

# California Public Employees' Retirement System

## Total Fund Investment Policy

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**Effective Date**      **April 18, 2016**  
 This policy supersedes the previous Total Fund Investment Policy and the consolidated policies listed in the table of contents below.

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# California Public Employees' Retirement System

## 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 a dynamic document 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.

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# California Public Employees' Retirement System

## Total Fund Investment Policy Overarching Statements

**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.  
Responsibil-  
ities**

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

1. Reporting to the Committee
2. Investment Responsibilities

# California Public Employees' Retirement System

## Total Fund Investment Policy Overarching Statements

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<b>E. Performance Objectives</b>	<p>Specifically:</p> <ul style="list-style-type: none"><li>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.</li><li>B. CalPERS will seek to maximize returns for the level of risk taken;</li><li>C. CalPERS will seek to achieve a return that exceeds the Policy Index; and</li><li>D. CalPERS will seek to invest its assets efficiently, bearing in mind the impact of management and transaction costs on investment returns.</li></ul> <p>Policy benchmarks are listed in Appendix 5.</p>
<b>F. Computations &amp; Calculations</b>	<p>All calculations and computations required under this Policy shall be based on the market value and holdings detail recorded by the CalPERS Custodian.</p>
<b>G. Investment Constraints &amp; Limitations</b>	<p>Details regarding various investment constraints and limitations are provided in Appendix 7 for all Policy sections.</p>
<b>H. Glossary of CalPERS Specific Terms</b>	<p><i>Italicized</i> terms appearing in the Policy are CalPERS specific in nature and are defined in the <a href="#">CalPERS Specific Glossary of Terms</a>.</p>
<b>I. Policy Document History</b>	<p>Historical details of the Committee's adoption of and revisions to the Policy are provided in Appendix 8.</p>

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# California Public Employees' Retirement System

## 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.

# California Public Employees' Retirement System

## Total Fund Investment Policy Sections

### 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.

# California Public Employees' Retirement System

## Total Fund Investment Policy Sections

### II. Asset Allocation Strategy (continued)

#### Investment Approaches & Parameters (continued)

#### Strategic (continued)

- 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.

# California Public Employees' Retirement System

## Total Fund Investment Policy Sections

### II. Asset Allocation Strategy (continued)

#### Investment Approaches & Parameters (continued)

#### Strategic (continued)

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. As contemplated in the CalPERS Funding Risk Mitigation Policy, the occurrence of a Funding Risk Mitigation Event, shall trigger an adjustment to the expected investment return, which shall in turn trigger an automatic adjustment to the CalPERS asset allocation targets as detailed in Appendix 4, Table 2.
- D. 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.

Further limitations are specified in Appendix 7.

# California Public Employees' Retirement System

## Total Fund Investment Policy Sections

### II. Asset Allocation Strategy (continued)

#### Investment Approaches & Parameters (continued)

#### Implementation (continued)

- 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 7.
- G. Managers may be retained for Program implementation subject to policy asset allocation ranges and/or overlay portfolio constraints.
- H. The active asset allocation return will be measured and included in the Total Fund return and reported to the Committee no less than annually.
- I. Target Tracking Error  
Limitations on the Asset Allocation Program target tracking error relative to the Total Fund Policy Benchmark are detailed in Appendix 7.
- J. **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.

# California Public Employees' Retirement System

## Total Fund Investment Policy Sections

### II. Asset Allocation Strategy (continued)

#### 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.

# California Public Employees' Retirement System

## Total Fund Investment Policy Sections

### III. Benchmarks

**Purpose** The purpose of a benchmark is to establish target investment exposures, and to 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. Each asset class and related components shall have a benchmark as specified herein. Asset class benchmarks shall be set by the Committee. Staff shall establish controls for the selection and modification of benchmarks.

See Appendix 5 for benchmark details.

**Performance Objective & Benchmark** A. The performance objective is for the various asset classes and programs to meet or exceed their respective benchmarks in a manner that is consistent with the risk parameters established for such asset class or program.

B. The policy benchmarks for individual programs or strategies are listed in Appendix 5.

In the event that benchmark modification needs to be considered, staff or a member of the Committee may bring the matter before the Committee for due diligence and consideration. This due diligence shall include:

A. Analysis by staff, in consultation with third-party experts, that the indicators are evidenced and have the potential to adversely impact the benchmark performance.

Analysis of the expected effect of the benchmark modification on the total portfolio risk/return characteristics.

# California Public Employees' Retirement System

## Total Fund Investment Policy Sections

### 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 for the implementation of the program. The level of risk assumed will be monitored and reported using selected risk metrics as required herein.

The program does not require the elimination of risk but instead strives to achieve a balance between risk and return. CalPERS must take on risk to achieve desired levels of return. The objective is to ensure that economic and investment risk taken is prudent and properly managed with collaborative input from each asset class.

The program is not intended to manage other risks that CalPERS faces, such as operational risks and legal risks. These risks are managed by other units within CalPERS and are addressed within their separate policies.

The program shall be managed with the objective of accomplishing the following:

- 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.

# California Public Employees' Retirement System

## Total Fund Investment Policy Sections

### IV. Investment Risk Management (continued)

#### Investment Approaches & Parameters

- A. Investment Risk Management Framework  
The CalPERS investment risk framework established herein 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. Risk Management and Assessment  
Investment risk is assessed using appropriate and consistent industry standard methodologies established at the Total Fund level and within each asset class.
- C. Risk Limits and Guidelines
- I. Total Fund tracking error limits (both total and active allocation) are specified in Appendix 7 and will be monitored and managed as identified risks within the overall investment risk framework.
  - II. The leverage report shall document the amount of leverage in each asset class relative to the leverage limit stated in Appendix 6.
  - III. The counterparty report establishes guidelines for each investment counterparty based on credit default swap spreads that will be used to monitor trends in the credit quality of each counterparty.
  - IV. A "what if" risk analysis will be performed for any investment that exceeds the delegated authority of the applicable Managing Investment Director. Staff will also perform a "what if" risk analysis upon the request of other Investment Office staff or the Committee.

