

CALSTRS

CALIFORNIA STATE TEACHERS'
RETIREMENT SYSTEM

**INFLATION SENSITIVE
INVESTMENT
POLICY**

INVESTMENT BRANCH

MARCH 2020

Q. Inflation Sensitive Investment Policy

EXECUTIVE SUMMARY

The purpose of the Inflation Sensitive Policy (Policy) is to expand the opportunity set beyond the current portfolio constituents available under the current [Investment Policy and Management Plan](#) (IPMP, pg. A-15). This Policy includes investments and strategies not covered by the Infrastructure Policy. However, this Policy incorporates the [Infrastructure Policy](#) by reference and recognizes it as an integral component of the Inflation Sensitive asset class structure.

In accordance with the CalSTRS Investment Policy and Management Plan, the California State Teachers' Retirement System Board (Board) has established an Inflation Sensitive Portfolio. The primary objective for the Inflation Sensitive Portfolio (Portfolio) is to invest in strategies that provide further diversification of CalSTRS overall investment Portfolio. The secondary objective of the Inflation Sensitive Portfolio is to invest in strategies that provide protection against inflation and generate a long term return which exceeds both inflation and the performance benchmark while taking reasonable and prudent risk.

CalSTRS Inflation Sensitive assets are to be invested, administered, and managed in a prudent manner for the sole benefit of its participants and beneficiaries, in accordance with the California Constitution, Teachers' Retirement Law, and other applicable statutes. No investment instrument or activity prohibited by the IPMP shall be authorized for the Inflation Sensitive Portfolio.

The Policy ensures that investors, managers, consultants, advisors, or other participants selected by CalSTRS take prudent and careful action while managing the Portfolio. The purchase, management, and sale of all Portfolio investments are performed by external and/or internal professionals (managers) who are monitored and evaluated by internal investment officers, a Portfolio consultant, and/or independent fiduciaries.

CalSTRS believes that environmental, social and governance (ESG) issues can affect the performance of our investments. As a result, CalSTRS Investment Policy for Mitigating Environmental, Social, and Governance Risks has been developed as a tool that both internal and external investment managers are expected to use to assess the impact of ESG risks when making an investment on behalf of CalSTRS.

The internal investment officers and independent fiduciaries operate under the direction of the Chief Investment Officer (CIO). Review of the Portfolio falls under the general consultant (Consultant), who reports directly to the Investment Committee. If a specialty asset class consultant is retained, that consultant will report directly to the Investment Committee.

Policies approved by the CalSTRS' Investment Committee cannot be altered without explicit direction from the Board.

PROGRAM OBJECTIVES

The purpose of the Portfolio is to provide diversification to the CalSTRS portfolio, lower the macroeconomic risks that pervade other major asset classes, and positively capture long-term changes in inflation.

Inflation is defined as a sustained and persistent increase in the general price level of goods and services leading to a subsequent reduction in individual and group purchasing power. Inflation can be driven by an increase in the overall money supply or disequilibrium between supply and demand, in any number of markets, that ripple across the economy. The strategic objective of the Portfolio is to:

- A. Provide inflation protection, diversification and inflation linked returns for the long-term.
- B. Lower CalSTRS' portfolio volatility through a combination of strategies and sector allocations less correlated with long-term growth.
- C. Pursue investments which provide cash flows correlated with inflationary assets that contain adjustable contractual or non-contractual payment streams that will benefit from inflation over the long-term.
- D. Pursue investments expected to benefit from inflation and increase in market value over the long term.

The Portfolio will seek to improve the diversification of the total investment portfolio and enhance its risk-adjusted total return. The assets shall be managed to generate current income and provide a modest level of capital appreciation.

PERFORMANCE OBJECTIVES

The Portfolio is to be structured to achieve a long term total return that is consistent with its program benchmarks. Each strategy within the Portfolio will have its own specific performance benchmark. Therefore, the portfolio will have a blended weighting comprised of the strategies undertaken within the Portfolio. A blended and weighted benchmark will be the end result. The long term objective of the Portfolio is to exceed US CPI by a reasonable level over a market cycle of three to five years.

