TEXAS MUNICIPAL RETIREMENT SYSTEM

INVESTMENT POLICY STATEMENT

DECEMBER 2016

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INVESTMENT POLICY

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TEXAS MUNICIPAL RETIREMENT SYSTEM
INVESTMENT POLICY STATEMENT
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I. INTRODUCTION AND PURPOSE

This Investment Policy Statement (IPS) governs the investment of assets for the Texas Municipal Retirement System (TMRS or System) and is established to provide a framework for the management of those assets. This IPS outlines objectives, beliefs, benchmarks, restrictions, risks and responsibilities so that members of the TMRS Board of Trustees (Board), TMRS investment staff, investment Managers, consultants, and TMRS stakeholders clearly understand them and how they impact the TMRS investment program.

The Board intends for this IPS to be a dynamic document subject to periodic review and refinement. Policies will be modified from time to time to reflect changes in assets and investment programs, benefit changes, and economic conditions. Deviation from this IPS is not permitted without prior Board authorization or otherwise specifically allowed by this IPS.

II. GOVERNING AUTHORITY

TMRS was created by the Texas Legislature in 1947 and began operations in 1948. TMRS is a statewide governmental pension plan qualified under section 401(a) of the Internal Revenue Code (IRC) and is not subject to Title I of the Employees Retirement Income Security Act of 1974 (ERISA). TMRS is created by statute and administered in accordance with Title 8, Subtitle G, Chapters 851 through 855 of the Texas Government Code (the "TMRS Act") and other applicable provisions of Title 8 of the Texas Government Code, and provides retirement, disability and death benefits for employees of over 850 Texas cities. TMRS administrative rules, adopted by the Board, may be found under the Texas Administrative Code, Title 34.

III. MISSION STATEMENT

The TMRS Board has a fiduciary responsibility to the members and beneficiaries of the System. In recognition of this responsibility, the Board has adopted the following Mission and Vision Statements:

TMRS Mission Statement

To deliver secure and competitive retirement plans through a professionally managed organization that anticipates diverse needs; provides quality services; and openly and effectively communicates with members, retirees, and cities.

TMRS Vision Statement

TMRS will be the preferred provider of competitive retirement benefits and excellent customer service by improving plan funding, investment return, communication, and education.

IV. INVESTMENT OBJECTIVE

The overall objective of TMRS' investment program is to ensure that members, retirees and beneficiaries are provided with the benefits they have been promised by their employers at a reasonable and predictable cost to the employers.

Assets will be invested with a total return posture given appropriate consideration for portfolio volatility (risk) and liquidity. Total return includes dividends, interest, and realized and unrealized capital appreciation.

The actuarial consultant recommends the actuarial return assumption for the investment program after consulting with both internal investment staff and the Board's retained Investment Consultant regarding the expectations surrounding the long term investment returns available from a well-diversified investment portfolio. The Board is responsible for approving an Actuarial Return Assumption and accepting that the commensurate risk posture of that portfolio is in line with the Board's Risk Tolerance.

The specific investment return objective is to maximize the probability of achieving the Actuarial Return Assumption without exceeding the Risk Tolerance of the Board. The current Actuarial Return Assumption adopted by the Board is 6.75%.

V. INVESTMENT BELIEFS

The investment beliefs of the Board are based on capital market theories that are generally accepted and followed by institutional investors, who by definition are long-term oriented investors. These beliefs hold that:

1. Increasing risk is rewarded with compensating returns over time and, therefore, prudent risk-taking is justifiable for long-term investors.

2. Risk can be decreased through broad diversification of asset classes and investment strategies/Managers, as well as diversification of individual securities.

3. Over time, the relative performance of different asset classes is reasonably consistent. For example, over the long-term, equity investments have provided and should continue to provide superior returns over other security types and short term fixed-income securities can protect capital and provide liquidity in periods of depressed economic activity.

4. The primary determinant of long-term investment performance is the strategic, or long-term, allocation of assets among various asset classes.

5. The risk of short term (tactical) shifts between asset classes is hard to diversify and is therefore unlikely to be rewarded with any degree of reliability and therefore must be used judiciously.

6. The potential to increase risk adjusted returns, through active management, exists in most capital markets and is inversely dependent on the efficiency of the market.

VI. STANDARDS OF CARE

A. **Standard of Prudence Applicable**. All participants in the investment process will act responsibly. The standard of prudence to be applied by the Board and investment staff is as follows:

1. In satisfying this standard, Board members and investment staff shall exercise the degree of judgment and care, under the circumstances, that persons of prudence, discretion, and intelligence exercise in the management of their own affairs, considering the probable income from the securities and probable safety of their capital and in consideration of the purposes, terms, distribution requirements and other circumstances of the trust.

