most productive use of capital over the long-term. We recommend the following:
 - i. **Policy:** The board should develop and disclose its policy on capital allocation that outlines the application of discretionary cash flows for organic growth projects, investments, strategic mergers and acquisitions, cash and scrip dividends, debt repayment, and share repurchases. The board should also communicate its philosophy on the use of debt leverage.
 - ii. **Board Monitoring and Assessment:** The board should monitor capital allocation decisions and the range of capital allocation alternatives and their corresponding risks.
 - iii. **Disclosure:** The board should disclose the following details in regulatory filings:
 - i. The board's role in overseeing capital allocation decisions and how each decision aligns with the company's strategic priorities for investment to ensure long-term value creation
 - ii. The controls and metrics in place to monitor capital allocation decisions
 - iii. The impact on performance targets in executive compensation plans
 - iv. The board's measures to address potential conflicts of interest with incentives impacted by capital allocation decisions, such as share buybacks.
 - c. **Corporate Performance:** Set performance objectives, monitor implementation and corporate performance, and oversee major capital expenditures, and acquisitions/divestitures.
 - d. **Corporate Culture:** Boards should have an active role in setting a high-performance corporate culture, which includes: respectful treatment of

employees; efforts to promote diversity, inclusion and innovation; providing a workplace free of sexual harassment and other forms of harassment; fostering trust between employees and management; and promoting ownership and accountability for an ethical corporation.

- i. **Policy:** The board should develop and disclose its efforts towards establishing effective corporate culture, including its anti-harassment policy, and the mechanisms through which the board learns about employee complaints, how the claims are addressed, and the actions taken. CalPERS supports voluntary arbitration in company policies.
- ii. **Board Oversight:** Boards should have oversight of the following:
 - a) Review of the company's policies, practices and executive responsibilities related to corporate culture
 - b) Review of the potential risks related to corporate culture, including all forms of harassment
 - c) Implementation of effective corporate culture
- iii. **Disclosure:** Companies should ensure all settlements are reported to the Board. Financial-reporting standard setters generally require disclosure of material settlements, including those involving sexual harassment. CalPERS supports disclosure of settlements, including those related to sexual harassment, involving an executive or member of the board or at any level within the company when a pattern of behavior is demonstrated.
- e. **Corporate Annual Report and Accounts:** Affirm that the company's annual report and accounts present a true and fair view of the company's position and prospects. As appropriate, taking into account statutory and regulatory obligations in each jurisdiction, the information provided in the annual report and accounts should comply with the following:
 - i. be relevant to investment decisions, enabling shareowners to evaluate risks, past and present performance, and to draw inferences regarding future performance;
 - ii. enable shareowners, who put up the risk capital, to fulfill their responsibilities as owners to assess company management and the strategies adopted
 - iii. be a faithful representation of the events it purports to represent
 - iv. generally be neutral and report activity in a fair and unbiased way except where there is uncertainty (prudence should prevail such that assets and income are not overstated and liabilities and expenses are not understated; there should be substance over form; any off-balance sheet items should be appropriately disclosed)

- v. be verifiable so that when a systematic approach and methodology is used the same conclusion is reached
- vi. be presented in a way that enables comparisons to be drawn of both the entity's performance over time and against other entities
- vii. recognize the 'matching principle', which requires that expenses are matched with revenues.
- viii. recognize the establishment and maintenance of an effective system of internal control which should be measured against internationally accepted standards of internal audit and tested periodically for its adequacy (where an internal audit function has not been established, full reasons for this should be disclosed in the annual report, as well as an explanation of how adequate assurance of the effectiveness of the system of internal controls has been obtained)
- f. **Reincorporation:** When considering reincorporation, corporations should analyze shareowner protections, company economic, capital market, macro-economic, and corporate governance considerations. Companies should not reincorporate to offshore locations where corporate governance structures are weaker, which reduces management accountability to shareowners.
- g. **Charitable and Political Contributions:** Robust board oversight and disclosure of corporate charitable and political activity is needed to ensure alignment with business strategy and to protect assets on behalf of shareowners. We recommend the following:
 - i. **Policy:** The board should develop and disclose a policy that outlines the board's role in overseeing corporate charitable and political contributions (including direct or indirect⁴ lobbying and grassroots lobbying communications⁵), the terms and conditions under which charitable and political contributions are permissible, and the process for disclosing charitable and political contributions annually.
 - ii. **Board Monitoring, Assessment and Approval:** The board of directors should monitor charitable and political contributions (including direct or indirect lobbying and grassroots lobbying communications) made at the local, state, and federal levels by the company. The board should ensure that only

⁴ "Indirect lobbying" is lobbying activities engaged in by a trade association or other organization of which the company is a member or a financial contributor.

⁵ "Grassroots lobbying communication" is a communication directed to the general public that (a) refers to specific legislation or regulation, (b) reflects a view on the legislation or regulation and (c) encourages the recipient of the communication to take action with respect to the legislation or regulation.

contributions consistent with and aligned to the interests of the company and its shareowners are approved.

- iii. **Disclosure:** The board should disclose on an annual basis the amounts and recipients of monetary and non-monetary contributions made by the company at the local, state, and federal levels during the prior fiscal year. If any expenditure earmarked or used for political or charitable activities were provided to or through a third-party to influence elections of candidates or ballot measures or governmental action, then those expenditures should be included in the report.

8. **Board, Committee, and Director Evaluation:** No board can truly perform its function of overseeing a company's strategic direction and monitoring management's success without a system of evaluating itself. The board should establish preparation, participation and performance expectations for itself (acting as a collective body), for the key committees and each of the individual directors. A process by which these established board, key committee and individual director expectations are evaluated on an annual basis should be disclosed to shareowners. Directors must satisfactorily perform based on the established expectations with re-nomination based on any other basis being neither expected nor guaranteed.
9. **Board Talent Assessment and Diversity:** The board should facilitate a process that ensures a thorough understanding of the diverse characteristics necessary to effectively oversee management's execution of a long-term business strategy. Board diversity should be thought of in terms of skill sets, gender, age, nationality, race, sexual orientation, gender identity, disability, and historically under-represented groups. Consideration should go beyond the traditional notion of diversity to include a more broad range of experience, thoughts, perspectives, and competencies to help enable effective board leadership. A robust process for how diversity is considered when assessing board talent and diversity should be adequately disclosed and include the following:
 - a. **Director Talent Evaluation:** To focus on the evolving global capital markets, a board should disclose its process for evaluating the diverse talent and skills needed on the board and its key committees.
 - b. **Director Attributes:** Board attributes should include a range of skills and experience which provide a diverse and dynamic team to oversee business strategy, risk mitigation and senior management performance. The board should establish and disclose a diverse mix of director attributes, experiences, perspectives and skill sets that are most appropriate for the company. Collectively, director attributes should include expertise in at least the following areas: accounting or finance, international markets, business, human capital

management, industry knowledge, governance, customer-base experience or perspective, crisis response, leadership, strategic planning, and competence managing multifaceted risk – including expertise and experience in climate change and other environmental risk management strategies, where material to business model or operations. Additionally, existing directors should receive continuing education regarding a company’s activities and operations to ensure the board maintains the necessary skill sets and knowledge to meet its fiduciary responsibilities.

- c. **Director Nominations:** With each qualified director nomination recommendation, the board should consider the issue of competence, independence, continuing director tenure, as well as board diversity, and take steps as necessary to ensure that the board maintains openness to new ideas, a willingness to re-examine the status quo, and ability to exercise judgment in the best interests of the corporation free of any external influence that may attempt to be or may appear to be exerted upon them.
 - d. **Director Tenure:** Boards should consider all relevant facts and circumstances to determine whether a director should be considered independent – these considerations include the director’s years of service on the board – extended periods of service may adversely impact a director’s ability to bring an objective perspective to the boardroom. We believe director independence can be compromised at 12 years of service – in these situations a company should carry out rigorous evaluations to either classify the director as non-independent or provide a detailed annual explanation of why the director can continue to be classified as independent. Additionally, there should be routine discussions as part of a rigorous evaluation and succession planning process surrounding director refreshment to ensure boards maintain the necessary mix of skills, diversity, and experience to meet strategic objectives.
 - e. **Diversity Disclosure:** Boards should annually disclose their demographic information including race, ethnicity and gender. Ideally, companies should disclose their Employer Information Report, known as the EEO-1 report, or similar workforce demographic data to enable shareowners to assess the board’s diversity relative to its workforce and compare companies in similar industries.
10. **Role of the Audit Committee:** At least one member of the Audit Committee should have recent and relevant financial experience. The main role and responsibilities of the Audit Committee should be described in the committee’s terms of reference including the following:

- a. **Auditor Liability:** To strengthen the auditor's objective and unbiased audit of financial reporting, audit committees should ensure that contracts with the auditor do not contain specific limits to the auditor's liability to the company for consequential damages or require the corporation to use alternative dispute resolution.
- b. **Auditor Selection:** Audit committees should promote expanding the pool of auditors considered for the annual audit to help improve market competition and thereby minimize the concentration of only a small number of audit firms from which to engage for audit services. To allow audit committees a robust foundation to determine audit firm independence, auditors should provide three prior years of activities, relationships, and services (including tax services) with the company, affiliates of the company and persons in financial reporting oversight roles that may impact the independence of the audit firm.
- c. **Auditor Rotation:** Audit committees should promote rotation of the auditor to ensure a fresh perspective and review of the financial reporting framework.
- d. **Audit Committee Communication with Auditor:** The auditor should articulate to the Audit Committee, risks and other matters arising from the audit that are significant to the oversight of the financial reporting process, including situations where the auditor is aware of disputes or concerns raised regarding accounting or auditing matters. The Audit Committee should consider providing to investors a summary document of its discussions with auditors to enhance investor confidence in the audit process.
- e. **Monitoring the integrity of the accounts:** And any formal announcements relating to the company's financial performance, and reviewing significant financial reporting judgments contained in them.
- f. **Oversight of key accounting policies and accounting judgments:** Which should be in accordance with generally accepted international accounting standards, and disclosing such policies in the notes to the company's accounts.
- g. **Audit Scope:** Agreeing to the minimum scope of the audit as prescribed by applicable law and any further assurance that the company needs. Shareowners (who satisfy a reasonable threshold shareholding) should have the opportunity to expand the scope of the forthcoming audit or discuss the results of the completed audit should they wish to.
- h. **Auditor Independence:** Assuring itself of the quality of the audit carried out by the external auditors and assessing the effectiveness and independence of the auditor each year. This includes overseeing the appointment, reappointment and, if necessary, the removal of the external auditor and the remuneration of the auditor. There should be transparency in advance when the audit is to be

tendered so that shareowners can engage with the company in relation to the process should they so wish.

- i. **Auditor Dialogue:** Having appropriate dialogue with the external auditor without management present and overseeing the interaction between management and the external auditor, including reviewing the management letter provided by the external auditors and overseeing management's response; and reporting on its work and conclusions in the annual report.
- j. **Assertion of Internal Financial Controls:** The Audit Committee should require the auditor's opinion to include commentary on any management assertion that the system of internal financial controls is operating effectively and efficiently, that assets are safeguarded, and that financial information is reliable as of a specific date, based on a specific integrated framework of internal controls.
- k. **Audit Committee Expertise:** Audit Committee financial expertise at a minimum should include skill-sets as outlined by Section 407(d)(5)(i) of Regulation S-K and the Exchange listing requirements. Boards should consider the effectiveness of the Audit Committee and designated financial expert(s) in its annual assessment. Firms may be able to reduce their cost of capital as related to the quality of its financial reporting. The quality of financial reporting can be increased by appropriately structuring the Audit Committee with effective financial expertise.
- l. **Annual Reporting:** Disclosures in the annual reporting must include the following:
 - i. Assessment of the independence and objectivity of the external auditor to assure the auditors and their staff have no financial, business, employment or family and other personal relationships with the company
 - ii. Assessment of the appropriateness of total fees charged by the auditors;
 - iii. Assessment of non-audit services and fees charged including limitations or restrictions tied to the provision of non-audit services
 - iv. Explanation of why non-audit services were provided by the auditor rather than by another party and how the auditor's independence has been safeguarded;
 - v. Rational for recommending the appointment, reappointment or removal of the external auditor, including information on tendering frequency, tenure, and any contractual obligations that acted to restrict the choice of external auditors
 - vi. Auditor rotation period
 - vii. Assessment of issues which resulted in an auditor resignation
 - viii. Assessment of all relationships between the registered public accounting firm or any affiliates of the firm and the potential audit clients or persons in

a financial reporting oversight role that may have a bearing on independence.