PROGRAM BENCHMARK

The current program benchmark is a weighted blend of the Bloomberg Barclays U.S. Treasury Inflation Linked Bond Index Series L, Alerian MLP daily Index, Bloomberg Commodity Index, NCREIF Timberland Fund and Separate Account Index (quarter lagged), Zero return Daily Index, CPI +3% (quarter lagged), and a CPI +4% (quarter lagged). As new strategies are added, the future benchmark shall be a blended performance benchmark that will comprise the weightings for each of the strategies undertaken in the Inflation Sensitive Portfolio multiplied by their respective benchmarks. The Policy will be updated accordingly though a schedule set forth by the Board.

PROGRAM STRUCTURE

The Inflation Sensitive Portfolio is a unique hybrid class of multiple asset types that jointly seek to produce a stable return and one that exceeds the specified performance objective. To achieve the stated performance objective, the Portfolio will invest in a diversified portfolio of strategies with a mixture of both internal and external management. Diversification within the Portfolio will be a critical aspect of risk-control. Investments will be aggregated, assessed, and monitored to control for unintended biases.

Inflation Sensitive assets will consist of two major components:

- A. Public – Inflation Sensitive – will include strategies that utilize public securities that have a linkage to changes in inflation and are bought and sold in widely recognized and liquid markets and can include:
 - 1. Government Inflation Linked Bonds – these strategies invest in US Treasury Inflation Linked securities and/or Global Sovereign Inflation Linked Securities.
 - 2. Inflation Linked Corporate debt (investment grade) - short-term fixed and floating rate debt and loan securities – these securities may take the form of short term corporate securities that have investment grade ratings. Investment grade ratings are those securities rated Baa3/BBB-/BBB- or higher using two of the three equivalent ratings of Moody's, Standard and Poor's Ratings Service, or Fitch Ratings.
 - 3. Inflation Linked Corporate debt (high yield) - short-term fixed and floating rate debt and loan securities – these securities may take the form of short term corporate debt in which the investor has first or second lien coverage and have below investment grade credit ratings. Below investment grade ratings are those securities rated Ba1/BB+/BB+ or lower using two of the three equivalent ratings of Moody's, Standard and Poor's Rating Service, or Fitch Ratings.
 - 4. Commodities and commodity-based strategies determined to be aligned with CalSTRS inflation sensitive mandate.
 - 5. Equity securities and equity-based strategies determined to be aligned with CalSTRS inflation sensitive mandate.
- B. Private – Inflation Sensitive – will include strategies that utilize private securities that have a linkage to changes in inflation but are more illiquid than public strategies and can include:
 - 1. Infrastructure related equity positions and/or debt securities – these strategies are within the Infrastructure Portfolio and are defined in the [Infrastructure Portfolio Policy](#).
 - 2. Other security types and strategies may include, but are not limited to: timber, agricultural, energy, commodities or other strategies uncovered as part of the Inflation Sensitive unit's normal course of business, strategies spun out of the

Investment Strategies and Risk unit, or strategies presented to other units of the Investment Branch that might not fit a particular unit's mandate but might more closely fit the Inflation Sensitive unit's objectives.

Allocation Ranges

Allocation and target ranges for the Inflation Sensitive Portfolio are established:

Strategy	Lower Limit	Upper Limit
• U.S. TIPS	0%	40%
• Commodities	0%	30%
• Private – Inflation Sensitive	40%	100%

New sub-asset classes along with their portfolio weight and range limitations will be determined by the Director of Inflation Sensitive, Deputy Chief Investment Officer, and/or Chief Investment Officer and incorporated into policy and updated accordingly through a schedule set forth by the Board.

Other Strategies

Other securities and or strategies that are deemed by the Director of Inflation Sensitive, the Chief Investment Officer, Deputy Chief Investment Officer, and consultant (e.g., general or specialized consultant - if deemed necessary) that are expected to provide protection against the risks associated with inflation may also be considered under this Policy. Such investments may include, but are not limited to, public and private equity/debt, preferred public and private equity/debt and publicly listed equity with an inflation protection emphasis. The Inflation Sensitive staff may select and utilize: Co-Investments, Accounts, Joint Ventures, Commingled Funds, and appropriate Direct Investments. These vehicles will be selected to provide for appropriate return and control, the highest level of accountability on the part of management, and alignment of interests with CalSTRS, all while mitigating both risk and costs.