# California Public Employees' Retirement System

## Total Fund Investment Policy Sections

### 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

# California Public Employees' Retirement System

## Total Fund Investment Policy Sections

### V. Global Derivatives and Counterparty Risk (continued)

#### Investment Approaches & Parameters (continued)

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 Compliance – procedures for ensuring compliance with any regulations in conjunction with derivatives activities undertaken by CalPERS

# California Public Employees' Retirement System

## Total Fund Investment Policy Sections

### VI. Investment Leverage

<b>Purpose</b>	<p>The purpose of this section is to set forth a framework for comprehensively identifying, measuring, managing, and reporting various forms of leverage.</p> <p>This section is intended to place limits on and set standards for the use of leverage that reasonably balances investment flexibility with risk management.</p> <p>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.</p>
<b>Investment Approaches &amp; Parameters</b>	<p>See Appendix 6 for investment leverage parameter details.</p> <ul style="list-style-type: none"><li>A. Use of leverage is prohibited unless expressly permitted in this section.</li><li>B. Direct debt, except for unsettled loss positions on non-exchange traded contracts, is prohibited unless authorized by the Committee for a defined purpose.</li><li>C. A capital commitment or credit enhancement program does not represent leverage or direct debt as these are considered contingent liabilities.</li><li>D. Any program that permits the use of recourse debt shall include the following risk management guidelines:<ul style="list-style-type: none"><li>1. A limit on the amount of recourse debt</li><li>2. Diversification requirements and due diligence standards shall be considered in the investment decision on the assets with recourse debt</li></ul></li><li>E. Recourse debt is prohibited for programs that may not have complete transparency on all investment positions. The maximum potential loss on these positions shall be the amount of investment.</li><li>F. The use of currency swaps does not result in notional leverage because the swaps merely convert exposure from one currency to another.</li></ul>

# California Public Employees' Retirement System

## Total Fund Investment Policy Sections

### VII. Divestment

#### Purpose

This section sets forth CalPERS policy (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.

CalPERS Board of Administration (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).)

These fiduciary obligations generally forbid 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.

# California Public Employees' Retirement System

## Total Fund Investment Policy Sections

### VII. Divestment (continued)

**Statement of Policy**

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:

- A. 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. For example, it might be imprudent to retain an investment in an actively managed portfolio, but prudent to retain it in an indexed portfolio or as part of a long-short absolute return strategy.
- B. To the extent required by law and consistent with fiduciary duties, CalPERS will comply with federal and constitutional California state laws that require Divesting.
- C. This Policy does not require CalPERS to re-examine investment policies and practices in effect when this Policy was adopted to determine whether they were influenced by Divestment Initiatives or have or will result in Divesting.

# California Public Employees' Retirement System

## Total Fund Investment Policy Sections

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### VIII. Liquidity Program

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**Purpose** The Liquidity Program seeks to provide liquid assets that could be converted to cash with little market impact.

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**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.

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# California Public Employees' Retirement System

## Total Fund Investment Policy Sections

### IX. Low Duration Fixed Income Program

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

**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.

# California Public Employees' Retirement System

## Total Fund Investment Policy Sections

### X. 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 Securities and Exchange Commission.

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.

# California Public Employees' Retirement System

## Total Fund Investment Policy Sections

### XI. 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 limits and constraints of the Liquidity Program. The program will be operated in a manner that maintains sufficient liquidity for the program and to adhere to the Investment Policy for Global Governance.

**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.

# California Public Employees' Retirement System

## Total Fund Investment Policy Sections

### XII. 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 7 of this Policy.

# California Public Employees' Retirement System

## Total Fund Investment Policy Sections

### XIII. 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 (CIO) 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

Plan level transitions may be accomplished through the use of designated plan level transitions portfolios or through the use of ACCS.

B. An asset class transition may be established within any asset class for the purpose of achieving asset class specific objectives. The MID from the specific asset class may initiate the use of an asset class transition portfolio after receiving approval from the CIO or COIO in advance. An asset class transition portfolio may be used by designated staff of the specific asset class operating within his or her delegated authority. 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:

# California Public Employees' Retirement System

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### XIII. Plan Level and Asset Class Transition Portfolios (continued)

- Purpose (continued)**
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 subject to additional 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.

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**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.

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# California Public Employees' Retirement System

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### XIV. Role of Private Asset Class Board Investment Consultants

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

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# California Public Employees' Retirement System

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### XV. Custody Management

**Purpose** The purpose of this section is to ensure the safe, efficient, and accurate custody of CalPERS assets. To carry out this objective, CalPERS shall contract with custodial firms with sufficient financial strength to protect the interests of CalPERS. Contracted custodians (Custodian) will be required, at a minimum, to demonstrate a long-term credit rating of Moody's A1 and S&P A+ (U.S. firms) or a similar measure of financial strength (non-U.S. firms).

**Custodian Duties** The Custodian shall provide daily custodial, accounting, performance and reporting services for eligible assets held in CalPERS' name, in a manner consistent with industry standards. The Custodian shall provide services for any assets held by additional agents or sub-custodians appointed by CalPERS or the Custodian.

The Custodian shall register all of CalPERS' assets in the name of CalPERS or as required by the depository-provided books and records maintained by the Custodian. The Custodian shall maintain documentation to substantiate CalPERS ownership and chain of control for all assets.

The Custodian shall have a comprehensive system, acceptable to CalPERS, of selecting and evaluating sub-custodians and monitoring their internal control structures, performance and financial conditions.

Eligible foreign sub-custodians are entities that are incorporated or organized under the laws of a country other than the United States and meet the following criteria:

- A. Qualified foreign banks or majority-owned direct or indirect subsidiaries of U.S. banks or bank holding companies.
- B. Securities depositories or clearing agencies that act as systems for the central handling of securities or equivalent book entries in the countries that are regulated by foreign financial regulatory authorities.
- C. Securities depositories or clearing agencies that act as transnational systems for the central handling of securities or equivalent book entries.

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### XV. Custody Management (continued)

**Custodian  
Duties  
(continued)**

The Custodian shall:

1. provide assurances, through a third-party review acceptable to CalPERS, that internal controls are sufficient to protect CalPERS assets;
2. adhere to US/Global accounting standards necessary for CalPERS to conform to its required financial reporting standards;
3. offer a robust technology platform with a strong control and security environment. Technology and data must be able to interface with multiple other systems supporting CalPERS business; and
4. have a global presence, supporting and providing services for international investments across the globe.

A. Fiduciary Relationship

Custodians, sub-custodians, and agents shall acknowledge their fiduciary relationship with CalPERS. They shall discharge each of their duties therein and exercise each of their powers (as those duties and powers are defined herein), with the care, skill, prudence, and diligence under the circumstances then prevailing that a prudent person acting in a like capacity and familiar with such matters uses in the conduct of an enterprise of a like character and with like aims. The Custodian is required to contractually inform all sub-custodians and agents of this fiduciary relationship.

B. Ethics and Conflicts of Interest

Custodians shall comply with CalPERS policies and procedures, as amended from time to time, relating to ethics and conflicts of interest.

C. Custodian Liability

The Custodian shall be fully liable for any loss to, or diminution in, the value of the fund resulting from the Custodian's own acts or omissions. This liability shall extend to the acts or omissions of the Custodian's agents and sub-custodians.

CalPERS may, at its discretion, limit the liability of the Custodian when doing so does not compromise the rights of CalPERS or the safety or security of CalPERS assets.