2. Investment and management decisions respecting individual assets will be evaluated not in isolation but in the context of the investment portfolio as a whole and as a part of an overall investment strategy having risk and return objectives reasonably suited to the trust.

Conflict of Interest Prohibited. Members of the Board, investment staff, investment Managers, and consultants involved in the investment of TMRS assets will refrain from any activity that could conflict with the proper execution and management of the TMRS investment program, or that could impair their ability to make impartial recommendations and decisions. These parties are required to disclose, in writing, all relationships that could create or appear to create a conflict of interest in their unbiased involvement in the investment process and when appropriate to cure the conflict in a manner provided by the TMRS Ethics Policy or their contract with TMRS as applicable.

VII. ROLES AND RESPONSIBILITIES

In adopting this IPS, the Board requires all Trustees and TMRS investment staff involved in the investment of TMRS assets to make all investment decisions in the best interest of the System and abide by the TMRS Ethics Policy. The TMRS Ethics Policy delineates many duties that covered persons must abide with including that they may not solicit, accept, or agree to accept any gifts of more than *$50.00*, personal benefits, or personal favors offered to them because of their positions with TMRS, among other requirements. Cash gifts are prohibited. Acceptance of invitations to seminars, conferences, receptions and business meals when the sponsor or a representative of the sponsor is present and such event has a presentation or discussion of topics pertinent to the investment of TMRS assets or relates to the official TMRS duties of the individual and is not otherwise prohibited by law, are permitted. In all cases, investment staff should use reasonable care and judgment to not place themselves in a situation that might cause, or be perceived to cause, a loss of independence or objectivity. TMRS investment staff will also comply with TMRS policies on personal investment activities, where applicable. Please see the official TMRS Ethics Policy for more detail.

A. The **Board of Trustees** is responsible for the administration of the System and its investment program. The Board members are individually fiduciaries with respect to the System and must discharge their duties solely in the interest of the members and annuitants for the exclusive purpose of providing benefits to members, retirees and their beneficiaries. The Board also appoints the investment consultants, investment Managers, Executive Director, General Counsel, Internal Auditor, Custodian Bank/Securities Lending Agent, and consulting actuary; and approves the annual operating budget**.**

As part of their fiduciary obligations, the Board has the legal responsibility for managing the System's overall investment strategy, including:

1. Establishing investment goals and objectives consistent with plan funding needs;
2. Approving an asset allocation strategy;
3. Establishing an explicit, written investment policy consistent with identified goals and objectives, and applicable laws;
4. Delegating responsibilities for day-to-day management of the investment program through the Executive Director to the Chief Investment Officer and investment staff.
5. Hiring investment consultants to advise the Board, and investment Managers for prescribed mandates to implement this IPS, unless Manager hiring and termination responsibilities are delegated to the Executive Director or investment staff in writing through Board Resolution;
6. Monitoring the activities of the investment program for compliance with the provisions of this IPS; and
7. Avoiding conflicts of interest and prohibited transactions.

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

Delegation of Co-Investment Authority

For purposes of fulfilling the role as described in this section of this IPS, the Executive Director is authorized to approve co-investment opportunities that meet the guidelines described herein. Co-investment recommendations will be submitted by CIO, Director of the appropriate asset class and the appropriate TMRS consultant to the Executive Director for approval. Co-investments will be reported to the Board immediately after being signed by the Executive Director and will be discussed in more detail at the next Board meeting.

C. The **Chief Investment Officer (CIO)** is part of the investment staff and directs the TMRS investment program consistent with Board-adopted investment goals and objectives, investment policy statements as contained in this IPS, and within applicable state and federal laws. The CIO ensures that adequate resources are available to implement the Board's investment policies, including custody relationships, internal procedures, qualified investment staff and analytical and risk management tools, subject to the budget approval process. The CIO works closely with internal investment staff and the investment consultant(s) to ensure that policies and procedures provide adequate controls to protect the integrity of the investment program, and oversees all investment processes including the selection and due diligence oversight of investment Managers.

D. The **General Counsel** serves as legal advisor to the System and reports to the Board (and administratively to the Executive Director). In regard to the investment program, the General Counsel or his/her designee coordinates all legal services requested by the CIO or other investment staff which include; the review, drafting, and negotiation of contracts, drafting of legal opinions, providing legal advice, overseeing outside counsel with regard to regulatory compliance matters, monitoring legislation and legal issues, drafting bills and administrative rules, and coordinating contracted legal work, including the selection, supervision, retention and evaluation of outside law firms.