RISK MANAGEMENT

- A. Diversification - plays a critical role in a portfolio in order to control risk and maximize returns. The Portfolio is expected to diversify among and across various investment types and structures in order to insure liquidity, maximize income and insure modest capital appreciation. Minimum and maximum ranges with respect to investment sectors, credit exposures, duration, and tracking error will be established, when applicable, to those parts of the Portfolio that have significant debt exposures. The Director of Inflation Sensitive will work with managers and develop guidelines to insure that portfolios and strategies are broadly diversified within the best practices of any particular strategy adopted.
- B. Derivatives - are permitted to assist in the efficient management of risk, asset allocation or market exposures in the Portfolio. Such instruments can include futures, options, swap agreements, or forwards as well as strategies that may employ derivatives as part of their

normal course of management. The implementation of any derivative strategy will be thoroughly reviewed by the Director of Inflation Sensitive, the Director of Fixed Income, the Deputy Chief Investment Officer and/or the Chief Investment Officer. Limitations concerning aggregate risk control and counterparty exposures will be documented in the investment guidelines and not conflict with the IPMP.

- C. Authorized traders – authorization letters which specify who may transact business for the Portfolio shall be sent a copy of the most recent investment resolution at the time the account is opened and then periodically to all broker/dealers with whom CalSTRS conducts business. Whenever a change in an authorized trader(s) takes place, the broker/dealer shall be notified in writing or via e-mail within 24 hours in the event of a termination, or as soon as possible in the event of a newly authorized trader(s).

Inflation Sensitive Internal/External Management

The Inflation Sensitive Portfolio will be managed through a combination of internal staff and external managers. Within the boundaries established in the procedures, the decision to hire an external manager or utilize internal investment staff for an investment strategy is made by applying a Board-approved criteria matrix (Exhibit 2) to evaluate a variety of factors including, but not limited to, cost effectiveness/control, market transparency and liquidity, market efficiency, active risk, and infrastructure/resource requirements. CalSTRS uses active external management as a tool to implement its inflation sensitive strategies and to allocate risk where it believes there is the greatest opportunity to enhance returns commensurate with the associated risk undertaken.

Within the boundaries and ranges established by this Investment Policy, staff is responsible for the selection, allocation, and oversight of external managers hired to implement an Inflation Sensitive strategy. Manager guidelines, objectives, benchmark selection, portfolio composition, and constraints are to be administered and monitored across all inflation sensitive portfolios.

Portfolio Leverage

CalSTRS will employ leverage in the Portfolio as found within a Fund, Accounts/ Co-investments, Joint Ventures, and applicable Direct Investments. Such leverage may exist at the portfolio, manager or investment level. Since leverage also increases the volatility of the Portfolio, careful consideration will be given to the impact of leverage on investment and portfolio risk. In addition, limitations on the amount of leverage at the individual asset or investment entity level, as well as debt service coverage requirements, will be negotiated or arranged wherever possible.

Leverage at the aggregate Inflation Sensitive portfolio level shall be monitored with a long-term goal of maintaining it at no higher than 50 percent (50%) LTV (i.e., loan-to-value). To preserve the character of the asset class within CalSTRS' total Fund portfolio, the aggregate asset class shall not be overleveraged. This shall be measured quarterly by comparing the principal amount of debt secured by Private Inflation Sensitive investments in the Portfolio to the aggregate gross fair market value. To the extent that leverage exceeds the maximum, CalSTRS shall make reasonable efforts to reduce the leverage ratio to below the maximum allowable, within a reasonable time frame.

Exit Strategies

The Portfolio is expected to have a combination of liquid and illiquid assets. Some fund structures may have liquidation mechanisms and others may not have clearly defined liquidation events. The Portfolio will seek to diversify among the various structures available based on a careful balance between the need for liquidity, the potential negative effects of inflation and structures emphasizing both income and modest capital appreciation.

MONITORING AND REPORTING

The following reports will be prepared and presented to the Board, unless otherwise stated, in order to facilitate visibility of compliance monitoring and reporting according to this document:

- i. Inflation Sensitive Semi-Annual Report – prepared by staff.
- ii. Performance Report – prepared by master custodian/consultant (semi-annually).
- iii. Investment Manager Ratings Report – prepared by staff (semi-annually).
- iv. Business Plan – prepared by staff (annually).