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**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

Investment Office Staff			
Program	Responsible Party	Report Content	Frequency
<b>Total Fund</b>	All Programs	1. Staff shall report problems with, material changes to, and all violations of this Policy. These reports shall include explanations of any violations and appropriate recommendations for corrective action.	At the next Committee meeting or sooner if deemed necessary
<b>Investment Beliefs</b>	All Programs	2. Staff shall report investment program strategy and its consistency with the Investment Beliefs.	No less than annually
<b>Asset Allocation</b>	Asset Allocation & Risk Management	3. Staff shall report asset class allocations relative to their targets and ranges, as well as investment performance results for each asset class relative to benchmark returns. Allocations may temporarily deviate from policy ranges due to extreme market volatility and any such deviations shall be reported.	At the next Committee meeting or sooner if deemed necessary
		4. Staff shall report program allocations, returns, risks, and activity.	No less than annually
		5. 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
		6. 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
<b>Benchmarks</b>	Asset Allocation & Risk Management	7. Staff shall report any benchmark changes.	No less than annually

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<b>Investment Office Staff (continued)</b>			
<b>Program</b>	<b>Responsible Party</b>	<b>Report Content</b>	<b>Frequency</b>
<b>Risk Management</b>	Asset Allocation & Risk Management	8. Staff shall report CalPERS investment risks and associated returns.	No less than annually
		9. Staff shall provide input and consulting on the design of risk reports used to measure and monitor risk. Reports should reflect the key risks identified as part of the overall risk framework.	No less than annually
		10. Volatility – Staff will report on both forecasted total risk and tracking error, measured as one standard deviation for the next year. These measures will be reported for each asset class and the Total Fund. In addition, staff will document the accuracy of risk forecasts for the Total Fund. Staff will accomplish this by presenting the history of monthly forecast and realized risk for both total risk and tracking error.	No less than annually
		11. Leverage – Staff will provide a report of recourse debt, non-recourse debt and notional leverage by asset class and the Total Fund. The report will also include capital commitments for the illiquid asset classes.	No less than annually
		12. Currency Risk – Staff will provide a report summarizing both actual portfolio and benchmark currency exposures of the Total Fund.	No less than annually
		13. Counterparty Risk – Staff will report on counterparty exposure, summarizing net amounts owed to or due from CalPERS investment counterparties. The report will include credit default swap spreads and credit ratings for use in determining when exposure to individual counterparties is to be limited.	No less than annually
		14. 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
		15. Stress Testing – Staff will be responsible for the specification of stress testing 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. Liquidity Risk – During times of market stress, staff will report on the risk that assets cannot trade at or near the previous market price because of inadequate trading volume for particular instruments. Liquidity risk may also be evaluated based on capital commitments and debt restructuring requirements.	No less than annually
		17. Scenario Analysis – Staff will review the impact on total risk and tracking error of proposed new strategies or shifts in existing investments. The risk analysis will be performed at the asset class and total fund levels.	No less than annually

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<b>Investment Office Staff (continued)</b>			
<b>Program</b>	<b>Responsible Party</b>	<b>Report Content</b>	<b>Frequency</b>
<b>Leverage</b>	Asset Allocation & Risk Management	18. Staff shall report recent estimates by asset class on recourse debt, non-recourse debt, and notional leverage. Leverage for the Currency, Credit Enhancement, and Securities Lending Programs shall be reported separately from asset class leverage.	No less than annually
		19. Staff shall report the amount of debt previously classified as recourse that CalPERS paid in the prior year.	No less than annually
<b>Divestment</b>	Investment Compliance & Operational Risk	20. Staff shall report to the Committee on (a) compliance activities undertaken pursuant to statutory divestment mandates from the state legislature, as applicable, and (b) any divestment decisions that may be required.	No less than annually
		21. Staff shall prepare and submit for Committee approval any divestment activity reports required by statute to be submitted to the California Legislature (e.g., Iran, Sudan etc.).	No less than annually
<b>Opportunistic</b>	All Programs	22. Staff shall report on program investments, returns, risks, and activity.	No less than annually
<b>Terminated Agency Pool</b>	Asset Allocation & Risk Management	23. 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
<b>Plan Level &amp; Asset Class Transition Portfolios</b>	Investment Servicing Division	24. Staff shall report on the usage of transition portfolios.	No less than annually
<b>Targeted Investments Program</b>	Targeted Investments Program	25. 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

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<b>General Pension Consultant</b>		
<b>Program</b>	<b>Report Content</b>	<b>Frequency</b>
<b>Total Fund</b>	1. 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
<b>Global Derivatives &amp; Counterparty Risk</b>	2. 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
<b>Divestment</b>	3. Consultant shall present to the Committee a comprehensive review and analysis of divestment activities to date.	No less than annually
<b>Liquidity</b> ~~~~~ <b>Low Duration Fixed Income</b> ~~~~~ <b>Securities Lending</b>	4. Consultant shall monitor, evaluate, and report on the performance of the Programs within this Policy relative to the benchmarks and other applicable CalPERS Policies.	No less than annually

<b>Private Asset Class Board Investment Consultants</b>		
<b>Program</b>	<b>Report Content</b>	<b>Frequency</b>
<b>Private Asset Classes</b>	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 major asset class sub-component programs 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. Perform annual review of the program 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

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**Appendix 2  
Investment 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
- External Manager

Investment Committee		
Program	Responsible Party	Responsibility
<b>Total Fund</b>	Investment Committee	1. Approve adoption of and oversee compliance with Investment Policies designed to achieve CalPERS strategic objectives.
		2. Review policy recommendations made by staff.
		3. 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. Set the Total Fund policy benchmarks.
<b>Divestment</b>	Investment Committee	5. 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.

Investment Office Staff		
Program	Responsible Party	Responsibility
<b>Total Fund</b>	All Programs	1. 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. Engage with other asset class staff, consultants, and other pertinent parties to seek advice and counsel regarding investment strategy and investment results.
		3. Develop and maintain investment procedures, program guidelines, and sub-program guidelines.
		4. Implement and adhere to all policies.
		5. All aspects of program portfolio management, including investment transactions, use of leverage, and monitoring, analyzing, and evaluating performance relative to the appropriate benchmark.
		6. Manage CalPERS asset class allocations within policy ranges approved by the Committee, in accordance with policy guidelines.
		7. Modify benchmarks as applicable.