11. **Role of the Nomination Committee:** The main role and responsibilities of the nomination committee should be described in the committee's terms of reference including the following:
- a. **Skills Matrix:** Developing a skills matrix, by preparing a description of the desired roles, experience and capabilities required for each appointment, and then evaluating the composition of the board.
 - b. **Board Appointments:** Leading the process for board appointments and putting forward recommendations to shareowners on directors to be elected and re-elected.
 - c. **Director Conflicts of Interest:** Upholding the principle of director independence by addressing conflicts of interest (and potential conflicts of interest) among committee members and between the committee and its advisors during the nomination process.
 - d. **Independent Consultants:** Considering and being responsible for the appointment of independent consultants for recruitment or evaluation including their selection and terms of engagement and publicly disclosing their identity and consulting fees.
 - e. **Shareowner Dialogue:** Entering into dialogue with shareowners on the subject of board nominations either directly or via the board
 - f. **Board Succession Planning:** The board should implement and disclose a board succession plan that involves preparing for future board retirements, committee assignment rotations, committee chair nominations and overall implementation of the company's long-term business plan. Boards should establish clear procedures to encourage and consider board nomination suggestions from long-term shareowners. The board should respond positively to shareowner requests seeking to discuss incumbent and potential directors.
12. **Role of the Compensation Committee:** The main role and responsibilities of the compensation committee should be described in the committee terms of reference including the following:
- a. **Compensation Philosophy:** Determining and recommending to the board the remuneration philosophy and policy of the company.
 - b. **Oversight of Plan Design, Implementation, Monitoring and Evaluation:** Short-term and long-term share-based incentives and other benefits schemes including pension arrangements, for all executive officers.
 - c. **Director Conflicts of Interest:** Ensuring that conflicts of interest among committee members and between the committee and its advisors are avoided.

- d. **Independent Consultants:** Appointing any independent remuneration consultant including their selection and terms of engagement and disclosing their identity and consulting fees; and
 - e. **Shareowner Dialogue:** Maintaining appropriate communication with shareowners on the subject of remuneration, either directly or via the board.
13. **Risk Oversight:** In response to the turmoil in the financial markets and economic uncertainties, CalPERS has elevated the importance of risk oversight and management. The primary goal is to ensure companies adopt policies, operating procedures, internal controls, federal and state law compliance programs, reporting, and decision-making protocols to effectively manage, evaluate, and mitigate risk. The ultimate outcome is to ensure that companies function as “risk intelligent” organizations. We recommend the following:
- a. The board is ultimately responsible for a company’s risk management philosophy, organizational risk framework and oversight. The board should be comprised of skilled directors with a balance of broad business experience and extensive industry expertise to understand and question the breadth of risks faced by the company. Risk management should be considered a priority and sufficient time should be devoted to oversight.
 - b. The company should promote a risk-focused culture and a common risk management framework should be used across the entire organization. Frequent and meaningful communication should be considered the “cornerstone” for an effective risk framework. A robust risk framework will facilitate communication across business units, up the command chain and to the board. The company’s culture with regard to risk and the process by which issues are escalated and de-escalated within the company should be evaluated at intervals as appropriate to the situation.
 - c. The board should set out specific risk tolerances and implement a dynamic process that continuously evaluates and prioritizes risks. An effective risk oversight process considers both internal company related risks such as operational, financial, credit, solvency, liquidity, corporate governance, cyber-security, environmental, reputational, social, product safety and external risks such as geopolitical, industry related, systemic, and macro-economic.
 - d. Compensation practices should be evaluated to ensure alignment with the company’s risk tolerances and that compensation structures do not encourage excessive risk taking.
 - e. At least annually, the board should approve a documented risk management plan and disclose sufficient information to enable shareowners to assess whether the board is carrying out its risk oversight responsibilities. Disclosure

should also include the role of external parties such as third-party consultants in the risk management process. While ultimate responsibility for a company's risk management approach rests with the full board, having a risk committee (be it a stand-alone risk committee, a combined risk committee with nomination and governance, strategy, audit or other) can be an effective mechanism to bring the transparency, focus and independent judgment needed to oversee the company's risk management approach.

- f. While the board is ultimately responsible for risk oversight, executive management should be charged with designing, implementing and maintaining an effective risk program. Roles and reporting lines related to risk management should be clearly defined. At a minimum, the roles and reporting lines should be explicitly set out for the board, board risk committees, Chief Executive Officer, Chief Financial Officer, the Chief Risk Officer, and business unit heads. The board and risk related committees should have appropriate transparency and visibility into the organization's risk management practices to carry out their responsibilities.

14. CEO Succession Plan: The board should proactively lead and be accountable for the development, implementation, and continual review of a CEO succession plan. Board members should be required to have a thorough understanding of the characteristics necessary for a CEO to execute on a long-term strategy that optimizes operating performance, profitability and shareowner value creation. At a minimum, the CEO succession planning process should include the following:

- a. Become a routine topic of discussion by the board.
- b. Extend down throughout the company emphasizing the development of internal CEO candidates and senior managers while remaining open to external recruitment.
- c. Require all board members be given exposure to internal candidates.
- d. Encompass both a long-term perspective to address expected CEO transition periods and a short-term perspective to address crisis management in the event of death, incapacitation or untimely departure of the CEO.
- e. Provide for open and ongoing dialogue between the CEO and board while incorporating an opportunity for the board to discuss CEO succession planning without the CEO present.
- f. Be disclosed to shareowners on an annual basis and in a manner that would not jeopardize the implementation of an effective and timely CEO succession plan.

15. Director Succession Plan: The board should proactively lead and be accountable for the development, implementation, and continual review of a director succession plan. Board members should be required to have a thorough understanding of the

characteristics necessary to effectively oversee management's execution of a long-term strategy that optimizes operating performance, profitability, and shareowner value creation. At a minimum, the director succession planning process should include the following:

- a. Become a routine topic of discussion by the board.
- b. Encompass how expected future board retirements or the occurrence of unexpected director turnover as a result of death, incapacitation or untimely departure is addressed in a timely manner.
- c. Encompass how director turnover either through transitioning off the board or as a result of rotating committee assignments and leadership is addressed in a timely manner.
- d. Provide for a mechanism to solicit shareowner input.
- e. Be disclosed to shareowners on an annual basis and in a manner that would not jeopardize the implementation of an effective and timely director succession plan.

16. Human Capital Management Practices: Corporations should adopt maximum progressive practices toward the elimination of human rights violations in all countries or environments in which the company operates. Additionally, these practices should emphasize and focus on preventing discrimination, harassment of any kind including sexual harassment, and/or violence based on race, color, religion, national origin, age, disability, sexual orientation, gender identity, marital status, or any other status protected by laws or regulations in areas of a company's operation. Boards should be accountable for companies to develop and implement company policies, procedures, integrated financial reporting, training and internal reporting structures to ensure commitment to the following:

- a. **Universal Human Rights:** Express our support for universal human rights and, particularly, those of our employees, the communities within which we operate, and parties with whom we do business. This includes free, prior, and informed consent as a standard in relation to Indigenous Peoples' rights.
- b. **Equal Employment Opportunity:** Promote equal opportunity for our employees at all levels of the company with respect to issues such as color, race, gender, age, disability, ethnicity or religious beliefs, and operate without unacceptable worker treatment such as the exploitation of children, physical punishment, female abuse, involuntary servitude, or other forms of abuse.
- c. **Freedom of Association:** Respect our employees' voluntary freedom of association.
- d. **Eliminate all Forms of Forced and Compulsory Labor:** Compensate our employees to enable them to meet at least their basic needs and provide the

opportunity to improve their skill and capability in order to raise their social and economic opportunities.

- e. **Provide a safe and healthy workplace:** Protect human health and the environment; and promote sustainable development.
- f. **Promote fair competition:** This includes respect for intellectual and other property rights, and not offer, pay or accept bribes.
- g. **Strategic Social Investment:** Work with governments and communities in which we do business to improve the quality of life in those communities – including their educational, cultural, economic and social well-being – and seek to provide training and opportunities for workers from disadvantaged backgrounds.
- h. **Application to Supply Chain:** Promote the application of these principles by those with whom we do business

C. Executive, Director, and Employee Compensation

CalPERS believes well-designed compensation programs can be a powerful and effective tool to reward value-creating executives and employees and appropriately align their interests with those of providers of capital (shareowners) to achieve sustainable, long-term investment returns.

CalPERS recognizes that having a one-size-fits-all compensation program may not be appropriate for companies of different sizes, locations, and industries. Therefore, we believe companies should have flexibility in designing and structuring their compensation programs, given their disparate operating business models.

Our compensation principles are intended to provide a framework for companies to consider in designing and implementing their compensation programs.

The following summarizes our compensation principles:

1. **Compensation Philosophy:** Companies that demonstrate sustainable long-term performance should be able to properly reward their executives and employees for contributing to the success of the business and creating long-term shareowner value. The board, through its Compensation Committee, has the core function to ensure compensation programs are:
 - a. **Aligned with Providers of Capital:** Compensation programs should symmetrically align the interests of the companies' executives and employees with the providers of capital, that is, both sides should participate in good and bad times. Incentive pay should be tied to shareowner experience.
 - b. **Linked to Performance:** Compensation programs should have an appropriate pay-for-performance alignment where pay is directly linked to company performance. Executives and employees should be rewarded for focusing on and generating sustainable long-term

performance.

- c. **Risk Aware:** Compensation programs should incentivize prudent risk taking by executives and employees. The rationale for the appropriateness of the metrics used to promote long-term shareowner value creation should be adequately disclosed and explained in the compensation programs.
 - d. **Aligned with Business Strategy:** Compensation programs should provide a clear and well-articulated philosophy that links compensation and performance metrics to the company's long-term business strategy.
 - e. **Supportive of Sustainability Objectives:** Compensation programs should be designed to support relevant sustainability performance objectives.
 - f. **Cost Effective & Equitable:** Compensation programs should not result in unwarranted transfer of wealth from shareowners to company executives and employees. Compensation should be reasonable and equitable, and the quantum should be determined within the context of the company's workforce as a whole.
 - g. **Free from Discrimination & Bias:** Compensation programs should actively incentivize fairness and structurally avoid discrimination and bias that may unfairly affect the compensation of any employee, such as discrimination and bias related to gender, age, nationality, race, sexual orientation, gender identity and disability. Through an active approach to bias and discrimination elimination, companies should strive to attract and retain the best employees and mitigate risk of legal challenges.
 - h. **Transparent:** Compensation programs should be transparent and provide clear, comprehensive, and relevant disclosures necessary to allow shareowners to evaluate a company's compensation practices.
2. **Compensation Elements:** Compensation programs should have an appropriate mix of fixed and variable pay elements, and a significant portion of the plans should be performance-based.
- a. **Salary:** Salary is one of the few components of compensation not "at risk," therefore it should be set at a reasonable level and appropriately reflect the responsibilities at the company.
 - b. **Incentive Compensation:** Incentive compensation, whether short-term or long-term, should be demonstrably linked to company performance and enhance long-term shareowner value. We believe incentive compensation should be primarily long-term and performance-based. Companies should disclose and discuss the relevance and appropriateness of the award structures, such as performance metrics, peer groups, performance periods, and/or any other performance

conditions, in the context of how they relate to company's specific strategy, business or industry. Rationale should be provided for performance metrics chosen and why the performance targets are relevant and challenging. We believe performance targets should be challenging, and except in rare and extraordinary situation, the Compensation Committee should not "lower the bar" by changing the performance targets. The Compensation Committee should fully disclose revised performance targets and provide sufficient justification if significant changes are made to initial or prior year ones. Additionally, compensation programs should disclose equity ownership and retention guidelines. It is important for the executive's financial interests to be aligned with those of shareowners and the company's long-term success, so we believe executives should attain and continuously hold a significant equity investment in the company they are managing. Furthermore, all equity awards, whether subject to equity ownership requirements or not, should not be hedged, pledged, or otherwise encumbered.

- c. **Other Forms of Compensation:** We believe that additional compensation awards granted outside of the company's incentive plans may potentially undermine the integrity of its regular incentive plans or the link between pay and performance, or both. While we are wary of such awards, we recognize that additional compensation awards, such as supplemental or one-off awards, may be appropriate if companies provide a thorough description as well as an explanation of how they align with long-term company performance and shareowner value creation.
- d. **Retirement Plans and Other Post-Employment Benefits:** We believe post-employment benefits, including retirement plans, can be an important part of overall compensation. Companies should clearly articulate and disclose post-employment benefits, which may include defined contribution/benefit plans, supplemental executive retirement plans (SERPs), health care benefits, pensions or other retirement benefits, and provide an explanation demonstrating how these align with long-term shareowners' interests.

- 3. **Compensation Structure:** We believe it is in the best interests of companies to have well-structured compensation programs that properly incentivize executives and employees, appropriately align the interests of executives and shareowners, and create long-term shareowner value. Compensation plan structures, including the quantitative and qualitative components, should be thoroughly disclosed in the compensation programs for shareowners to evaluate the compensation practices.

- a. **Shareowner Advisory Vote on Executive Compensation:** Companies should submit executive compensation policies to shareowners for

approval on an annual basis.