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

Investment staff responsible for risk management supports the investment program at the strategic and operational levels through the establishment of appropriate policies and procedures as well as implementation and maintenance of analytical tools to measure and monitor risk as further described in the IPS and procedures documents.

F. The **Finance Department Staff** is independent of the Investment Department and serves as the record-keeper for the investment program.

G. The **Internal Auditor** reports to the Board (and administratively to the Executive Director). In regard to the investment program, the Internal Auditor is responsible for ensuring that there is an objective audit for all the investment functions. It is the Internal Auditor's objective to promote adequate and effective internal controls at a reasonable cost. Recommendations are expected to lead to economies and efficiencies in the System's investment operations and improvements in internal controls.

VIII. EXTERNAL PROVIDERS

A. The **General Investment Consultant** (Consultant) is hired by, and reports to, the Board. The Consultant provides advice to the Board on all investment-related matters, including the development of investment goals and objectives, investment policies and strategies, asset allocation decisions, high-level implementation issues, some Manager search, selection, monitoring and terminations, investment management guidelines and restrictions, analysis of investment performance, and internal staffing issues. The Consultant also provides the Board with educational opportunities designed to improve each Trustee's knowledge of investment practices and issues.

Although the Consultant is retained to provide competent, objective and independent advice to the Board, the Consultant is a valuable resource for investment staff, working closely with them in all aspects of the investment program and to ensure that issues remain focused and addressed specifically to TMRS' investment objectives, and in accordance with applicable state and federal laws.

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

C. **External Investment Management firms (Managers)** are retained by the Board to manage or advise on specific strategies and asset classes, through a Manager search process and according to specific qualifying criteria as set forth in this IPS. The Managers must manage or advise on the assets according to the terms of the contract governing the mandate and within guidelines and restrictions as set forth by TMRS. TMRS investment staff will monitor portfolio trade activity and are to be in regular communication with the Managers regarding market and economic conditions impacting a portfolio's strategy.

D. As needed, **External Counsel** will be retained by the System under the direction of the General Counsel or his/her designee, to provide legal counsel and ensure that investment contracts are legally binding and enforceable in an acceptable venue and to provide advice regarding regulatory matters related to investment matters.

E. The **Custodian Bank** serves as the master custodian of the System's assets and is responsible for maintaining the official book of record under the supervision of TMRS' Finance and Investment department Staff, calculating investment performance, and serving as an additional layer of risk control in the safekeeping of System assets.

F. The **Securities Lending Agent,** when utilized, is responsible for lending securities and reinvesting cash collateral according to this IPS and its guidelines. The Board may appoint the custodian bank or a third party to serve as the System's lending agent.

G. A **Transition Manager** may be retained by TMRS to assist in the transfer of assets from one investment Manager to another, and serves as a liaison between the investment staff, the custodian, the Manager distributing assets, and the Manager receiving assets. This transition may occur either within an asset class or between asset classes. The Transition Manager, chosen from the Board approved list of providers, is to facilitate clear communication between all parties, work to minimize market impact, trading costs and opportunity cost. The Transition Manager will provide a detailed post-trade analysis for investment staff. Investment staff will provide a summary of activity to the Board as needed. *(Also see Investment Manager Transitions in Section XIX.)*

IX. <u>INVESTMENT CONSULTANTS</u>

Investment Consultants must act as fiduciaries in their role as an investment consultant assisting and advising the TMRS Board and investment staff on investment matters, be bound by prudent expert standards, be approved registered investment advisors under the Investment Advisor's Act of 1940 as amended, and be independent. Independence is defined as not having other business relationships that could be construed as posing a conflict of interest. Further, with respect to the scope of services required, Consultants must demonstrate substantial expertise and experience in providing investment consulting and assistance in implementing institutional portfolio management, and possess the resources, capacity, qualifications, staff support, databases, contacts, software, and methods to research, assist, and advise the TMRS staff and Board. It is imperative that any Consultant have the independence and ability to inform the Board in the event of any concerns related to investment activity. Accordingly, the Board directs the Consultant to adhere to the following notification process if, in the Consultant's view, circumstances dictate.

A. Upon learning of an issue that the Consultant believes is material regarding deviation from prudence, objectivity, policy or parameter adherence or any other matter of concern involving the Board's investment program, the Consultant is to express that concern in writing to the Executive Director and CIO. A written response will be sent to the Consultant.