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<b>Investment Office Staff (continued)</b>		
<b>Program</b>	<b>Responsible Party</b>	<b>Responsibility</b>
<b>Investment Beliefs</b>	Asset Allocation & Risk Management	8. Facilitate a periodic review of the Investment Beliefs in conjunction with the Strategic Asset Allocation process.
<b>Asset Allocation</b>	Asset Allocation & Risk Management	9. 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. Determine adjustments in asset class allocations, and direct rebalancing account activity and fund transfers across asset classes.
		11. For program tracking errors and CalPERS Total Fund tracking errors, staff will evaluate forecast values against subsequent realized values over rolling 3 year periods.
<b>Risk Management</b>	Asset Allocation & Risk Management	12. Select, maintain, and enhance the risk management tools used by the program to provide analyses that inform and support the investment actions of the entire CalPERS investment staff.
		13. Provide consulting to Investment Office staff regarding investments being contemplated, current investment risks and the attribution of risk and return.
		14. Provide consulting on the development of Investment Office Policies, Procedures and Guidelines with respect to the measurement, assessment, and management of investment risk.
		15. Provide consulting on the design of processes and reports used to measure and monitor risk.
<b>Global Derivatives &amp; Counterparty Risk</b>	Asset Allocation & Risk Management	16. Monitor the implementation of and compliance with the policy including due diligence and oversight of derivatives activities by External Managers, limited liability entities, or registered/commingled fund vehicles.
		17. Monitor and evaluate the use of derivatives and counterparty risk exposures across CalPERS to ensure the appropriate investment risk controls are in place.
	Asset Allocation & Risk Management /Asset Class Staff	18. 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.
		19. 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.

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<b>Investment Office Staff (continued)</b>		
<b>Program</b>	<b>Responsible Party</b>	<b>Responsibility</b>
<b>Divestment</b>	Asset Allocation and/or Asset Class/Program Areas	20. Provide the Committee with 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.
		21. Implement any required divestments or prohibitions on future investments.
	Investment Compliance & Operational Risk	22. Maintain the lists of companies subject to potential divestment.
		23. Monitor the implementation of any required divestments or prohibitions on future investments as required by the Policy.
	Global Governance	24. 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.
<b>Liquidity ~~~~~ Low Duration Fixed Income</b>	Global Fixed Income	25. Monitor internal and external managers in the implementation of, and compliance with, the Policy.
		26. All aspects of portfolio management including monitoring, trading, analyzing, evaluating, performance relative to the appropriate benchmark, and selecting and contracting with managers.
<b>Opportunistic</b>	CIO	27. Responsible for management of the Opportunistic Program
		28. Pre-approve all terms of any transfer of assets between a program account and another CalPERS account.
	CIO & MIDs	29. Determine clear assignment of investment management responsibility for each program asset.
<b>Securities Lending</b>	Global Equity	30. Monitor the implementation of, and compliance with, the Policy by lending agents, cash collateral managers, and principal borrowers.
		31. All aspects of portfolio management including monitoring, trading, analyzing, evaluating, performance relative to the appropriate benchmark, and selecting and contracting with managers
<b>Terminated Agency Pool</b>	Asset Allocation & Risk Management	32. 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.
<b>Plan Level &amp; Asset Class Transition Portfolios</b>	Investment Servicing Division	33. Maintain control of the movement of cash and securities at the CalPERS Custodian.
<b>Role of Private Asset Class Board Investment Consultants</b>	Private Equity and Real Assets	34. For investment transactions within staff's delegated authority, staff will analyze the transaction and make the investment decision.
		35. For investment transactions exceeding staff's delegated authority, staff will analyze the transaction and provide a recommendation to the Committee.
<b>Custody Management</b>	Investment Servicing Division	36. Notify the Custodian in writing of the appointment, suspension, or termination of any investment manager.
		37. Develop and recommend to the Committee the criteria and methodology for selection of the Custodian, consistent with CalPERS' enterprise-wide competitive solicitation and contracting procedures.
		38. Ensure that all original investment documents including deeds, titles, partnerships, and insurance contracts are safeguarded in accordance with the CalPERS enterprise-wide Business Continuity Plan.

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<b>Actuarial Office Staff</b>		
<b>Program</b>	<b>Responsible Party</b>	<b>Responsibility</b>
<b>Terminated Agency Pool</b>	Actuarial Staff	1. Provide a forecast of benefit payment cash flow.
		2. Recalculate pool benefit payment cash flow when new agencies are added to the program.

<b>General Pension Consultant</b>		
<b>Program</b>	<b>Responsible Party</b>	<b>Responsibility</b>
<b>Total Fund</b>	General Pension Consultant	1. 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. Provide independent perspective and counsel to the Committee, to include routine communication with the Investment Office staff and periodic review of processes and procedures.
<b>Benchmarks</b>	General Pension Consultant	3. Monitor and evaluate the appropriate use of benchmarks related to performance of the Total Fund and Programs relative to the policy.
		4. Review and recommend approval of all requests for benchmark replacements and modifications.

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<b>Private Asset Class Board Investment Consultants (PACBIC)</b>					
<b>Program</b>	<b>Transaction Type/Size</b>	<b>Independent Due Diligence Report (not PACBIC)</b>	<b>Prudent Person Opinion (not PACBIC)</b>	<b>PACBIC Transaction Role</b>	<b>Opinion to the Board</b>
<b>Private Equity</b>	1. Fund Investments	MID discretion	N/A	MID discretion	N/A
	2. Co-Investment	MID discretion	N/A	MID discretion	N/A
	3. <b>Customized Investment Accounts</b> that invest alongside other similarly structured funds in the same investments	MID discretion	N/A	MID discretion	N/A
	4. Customized Investment Accounts with an individual mandate that does not invest alongside other similarly structured funds in the same investments or a Direct Investment	N/A	Required	MID discretion	N/A
	5. >Staff Delegated Authority	N/A	Required	Required	Required
<b>Real Assets</b>	6. ≤ \$50 million	N/A	MID discretion	MID discretion	N/A
	7. >\$50 Million	N/A	Required	MID discretion	N/A
	8. >Staff Delegated Authority	N/A	Required	Required	Required

1. Except as noted below, the 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 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.

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<b>External Manager</b>		
<b>Program</b>	<b>Responsible Party</b>	<b>Responsibility</b>
<b>Global Derivatives &amp; Counterparty Risk</b>	External Manager	1. Operate under Investment Management Agreements (IMAs).
		2. Communicate with staff as needed regarding investment strategy and investment results.
		3. Cooperate fully with CalPERS staff, Custodian, and General Pension Consultant concerning requests for information.
<b>Liquidity, ----- Low Duration Fixed Income</b>	Global Fixed Income	4. Manage investments in accordance with each manager's contract with CalPERS and the Policy.
		5. Communicate and cooperate with Investment Office staff and authorized third parties regarding the management of investments..
<b>Securities Lending</b>	Global Equity	6. Manage investments in accordance with each manager's contract with CalPERS and the Policy.
		7. Communicate and cooperate with Investment Office staff and authorized third parties regarding the management of investments.