- b. **CEO Pay Ratio:** Companies should disclose the ratio of CEO compensation to the median annual total compensation of all other employees, and the methodology used to determine the ratio. CEO pay should be consistent with internal wage structures (CEO to median employee, and CEO to named executive officers) rather than be driven by external benchmarking. Internal pay equity is important for recognizing and incentivizing the contribution of the general employee base to the company's success as well as attracting and retaining employees.
- c. **Peer Benchmarking:** Companies should disclose the companies in peer groups used for benchmarking and/or other comparisons. We believe companies should not use peer groups to ratchet up pay that is seemingly unrelated to company performance. Where peer benchmarking is used, target pay percentile levels should be set after considering the company's historic financial performance relative to its chosen peers. Companies should provide a rationale if the peer group used for compensation purposes differs from that used to compare overall company performance. We believe companies should provide sufficient justification for any award of compensation for below median performance.
- d. **Vesting Period/Post-Vesting Holding Requirements:** Companies should disclose and clearly articulate the rationale for vesting periods and any mandatory holding periods on vested awards. The post-vesting holding requirements should ensure the executive's interests are properly aligned with those of long-term shareowners. To achieve this alignment, we believe equity compensation should be subject to a minimum vesting and/or holding period of 5 years from grant date, with the provision that no more than 20% of the equity can be sold annually starting in the sixth year from grant date.
- e. **Post-Separation Holding Period:** Companies should disclose any holding period requirements for executives after retirement or separation of service. We believe the equity compensation earned by executives should be held for a minimum of 2 years after they retire or separate from the company.
- f. **Excise Tax Gross-Ups:** We believe excise tax gross-ups should not be permitted in compensation programs. If tax gross-up provisions are used, companies should disclose them and provide justifications for having such arrangements in the compensation programs.
- g. **Clawback Policy:** Companies should develop and disclose policies to recoup compensation made to executives during periods of fraudulent activity, inadequate oversight, misconduct including harassment of any kind such as sexual harassment, or gross negligence, which impacted or is reasonably expected to impact financial results or cause

create a potential conflict with the directors' primary role as an independent representative of shareowners. Companies should fully disclose director equity ownership and holding requirements and guidelines. To demonstrate alignment with shareowners, directors should attain and continuously maintain an equity ownership in the company that is meaningful given their particular financial context. Also, directors should repay compensation to the company in the event of malfeasance or a breach of fiduciary duty involving the director.

D. Corporate Reporting

CalPERS expects fair, accurate and timely reporting on how companies employ and identify risks related to financial, human and physical capital, in order to generate sustainable economic returns.

1. **Integrated Financial Reporting:** Financial reporting plays an integral role in the capital markets by providing transparent and relevant information about the economic performance and condition of businesses. Effective financial reporting depends on high quality accounting standards, as well as consistent application, rigorous independent audit and enforcement of those standards. Companies should provide for the integrated representation of operational, financial, human capital management practices, environmental, social, and governance performance in terms of both financial and non-financial results in order to offer investors better information for assessing risk. The board should provide an integrated report that puts historical performance into context, and portrays the risks, opportunities and prospects for the company in the future, helping shareowners understand a company's strategic objectives and its progress towards meeting them. Such disclosures should:
 - a. be linked to the company's business model
 - b. be genuinely informative and include forward-looking elements where this will enhance understanding
 - c. describe the company's strategy, and associated risks and opportunities, and explain the board's role in assessing and overseeing strategy and the management of risks and opportunities
 - d. be accessible and appropriately integrated with other information that enables shareowners to obtain a picture of the whole company
 - e. use key performance indicators (KPIs) that are linked to strategy and facilitate comparisons, including human capital KPIs such as:
 - total workforce cost
 - stability of the workforce, including voluntary and involuntary turnover and internal hire rates

- average hours of training per employee per year
 - safety of workforce, including frequency, severity and lost-time due to injuries, illness and fatalities
 - diversity data including race, ethnicity and gender by level such as an Employer Information Report, known as the EEO-1 report, or similar demographic data
 - standardized measures of employee satisfaction
- f. use objective metrics where they apply and evidence-based estimates where they do not
- g. be strengthened where possible by independent assurance that is carried out annually and with regard to established disclosure standards
2. **Transparency:** Operational, financial, and governance information about companies must be readily transparent to permit accurate market comparisons; this includes disclosure and transparency of objective globally accepted minimum accounting standards, such as the International Financial Reporting Standards (IFRS).
- a. **Comprehensive Disclosure:** The board should present a balanced and understandable assessment of the company's position and prospects in the annual report and accounts in order for shareowners to be able to assess the company's performance, business model and strategy (including human capital management, and climate change strategy) and long-term prospects. Additionally, to provide for efficient analysis and comparison of corporations by shareowners, corporations should adopt well-known reporting standards⁶ and tools to disclose industry-relevant environmental, social, and governance risks and opportunities that can affect the performance of the company.
- b. **Materiality:** The board should disclose relevant and material information on a timely basis so as to allow shareowners to take into account information which assists in identifying risks and sources of wealth creation. Issues material to shareowners should be set out succinctly in the annual report, or equivalent disclosures, and approved by the board itself.
- c. **Board Governance Principles:** The board should adopt and disclose a written statement of its own governance principles, and re-evaluate them on at least an annual basis.
3. **Proxy Materials:** Proxy materials should be written in a manner designed to provide shareowners with the information necessary to make informed voting decisions. Similarly, proxy materials should be distributed in a manner designed to encourage

⁶ The Task Force on Climate-Related Financial Disclosures ([TCFD](#)), the Sustainability Accounting Standards Board ([SASB](#)), Global Reporting Initiative Standards ([GRI](#)), International Integrated Reporting Council ([IIRC](#)) and Carbon Disclosure Project ([CDP](#)) offer useful investor endorsed disclosure guidance.

shareowner participation. All shareowner votes, whether cast in person or by proxy, should be formally counted with vote outcomes formally announced.

4. **Auditor's Enhanced Reporting to Investors:** Auditors should provide independent assurance and attestation to the quality of financial statements to instill confidence in the providers of capital. Auditors should bring integrity, independence, objectivity, and professional competence to the financial reporting process. The audit opinion should state whether the financial statements and disclosures are complete, materially accurate, and free of material misstatement, whether caused by error or fraud. Auditors should provide a reasonable and balanced assurance on financial reporting matters to investors in narrative reports such as an Auditor's Discussion and Analysis (AD&A) or a Letter to the Shareowners. Enhanced reporting should include:
 - a. Business, operational and other risks believed to exist and considered.
 - b. Assumptions used in judgments that materially affect the financial statements, and whether those assumptions are at the low or high end of the range of possible outcomes.
 - c. Appropriateness of the accounting policies adopted by the company.
 - d. Changes to accounting policies that have a significant impact on the financial statements.
 - e. Methods and judgments made in valuing assets and liabilities.
 - f. Unusual transactions.
 - g. Accounting applications and practices that are uncommon to the industry.
 - h. Identification of any matters in the Annual Report that the auditors believe are incorrect or inconsistent with the information contained in the financial statements or obtained in the course of their audit.
 - i. Audit issues and their resolutions, which the audit partner documents in a final audit memo to the Audit Committee.
 - j. Quality and effectiveness of the governance structure and risk management.
 - k. Completeness and reasonableness of the Audit Committee report.
5. **Stakeholder Relations:** CalPERS believes that corporations should strive for active cooperation with stakeholders. This cooperation will be most likely to create wealth, employment and sustainable economies. With adequate, accurate and timely data disclosure of environmental, social, and governance practices, shareowners are able to more effectively make investment decisions by taking into account those practices of the companies in which the System invests.
6. **Environmental Management Practices:** CalPERS' believes companies' long-term value creation requires effective management of environmental risks and opportunities. Companies should identify, manage, and disclose material environmental risks and

opportunities that are relevant to their short and long-term success. Environmental issues may include the following:

- i. **Environmental effects on company:** change, volatility or deterioration in the environment that may impact business operations, such as:
 - climate change, extreme weather
 - loss or degradation of ecosystem services (e.g., pollination), decline of biodiversity
 - change in access to clean, affordable and adequate sources of water and other critical natural resources (e.g., natural food supplies)
- ii. **Company impact on the environment:** Potential regulatory change, liability, license to operate, reputational or market access risks posed by the company's environmental impacts, including:
 - emissions, pollution, waste, loss of biodiversity, degradation of natural ecosystems (e.g., deforestation)
- iii. **Transition:** Transition of company's industry and/or customers toward more sustainable products, services or practices, such as:
 - low carbon economy, technologies improving environmental outcomes
 - sustainability certifications, restoration, adaptation and risk mitigation business models

With regard to material environmental risk and opportunities, good practices include:

a. Board Oversight:

- i. The board identifies and oversees management of material environmental risks and opportunities and sets robust and relevant environmental strategy, time-bound goals and/or targets⁷.
- ii. Board member(s), board committee(s), or full board have pertinent environmental knowledge and experience, or have a designated committee or other such body with the ability to access independent sources of such knowledge and experience.
- iii. Alignment of lobbying (including direct or indirect lobbying and grassroots lobbying communications) activities and company expenditures with environmental strategy.

b. Management Execution

- i. Senior executives manage the development and execution of science-based and time-bound environmental strategies, goals, and/or targets.

⁷ The global climate change agreement reached at the 21st Conference of the Parties (COP21), "The Paris Agreement", provides globally agreed, and CalPERS endorsed, targets related to climate change.

- ii. Risk and opportunity management throughout the value chain, strategic planning and general business activities integrate environmental considerations.
 - iii. Executive officers' compensation is linked to attainment of environmental goals and targets.
 - iv. The company calculates environmental metrics relevant to its business operations annually, including, but not limited to, greenhouse gas emissions.
- c. **Disclosure on Environmental Risks and Opportunities⁸:**
- i. **Governance:** Company's governance around environmental risks and opportunities.
 - ii. **Strategy:** Actual and potential impacts on the company's businesses, strategy and financial planning.
 - i. Risks and opportunities the company has identified over the short, medium, and long-term.
 - ii. Environmental commitments the company has made including timelines, targets, and impact on financial statements, and business strategy.
 - iii. Engagement with policy makers regarding environmental risks and opportunities material to the company (including related expenditures).
 - iii. **Risk Management:** How the company identifies, assesses, and manages environmental risks and opportunities including the following:
 - i. How company works to ensure its business models and supply chain are robust, responsive, and/or resilient.
 - ii. If and how company uses internal pricing for carbon, water, or other natural resources.
 - iii. How company manages traceability issues in its supply chain.
 - iv. How company identifies and manages impacts, or potential impacts, on local environments and communities including company's approach to material human capital issues (e.g., public health, land rights, and just transition in relation to workers).
 - iv. **Metrics and Targets:** Environmental metrics⁴ used to assess and manage relevant environmental risks and opportunities, noting where third-party verification has been used. These metrics should be decision-useful, for both the company and investors. Performance relative to targets and commitments should also be disclosed.
7. **Codes of Conduct/Ethics:** The board should adopt high standards of business ethics through codes of conduct/ethics (or similar instrument) and oversee a culture of

⁸ The Task Force on Climate-Related Financial Disclosures ([TCFD](#)), the Sustainability Accounting Standards Board ([SASB](#)), [GRESB](#) and [CDP](#) offer useful investor endorsed disclosure guidance pertaining to climate impacts, deforestation, water and other potentially material environmental factors.

integrity, notwithstanding differing ethical norms and legal standards in various countries. This should permeate all aspects of the company's operations, ensuring that its vision, mission and objectives are ethically sound and demonstrative of its values. Codes should be effectively communicated and integrated into the company's strategy and operations, including risk management systems and compensation structures.

- a. **Behavior and Conduct:** The board should foster a corporate culture which ensures that employees understand their responsibilities for appropriate behavior. There should be appropriate board level and staff training in all aspects relating to corporate culture and ethics. Due diligence and monitoring programs should be in place to enable staff to understand relevant codes of conduct and apply them effectively to avoid company involvement in inappropriate behavior.
 - b. **Bribery and Corruption:** The board should ensure that management has implemented appropriately stringent policies and procedures to mitigate the risk of bribery and corruption or other malfeasance. Such policies and procedures should be communicated to shareowners and other interested parties.
 - c. **Whistleblowing:** The board should ensure that the company has in place an independent, confidential mechanism whereby an employee, supplier or other stakeholder can (without fear of retribution) raise issues of particular concern with regard to potential or suspected breaches of a company's code of ethics or local law.
 - d. **Prohibit Greenmail:** Every company should prohibit greenmail.
8. **Company General Meetings:** The general meeting agenda should be posted on the company's website at least one month prior to the meeting taking place. The agenda should be clear and properly itemized and include the date and location of the meeting as well as information regarding the issues to be decided at the meeting.
- a. **Vote Deadline:** The board should clearly publicize a date by which shareowners should cast their voting instructions.
 - b. **Share Blocking:** The practice of share blocking or requirements for lengthy share holdings should be discontinued.
 - c. **Selection and Notification of Meeting Time and Location:** Corporations should make shareowners' expense and convenience primary criteria when selecting the time and location of shareowner meetings. Appropriate notice of shareowner meetings, including notices concerning any change in meeting date, time, place or shareowner action, should be given to shareowners in a manner and within time frames that will ensure that shareowners have a reasonable opportunity to exercise their franchise.
 - d. **Record Date and Ballot Item Disclosure:** To promote the ability of shareowners to make informed decisions regarding whether to recall loaned shares: (1) shareowner meeting record dates should be disclosed as far in advance of the

record date as possible, and (2) proxy statements should be disclosed before the record date passes whenever possible.