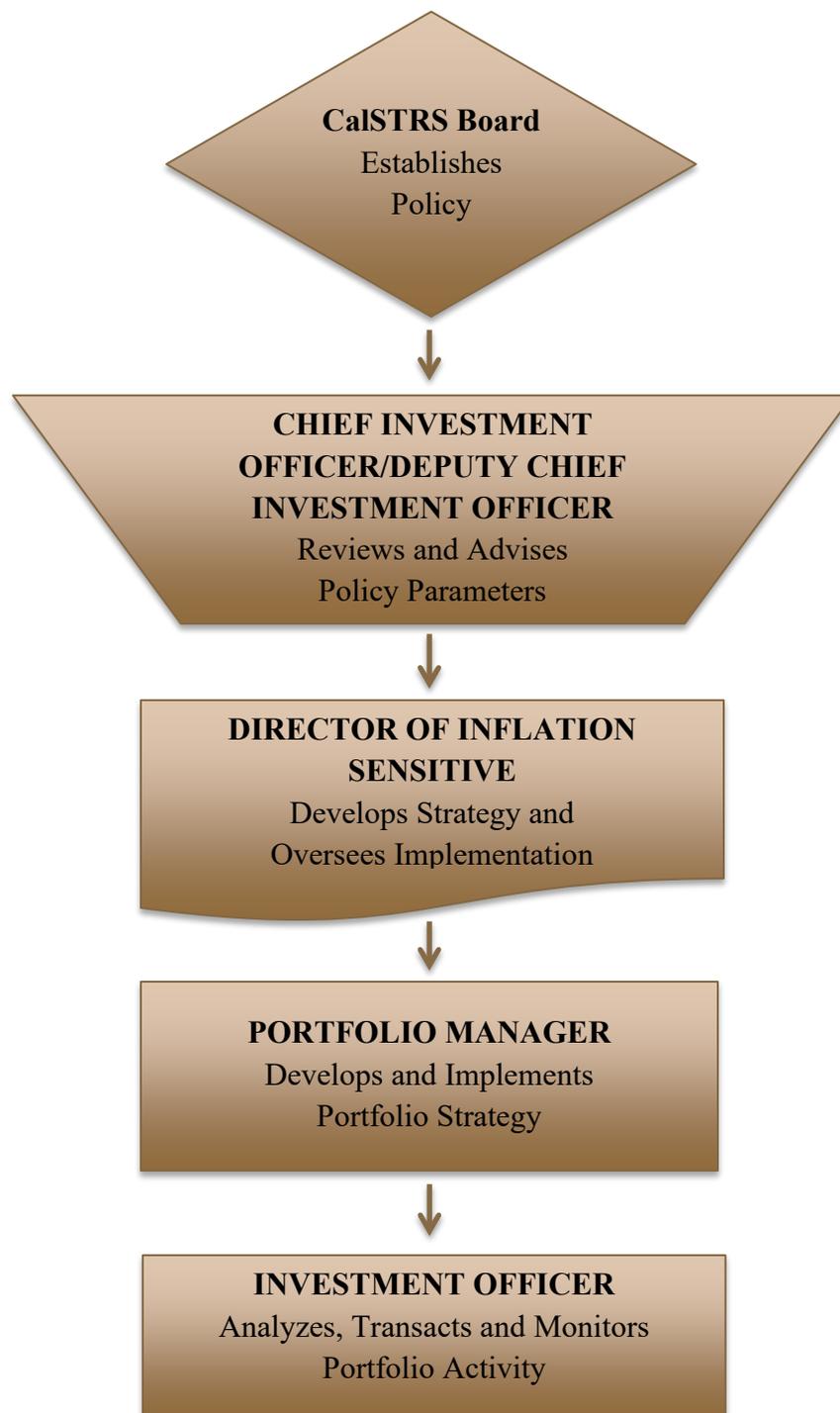
Policy Monitoring and Modification

The general consultant or specialized Inflation Sensitive consultant, if retained, shall monitor the investment process for compliance with this policy and report to the CalSTRS Investment Committee on a semi-annual basis.