**Appendix 3  
Investment Beliefs**

**October 14, 2013**

<b>Investment Belief I</b>
Liabilities must influence the asset structure.
A. Ensuring the ability to pay promised benefits by maintaining an adequate funding status is the primary measure of success for CalPERS.
B. 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.
C. CalPERS cares about both income and appreciation components of total return.
D. Concentrations of illiquid assets must be managed to ensure sufficient availability of cash to meet obligations to beneficiaries.
<b>Investment Belief II</b>
A long time investment horizon is a responsibility and an advantage.
Long time horizon <b>requires</b> that CalPERS:
A. Consider the impact of its actions on future generations of members and taxpayers.
B. Encourage investee companies and external managers to consider the long-term impact of their actions.
C. 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.
D. Advocate for public policies that promote fair, orderly and effectively regulated capital markets.
Long time horizon <b>enables</b> CalPERS to:
A. Invest in illiquid assets, provided an appropriate premium is earned for illiquidity risk.
B. Invest in opportunistic strategies, providing liquidity when the market is short of it.
C. Take advantage of factors that materialize slowly such as demographic trends.
D. Tolerate some volatility in asset values and returns, as long as sufficient liquidity is available.

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<p><b>Investment Belief III</b></p> <p>CalPERS investment decisions may reflect wider stakeholder views, provided they are consistent with its fiduciary duty to members and beneficiaries.</p>
<p>A. 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.</p>
<p>B. CalPERS primary stakeholders are members / beneficiaries, employers and California taxpayers as these stakeholders bear the economic consequences of CalPERS investment decisions.</p>
<p>C. In considering whether to engage on issues raised by stakeholders, CalPERS will use the following prioritization framework:</p> <ol style="list-style-type: none"> <li>1. Principles and Policy – to what extent is the issue supported by CalPERS Investment Beliefs, Principles of Accountable Corporate Governance or other Investment Policy?</li> <li>2. Materiality – does the issue have the potential for an impact on portfolio risk or return?</li> <li>3. 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?</li> <li>4. Capacity – does CalPERS have the expertise, resources and standing to influence an outcome?</li> </ol>
<p><b>Investment Belief IV</b></p> <p>Long-term value creation requires effective management of three forms of capital: financial, physical and human.</p>
<p>A. Governance is the primary tool to align interests between CalPERS and managers of its capital, including investee companies and external managers.</p>
<p>B. 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.</p>
<p>C. CalPERS may engage investee companies and external managers on their governance and sustainability issues, including:</p> <ol style="list-style-type: none"> <li>1. Governance practices, including but not limited to alignment of interests.</li> <li>2. Risk management practices.</li> <li>3. Human capital practices, including but not limited to fair labor practices, health and safety, responsible contracting and diversity.</li> <li>4. Environmental practices, including but not limited to climate change and natural resource availability.</li> </ol>

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<b>Investment Belief V</b>
CalPERS must articulate its investment goals and performance measures and ensure clear accountability for their execution.
A. A key success measure for the CalPERS investment program is delivery of the long-term target return for the fund.
B. The long time horizon of the fund poses challenges in aligning interests of the fund with staff and external managers.
C. 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.
D. Each asset class should have explicit alignment of interest principles for its external managers.
<b>Investment Belief VI</b>
Strategic asset allocation is the dominant determinant of portfolio risk and return.
A. CalPERS strategic asset allocation process transforms the fund's targeted rate of return to the market exposures that staff will manage.
B. CalPERS will aim to diversify its overall portfolio across distinct risk factors / return drivers.
C. 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.
D. CalPERS will consider investment strategies if they have the potential to have a material impact on portfolio risk and return.
<b>Investment Belief VII</b>
CalPERS will take risk only where we have a strong belief we will be rewarded for it.
A. An expectation of a return premium is required to take risk; CalPERS aims to maximize return for the risk taken.
B. Markets are not perfectly efficient, but inefficiencies are difficult to exploit after costs.
C. CalPERS will use index tracking strategies where we lack conviction or demonstrable evidence that we can add value through active management.
D. 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.

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<b>Investment Belief VIII</b> Costs matter and need to be effectively managed.
A. CalPERS will balance risk, return and cost when choosing and evaluating investment managers and investment strategies.
B. Transparency of the total cost to manage the CalPERS portfolio is required of CalPERS business partners and itself.
C. Performance fee arrangements and incentive compensation plans should align the interests of the fund, staff and external managers.
D. 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.
E. When deciding how to implement an investment strategy, CalPERS will implement in the most cost effective manner.
<b>Investment Belief IX</b> Risk to CalPERS is multi-faceted and not fully captured through measures such as volatility or tracking error.
A. CalPERS shall develop a broad set of investment and actuarial risk measures and clear processes for managing risk.
B. The path of returns matters, because highly volatile returns can have unexpected impacts on contribution rates and funding status.
C. 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.
<b>Investment Belief X</b> Strong processes and teamwork and deep resources are needed to achieve CalPERS goals and objectives.
A. Diversity of talent (including a broad range of education, experience, perspectives and skills) at all levels (Board, staff, external managers, corporate boards) is important.
B. 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.
C. CalPERS will be best positioned for success if it: <ul style="list-style-type: none"> <li>1. Has strong governance.</li> <li>2. Operates with effective, clear processes.</li> <li>3. Focuses resources on highest value activities.</li> <li>4. Aligns interests through well designed compensation structures.</li> <li>5. Employs professionals who have intellectual rigor, deep domain knowledge, a broad range of experience and a commitment to implement CalPERS Investment Beliefs.</li> </ul>

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

**The targets and ranges are effective July 1, 2015.**

Table 1 – Strategic Asset Allocation Targets and Ranges

Asset Class	Policy Target	Interim Target	Policy Range Relative to Target
<b>Growth</b>	<b>59%</b>	<b>61%</b>	<b>+/- 7%</b>
Global Equity	47%	51%	+/- 7%
Private Equity	12%	10%	+/- 4%
<b>Income - Global Fixed Income</b>	<b>19%</b>	<b>20%</b>	<b>+/- 5%</b>
<b>Real Assets</b>	<b>14%</b>	<b>12%</b>	<b>+/- 5%</b>
Real Estate	11%	10%	+/- 5%
Infrastructure & Forestland	3%	2%	+/- 2%
<b>Inflation</b>	<b>6%</b>	<b>6%</b>	<b>+/-3%</b>
<b>Liquidity</b>	<b>2%</b>	<b>1%</b>	<b>+/-3%</b>
<b>Total Fund</b>	<b>100%</b>	<b>100%</b>	<b>N/A</b>

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Table 2 outlines the asset allocation target weight changes that will be implemented following a Funding Risk Mitigation Event as defined in the Funding Risk Mitigation Policy.