- e. **Timely Disclosure of Voting Results:** A company should broadly and publicly disclose in a timely manner the final results of votes cast at annual and special meetings of shareowners. Whenever possible, preliminary results should be announced at the annual or special meeting of shareowners. If a board-endorsed resolution has been opposed by a significant proportion of votes, the company should explain subsequently what actions were taken to understand and respond to the concerns that led shareowners to vote against the board's recommendation.
- f. **Election Polls:** Polls should remain open at shareowner meetings until all agenda items have been discussed and shareowners have had an opportunity to ask and receive answers to questions concerning them.
- g. **Meeting Adjournment and Extension:** Companies should not adjourn a meeting for the purpose of soliciting more votes to enable management to prevail on a voting item. A meeting should only be extended for compelling reasons such as vote fraud, problems with the voting process or lack of a quorum.
- h. **Electronic Meetings:** Companies should hold shareowner meetings by remote communication (so-called "virtual" meetings) only as a supplement to traditional in-person shareowner meetings, not as a substitute. Companies incorporating virtual technology into their shareowner meeting should use it as a tool for broadening, not limiting, shareowner meeting participation. With this objective in mind, a virtual option, if used, should facilitate the opportunity for remote attendees to participate in the meeting to the same degree as in-person attendees.
- i. **Director Attendance:** All directors should attend the annual shareowners' meeting and be available, when requested by the chair, to respond directly to oral or written questions from shareowners.
- j. **Broker Non-Votes:** Broker non-votes should be counted for quorum purposes only.

E. Regulatory Effectiveness

It is important to have effective regulation as it protects CalPERS as an investor from externalities, maintains fair, orderly and efficient financial markets, and facilitates capital formation. In order to fulfill their vital functions, regulators need to have funding which is independent, sufficient, and multi-year.

1. **Code of Best Practices:** Each capital market in which shares are issued and traded should adopt its own Code of Best Practices to promote transparency of information, prevention of harmful labor practices, investor protection, and corporate social responsibility. Where such a code is adopted, companies should disclose to their shareowners whether they are in compliance.
2. **Financial Markets:** Policy makers and standards setters who impact investment portfolio risk and return should promote fair, orderly, and effectively regulated financial markets through addressing the following:
 - a. **Transparency:** To promote full disclosure so that the financial markets provide incentives that price risk and opportunity.
 - b. **Governance:** To foster alignment of interest, protect investor rights and independence of regulators.
 - c. **Systemic Risks:** To identify issues that give rise to risks that threaten global markets and work to foster action that mitigates those risks.
3. **Global Accounting Standards:** It is critical to maintain high-quality accounting standards in jurisdictions where we invest.
4. **Political Stability:** Progress toward the development of basic democratic institutions and principles, including such things as: a strong and impartial legal system and respect and enforcement of property and shareowner rights. Political stability encompasses the following:
 - a. **Political risk:** Internal and external conflict, corruption, the military and religion in politics, law and order, ethnic tensions, democratic accountability, and bureaucratic quality.
 - b. **Civil liberties:** Freedom of expression, association and organization rights; rule of law and human rights; free trade unions and effective collective bargaining; personal autonomy and economic rights.
 - c. **Independent judiciary and legal protection:** An absence of irregular payments made to the judiciary, the extent to which there is a trusted legal framework that honors contracts, clearly delineates ownership and protects financial assets.
5. **Transparency:** Financial transparency, including elements of a free press, is necessary for investors to have truthful, accurate and relevant information. Transparency encompasses the following:

- a. **Freedom of the press:** Structure of the news delivery system in a country, laws and their promulgation with respect to the influence of the news, the degree of political influence and control, economic influences on the news, and the degree to which there are violations against the media with respect to physical violations and censorship.
 - b. **Monetary and fiscal transparency:** The extent to which governmental monetary and fiscal policies and implementation are publicly available in a clear and timely manner, in accordance with international standards.
 - c. **Stock exchange listing requirements:** Stringency of stock exchange listing requirements with respect to frequency of financial reporting, the requirement of annual independent audits, and minimal financial viability.
 - d. **Accounting standards:** The extent to which U.S. Generally Accepted Accounting Principles, or International Accounting Standards are used in financial reporting and whether the country is a member of the International Accounting Standards Council.
6. **Sustainable Policy Framework:** Sound regulation should be based on scientific and transparent analysis of social and environmental issues. Regulation should be long-term focused and stable, providing the certainty for innovation, smart investment, and global competitiveness.
- a. **Productive Labor Practices:** No harmful labor practices or use of child labor. In compliance, or moving toward compliance, with the International Labor Organization (ILO) Declaration on the Fundamental Principles and Rights at Work. Productive Labor Practices encompasses:
 - i. **ILO ratification:** Whether the convention is ratified, not ratified, pending ratification or denounced.
 - ii. **Quality of enabling legislation:** The extent to which the rights described in the ILO convention are protected by law.
 - iii. **Institutional capacity:** The extent to which governmental administrative bodies with labor law enforcement responsibility exist at the national, regional and local levels.
 - iv. **Effectiveness of implementation:** Evidence that enforcement procedures exist and are working effectively and evidence of a clear grievance process that is utilized and provides penalties that have deterrence value.

- b. **Transaction costs:** The costs associated with trading in a particular market, including stamp taxes and duties, amount of dividends and income taxes and capital gains taxes.

APPENDIX A

United Nations Supported Principles for Responsible Investment

Launched in April 2006, The Principles for Responsible Investment (PRI) provides the framework for investors to give appropriate consideration to environment, social and corporate governance (ESG) issues. The PRI was created as an initiative of the UN Secretary-General and coordinated by the UNEP Finance Initiative and the UN Global Compact. An international working group of 20 institutional investors was supported by a 70-person multi-stakeholder group of experts from the investment industry, intergovernmental and governmental organizations, civil society and academia.

CalPERS is one of the original signatories.

The Principles

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

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

We encourage other investors to adopt the Principles. Additional information can be found at www.unpri.org.

APPENDIX B

LIST OF MEMBERSHIPS AND ENDORSEMENTS SUPPORTED BY CALPERS

1. The Global Sullivan Principles
<https://www.sullivanprinciples.html/>
2. UN Global Compact Principles
<https://www.unglobalcompact.org/>
3. Council of Institutional Investors (CII)
<http://www.cii.org/>
4. International Corporate Governance Network Principles (ICGN)
<https://www.icgn.org/>
5. Ceres
<http://www.ceres.org/>
6. Sustainability Accounting Standards Board (SASB)
<https://www.sasb.org>
7. Taskforce for Climate-related Financial Disclosures (TCFD)
<https://www.fsb-tcf.org/>

Appendix 8: Total Fund Investment Policy Document History

Summary of Change	Date
<p>Adopted by the Investment Committee.</p> <p>Fourteen policies were incorporated into the Total Fund Investment Policy and repealed 1) Total Fund Statement of Investment Policy, 2) Investment Beliefs, 3) Asset Allocation Strategy, 4) Benchmarks, 5) Risk Management Program, 6) Global Derivatives and Counterparty Risk, 7) Leverage, 8) Divestment, 9) Opportunistic Program, 10) Plan Level and Asset Class Transition Portfolios, 11) Role of Private Asset Class Board Investment Consultants, 12) Custody Management, 13) Economically Targeted Investments, 14) Terminated Agency Pool</p>	March 16, 2015
<p>Administrative Changes to Appendix 5, Investment Benchmarks, to reflect closure of State Peace Officer & Firefighters (POFF) Fund</p>	April 14, 2015
<p>Approved by the Investment Committee</p> <p>Revisions relevant to the strategic asset allocation process and the Long-Term Care Fund</p>	June 15, 2015
<p>Approved by the Investment Committee</p> <p>Revisions relevant to Liquidity Program changes to ensure enough liquidity is available to meet obligations; and benchmark change to cash-only</p>	June 15, 2015, Effective July 1, 2015
<p>Approved by the Investment Committee</p> <p>Revisions relevant to the 2015 Investment Policy Revision Project, including revisions to current policy content, new policy content, and general changes to enhance clarity and address non-material inconsistencies and formatting. Five policies were incorporated into the Total Fund Investment Policy and repealed 1) Currency Overlay Program, 2) Liquidity Program, 3) Low Duration Fixed Income Program, 4) Multi-Asset Class Partners Program, 5) Securities Lending</p>	April 18, 2016
<p>Approved by the Investment Committee</p> <p>Revisions to the Liquidity and Divestment sections, and establishment of a new section, Governance and Sustainability Strategy. The Global Governance Policy, Including CalPERS Governance and Sustainability Principles, was repealed and incorporated into the Total Fund Investment Policy.</p>	April 17, 2017
<p>Approved by the Investment Committee</p> <p>Revisions to the Liquidity Program to expand the investable universe for sovereign securities, and Low Duration sections, including removal of references to the High Quality Libor and Short Duration sub-programs, and corresponding benchmark references.</p>	November 13, 2017

Summary of Change	Date
<p>Approved by the Investment Committee</p> <p>Revisions to the Governance and Sustainability Principles, strategic asset allocation targets, ranges, and policy benchmarks. Additional revisions were made to reflect organizational and business process changes.</p>	June 18, 2018
<p>Approved by the Investment Committee</p> <p>Additional changes to reflect organizational as business process changes, as well as changes to several benchmarks for the Affiliate Funds.</p>	November 13, 2018
<p>Administrative changes made to migrate policy into an accessible template.</p>	February 11, 2019
<p>Administrative changes made to reflect California Employers' Pension Prefunding Trust benchmarks as approved at the June 17, 2019 meeting of the Investment Committee.</p>	June 17, 2019
<p>Approved by the Investment Committee</p> <p>Revisions to the Governance and Sustainability Principles, strategic asset allocations and leverage management. Additional revisions were made to reflect organizational and business process changes.</p>	September 16, 2019
<p>Approved by the Investment Committee and ratified by the Board of Administration.</p> <p>Revisions related to the Opportunistic Program and to the benchmark methodology to reflect business process change.</p>	June 17, 2020
<p>Administrative changes made to reflect the benchmark update for several Affiliate Funds.</p>	July 10, 2020
<p>Approved by the Investment Committee</p> <p>Revisions related to the Asset Allocation Strategy and additional conforming changes for organization and business process changes.</p>	September 13, 2021
<p><u>[Approved by the Investment Committee]</u></p> <p><u>[Description of changes]</u></p>	<p><u>[Month DD, YYYY]</u></p>

CalPERS Investment Policy for Global Fixed Income Program

Effective Date

This Policy is effective [Month DD, YYYY] and supersedes all previous Global Fixed Income Program investment policies.

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Introduction

The California Public Employees' Retirement System (CalPERS) Total Fund Investment Policy, adopted by the CalPERS Investment Committee (Committee), sets forth the CalPERS investment beliefs and overarching investment purposes and objectives with respect to its investment programs. The CalPERS Total Fund Investment Policy specifically covers key areas of investment strategy, including performance objectives, asset allocation strategies, benchmark selection, investment risk management, and derivatives, leverage, and divestment policies, among other elements that are applicable to all asset classes and programs at CalPERS.

This document sets forth the investment policy (Program Policy) for the Global Fixed Income Program (Program). The design of this Program Policy ensures that staff, investors, managers, consultants, and other participants selected by CalPERS take prudent and careful action while managing the Program. Additionally, use of this Program Policy assures sufficient flexibility in managing investment risks and returns associated with the Program.

This Program Policy should be read in conjunction with and is subject to conditions contained within the CalPERS Total Fund Investment Policy (Total Fund Policy). This Program Policy shall also be managed to comply with all applicable Investment Office policies.

Strategic Objective

The Program has five strategies: Treasury, Mortgage-Backed Securities, Investment Grade Corporates, Emerging Markets Sovereign Bonds, and High Yield, each defined as an "Asset Segment" and having the strategic objectives outlined below.

- A. The Treasury Segment of the Program has the following strategic objective:
 - To serve as an economic diversifier to equity risk and be a reliable source of liquidity.
- B. The Mortgage-Backed Securities Segment of the Program has the following strategic objective:
 - To provide a reliable source of income and an additional source of liquidity.
- C. The Investment Grade Corporates Segment of the Program has the following strategic objective:
 - To provide a reliable source of income and an additional source of liquidity.
- D. The Emerging Markets Sovereign Bonds Segment of the Program has the following strategic objective:
 - To provide exposure to economic growth and be a reliable source of income.
- E. The High Yield Segment of the Program has the following strategic objective:
 - To provide exposure to economic growth and be a reliable source of income.

Responsibilities

Details regarding various levels of responsibility for this Program are provided in Appendix 1, Reporting to the Investment Committee, and Appendix 2, Investment Responsibilities, to this Program Policy.