This Inflation Sensitive Investment Policy shall be reviewed periodically to determine if modifications are necessary or desirable. Any changes shall be subject to the approval of the Investment Committee.

Adopted by the Teachers' Retirement Board on September 2, 2015
Revised to define APM trading and cash transfer limits and reflect new reporting frequency on
April 5, 2017
Revised to give the ability to adjust the benchmark to reflect the dynamic weighting of assets that
will be incorporated into the Inflation Sensitive Portfolio on July 12, 2017
Revised to reflect new format, ESG language, sub-asset class allocation, ranges and language,
and exit strategy language on March 5, 2020

POLICY IMPLEMENTATION FLOWCHART



Internal / External Decision Criteria Matrix

		Low	Medium	High
<u>Decision Factors</u>	Cost-Effectiveness/ Control	External	External/Internal	Internal
	Market Liquidity & Transparency	External	External/Internal	Internal
	Market Efficiency	External	External/Internal	Internal
	Active Risk	Internal	External/Internal	External
	Infrastructure/ Resource Requirements	Internal	External/Internal	External

Cost-Effectiveness/Control

After including all costs, is internal management able to add more value than external management? All things being equal, management fees increase in direct relation to the risk and complexity of the strategy being managed. Given the narrower band for tracking error (i.e., risk) described earlier in this paper, passive management usually provides opportunities for more cost-effective management of assets, while active management presents the potential to generate alpha. For active management to make sense in the Portfolio, the strategy must generate returns in excess of the benchmark net of management fees which, as discussed in last year’s active/passive study, is difficult to accomplish consistently.

The decision to manage a portfolio internally or externally should not be based solely on who provides the cheapest management fees. Even though many studies have shown that internal asset management typically has a lower cost structure than external management, a more holistic view should be used in the decision making process, which includes control of the assets and market awareness of internal staff. Internal management, it has been argued, allows better coordination over when and how assets are deployed, permits greater control over corporate governance issues, and allows for a more straightforward mechanism to customize investment mandates that align with a plan sponsor’s unique directives. In other words, internal management is able to focus on

CalSTRS as its one and only client, versus the multiple accounts among which an external manager must divide its attention. Also, as internal staff begins to manage new strategies, staff should continue to identify additional ways to take advantage of market inefficiencies when they occur. It should be noted, however, that building in-house investment management expertise can be difficult, given the employment and hiring practices dictated by State employment.

While there seem to be many benefits to internal management, we should recognize that bringing assets in-house requires significant up-front costs which can then be amortized over the investment period. These costs include sufficient staffing levels, computer support systems, specialized software/technology, and access to investment-related data. It is clear that building and sizing the infrastructure, risk management and trading systems, and people are critical to investment success. The same criteria we apply to external managers in terms of people, process, and philosophy apply internally, as well. However, once an infrastructure has been established for an asset class, the incremental costs of adding new strategies may be minimal, depending upon the strategy.

Market Transparency and Liquidity

Does the market have enough liquidity and transparency to allow for effective management of the strategy? While it appears that the internal versus external management debate centers around the public (i.e., fixed income and equity) markets, as opposed to the private markets (i.e., private equity and real estate), it is really the transparency and liquidity of the markets within which each strategy trades that is the primary decision factor.

Private markets are generally less transparent and liquid than other asset classes within the Fund. Public equity and debt markets are more transparent, have broadly and widely recognized indices, are highly liquid, and are amenable to structuring a broadly diversified portfolio. This liquidity and transparency, in terms of widely followed market information and pricing, make equity and fixed income portfolio management a different kind of management challenge, as the assets are broadly available for purchase and sale to all with a mandate and the proper business infrastructure/resources.

Market Efficiency

Does the strategy operate in a market that is efficient or inefficient? Market efficiency refers to the degree that all investors in a market have access to the same information and, at any given time, security prices reflect all available market information. The decision to manage an active or passive strategy should be directly based on the efficiency of the market. For markets that are considered highly efficient, the probability of consistently outperforming the market is relatively low, which suggests that a passive/core strategy would be appropriate. In markets that are less efficient, the opportunity exists to generate alpha. Finding these market inefficiencies requires dedicated resources to identify securities that are considered mispriced. When these inefficiencies are evident, a skilled active manager can take advantage of these opportunities and construct a portfolio that should generate fee-adjusted returns in excess of the market.