Table 2: Funding Risk Mitigation Event Asset Allocation Target Changes

<b>Starting Point Target Allocations (%)</b>	<b>Cumulative Reduction in Expected Investment Return of (%):</b>	<b>0.05</b>	<b>0.10</b>	<b>0.15</b>	<b>0.20</b>	<b>0.25</b>	<b>0.30</b>	<b>0.35</b>	<b>0.40</b>	<b>0.45</b>	<b>0.50</b>
	<b>Asset Classes</b>	<b>Allocation Target Weights with Reduced Expected Returns (%)</b>									
<b>51</b>	<b>Public Equity</b>	49	48	46	45	44	42	41	39	38	36
<b>10</b>	<b>Private Equity</b>	10	10	10	10	10	10	10	10	10	10
<b>20</b>	<b>Fixed Income</b>	22	23	25	26	27	29	30	32	33	35
<b>10</b>	<b>Real Estate</b>	10	10	10	10	10	10	10	10	10	10
<b>2</b>	<b>Infrastructure &amp; Forestland</b>	2	2	2	2	2	2	2	2	2	2
<b>6</b>	<b>Inflation Assets</b>	6	6	6	6	6	6	6	6	6	6
<b>1</b>	<b>Liquidity</b>	1	1	1	1	1	1	1	1	1	1

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**Appendix 5**  
**Investment Benchmarks**  
**Effective July 1, 2015**

**Table 1: Public Employees' Retirement Fund Policy Benchmarks**

The Total Fund Policy Benchmark is the average return of the asset class benchmark indices weighted by asset class benchmark allocations. The Total Fund Policy benchmark return is the return attributable to the target asset class allocations. Staff employs active strategies in an effort to achieve a Total Fund portfolio return that exceeds the Total Fund Policy benchmark return.

Asset Class	Benchmark	Policy Weight	Interim Target Weight
<b>Growth</b>	84% Public Equity benchmark + 16% Private Equity benchmark	59.0%	61.0%
<b>Income</b>	90% Barclays Long Liabilities + 10% Barclays International Fixed Income Index GDP weighted ex-US	19.0%	20.0%
<b>Inflation Assets</b>	75% ILB benchmark + 25% Commodities benchmark	6.0%	6.0%
<b>Real Assets</b>	83% Real Estate benchmark + 8.5% Infrastructure benchmark + 8.5% Forestland benchmark	14.0%	12.0%
<b>Liquidity</b>	91-day Treasury Bill	2.0%	1.0%

During the transition of implementing the approved strategic policy targets, interim weights will be used to calculate the Total Fund Policy benchmark. Interim weights will remain in use at the discretion of the Committee and will be reviewed on an annual basis.

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<b>Table 2: Public Employees' Retirement Fund Policy Benchmarks</b>		
Policy	Program	Benchmark
<b>TOTAL FUND POLICY BENCHMARK</b>		
Asset Allocation Strategy		Policy Index (Total Fund Policy Benchmark)
<b>GROWTH POLICIES</b>		
Growth	Total Growth	84% Public Equity benchmark +16% Private Equity benchmark
Public Equity	Total Public Equity	FTSE CalPERS Global (All-World, All Capitalization) customized to exclude Board directed divestments
Private Equity (PE)	Total Private Equity	(67% FTSE U.S. TMI + 33% FTSE AW ex U.S. TMI) +3% lagged one quarter.
<b>INCOME POLICIES</b>		
Global Fixed Income Program	Dollar-Denominated Fixed Income Program	Barclays Long Liabilities Index.
	International Fixed Income Program	Barclays International Fixed Income Index GDP weighted ex-US
Low Duration Fixed Income Program	Dollar-Denominated Fixed Income <b>High Quality LIBOR</b> (HQL) Program	Federal Funds based index
	Dollar-Denominated Fixed Income Short Duration Program	Federal Funds based index
	Internally Managed Dollar-Denominated Short-Term Program	Total rate of return of the State Street Bank Short-Term Investment Fund after investment management fees.
<b>INFLATION ASSETS POLICIES</b>		
Inflation Assets	Overall Program	75% ILB benchmark + 25% Commodities benchmark
	Commodities Program	Standard & Poor's GSCI Total Return Index
	Inflation-Linked Bond Program	ILB Custom Index: Blend of 67% Barclays Global Inflation-Linked U.S. and 33% Barclays Universal Government Inflation Linked Bond Index ex-US.

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<b>Table 2: Public Employees' Retirement Fund Policy Benchmarks</b>		
<b>Policy</b>	<b>Program</b>	<b>Benchmark</b>
<b>REAL ASSETS POLICIES</b>		
Real Assets	Total Real Assets	83% Real Estate benchmark + 8.5%Infrastructure benchmark + 8.5% Forestland benchmark.
	Real Estate Program	Exceed (net of fees) NCREIF ODCE
	Infrastructure Program	Consumer Price Index +4%, lagged one quarter
	Forestland Program	NCREIF Timberland
<b>LIQUIDITY POLICIES</b>		
Liquidity Program	Total Liquidity Program	91-day Treasury Bill
<b>OPPORTUNISTIC POLICIES</b>		
Opportunistic Program	Multi Asset Class Program	Absolute 7.5%
<b>ABSOLUTE RETURN STRATEGIES POLICIES</b>		
Absolute Return Strategies	Absolute Return Strategies Program	One year Treasury Note + 5%

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<b>Table 3: Affiliate Fund Policy Benchmarks</b>		
<b>Policy</b>	<b>Asset Class</b>	<b>Benchmark</b>
California Employers' Retiree Benefit Trust (CERBT) Fund		The benchmark for each asset allocation fund is a weighted benchmark determined by weighting each asset class benchmark by its policy target.
	Global Equity	MSCI ACWI IMI (Net)
	U.S. Fixed Income	Barclays Long Liability Index
	Treasury Inflation-Protected Securities (TIPS)	Barclays U.S. TIPS Index, Series L
	Commodities	S&P GSCI Total Return Daily
	Real Estate Investment Trusts (REITs)	FTSE EPRA/NAREIT Developed Liquid (Net)
Judges' Retirement System Fund	Cash Equivalents	91-day Treasury Bill
Judges' Retirement System II Fund		The benchmark for each asset allocation fund is a weighted benchmark determined by weighting each asset class benchmark by its policy target.
	Global Equity	CalPERS Custom FTSE Global Composite
	U.S. Fixed Income	Barclays Long Liability Index
	TIPS	Barclays U.S. TIPS Index, Series L
	Commodities	S&P GSCI Total Return Daily
	REITs	FTSE EPRA/NAREIT Developed Index
Legislators' Retirement System Fund		The benchmark for each asset allocation fund is a weighted benchmark determined by weighting each asset class benchmark by its policy target.
	Global Equity	CalPERS Custom FTSE Global Composite
	U.S. Fixed Income	Barclays Long Liability Index
	TIPS	Barclays U.S. TIPS Index, Series L
	Commodities	S&P GSCI Total Return Daily
	REITs	FTSE EPRA/NAREIT Developed Index