Investment Approaches & Parameters

All investment programs shall have specific written guidelines. The guidelines shall outline the investment approaches, permissible and restricted activities, and a performance objective that is commensurate with the program's purpose.

Staff shall rely on short- or long-term ratings from authorized nationally recognized statistical rating organizations (NRSROs) only. Staff shall maintain and annually update internal ratings for securities that are not rated by any authorized NRSROs.

Investment Constraints/ Limitations

See Appendix 3 for program investment constraints.

Glossary of CalPERS Specific Terms

Italicized terms appearing in the Program Policy are CalPERS-specific in nature and are defined in the [CalPERS Specific Glossary of Terms](#).

Policy Document History

See Appendix 4 for historical details of Investment Committee adoption of and revisions to this Program Policy.

Appendices

See the [Total Fund Investment Policy](#) appendices for overarching reporting requirements and responsibilities for the Investment Committee, staff, **General Pension Consultant**, **Private Asset Class Board Investment Consultant**, and **External Manager**.

Appendix 1: Reporting to the Investment Committee

The following tables provide details regarding reporting to the Investment Committee:

- Investment Office staff
- **General Pension Consultant**

Table 1: Investment Office Staff Reporting Responsibilities

Ref #	Report Content	Frequency
1.	Staff shall provide an Annual Program Review that will include a program overview, investment review, and business review in general conformance with the Annual Program Review Template.	No less than annually

Table 2: General Pension Consultant Reporting Responsibilities

Ref #	Report Content	Frequency
1.	The Consultant shall monitor, evaluate, and report on the performance of the Program relative to the benchmark and this Program Policy and other applicable CalPERS Policies.	No less than annually

Appendix 2: Investment Responsibilities

The following sections provide details regarding investment related responsibilities for the:

- Investment Office staff
- **General Pension Consultant**
- **External Manager**

Investment Office Staff Responsibilities

1. All aspects of portfolio management, including monitoring, trading, analyzing, evaluating performance relative to the appropriate benchmark, and selecting and contracting with managers.
2. Monitor the internal and external managers in the implementation of, and compliance with, the Program Policy and the Total Fund Policy.
3. Develop and maintain investment procedures, program guidelines, and sub-program guidelines.

General Pension Consultant Responsibilities

1. Provide independent perspective and counsel to the Committee, to include routine communication with the Investment Office staff and periodic reviews of processes and procedures.

External Manager Responsibilities

1. Manage the fund in accordance with each manager's contract with CalPERS, the Total Fund Policy, and the Program Policy.
2. Communicate and cooperate with Investment Office staff and authorized third parties regarding the management of the fund.

Appendix 3: Investment Constraints/Limitations

The following table provides details regarding investment constraints/limitations related to the following Asset Segments:

- Treasury Segment
- Mortgage-Backed Securities Segment
- Investment Grade Corporates Segment
- Emerging Markets Sovereign Bonds Segment
- High Yield Segment

Investment Constraints/Limitations by Global Fixed Income Asset Segment
<p>Treasury Segment</p> <ol style="list-style-type: none"> 1. Interest rate risk will be controlled using duration management. Duration will be maintained at +/-10% of the benchmark. 2. Further restrictions regarding liquidity and use of derivatives are outlined in the Policy-Related Procedures (PRP) for the Global Fixed Income Program.
<p>Mortgage-Backed Securities Segment</p> <ol style="list-style-type: none"> 1. Interest rate risk will be controlled using duration management. Duration will be maintained within +/- 0.50 of the benchmark. 2. Further restrictions regarding ratings, concentration, currency, geography, and use of derivatives are outlined in the PRP for the Global Fixed Income Program.
<p>Investment Grade Corporates Segment</p> <ol style="list-style-type: none"> 1. Interest rate risk will be controlled using duration management. Duration will be maintained within +/- 0.50 of the benchmark. 2. Further restrictions regarding ratings, concentration, currency, geography, and use of derivatives are outlined in the PRP for the Global Fixed Income Program.
<p>Emerging Markets Sovereign Bonds Segment</p> <ol style="list-style-type: none"> 1. Interest rate risk will be controlled using duration management. Duration will be maintained within +/- 0.50 of the benchmark. 2. Further restrictions regarding ratings, concentration, currency, geography, and use of derivatives are outlined in the PRP for the Global Fixed Income Program.
<p>High Yield Segment</p> <ol style="list-style-type: none"> 1. Interest rate risk will be controlled using duration management. Duration will be maintained within +/- 0.50 of the benchmark. 2. Further restrictions regarding ratings, concentration, currency, geography, and use of derivatives are outlined in the PRP for the Global Fixed Income Program.

Additional details regarding investment constraints/limitations and risks are outlined in each Program Segment specific written procedures.

Appendix 4: Policy Document History

Table 3: Global Fixed Income Program Policy History

Date	Detail
2015-11-16	<p>Approved by the Investment Committee</p> <p>Reformatted to incorporate Investment Policy Revision Project and Investment Delegation Restructuring Project revisions. The Credit Enhancement Program Policy was consolidated with the Global Fixed Income Program Policy and was repealed on November 16, 2015.</p>
2019-11-18	<p>Approved by the Investment Committee</p> <p>Updates were made to reflect the new asset segments. Administrative changes to migrate policy into an accessible template.</p>
[YYYY-MM-DD]	<p>[Approved by the Investment Committee]</p> <p>[Description of changes]</p>

CalPERS Investment Policy for Global Fixed Income Program

Effective Date

This Policy is effective [Month DD, YYYY] ~~November 18, 2019~~ and supersedes all previous Global Fixed Income Program investment policies.

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Introduction

The California Public Employees' Retirement System (CalPERS) Total Fund Investment Policy, adopted by the CalPERS Investment Committee (Committee), sets forth the CalPERS investment beliefs and overarching investment purposes and objectives with respect to its investment programs. The CalPERS Total Fund Investment Policy specifically covers key areas of investment strategy, including performance objectives, asset allocation strategies, benchmark selection, investment risk management, and derivatives, leverage, and divestment policies, among other elements that are applicable to all asset classes and programs at CalPERS.

This document sets forth the investment policy (Program Policy) for the Global Fixed Income Program (Program). The design of this Program Policy ensures that staff, investors, managers, consultants, and other participants selected by CalPERS take prudent and careful action while managing the Program. Additionally, use of this Program Policy assures sufficient flexibility in managing investment risks and returns associated with the Program.

This Program Policy should be read in conjunction with and is subject to conditions contained within the CalPERS Total Fund Investment Policy (Total Fund Policy). This Program Policy shall also be managed to comply with all applicable Investment Office policies.

Strategic Objective

The Program has ~~three~~ five strategies: ~~Long Treasury, Long Spread, Mortgage-Backed Securities, Investment Grade Corporates, Emerging Markets Sovereign Bonds,~~ and High Yield, each defined as an "Asset Segment" and having the strategic objectives outlined below.

- A. The ~~Long Treasury~~ Segment of the Program has the following strategic objective:
 - To serve as an economic diversifier to equity risk and be a reliable source of liquidity.
- ~~B. The Long Spread Segment of the Program has the following strategic objective:~~
 - ~~• To provide a reliable source of income and an additional source of liquidity.~~
- B. The Mortgage-Backed Securities Segment of the Program has the following strategic objective:
 - To provide a reliable source of income and an additional source of liquidity.
- C. The Investment Grade Corporates Segment of the Program has the following strategic objective:
 - To provide a reliable source of income and an additional source of liquidity.
- D. The Emerging Markets Sovereign Bonds Segment of the Program has the following strategic objective:
 - To provide exposure to economic growth and be a reliable source of income.
- ~~C.~~E. The High Yield Segment of the Program has the following strategic objective:
 - To provide exposure to economic growth and be a reliable source of income.

Responsibilities

Details regarding various levels of responsibility for this Program are provided in Appendix 1, Reporting to the Investment Committee, and Appendix 2, Investment Responsibilities, to this Program Policy.

Investment Approaches & Parameters

All investment programs shall have specific written guidelines. The guidelines shall outline the investment approaches, permissible and restricted activities, and a performance objective that is commensurate with the program's purpose.

Staff shall rely on short- or long-term ratings from authorized nationally recognized statistical rating organizations (NRSROs) only. Staff shall maintain and annually update internal ratings for securities that are not rated by any authorized NRSROs.

Investment Constraints/ Limitations

See Appendix 3 for program investment constraints.

Glossary of CalPERS Specific Terms

Italicized terms appearing in the Program Policy are CalPERS-specific in nature and are defined in the [CalPERS Specific Glossary of Terms](#).

Policy Document History

See Appendix 4 for historical details of Investment Committee adoption of and revisions to this Program Policy.

Appendices

See the [Total Fund Investment Policy](#) appendices for overarching reporting requirements and responsibilities for the Investment Committee, staff, ***General Pension Consultant, Private Asset Class Board Investment Consultant, and External Manager***.

Appendix 1: Reporting to the Investment Committee

The following tables provide details regarding reporting to the Investment Committee:

- Investment Office staff
- **General Pension Consultant**

Table 1: Investment Office Staff Reporting Responsibilities

Ref #	Report Content	Frequency
1.	Staff shall provide an Annual Program Review that will include a program overview, investment review, and business review in general conformance with the Annual Program Review Template.	No less than annually

Table 2: General Pension Consultant Reporting Responsibilities

Ref #	Report Content	Frequency
1.	The Consultant shall monitor, evaluate, and report on the performance of the Program relative to the benchmark and this Program Policy and other applicable CalPERS Policies.	No less than annually

Appendix 2: Investment Responsibilities

The following sections provide details regarding investment related responsibilities for the:

- Investment Office staff
- **General Pension Consultant**
- **External Manager**

Investment Office Staff Responsibilities

1. All aspects of portfolio management, including monitoring, trading, analyzing, evaluating performance relative to the appropriate benchmark, and selecting and contracting with managers.
2. Monitor the internal and external managers in the implementation of, and compliance with, the Program Policy and the Total Fund Policy.
3. Develop and maintain investment procedures, program guidelines, and sub-program guidelines.

General Pension Consultant Responsibilities

1. Provide independent perspective and counsel to the Committee, to include routine communication with the Investment Office staff and periodic reviews of processes and procedures.

External Manager Responsibilities

1. Manage the fund in accordance with each manager's contract with CalPERS, the Total Fund Policy, and the Program Policy.
2. Communicate and cooperate with Investment Office staff and authorized third parties regarding the management of the fund.

Appendix 3: Investment Constraints/Limitations

The following table provides details regarding investment constraints/limitations related to the following Asset Segments:

- ~~Long-Treasury Segment~~
- ~~Long Spread Segment~~
- Mortgage-Backed Securities Segment
- Investment Grade Corporates Segment
- Emerging Markets Sovereign Bonds Segment
- High Yield Segment

Investment Constraints/Limitations by Global Fixed Income Asset Segment
<p>Long-Treasury Segment</p> <ol style="list-style-type: none"> 1. Interest rate risk will be controlled using duration management. Duration will be maintained at +/-10% of the benchmark. 2. Further restrictions regarding liquidity and use of derivatives are outlined in the Policy-Related Procedures (PRP) for the Global Fixed Income Program.
<p>Long Spread Segment</p> <ol style="list-style-type: none"> 1. Sector Risk will be controlled by sector ranges that specify the degree by which allocations may fluctuate from the benchmark weights. Permitted sector ranges for each strategy will be maintained within +/- 10% of the benchmark weight with a minimum weight of 0%. 2. Further restrictions regarding duration, ratings, concentration, currency, geography, and use of derivatives are outlined in the PRP for the Global Fixed Income Program.
<p><u>Mortgage-Backed Securities Segment</u></p> <ol style="list-style-type: none"> 1. <u>Interest rate risk will be controlled using duration management. Duration will be maintained within +/- 0.50 of the benchmark.</u> 2. <u>Further restrictions regarding ratings, concentration, currency, geography, and use of derivatives are outlined in the PRP for the Global Fixed Income Program.</u>
<p><u>Investment Grade Corporates Segment</u></p> <ol style="list-style-type: none"> 1. <u>Interest rate risk will be controlled using duration management. Duration will be maintained within +/- 0.50 of the benchmark.</u> 2. <u>Further restrictions regarding ratings, concentration, currency, geography, and use of derivatives are outlined in the PRP for the Global Fixed Income Program.</u>
<p><u>Emerging Markets Sovereign Bonds Segment</u></p> <ol style="list-style-type: none"> 1. <u>Interest rate risk will be controlled using duration management. Duration will be maintained within +/- 0.50 of the benchmark.</u>

2. Further restrictions regarding ratings, concentration, currency, geography, and use of derivatives are outlined in the PRP for the Global Fixed Income Program.

High Yield Segment

1. Interest rate risk will be controlled using duration management. Duration will be maintained within +/- 0.50 of the benchmark.