Active Risk

Does internal staff have the knowledge and competence to manage the strategy in house? An active strategy requires highly specialized and skilled individuals who are well versed in the pursued strategy and willing to make educated decisions to take prudent risk, in order to achieve a net return higher than the benchmark. A passive or less active strategy still requires skilled individuals; however, the goal of this type of strategy is to track or slightly exceed the strategy's benchmark,

and the research effort is much less intensive than active managers.

Private equity and real estate are uniquely active markets in which expertise, in terms of property or company type, leverage, deal structure, deal components, and terms, make them truly active investments requiring resources capable of reviewing the fundamentals of the deal structure and capital to fund the deal. With internal management, recruiting investment professionals who have highly specialized skills in active strategies may be difficult. CalSTRS' compensation structure and the current environment of state budget cuts may provide a headwind to attracting new investment talent. There is also the potential for key investment staff turnover. This will always be a concern in both internal and external portfolios. CalSTRS, like external managers, would seek to construct a bench of talent for any strategy undertaken.

Infrastructure/Resource Requirements

Does CalSTRS have sufficient infrastructure and the resources to support the strategy? Technology and risk management systems, along with proper staffing levels (front and middle office) are a key ingredient to operating a successful investment management operation. CalSTRS has gained much of this experience over the last 20 years through the development of our own internal infrastructure, in terms of communications, specialized investment software, and analytical criteria needed to operate in the public fixed income and equity markets, as well as our exposure to external managers.

Glossary

ACCOUNT – An investment fund managed for one or two investors rather than many with a specialized mandate.

ACTIVE MANAGEMENT – An active manager seeks to outperform the benchmark by buying equities that they believe will provide superior performance versus a benchmark, making concentrated decisions to over or underweight a specific stock, bond, private asset or sector of the market based on fundamental, technical, or other criteria.

ASSET ALLOCATION – Distribution of investments over broad sectors of assets such as: equities, bonds, real estate, and international investments.

ASSET MANAGEMENT – The various disciplines involved with managing real assets from the time of investment through the time of disposition. Proper asset management plans and policies include: requirements for operating and capital budgets, asset management, leasing, physical asset analysis, operational and financial reporting, appraisal, audits, accounting policies and asset disposition plans (hold/sell analyses).

BASIS POINT – One hundredth of one percent or .0001 in decimal form.

BENCHMARK – A standard against which the performance of a security, mutual fund or investment manager can be measured. Generally, broad market and market-segment stock and bond indexes are used for this purpose.

BREAKEVEN INFLATION – The level of future inflation required to obtain similar returns between an investment in linkers/TIPS and an investment in nominal bonds; expressed as the difference between nominal and real yields.

BROAD MARKET-WEIGHTED PERFORMANCE BENCHMARK – With a market-weighted benchmark, the weighting of each asset class within the benchmark may change due to the market capitalization. Conversely, with a fixed-weighted benchmark, the weightings of each asset class are held constant.

BROKER – Refers to a person or entity registered with the National Association of Security Dealers and provides investment services (research, soft dollar, etc.) and/or execution services.

BROWNFIELD – Occurs when a company or government purchases an existing operating facility with cash flow.

CAPITAL APPRECIATION – A rise in the value of an asset based on a rise in market price.

CO-INVESTMENT – Investments where the management organization has a capital investment and ownership share. An investment into a portfolio company by limited partners alongside the

general partner.

COMMINGLED FUND – A term applied to all open-ended and closed-ended pooled investment vehicles designed for institutional tax-exempt investors. A commingled fund may be organized as a group trust, partnership, corporation, insurance company separate account, private real estate investment trust or other multiple ownership entity.

- **Open-ended Fund** – A commingled fund with no finite life, which allows continuous entry and exit of investors and typically engages in ongoing investment purchase and sale activities.
- **Closed-ended Fund** – A commingled fund with a stated termination date, with few or no additional investors after the initial formation of the fund. Closed-ended funds typically purchase a portfolio of assets to hold for the duration of the fund and, as sales occur, typically do not reinvest the sales proceeds.