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<b>Table 3: Affiliate Fund Policy Benchmarks</b>			
<b>Policy</b>	<b>Asset Class</b>	<b>Benchmark</b>	
Long-Term Care Fund		The benchmark for each asset allocation fund is a weighted benchmark determined by weighting each asset class benchmark by its policy target.	
	Global Equity	MSCI ACWI IMI (Net)	
	U.S. Fixed Income	Barclays Long Liability Index	
	TIPS	Barclays U.S. Treasury Inflation Protected Securities(TIPS) Index	
	Commodities	S&P GSCI Total Return Daily	
	REITs	FTSE EPRA/NAREIT Developed Liquid (Net)	
	Liquidity	91-day Treasury Bill	
Public Employees' Health Care Fund	U.S. Fixed Income	Barclays U.S. Aggregate Bond Index	
Supplemental Income Plans		The performance of each individual investment fund will be evaluated against its appropriate asset class benchmark. The benchmark for each asset allocation fund is a weighted benchmark determined by weighting each asset class benchmark by its policy target.	
	U.S. Equity	Russell 3000 Index	
	International Equity	MSCI ACWI ex-USA IMI Index (Net)	
	U.S. Fixed Income		Barclays U.S. Aggregate Bond Index
			Barclays U.S. 1-3 Year Government/Credit Bond Index
	Real Assets	The benchmark is a weighted benchmark consisting of:  Dow Jones-U.S. Select REIT Index; Bloomberg Roll Select Commodity Index; S&P Global Large MidCap Commodity and Resources Index; Barclays U.S. TIPS Bond Index; S&P Global Infrastructure Equity Index	
Cash Equivalents	BofA Merrill Lynch U.S. 3-Month Treasury Bill Index		

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<b>Appendix 6</b> <b>Summary of Permissible and Prohibited Types of Leverage</b>
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Program	Notional Leverage	Non-Recourse Debt	Recourse Debt
<b>Forestland</b>	Prohibited	Permissible: Loan-to-Value ratio (Non-Recourse + Recourse) shall not exceed 50%	Prohibited
<b>Global Equity</b>	Permissible: Will be calculated on a <b>net exposure</b> basis and shall not exceed 10% of the Global Equity market value.	Permissible	Prohibited
<b>Global Fixed Income</b>	Permissible: Shall not exceed 10% of the Global Fixed Income market value.	Prohibited	Prohibited
<b>Inflation Assets</b>	Prohibited	Prohibited	Prohibited
<b>Infrastructure</b>	Prohibited	Permissible: Loan-to-Value ratio (Non-Recourse + Recourse) shall not exceed 65%	Prohibited
<b>Liquidity</b>	Permissible: Total leverage within the Liquidity Program shall not exceed 2% of the total fund value	Not Applicable	Permissible: Total leverage within the Liquidity Program shall not exceed 2% of the total fund value
<b>Low Duration Fixed Income Program</b>	Prohibited	Prohibited	Prohibited
<b>Opportunistic</b>	Permissible	Permissible	Prohibited
<b>Private Equity</b>	Permissible	Permissible: Some investments may use non-recourse debt (leverage) which may increase the volatility of returns.	Permissible: Subscription Financing allowed providing that Total Recourse Debt Allocated shall not exceed 15% of the lower of the current Net Asset Value or the target Net Asset Value of the Portfolio.

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Program	Notional Leverage	Non-Recourse Debt	Recourse Debt
<b>Real Estate</b>	Prohibited	Permissible: Loan-to-Value ratio (Non-Recourse + Recourse) shall not exceed 50%	Permissible: <ul style="list-style-type: none"> <li>• Two types of recourse debt are allowed: Subscription Financing and Credit Accommodation</li> <li>• Loan-to-Value ratio (Non-Recourse + Recourse) shall not exceed 50%</li> <li>• Total Recourse Debt Allocated shall not exceed 10% of the lower of the current Net Asset Value or the target Net Asset Value of the Portfolio.</li> </ul>
<b>Securities Lending</b>	Permissible: Shall not exceed 70% of the Program.	Prohibited	Prohibited

**Appendix 7**  
**Investment Constraints & Limitations**  
**for Public Employees' Retirement Fund**

**Asset  
Allocation  
Strategy**

- A. With reference to the Asset Allocation Targets & Ranges indicated in Appendix 4:
1. For Global Equity and Global Fixed Income, the cumulative adjustment of the asset class weighting by staff shall not exceed 50% of the policy range of the asset class within any quarter without advance Committee consent.
- B. Overlay portfolios may be established to manage currency risk within the following parameters:
1. Currency overlay portfolio risk will be managed within the Asset Allocation program target tracking error.
  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.
- C. Target Tracking Error
1. The Asset Allocation Program will be managed within a target forecast annual tracking error to the Policy benchmark of 0.75% using the CalPERS Risk Management System. This implies that over any one-year period, there will be a less than 5% probability that the active asset allocation return will be less than negative 1.2%. The CalPERS Total Fund shall be managed with a target forecast annual tracking error of 1.5%, inclusive of active asset allocation and other active management decisions, using the CalPERS Risk Management System. For both of the above tracking error statistics, staff will evaluate forecast values against subsequent realized values over rolling three-year periods.

**Benchmarks**

See Appendix 5

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**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.
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**Investment  
Leverage**

See Appendix 6

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**Liquidity  
Program**

<b>Internally Managed Dollar-Denominated Short-Term Program</b>					
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: <ul style="list-style-type: none"> <li>• Standard &amp; Poor's (S&amp;P)</li> <li>• Moody's Investors Service, Inc. (Moody's)</li> <li>• Fitch Ratings (Fitch)</li> </ul>					
3. Credit Risk will be controlled by requiring minimum ratings outlined in the table below.					
<table border="1"> <thead> <tr> <th style="text-align: center;"><b>Asset</b></th> <th style="text-align: center;"><b>Minimum Credit Rating</b></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">All Securities (at time of purchase)</td> <td style="text-align: center;">Short Term: A2/P2/F2, or Long Term: A-/A3/A-</td> </tr> </tbody> </table>		<b>Asset</b>	<b>Minimum Credit Rating</b>	All Securities (at time of purchase)	Short Term: A2/P2/F2, or Long Term: A-/A3/A-
<b>Asset</b>	<b>Minimum Credit Rating</b>				
All Securities (at time of purchase)	Short Term: A2/P2/F2, or Long Term: A-/A3/A-				
<p>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.</p>					

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**Low Duration  
Fixed Income  
Program**

The following tables provide details regarding investment constraints/ limitations related to the following programs:

- Dollar-Denominated Fixed Income **High Quality LIBOR** (HQL) Program
- Dollar-Denominated Fixed Income Short Duration (SD) Program
- Dollar-Denominated Fixed Income Limited Liquidity Enhanced Return (LLER) Program