~~1.2. Further restrictions regarding ratings, concentration, currency, geography, and use of derivatives are outlined in the PRP for the Global Fixed Income Program. Restrictions regarding duration, ratings, concentration, out of index bets and use of derivatives are outlined in the PRP for the Global Fixed Income Program.~~

Additional details regarding investment constraints/limitations and risks are outlined in each Program Segment specific written procedures.

Appendix 4: Policy Document History

Table 3: Global Fixed Income Program Policy History

Date	Detail
2015-11-16	<p>Approved by the Investment Committee</p> <p>Reformatted to incorporate Investment Policy Revision Project and Investment Delegation Restructuring Project revisions. The Credit Enhancement Program Policy was consolidated with the Global Fixed Income Program Policy and was repealed on November 16, 2015.</p>
2019-11-18	<p>Approved by the Investment Committee</p> <p>Updates were made to reflect the new asset segments. Administrative changes to migrate policy into an accessible template.</p>
<u>[YYYY-MM-DD]</u>	<p><u>[Approved by the Investment Committee]</u></p> <p><u>[Description of changes]</u></p>

CalPERS Investment Policy for Global Equity

Effective Date

This policy is effective November 18, 2019 and supersedes all previous Global Equity Program investment policies.

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Introduction

The California Public Employees' Retirement System (CalPERS) Total Fund Investment Policy, adopted by the CalPERS Investment Committee (Committee), sets forth the CalPERS investment beliefs and overarching investment purposes and objectives with respect to its investment programs. The CalPERS Total Fund Investment Policy specifically covers key areas of investment strategy, including performance objectives, asset allocation strategies, benchmark selection, investment risk management, and derivatives, leverage, and divestment policies, among other elements that are applicable to all asset classes and programs at CalPERS.

This document sets forth the investment policy (Program Policy) for the Global Equity Program (Program). The design of this Program Policy ensures that staff, investors, managers, consultants, and other participants selected by CalPERS take prudent and careful action while managing the Program. Additionally, use of this Program Policy assures sufficient flexibility in managing investment risks and returns associated with this Program.

This Program Policy should be read in conjunction with and is subject to conditions contained within the CalPERS Total Fund Investment Policy (Total Fund Policy). This Program Policy shall also be managed to comply with all other applicable Investment Office policies.

Strategic Objective

The Program has two strategies, the Market Capitalization Weighted Segment and the Factor Weighted Segment, each defined as an "Asset Segment", and having the strategic objectives specified below.

- A. The Market Capitalization Weighted Segment of the Program has the following strategic objective:
 - To provide exposure to economic growth and be a reliable source of liquidity.
- B. The Factor Weighted Segment of the Program has the following strategic objective:
 - To provide exposure to economic growth with reduced overall volatility and some diversification of equity risk.

Responsibilities

Details regarding various levels of responsibility for this Program are provided in Appendix 1, Reporting to the Investment Committee, and Appendix 2, Investment Responsibilities, to this Program Policy.

Investment Approaches & Parameters

- A. Approach

In the management of the overall Global Equity portfolio, investments are made with a specific purpose. Included strategies may be index-oriented (which closely replicate an index selected as the benchmark) or active strategies (which permit **asset class tracking**

error within specified parameters). All strategies shall be categorized as “index-oriented” or “active.”

Global Equity utilizes both internally managed and externally managed strategies to meet the Strategic Objective. The Program seeks to facilitate meaningful information transfer from the external investment managers to Staff to help Staff develop scalable, sustainable, and efficient methods of increasing the likelihood of meeting Global Equity’s investment return goals over the long term.

B. Investment Opportunity Set

The primary universe of allowable investment assets within Global Equity shall be publicly traded global equity securities and derivatives thereof as described in the Total Fund Policy, Global Derivatives and Counterparty Risk Section, and associated procedure.

C. Investment Selection

Global Equity has internal committees to select desired strategies and allocate capital. The Global Equity committees review and approve internal and external strategies forming the pool of eligible investment strategy alternatives and allocate capital to and from those eligible strategies.

D. Investment Parameters

All investment strategies shall have specific, written guidelines. The guidelines shall outline the investment philosophy and approaches, permissible and restricted activities and a performance objective that is commensurate with the strategy’s purpose.

~~Investment Constraints/Limitations~~

~~See Appendix 3 for program investment constraints.~~

~~Glossary of CalPERS Specific Terms~~

~~**Italicized** terms appearing in the Program Policy are CalPERS-specific in nature and are defined in the CalPERS Specific Glossary of Terms.~~

~~Policy Document History~~

~~See Appendix 4 for historical details of Investment Committee adoption of and revisions to this Program Policy.~~

~~Appendices~~

~~See the Total Fund Investment Policy appendices for overarching reporting requirements and responsibilities for the Investment Committee, Staff, **General Pension Consultant**, **Private Asset Class Board Investment Consultant**, and **External Manager**.~~

Appendix 1: Reporting to the Investment Committee

The following tables provide details regarding reporting to the Investment Committee:

- Investment Office Staff
- General Pension Consultant

Table 1: investment Office Staff Reporting Responsibilities

Ref #	Report Content	Frequency
1.	Staff shall provide an Annual Program Review that will include a program overview, investment review, and business review in general conformance with the Annual Program Review Template.	No less than annually

Table 2: General Pension Consultant Reporting Responsibilities

Ref #	Report Content	Frequency
1.	The Consultant shall monitor, evaluate, and report on the performance of the Program relative to the benchmarks and this Program Policy and other applicable CalPERS Policies.	No less than annually

Appendix 2: Investment Responsibilities

The following sections provide details regarding investment related responsibilities for the:

- Investment Office Staff
- **General Pension Consultant**
- **External Manager**

Investment Office Staff Responsibilities

1. All aspects of portfolio management, including monitoring, trading, analyzing, evaluating performance relative to the appropriate benchmark, and selecting and contracting with managers.
2. Monitor internally and externally managed strategies in the implementation of, and compliance with, the Program Policy and the Total Fund Policy.
3. Develop and maintain investment procedures, program guidelines, and sub-program guidelines.
4. Design and implement a process for capital allocation within the asset class.

General Pension Consultants Responsibilities

1. Provide independent perspective and counsel to the Committee, to include routine communication with the Investment Office Staff and periodic reviews of processes and procedures.

External Manager Responsibilities

1. Manage the fund in accordance with each manager's contract with CalPERS, the Total Fund Policy, and the Program Policy.
2. Communicate and cooperate with Investment Office Staff and authorized third parties regarding the management of the fund.

Appendix 3: Investment Constraints/Limitations

The following table provides details regarding investment constraints/limitations related to the following Asset Segments:

- Market Capitalization Weighted Segment
- Factor Weighted Segment

Investment Constraints/Limitations by Global Equity Asset Segment
<p>Market Capitalization Weighted Segment</p> <ol style="list-style-type: none"> 1. Active risk will be managed using tracking error. On average, the aggregate forecasted tracking error is to be maintained between 0 and 50 basis points as measured by the CalPERS Risk Management system while allowing for slight deviations from this range depending on market conditions. 2. Further restrictions regarding concentration risk, out-of-benchmark bets, and use of derivatives are further outlined in the Policy-Related Procedures (PRP) for the Global Equity Program. <p>Factor Weighted Segment</p> <ol style="list-style-type: none"> 1. Active risk will be managed using tracking error. On average, the aggregate forecasted tracking error is to be maintained between 0 and 50 basis points as measured by the CalPERS Risk Management system while allowing for slight deviations from this range depending on market conditions. 2. Further restrictions regarding concentration risk, out-of-benchmark bets, and use of derivatives are outlined in the PRP for the Global Equity Program.

Appendix 4: Policy Document History

Table 3: Global Equity Program Policy Document History

Date	Detail
2012-12-10	Adopted by the Investment Committee
2013-11-18	Revisions approved by the Investment Committee
2013-12-24	Administrative changes to update template format and to align this policy with the Global Derivatives and Counterparty Risk Policy
2014-05-15	Administrative changes to standardize reporting frequencies to the Investment Committee to "no less than annually"
2014-05-15	Administrative changes to reflect the Policy Glossary of Terms Update Project
2014-10-13	Revisions approved by the Investment Committee
2015-11-16	Approved by the Investment Committee Reformatted to incorporate Investment Policy Revision Project and Investment Delegation Restructuring Project revisions
2019-11-18	Approved by the Investment Committee Updates were made to reflect the new asset segments. Administrative changes to migrate policy into an accessible template.

CalPERS Investment Policy for Global Fixed Income Program

Effective Date

This Policy is effective November 18, 2019 and supersedes all previous Global Fixed Income Program investment policies.

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Introduction

~~The California Public Employees' Retirement System (CalPERS) Total Fund Investment Policy, adopted by the CalPERS Investment Committee (Committee), sets forth the CalPERS investment beliefs and overarching investment purposes and objectives with respect to its investment programs. The CalPERS Total Fund Investment Policy specifically covers key areas of investment strategy, including performance objectives, asset allocation strategies, benchmark selection, investment risk management, and derivatives, leverage, and divestment policies, among other elements that are applicable to all asset classes and programs at CalPERS.~~

~~This document sets forth the investment policy (Program Policy) for the Global Fixed Income Program (Program). The design of this Program Policy ensures that staff, investors, managers, consultants, and other participants selected by CalPERS take prudent and careful action while managing the Program. Additionally, use of this Program Policy assures sufficient flexibility in managing investment risks and returns associated with the Program.~~

~~This Program Policy should be read in conjunction with and is subject to conditions contained within the CalPERS Total Fund Investment Policy (Total Fund Policy). This Program Policy shall also be managed to comply with all applicable Investment Office policies.~~

Strategic Objective

The Program has five strategies: Treasury, Mortgage-Backed Securities, Investment Grade Corporates, Emerging Markets Sovereign Bonds, and High Yield, each defined as an "Asset Segment" and having the strategic objectives outlined below.

- A. The Treasury Segment of the Program has the following strategic objective:
 - To serve as an economic diversifier to equity risk and be a reliable source of liquidity.
- B. The Mortgage-Backed Securities Segment of the Program has the following strategic objective:
 - To provide a reliable source of income and an additional source of liquidity.
- C. The Investment Grade Corporates Segment of the Program has the following strategic objective:
 - To provide a reliable source of income and an additional source of liquidity.
- D. The Emerging Markets Sovereign Bonds Segment of the Program has the following strategic objective:
 - To provide exposure to economic growth and be a reliable source of income.
- E. The High Yield Segment of the Program has the following strategic objective:
 - To provide exposure to economic growth and be a reliable source of income.

Responsibilities

~~Details regarding various levels of responsibility for this Program are provided in Appendix 1, Reporting to the Investment Committee, and Appendix 2, Investment Responsibilities, to this Program Policy.~~

Investment Approaches & Parameters

All investment programs shall have specific written guidelines. The guidelines shall outline the investment approaches, permissible and restricted activities, and a performance objective that is commensurate with the program's purpose.

Staff shall rely on short- or long-term ratings from authorized nationally recognized statistical rating organizations (NRSROs) only. Staff shall maintain and annually update internal ratings for securities that are not rated by any authorized NRSROs.

~~Investment Constraints/Limitations~~

~~See Appendix 3 for program investment constraints.~~

~~Glossary of CalPERS Specific Terms~~

~~**Italicized** terms appearing in the Program Policy are CalPERS-specific in nature and are defined in the CalPERS Specific Glossary of Terms.~~

~~Policy Document History~~

~~See Appendix 4 for historical details of Investment Committee adoption of and revisions to this Program Policy.~~

~~Appendices~~

~~See the Total Fund Investment Policy appendices for overarching reporting requirements and responsibilities for the Investment Committee, staff, **General Pension Consultant, Private Asset Class Board Investment Consultant**, and **External Manager**.~~

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- Investment Office staff
- **General Pension Consultant**

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1.	Staff shall provide an Annual Program Review that will include a program overview, investment review, and business review in general conformance with the Annual Program Review Template.	No less than annually

Table 2: General Pension Consultant Reporting Responsibilities

Ref #	Report Content	Frequency
1.	The Consultant shall monitor, evaluate, and report on the performance of the Program relative to the benchmark and this Program Policy and other applicable CalPERS Policies.	No less than annually

Appendix 2: Investment Responsibilities

The following sections provide details regarding investment related responsibilities for the:

- Investment Office staff
- **General Pension Consultant**
- **External Manager**

Investment Office Staff Responsibilities

1. All aspects of portfolio management, including monitoring, trading, analyzing, evaluating performance relative to the appropriate benchmark, and selecting and contracting with managers.
2. Monitor the internal and external managers in the implementation of, and compliance with, the Program Policy and the Total Fund Policy.
3. Develop and maintain investment procedures, program guidelines, and sub-program guidelines.

General Pension Consultant Responsibilities

1. Provide independent perspective and counsel to the Committee, to include routine communication with the Investment Office staff and periodic reviews of processes and procedures.

External Manager Responsibilities

1. Manage the fund in accordance with each manager's contract with CalPERS, the Total Fund Policy, and the Program Policy.
2. Communicate and cooperate with Investment Office staff and authorized third parties regarding the management of the fund.