COMMODITIES – the sale and purchase of a good (e.g., oil, cattle, or soybeans) usually carried out through a futures contract on exchanges that standardize the quantity and minimum quality of the commodity being traded.

CONSORTIUM – An investment in partnership with like-minded investors and a managing partner where the investors have more investment decision rights and governance rights. These investments may also be referred to as alliances or joint ventures.

CONTRACTUAL PAYMENT – Any cash flow stream delineated in a contract between two or more parties.

CORE INVESTMENT – Typical core portfolio investments shall be mature, brownfield/existing assets that produce steady and predictable cash flows. These assets should be difficult to replicate and will be long life assets.

CORPORATE BOND – A financial obligation for which the issuer, a company, promises to pay the bondholders a specified stream of cash flows, including periodic interest and a principal.

CREDIT RATING – A relative ranking of a borrower's ability to make timely interest payment and principal repayment based on past records of debt repayment, current financial status, and future outlook for the company.

DEFLATION – A general decline in prices, often caused by a reduction in the supply of money or credit.

DERIVATIVE – A derivative is a security whose price/return is dependent upon the price/return of some other underlying asset. Futures contracts, forward contracts, options and swaps are the most common types of derivatives.

DIRECT INVESTMENT – An investment in which CalSTRS has a direct ownership interest in

underlying infrastructure projects and/or assets. Direct investments are made outside of a limited partnership structure. While a co-investment is made alongside of a limited partnership investment, a direct investment is not. Direct investments need a greater level of due diligence and involve a greater level of risk in comparison to a co-investment.

DISCRETION – The level of authority given to an investment manager over the investment and management of a client’s capital once that capital is allocated to the investment manager.

DISEQUILIBRIUM – A situation where internal and/or external forces prevent market equilibrium from being reached or cause the market to fall out of balance. This can be a short-term byproduct of a change in variable factors or a result of long-term structural imbalances.

DISINFLATION – A slowing down of price increases, usually during a recession, when sales drop and retailers are unable to pass on higher prices to consumers.

DIVERSIFICATION – Investing in a wide range of securities/or asset classes in order to reduce financial risk.

DUE DILIGENCE – The process of investigating, evaluating and analyzing a potential investment’s characteristics, investment philosophy and terms and conditions.

ENVIRONMENTAL, SOCIAL AND GOVERNANCE (ESG) – Topics such as climate change, energy use, political contributions, labor and human rights.

EXTERNAL MANAGEMENT – Management of financial assets by an outside entity under contract to a CalSTRS Investment unit.

FEDERAL RESERVE – The independent central bank that influences the supply of money and credit in the United States through its control of bank reserves. It is also known as the Fed.

FIDUCIARY – A person in whom CalSTRS reposes, and the person accepts, a special trust and confidence involving the exercise of professional expertise and discretion.

FISCAL STIMULUS – A fiscal policy of incurring budget deficits to stimulate a weak economy.

GREENFIELD – Projects or assets that are new, under development or construction. These assets typically involve higher risk as they include design and construction risk on top of operating risk, but typically yield higher returns in the long-term. This contrasts with “brownfield” where the assets already exist and have a history of cash flow.

HIGH YIELD SECURITIES – A higher-risk debt security that is rated less than Baa3/BBB- by the rating agencies.

INCOME – The component of return derived from an asset or portfolio operations during the period of analysis.

INDEX – A defined representative collection of securities used to measure the change in value of the securities market on a monthly basis.

INDEXED PORTFOLIO – A portfolio which replicates a broad market index. The Portfolio’s objective is to minimize tracking error while providing market returns at a lower operating cost.

INFLATION – The general upward price movement of goods and services in an economy over a period of time.

INFLATION-LINK – Investments that allow inflation risk to be mitigated contractually through inflation-adjusted pricing agreements such as water utilities where the user fees are linked to Consumer Price Index (CPI).

INFLATION LINKED BONDS [aka linkers or, in the U.S., TIPS (Treasury Inflation-Protected Securities)] – Bonds aimed to preserve the purchasing power of the bondholder or to compensate for inflation experienced over the life of the bond.