B. If the Consultant believes the issue warrants immediate action, the Consultant must make this clear in the original correspondence and, in addition, recommend the action to be taken. In this instance, a concerted effort must be made by the Consultant to contact TMRS by telephone, at the time the original correspondence is sent, in order to provide the Executive Director or CIO with a verbal description of the issue, the proposed action, and the justification for both.

C. Upon receipt of TMRS' response, the Executive Director, CIO, and the Consultant will review the response at the earliest practical time and determine the proper course of action. The Board will be contacted if it is concluded that further immediate action is required and is beyond the authority granted to the Executive Director or investment staff. In any event, all such material matters will be reported to the Board at its next regularly scheduled meeting

X. ASSET ALLOCATION & REBALANCING POLICY

A. Asset Allocation

The Board recognizes that the most important determinant of long-term return and risk is the asset allocation decision. The Board's Strategic Target Allocation is intended to reflect, and be consistent with, the return objective and risk tolerance expressed in this IPS. It is designed to provide the highest probability of meeting or exceeding the Board's objectives at a controlled level of risk and liquidity that is acceptable to the Board. In establishing the asset allocation, the Board considers TMRS' ability to withstand not only the long-term risk of underperforming its return objective but also short and intermediate-term volatility in investment performance and fluctuations in the financial condition of the fund.

The Board has adopted the following framework for the asset allocation decision.

The Strategic Target Allocation must deliver:

1. A representation of the Board's long-term return objective with its implied Risk Tolerance;
2. Sufficient confidence for the Board to "stay the course" given extreme market moves; and
3. A benchmark against which to measure performance.

The following requirements are considered in setting the Strategic Target Allocation:

1. The Board's long-term return objective and implied Risk Tolerance, to support a "static" asset allocation;
2. Asset classes that represent all of the global investment opportunities appropriate for TMRS;
3. Modern portfolio theory as the basis for deciding one asset allocation is better than another; and
4. A representation of capital market opportunities consistent with the above basis.

The Strategic Target Allocation and acceptable ranges as determined by the Board to facilitate the achievement of long-term investment objectives within acceptable risk parameters are as follows:

Asset Class	Minimum %	Strategic Target Allocation %	Maximum %
US Equity	12.5	**17.5**	22.5
International Equity	12.5	**17.5**	22.5
Core Fixed Income	5	**10**	15
Non-Core Fixed Income	15	**20**	25
Real Estate	5	**10**	15
Real Return	5	**10**	15
Absolute Return	5	**10**	15
Private Equity	0	**5**	10
Cash Equivalents	0	**0**	10

B. <u>Rebalancing Policy</u>

The Board has chosen to adopt a rebalancing policy that is governed by allocation ranges rather than time periods. The ranges, specified in the table above, are a function of the volatility of each asset class and the proportion of the total fund allocated to the asset class.

The goal of the rebalancing policy is to ensure that the integrity of the Strategic Target Allocation is preserved through a disciplined process that allows investment staff the flexibility to rebalance the portfolio between Managers within an asset class and between asset classes, within the Board Approved ranges, to adjust for market movements and consider current market conditions, or valuations, in portfolio allocations.

Investment staff is responsible for developing and implementing all portfolio re-balancing activities, subject to prior written approval by the Chief Investment Officer and the Executive Director, that are appropriate for existing circumstances. Investment staff will consider cash flows, opportunity costs, transaction costs and portfolio disruptions in any rebalancing implementation. The Consultant and/or investment staff will report the results of rebalancing activity to the Executive Director upon completion of the rebalance and to the Board at an upcoming Board meeting.

During the transition towards the Strategic Target Allocation, certain asset classes will exceed maximum limits and will serve as either a funding source for new strategies or portfolios, or as a proxy pending implementation of certain allocations.

XI. PERFORMANCE MONITORING

Performance measurement will be based on total rate of return and will be monitored over a sufficient time period to reflect the investment expertise of the Manager(s) over one full market cycle, or five years, whichever is less. Performance results and evaluation relative to objectives will be reported to the Board on a quarterly basis.

A. <u>Return Expectations</u>

1. Total Portfolio specific performance objectives include, but may not be limited to, the following:
    a) Achieve a total rate of return over rolling 5-year periods meeting or exceeding the Actuarial Return Assumption
    b) Exceed an appropriate benchmark reflective of asset class participation over rolling five-year periods (i.e. actual allocation index during the implementation period and policy index once fully implemented).