Appendix 3: Investment Constraints/Limitations

The following table provides details regarding investment constraints/limitations related to the following Asset Segments:

- Treasury Segment
- Mortgage-Backed Securities Segment
- Investment Grade Corporates Segment
- Emerging Markets Sovereign Bonds Segment
- High Yield Segment

Investment Constraints/Limitations by Global Fixed Income Asset Segment
<p>Treasury Segment</p> <ol style="list-style-type: none"> 1. Interest rate risk will be controlled using duration management. Duration will be maintained at +/-10% of the benchmark. 2. Further restrictions regarding liquidity and use of derivatives are outlined in the Policy-Related Procedures (PRP) for the Global Fixed Income Program.
<p>Mortgage-Backed Securities Segment</p> <ol style="list-style-type: none"> 1. Interest rate risk will be controlled using duration management. Duration will be maintained within +/- 0.50 of the benchmark. 2. Further restrictions regarding ratings, concentration, currency, geography, and use of derivatives are outlined in the PRP for the Global Fixed Income Program.
<p>Investment Grade Corporates Segment</p> <ol style="list-style-type: none"> 1. Interest rate risk will be controlled using duration management. Duration will be maintained within +/- 0.50 of the benchmark. 2. Further restrictions regarding ratings, concentration, currency, geography, and use of derivatives are outlined in the PRP for the Global Fixed Income Program.
<p>Emerging Markets Sovereign Bonds Segment</p> <ol style="list-style-type: none"> 1. Interest rate risk will be controlled using duration management. Duration will be maintained within +/- 0.50 of the benchmark. 2. Further restrictions regarding ratings, concentration, currency, geography, and use of derivatives are outlined in the PRP for the Global Fixed Income Program.
<p>High Yield Segment</p> <ol style="list-style-type: none"> 1. Interest rate risk will be controlled using duration management. Duration will be maintained within +/- 0.50 of the benchmark. 2. Further restrictions regarding ratings, concentration, currency, geography, and use of derivatives are outlined in the PRP for the Global Fixed Income Program.

Additional details regarding investment constraints/limitations and risks are outlined in each Program Segment specific written procedures.

Appendix 4: Policy Document History

Table 3: Global Fixed Income Program Policy History

Date	Detail
2015-11-16	<p>Approved by the Investment Committee</p> <p>Reformatted to incorporate Investment Policy Revision Project and Investment Delegation Restructuring Project revisions. The Credit Enhancement Program Policy was consolidated with the Global Fixed Income Program Policy and was repealed on November 16, 2015.</p>
2019-11-18	<p>Approved by the Investment Committee</p> <p>Updates were made to reflect the new asset segments. Administrative changes to migrate policy into an accessible template.</p>

CalPERS Investment Policy for Real Assets Program

Effective Date

This Policy is effective December 16, 2019 and supersedes all previous Real Assets Program investment policies.

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Introduction

The California Public Employees' Retirement System (CalPERS) Total Fund Investment Policy, adopted by the CalPERS Investment Committee (Committee), sets forth the CalPERS investment beliefs and overarching investment purposes and objectives with respect to its investment programs. The CalPERS Total Fund Investment Policy specifically covers key areas of investment strategy, including performance objectives, asset allocation strategies, benchmark selection, investment risk management, and derivatives, leverage, and divestment policies, among other elements that are applicable to all asset classes and programs at CalPERS.

This document sets forth the investment policy (Program Policy) for the Real Assets Program (Program), which is comprised of the following three portfolios: Real Estate, Infrastructure, and Forestland. The design of this Program Policy ensures that staff, investors, managers, consultants, and other participants selected by CalPERS take prudent and careful action while managing the Program. Additionally, use of this Program Policy assures sufficient flexibility in managing investment risks and returns associated with this Program.

This Program Policy should be read in conjunction with Policy-Related Procedures (PRPs) and is subject to the CalPERS Total Fund Investment Policy (Total Fund Policy). Staff shall manage this Program Policy in compliance with all applicable Investment Office policies.

Strategic Objective

The Program's strategic objective is to provide stable and predictable cash yield, diversification of equity risk, and inflation protection.

Benchmark

The benchmarks for the Program are specified in the Benchmarks section of the Total Fund Investment Policy.

Responsibilities

Details regarding various levels of responsibility for this Program are provided in the following appendices to this Program Policy: Appendix 1, Reporting to the Investment Committee, and Appendix 2, Investment Responsibilities.

Investment Approaches and Parameters

1. Real Assets Program Allocations

Program allocation targets and ranges are listed in the Total Fund Investment Policy.

2. Diversification and Limits

To mitigate risk, staff shall maintain an appropriate level of diversification within the Program. Staff shall monitor the Program for adherence to the Key Policy Parameters specified in Appendix 3 to this Policy.

3. Infrastructure and Forestland Parameters

The Key Policy Parameters pertaining to risk classifications, geographic regions, and leverage will apply to (a) the Infrastructure portfolio only when the Net Asset Value (NAV) for that portfolio exceeds \$5.0 billion and (b) the Forestland portfolio only when the NAV for that portfolio exceeds \$3.0 billion.

~~Investment Constraints/Limitations~~

~~See Appendix 3 for program investment constraints.~~

~~Glossary of CalPERS Specific Terms~~

~~***Bold italicized*** terms appearing in the Program Policy are “CalPERS specific” in nature and are defined in the CalPERS Specific Glossary of Terms.~~

~~Policy Document History~~

~~See Appendix 4 for historical details of the Committee’s adoption of, and subsequent revisions to, this Program Policy.~~

~~Policy Appendices~~

~~See the Total Fund Investment Policy appendices for overarching reporting requirements and responsibilities for the Investment Committee, staff, ***General Pension Consultant***, and ***Private Asset Class Board Investment Consultant***.~~

Appendix 1: Reporting to the Investment Committee

The following tables provide details regarding reporting to the Investment Committee:

1. Investment Office staff
2. **General Pension Consultant**

Table 1: Investment Office Staff Reporting Responsibilities

Ref #	Report Content	Frequency
1.	Staff shall provide an Annual Program Review that will include a program overview, investment review, and business review in general conformance with the Annual Program Review Template.	No less than annually
2.	Staff shall maintain a Strategic Plan approved by the Committee setting forth CalPERS' long-term objectives for investment and management of the Program. Changes to the Strategic Plan require Committee approval.	At a minimum every five years

Table 2: General Pension Consultant Reporting Responsibilities

Ref #	Report Content	Frequency
1.	The Consultant shall monitor, evaluate, and report on the performance of the Program relative to the benchmarks and this Program Policy and other applicable CalPERS policies.	No less than annually

Appendix 2: Investment Responsibilities

The following sections provide details regarding investment-related responsibilities for the:

- Investment Committee
- **General Pension Consultant**
- **Private Asset Class Board Investment Consultants**
- Managers/Partners

As used in this Policy, the term “manager” refers to third-party managers under the Program, and the term “partner” includes managing members of Limited Liability Companies.

Investment Office Staff Responsibilities

1. Undertake all aspects of portfolio management including monitoring, trading, analyzing, and evaluating performance relative to the appropriate benchmark, and selecting and contracting with managers/partners consistent with all applicable policies and procedures.
2. Develop and maintain investment procedures, program guidelines, and portfolio guidelines.
3. Screen and evaluate investment proposals consistent with the Program’s Strategic Plan, Appendix 3, and applicable investment policies and procedures.
4. Execute approved investment transactions, including negotiating investment agreements, performing initial and ongoing due diligence, and closing transactions.

General Pension Consultant Responsibilities

1. Provide independent perspective and counsel to the Committee, to include routine communication with the Investment Office staff and periodic reviews of processes and procedures.

Private Asset Class Board Investment Consultants Responsibilities

The responsibilities of the respective board consultants are specified in the “Private Asset Class Board Investment Consultants” section of, and the reporting and responsibility appendices to, the Total Fund Investment Policy.

Manager/Partner Responsibilities

1. Manage its allocated portion of the Program in accordance with (a) each manager/partner’s contract or partnership/operating agreement with CalPERS and (b) applicable policies.
2. Communicate and cooperate with Investment Office staff and authorized third parties regarding the management of its allocated portion of the Program.

Appendix 3: Investment Constraints/Limitations

Staff Authority Limits

Table 3 below outlines the NAV limits at which staff may undertake commitments and dispositions.

Commitment limits (i) include new commitments, additional commitments made for investments in existing assets, and debt pay-downs, and (ii) apply only to the amount committed or invested, excluding any leverage or fees.

Table 3: Staff Authority Limits - Real Assets Program

	Commitments (\$ billions)	Dispositions (\$ billions)
Managing Investment Director limit per: (Real Estate)	\$3	\$3
Chief Investment Officer limit per: (Real Estate)	\$6	\$6
Managing Investment Director limit per: (Infrastructure)	\$1	\$1
Chief Investment Officer limit per: (Infrastructure)	\$2	\$2
Managing Investment Director limit per: (Forestland)	\$1	\$1
Chief Investment Officer limit per: (Forestland)	\$2	\$2
Managing Investment Director Cumulative Fiscal Year Limit: (Real Assets)	\$15	\$15

Key Policy Parameters

1. Partner Relationship Exposure

The maximum Partner Relationship Exposure for the Program is 20%. Similarly, the maximum exposure to outstanding investments with no **External Manager** is also 20%. For purposes of this Appendix 3,

- a. "Partner Relationship Exposure" means, with reference to any given Partner Relationship, the ratio of (i) the NAV of assets under management with such

Partner Relationship, plus total unfunded commitments, to (ii) the total NAV of the Program plus total unfunded commitments; and

- b. “Partner Relationship” means, collectively, the total investment allocation with any one manager or partner, or, in cases where the Program has investments with multiple members of an affiliated group of managers and/or partners, the investment allocation with that affiliated group.

2. Risk Classifications

The Program will be divided into three risk classifications: core, value add, and opportunistic. Individual assets will be assigned to the appropriate risk classification.

The permitted NAV percentage ranges for each risk classification are outlined in Table 4.

Table 4: Risk Classifications

Risk Classification	Real Assets	Real Estate	Infrastructure	Forestland
Core	75-100%	75-100%	60-100%	75-100%
Value Add	0-25%	0-25%	0-25%	0-25%
Opportunistic*	0-25%	0-25%	0-25%	0-25%

*Development assets will have a limit of 10% of the Program and each portfolio. All Development assets will be assigned the “opportunistic” risk classification.

3. Geography

Staff will pursue a global real assets investment strategy, with emphasis in the United States. International markets are categorized as Developed, Emerging, and Frontier, based on FTSE classification of markets. The permitted NAV percentage ranges for each geographic region are outlined in Table 5.

Table 5: Geography

Region	Real Assets	Real Estate	Infrastructure	Forestland
United States	70-100%	75-100%	40-100%	50-100%
International Developed Markets	0-30%	0-25%	0-60%	0-50%
International Emerging Markets	0-15%	0-15%	0-15%	0-15%
International Frontier Markets	0-5%	0-5%	0-5%	0-5%

4. Public Securities

Public securities will not exceed 10% of the Program.

Appendix 4: Policy Document History

Table 6: Real Assets Program Policy History

Date	Detail
2011-04-11	Approved by the Policy Subcommittee
2011-05-16	Adopted by the Investment Committee
2011-06-15	Approved by the Policy Subcommittee
2011-08-15	Adopted by the Investment Committee
2013-04-15	Approved by the Investment Committee
2013-12-16	Approved by the Investment Committee
2014-05-28	Administrative changes to (1) align this policy with the Global Derivatives and Counterparty Risk Policy, and (2) to standardize reporting frequencies to the Investment Committee to "no less than annually"
2014-05-28	Administrative changes to reflect the Policy Glossary of Terms Update Project
2016-02-16	Approved by the Investment Committee Added Attachment D, Investment Limits and Constraints, to incorporate Investment Restructuring Project revisions
2016-08-15	The Investment Policy for Real Assets was conditionally approved by the Investment Committee pending approval of the Real Assets Investment Policy Procedures and Guidelines by the Board's Investment Consultants. The Policy was reformatted to incorporate Investment Policy Revision Project revisions. As of November 30, 2016, the IPPGs were approved by the Board Investment Consultants. Real Assets staff requested the updated Investment Policy for Real Assets and the IPPGs be effective as of January 1, 2017.
2018-03-19	Approved by the Investment Committee Revisions to clarify fiscal year commitment limits specific to the Managing Investment Director, and establish a threshold at which the concentration limits apply to the Forestland Portfolio.
2018-11-13	Approved by the Investment Committee Revisions to clarify that threshold limits apply to leverage considerations for the Forestland and Infrastructure programs, clarify that the Real Assets Strategic Plan shall be used in the evaluation of investment proposals, and several ministerial updates.
2018-12-17	Approved by the Investment Committee

Date	Detail
	Revision of the regional ranges for the Infrastructure portfolio to increase the permitted exposure to International Developed Markets by 10% with a corresponding reduction to the permitted exposure to the U.S.
2019-01-08	Administrative changes made to migrate policy into an accessible template.
2019-12-16	Approved by the Investment Committee Updates were made to RA Program Policy staff authority limits. Administrative changes were to reflect business process changes and migrate policy into an accessible template.