INFRASTRUCTURE – The basic physical and organizational structures needed for the operation of a society or enterprise, or the services and facilities necessary for an economy to function. The term typically refers to the technical structures that support a society, such as roads (transportation assets), water supply, sewage systems, power grids, telecommunications, and so forth. Viewed functionally, infrastructure *facilitates* the production of goods and services; for example, roads enable the transport of raw materials to a factory, and also for the distribution of finished products to markets.

INTERNAL MANAGEMENT – Assets managed by an internal unit of the CalSTRS Investment branch.

INVESTMENT GRADE SECURITIES – Investment-grade is restricted to those bonds rated Baa3/BBB- and above by the rating agencies.

INVESTMENT OFFICER – Any one of the in-house investment professionals in the CalSTRS Investment unit.

LEVERAGE – The use of borrowed funds to increase purchasing power and, ideally, to increase the profitability of an investment.

LINKERS – Inflation linked bonds.

LIQUIDITY – Refers to availability of a stock or bond to be traded. An issue that is readily available is considered to be liquid, an issue that does not trade very often is deemed illiquid.

MARKET CYCLE – Generally considered to be three to five years.

MASTER LIMITED PARTNERSHIP (MLP) – A limited partnership that is publicly traded on a securities exchange. The entity combines the tax benefits of a limited partnership with the liquidity of publicly traded securities.

MONETARY STIMULUS – The Federal Reserve adjusts the money supply either through open market transactions, member bank reserve requirements, or through changing the discount rate.

OECD – The Organization for Economic Co-operation and Development. An organization that acts as a meeting ground for thirty-four (34) countries (including the U.S. and Canada) which are advocates of the free market system and promotes policies that will improve the economic and social well-being of people around the world. The OECD provides a forum in which governments can work together to understand what drives economic, social and environmental change.

OPPORTUNISTIC – A phrase characterizing an investment in underperforming and/or undermanaged assets/projects. Such assets usually have greater risk/return characteristics than found in a typical core investment.

PASSIVE MANAGEMENT – Passive managers utilize either a replication or optimization method to track a benchmark's performance. With replication, every security in the portfolio is held in the exact proportion as the benchmark. Optimization seeks to mimic the risk and return characteristics of a benchmark by only holding a subset of the benchmark's securities.

PERFORMANCE BENCHMARK – Refers to each individual external manager's designated benchmark (example, Russell 1000) and their performance target (example, Russell 1000 + 1½ percent).

PORTFOLIO – A collection of stocks, bonds, or money market securities owned by an investor and segmented by a predefined method.

POSITION – The long and short status of securities, futures, and options in an account.

PUBLIC PRIVATE PARTNERSHIPS (PPP) – A government service or private business venture which is funded and operated through a partnership of government and one or more private sector companies. PPP involves a contract between a public sector authority and a private party in which the private party provides a public service or project and assumes substantial financial, technical and operational risk in the project.

QUALITY RANGES – Guidelines for the percentage of market value of a particular credit rating within a portfolio.

RATE OF RETURN – The total income received over a period of time including interest income, accretion of discount, amortization of premium, and change of market value; usually expressed as a percentage or in decimal format.

REAL RATE OF RETURN – Yield to the investor after adjusting for inflation (typically determined by the Consumer Price Index).

REAL YIELDS – The yields of an inflation-linked bond.

SECTOR ALLOCATION – Distribution of investments within one sector of a larger portfolio (e.g., the bond sector allocation of a portfolio with an equity and bond mandate).

SWAP AGREEMENT (SWAP) – An arrangement between two parties to exchange one security for another, to change the mix of a portfolio or the maturities of the bonds it includes, or to alter

another aspect of a portfolio or financial arrangement.

TOTAL RETURN – The sum of the income and appreciation returns.

UNITED STATES TREASURY SECURITIES – Debt issues of the U.S. Government, such as Treasury bills, notes, and bonds.

US – CPI – the CPI-U Index is the non-seasonally adjusted U.S. City Average all Items Consumer Price Index for All Urban Consumers published monthly by the Bureau of Labor Statistics of the U.S. Department of Labor.

VALUE-ADDED – A phrase commonly used by investment managers to describe a management approach to an asset with the connotation that their skills will add value, which otherwise would not be realized.

VOLATILITY -The relative rate at which the price of a security moves up and down, found by calculating the annualized standard deviation of daily change in price.

*Definitions obtained from Bloomberg and Investopedia