<b>All Dollar-Denominated Fixed Income Programs</b>
<p>1. Authorized NRSROs are limited to:</p> <ul style="list-style-type: none"> <li>• Standard &amp; Poor's (S&amp;P)</li> <li>• Moody's Investors Service, Inc. (Moody's)</li> <li>• Fitch Ratings (Fitch)</li> </ul>

<b>Dollar-Denominated Fixed Income HQL Program</b>														
<p>1. Interest Rate Risk must be controlled by limiting duration to not exceed 90 days due to the stable return mandate of the HQL Program.</p>														
<p>2. Credit Risk will be controlled by requiring minimum ratings by asset type as outlined in the table below. A downgrading of a security that causes a violation in the guidelines shall not require an immediate sale if the Managing Investment Director of Global Fixed Income 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. The following is the minimum quality for each of the sectors.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;"><b>Asset / Counterparty</b></th> <th style="text-align: center;"><b>Minimum Credit Ratings</b></th> </tr> </thead> <tbody> <tr> <td>US Treasury and Government Sponsored</td> <td>AAA/Aaa/AAA</td> </tr> <tr> <td>Repurchase Agreements</td> <td>A1/P1/F1</td> </tr> <tr> <td>Structured Securities</td> <td>AAA/Aaa/AAA</td> </tr> <tr> <td>Money Market Securities</td> <td>A2/P2/F2</td> </tr> <tr> <td>Corporate Securities</td> <td>BBB+/Baa1/BBB+</td> </tr> <tr> <td>Yankee Sovereign Securities</td> <td>A-/A3/A-</td> </tr> </tbody> </table> <p>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.</p>	<b>Asset / Counterparty</b>	<b>Minimum Credit Ratings</b>	US Treasury and Government Sponsored	AAA/Aaa/AAA	Repurchase Agreements	A1/P1/F1	Structured Securities	AAA/Aaa/AAA	Money Market Securities	A2/P2/F2	Corporate Securities	BBB+/Baa1/BBB+	Yankee Sovereign Securities	A-/A3/A-
<b>Asset / Counterparty</b>	<b>Minimum Credit Ratings</b>													
US Treasury and Government Sponsored	AAA/Aaa/AAA													
Repurchase Agreements	A1/P1/F1													
Structured Securities	AAA/Aaa/AAA													
Money Market Securities	A2/P2/F2													
Corporate Securities	BBB+/Baa1/BBB+													
Yankee Sovereign Securities	A-/A3/A-													

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**Low Duration  
Fixed Income  
Program  
(continued)**

Dollar-Denominated Fixed Income SD Program															
1. Interest Rate Risk must be controlled by limiting the SD Program's duration to not exceed 180 days.															
2. Credit Risk will be controlled by requiring minimum ratings by asset type as outlined in the table below. Credit Risk shall be actively managed on a risk/return basis. A downgrading of a security that causes a violation in the guidelines shall not require an immediate sale if the Managing Investment Director of Global Fixed Income 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. The following is the minimum quality for each of the sectors.															
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Asset / Counterparty	Minimum Credit Rating														
US Treasury and Government Sponsored	AAA/Aaa/AAA														
Repurchase Agreements	A1/P1/F1														
Structured Securities	BBB/Baa2/BBB														
Money Market Securities	A2/P2/F2														
Corporate Securities	BBB+/Baa1/BBB+														
Yankee Sovereign Securities	A-/A3/A-														
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.															

Dollar-Denominated Fixed Income LLER Program					
1. Interest Rate Risk must be controlled by limiting the LLER Program's duration to not exceed 270 days.					
2. Credit Risk will be controlled by requiring minimum ratings by asset type as outlined in the table below. Credit Risk shall be actively managed on a risk/return basis. A downgrading of a security that causes a violation in the guidelines shall not require an immediate sale if the Managing Investment Director of Global Fixed Income 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. The following is the minimum quality for each of the sectors.					
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Asset / Counterparty	Minimum Credit Rating				
All Securities (at time of purchase)	BBB-/Baa3/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.					

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**Opportunistic  
Program**

A. Allocation

1. The market value of program investments shall not exceed 3% 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.

B. Diversification Guidelines

1. The market value of program non-publicly traded investments (excluding fixed income securities) shall not represent more than 1.5% of the Total Fund.
  2. The market value of any program strategy or type of asset shall not exceed 2% of the Total Fund.
  3. The aggregate market value of program assets of a single country other than the United States shall not exceed 1% of the Total Fund.
- 

**Securities  
Lending**

The following tables provide details regarding investment constraints/ limitations related to the following:

- Lending Guidelines
- Cash Collateral Re-Investment Guidelines
- Liquidity Guidelines

<b>Lending Guidelines</b>	
1.	Initial Margin: The proper amount of collateralization shall be market value times the appropriate percentage for each security type. <ol style="list-style-type: none"><li>a. Domestic securities – 102%</li><li>b. Matching currency investment for G10 domiciled issuers – 102%</li><li>c. All other international securities – 105%</li></ol>
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. <ol style="list-style-type: none"><li>a. The maintenance margin is 102% for securities with an initial margin of 102%</li><li>b. The maintenance margin is 105% for securities with an initial margin of 105%</li></ol>
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%.

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**Securities Lending (continued)**

<b>Cash Collateral Re-Investment Guidelines</b>
1. The duration of the collateral investment portfolio shall not differ from the duration of the outstanding loans by more than 60 days.

<b>Liquidity Guidelines</b>
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.

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

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<b>Appendix 8</b> <b>Total Fund Investment Policy Document History</b>
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Adopted by the Investment Committee	March 16, 2015
Administrative Changes to Appendix 5, Investment Benchmarks, to reflect closure of State Peace Officer & Firefighters (POFF) Fund	April 14, 2015
Approved by the Investment Committee Revisions relevant to the strategic asset allocation process and the Long-Term Care Fund	June 15, 2015
Approved by the Investment Committee Effective Revisions relevant to Liquidity Program changes to ensure enough liquidity is available to meet obligations; and benchmark change to cash-only	June 15, 2015 July 1, 2015
Approved by the Investment Committee 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.	April 18, 2016

The following policies were incorporated into the Total Fund Investment Policy and repealed on April 18, 2016:

- Currency Overlay Program
- Liquidity Program
- Low Duration Fixed Income Program
- Multi-Asset Class Partners Program
- Securities Lending

The following policies were incorporated into the Total Fund Investment Policy and repealed on March 16, 2015:

- Total Fund Statement of Investment Policy
- Investment Beliefs
- Asset Allocation Strategy
- Benchmarks
- Risk Management Program
- Global Derivatives and Counterparty Risk
- Leverage
- Divestment
- Opportunistic Program
- Plan Level and Asset Class Transition Portfolios
- Role of Private Asset Class Board Investment Consultants
- Custody Management
- Economically Targeted Investments
- Terminated Agency Pool