CalPERS Investment Policy for Private Equity Program

Effective Date

This policy is effective June 17, 2020 and supersedes all previous Private Equity Program investment policies.

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Introduction

The California Public Employees' Retirement System (CalPERS) Total Fund Investment Policy, adopted by the CalPERS Investment Committee (Committee), sets forth the CalPERS investment beliefs and overarching investment purposes and objectives with respect to its investment programs. The CalPERS Total Fund Investment Policy specifically covers key areas of investment strategy, including performance objectives, asset allocation strategies, benchmark selection, investment risk management, and derivatives, leverage, and divestment policies, among other elements that are applicable to all asset classes and programs at CalPERS.

This document sets forth the investment policy (Program Policy) for the Private Equity (PE) Program (Program). The design of this Program Policy ensures that Staff, investors, managers, consultants, and other participants selected by CalPERS take prudent and careful action while managing the Program. Additionally, use of this Program Policy assures sufficient flexibility in managing investment risks and returns associated with the Program.

This Program Policy should be read in conjunction with Policy Related Procedures (PRPs) and is subject to the CalPERS Total Fund Investment Policy (Total Fund Policy). Staff shall manage this Program Policy in compliance with all applicable Investment Office policies.

Strategic Objective

The Program's strategic objective is to maximize risk-adjusted rates of return and enhance the equity return to the Fund.

Benchmark

The benchmarks for the Program are specified in the Benchmarks section of the Total Fund Policy.

Responsibilities

Details regarding various levels of responsibility for this Program are provided in the following appendices to this Program Policy: Appendix 1, Reporting to the Investment Committee, and Appendix 2, Investment Responsibilities.

Investment Approaches & Parameters

A. Approach

1. Staff shall manage the Program as a whole with specific criteria appropriate to partnership investments, co- investments, and **Customized Investment Accounts**.
2. Top-down strategic assessments shall identify portfolio weightings and identify the most attractive segments of the market for investing.

B. Specific Risk Parameters

There are specific risks associated with private equity investments that shall be monitored and mitigated by CalPERS commensurate with the expected return as each investment proposal is considered, including but not limited to the following major risk categories:

1. Leverage: The increased volatility risk posed by the existence of non-recourse debt at the underlying investment level.
2. Operating and Business: The potential for certain investments to entail exceptional operating and business risks.
3. Liquidity: The liquidity risks inherent in private equity, given typical time horizons of 5-10 years and generally limited opportunities for sale in the secondary market.
4. Structural: The risks arising from a potential misalignment of interests between the general partner and the limited partners, which may be mitigated by, among other things, structuring fees and incentive payments and other key aspects of the business relationship so as to better align the interests of the partners.
5. Valuation: The risks associated with the valuation process for partnerships and co-investments, including whether the general partner employs an appropriate valuation discipline.

The investment approach for the portfolio shall seek to reduce risk through appropriate diversification by geography, industry, **Vintage Year** and investment strategy.

C. Investment Vehicle Parameters

Investment vehicles may take the form of limited partnerships, limited liability companies (LLCs), or other similar limited liability legal structures.

~~Investment Constraints/ Limitations~~

~~See Appendix 3 for program investment constraints.~~

~~Glossary of CalPERS Specific Terms~~

~~**Bold Italicized** terms appearing in the Program Policy are “CalPERS specific” in nature and are defined in the CalPERS Specific Glossary of Terms.~~

~~Policy Document History~~

~~**History** See Appendix 4 for historical details of the Committee’s adoption of, and subsequent revisions to, this Program~~

~~Policy Appendices~~

~~See the Total Fund Policy appendices for overarching reporting requirements and responsibilities for Investment Committee, Staff, **General Pension Consultant, and Private Asset Class Board Investment Consultant**.~~

Appendix 1: Reporting to the Investment Committee

The following tables provide details regarding reporting to the Investment Committee:

- Investment Office Staff
- General Pension Consultant

Table 1: Investment Office Staff Reporting Responsibilities

Ref #	Report Content	Frequency
1.	Staff shall provide an Annual Program Review that will include a program overview, investment review, and business review in general conformance with the Annual Program Review Template.	No less than annually
2.	Staff shall report regarding investment proposals it has received, the stage they are at in the pipeline, and their ultimate disposition.	Next Committee meeting, or sooner if deemed necessary

Table 2: General Pension Consultant Reporting Responsibilities

Ref #	Report Content	Frequency
1.	The Consultant shall monitor, evaluate, and report on the performance of the Program relative to the benchmarks and this Program Policy and other applicable CalPERS Policies.	No less than annually

Appendix 2: Investment Responsibilities

The following sections provide details regarding investment-related responsibilities for the:

- Investment Office Staff
- ***Private Asset Class Board Investment Consultant***
- General Partner

Investment Office Staff Responsibilities

1. All aspects of program portfolio management, including monitoring, analyzing, evaluating performance relative to the appropriate benchmark, selecting investments, and contracting with general partners.
2. Monitor general partners in the implementation of, and compliance with, the Program Policy.
3. Develop and maintain selection guidelines for private equity investments.
4. Develop and maintain investment procedures, program guidelines, and sub-program guidelines.
5. Monitor non-recourse debt as a risk factor.

Private Asset Class Board Investment Consultant Responsibilities

1. Provide independent perspective and counsel to the Committee, to include routine communication with Investment Office staff and periodic reviews of processes and procedures.

General Partner Responsibilities

1. All aspects of portfolio management as set forth in each general partner's limited partnership agreement or contract with CalPERS and the Program Policy and Total Fund Policy.
2. Communicate and cooperate with Investment Office staff and authorized third parties regarding the management of the fund.

Appendix 3: Investment Constraints/Limitations

A. Strategy Allocation Targets & Ranges:

Strategy	Target	Range
Buyouts	70%	60% - 80%
Credit Related	5%	0% - 10%
Venture Capital	1%	0% - 7%
Growth/Expansion	15%	5% - 20%
Opportunistic	10%	0% - 15%

B. Investment Parameters:

Staff Authority Limits

Net Asset Value (NAV) in billions

The Managing Investment Director (MID) and Chief Investment Officer (CIO) limits apply per commitment.	Funds	Co-Investments	Customized Investment Account	Secondary
MID	\$0.5	\$0.3	\$1.3	\$0.9
CIO	\$1	\$0.6	\$1.9	\$1.7
MID Fiscal Year Limit*	\$10	\$3	\$5	\$3

*Fiscal Year Limit applies to cumulative commitments.

1. Committee approval will be required for commitments beyond those authorized for the CIO. If there is a vacancy in the CIO position, Committee approval will be required for commitment authority otherwise delegated to the CIO.
2. The aggregate **Net Committed Capital** to any one general partner is limited to 10% or less of PE's total Net Committed Capital. Any exceptions to this must be specifically approved by the Committee. On August 18, 2014, the Committee approved three exceptions, increasing the maximum exposure from 10% to 15% for the following general partners: Blackstone, Carlyle and Apollo.
3. Co-Investments are subject to the further restriction that the co-investment must be made alongside a firm with which the PE Program has an active commitment.
4. Fund Investment Limitation - CalPERS commitments to any one fund cannot exceed 25% of the fund.

Appendix 4: Private Equity Program Policy Document History

Date	Detail
1997-04-04 1997-04-14	Approved by the Policy Subcommittee Adopted by the Investment Committee
2005-03-11 2005-04-18	Revised by the Policy Subcommittee Approved by the Investment Committee
2005-09-16 2005-10-17	Revised by the Policy Subcommittee Approved by the Investment Committee
2006-04-14 2006-05-15	Revised by the Policy Subcommittee Approved by the Investment Committee
2008-08-18 2008-09-15	Revised by the Policy Subcommittee Approved by the Investment Committee
2009-06-16	Administrative changes made to align with Policy Review Project
2009-12-14 2010-02-16	Revised by the Policy Subcommittee Approved by the Investment Committee
2011-10-17 2011-11-14	Revised by the Policy Subcommittee Approved by the Investment Committee
2012-05-14	Administrative changes made to reflect Delegation revisions
2013-06-12	Administrative changes made to reflect Private Asset Class Board Consultant Policy revisions
2013-12-24	Administrative changes to update template format and to align this policy with the Global Derivatives and Counterparty Risk Policy
2014-06-24	Administrative changes to standardize reporting frequencies to the Investment Committee to “no less than annually”
2014-06-24	Administrative changes to reflect the Policy Glossary of Terms Update Project
2015-12-14	Approved by the Investment Committee Reformatted to incorporate Investment Policy Revision Project and Investment Delegation Restructuring Project revisions
2016-07-22	Administrative changes made to reflect General Pension Consultant reporting responsibility
2016-12-14	Administrative change to Appendix 3 to include exceptions approved in August 2014 by the Investment Committee increasing the maximum exposure to three general partners from 10% to 15% (Blackstone, Carlyle and Apollo).
2018-08-13	Approved by the Investment Committee Revisions to the depiction of commitment and fiscal year limits for investment types to dollar thresholds, as well as updates to targets and ranges for the Buyouts and credit-related strategies.
2019-12-16	Approved by the Investment Committee

Date	Detail
	Updates were made to CalPERS Specific Glossary of Terms. Administrative changes were to reflect business process changes and migrate policy into an accessible template.
2020-02-28	Administrative change to the reporting frequency to align with the quarterly BOA IC meetings.
2020-07-10	Administrative changes to the strategy targets and ranges to reflect the changes approved by the Investment Committee and ratified by the Board of Administration at the June 2020 committee meetings and to clean up typographical error.

June 13, 2022

Mr. David Miller
Chair of the Investment Committee
California Public Employees' Retirement System
400 P Street
Sacramento, CA 95814

Re: Agenda Item 5b Revisions to the Total Fund and Global Fixed Income Policies – 2nd Reading

Dear Mr. Miller:

You requested Wilshire's opinion on Staff's presentation of the Total Fund and Global Fixed Income, Investment Policies. As the Board's consultant, Wilshire has been closely involved in the drafting of the policy revisions with the overarching goal of enhancing Board governance and ensuring the appropriate tools and reporting are in place to move the portfolio towards the adopted asset allocation targets. **In aggregate, Wilshire is comfortable that the proposed changes are consistent with a strong governance framework and appropriately adjust policy to align with the approved asset allocation.**

The Investment Committee provided input and suggestions after the 1st reading, which have been incorporated into the revisions. The Total Fund Policy now incorporates the policies previously reserved in separate governance documents (Private Equity, Global Fixed Income, etc.) into the Total Fund Policy. This increases the consistency, readability and usability of the documents without loss of governance oversight.

Wilshire feels the Private Debt policy language covers the appropriate governance items for the new asset class. A table delineating program responsibilities for the new Private Debt allocation covering parameters around prudent person opinions are under discussion and will be presented as part of a review of the other private asset class policies at a future Investment Committee meeting. Wilshire is comfortable with that timeline. Wilshire worked with Staff to narrow the strategy ranges in the Investment Parameters table to ensure a certain level of diversification. Wilshire believes the revised strategy ranges are appropriate as the program ramps up. Further, it is Wilshire's understanding that specific targets for each strategy will be established once the new program has sufficiently increased in size. Staff authority limits remain consistent with those previously found for Opportunistic Strategies, which were primarily focused on private debt commitments.

The PERF policy benchmark is defined to align with the new asset allocation in Appendix 5, Table 1; with no changes from the 1st reading. It incorporates benchmarks for the new asset classes along with a benchmark to measure strategic leverage implementation. Of note, the policy benchmark for Strategic Leverage utilizes the ICE BofA US 3-month Treasury Bill Index, net of transactions costs. This is the standard index provider offering and Wilshire is comfortable that it provides a reasonable basis for comparing the impact of leverage in the policy benchmark. Additionally, it aligns with the benchmark used in the Affiliate Funds policy benchmarks. In summary, **Wilshire reiterates that these benchmarks**

broadly meet best practices in benchmarking, align with the investment expectations of the portfolio segments, and are appropriate for measuring the effectiveness of Total Fund portfolio management.

Investment Beliefs

Wilshire believes the proposed revisions continue to support a number of CalPERS' Investment Beliefs:

Investment Belief 4: "Long term value creation requires effective management of three forms of capital: financial, physical and human; Governance is the primary tool to align interests between CalPERS and managers of its capital"

Investment Belief #5 – "CalPERS must articulate its investment goals and performance measures and ensure clear accountability for their execution."

Investment Belief #10 (sub-belief C) - "CalPERS will be best positioned for success if it 1) has strong governance, 2) operates with effective, clear processes..."

Conclusion

Wilshire has reviewed the proposed 2nd reading revisions in detail. We are comfortable that the changes proposed within the policies promote more effective governance. Please do not hesitate to contact us should you require anything further or have any questions.

Regards,



Thomas Toth, CFA

Managing Director, Wilshire Advisors