Based on recommendations by investment staff and Consultant, the Board has selected the following Policy Benchmarks and Policy Index:

Asset Class	Policy Benchmarks	Asset Class Goal	Policy Index
US Equities	Russell 3000 Index	Benchmark	17.5%
Int'l. Equities	MSCI ACW-ex US IMI (USD) net	Benchmark	17.5%
Core Fixed Income	Barclays US Aggregate Bond Index	Benchmark	10%
Non-Core Fixed Income	50% Barclays US Corporate High Yield Index 25% J.P. Morgan GBI Emerging Markets Global Diversified ($) Index 25% J.P. Morgan CEMBI Broad Diversified Index ($)	Benchmark	20%
Real Estate	NCREIF-ODCE Index	CPI + 5%	10%
Real Return	Barclays World Government Inflation Linked Bond Index	CPI +4%	10%
Absolute Return	HFRI Fund of Funds: Diversified Index	Cash (3-month Libor) + 5%	10%
Private Equity	Russell 3000 Index + 3%	Benchmark	5%
Cash Equivalents	30 Day T-Bill	Benchmark	0%
	TMRS Policy Index		100%

2. **Individual Portfolio Accounts**. Investment staff and the Consultant, subject to review by the CIO, will determine performance expectations for each Manager. Specific performance objectives for active strategies include, but may not be limited to, the following:
   a) Exceed an appropriate index or benchmark net of fees over rolling five- year periods
   b) Rank above median in an appropriate universe of Managers possessing a similar style over rolling five-year periods.
   c) Investment staff and the Consultant will evaluate performance relative to expectations and appropriate peer groups for each real estate, real return, private equity, absolute return and other unique Manager or fund structure.

There may be short-term variations from these objectives; the Board believes, however, that over the long-term (market cycle to market cycle), these goals should be attainable.

B. <u>Consequences of Underperformance</u>

If an investment portfolio's performance falls below expectations, and if the performance fails to improve relative to the standards detailed above and/or qualitative factor changes remain unresolved, the Manager may be considered for termination or redemption.

XII. <u>COMPLIANCE PROGRAM</u>

In coordination with the Chief Investment Officer, compliance personnel shall design and implement a detailed compliance program which uses a combination of daily, weekly and monthly testing of all testable parameters of this IPS and all Manager guidelines at the Manager, asset class and total fund level as appropriate. Testing may be completed either through systematic resources (i.e. automated custodial compliance) or manually if necessary. Compliance personnel shall create and present a quarterly report to the Board with the results of the testing performed during each period.

XIII. INVESTMENT RISK MANAGEMENT

A. Risk Management

TMRS will have a robust risk management program to identify, evaluate and manage all risks related to investment decisions and results. There are several key components to achieving this objective:

1. Ensuring that the risk representations in the capital markets models and assumptions used by the Board in setting the Strategic Target Allocation and Risk Tolerance are internally consistent, consistent with industry best practice, consistent with the Board's investment risk philosophy and with the risk analytics used for monitoring portfolio risk.
2. Ensuring that appropriate attention is paid to Manager specific risk contribution and portfolio impacts during the Manager selection process.
3. Ensuring that policies and procedures are documented and followed regarding risk identification, evaluation and management within the investment department.
4. Production of detailed risk reporting which provides senior management and the Board with a tool for ensuring that the intent of this IPS regarding investment risk is being followed.

B. Key Risks

The following are key risks that are identified and detailed in the internal procedures of the investment staff:

A. Strategic Risk- Strategic risk is the risk of pursuing the wrong investment strategy due to lack of clarity in investment beliefs, objectives and/or risk tolerance. To the extent any of these decision components change, the Strategic Target Allocation may no longer be appropriate and may require review. To ensure that the Strategic Target Allocation remains appropriate:
    a) The Strategic Target Allocation will be reviewed at least annually for reasonableness relative to significant economic and market changes or to changes in the Board's long-term goals and objectives.
    b) A formal asset allocation study will be conducted at least every three years to verify or amend the targets.
    c) A formal pension financial (asset-liability) study will be conducted at least every five years.

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

C. Investment Risk Reporting

Investment risk reporting is the responsibility of the risk management function. The reporting will be done at least quarterly through implementation of internal analytical resources and are expected to address the following areas at a minimum:

1. Significant market exposure deviations from benchmarks in the portfolio

2. Risk and return from attributed Manager performance relative to Manager benchmarks

3. Breakdown of forward looking risk in the portfolio relative to the Policy Benchmark

XIV. RISK BUDGETING

TMRS has adopted a risk budgeting and allocation framework for active risk. The purpose of this framework is to define a risk budget for Active Risk at the total fund level and to provide a transparent and measurable methodology for allocating that risk to active strategies in an optimal way.

The total fund risk budget is recommended to the Board based on the investment staff's estimate of what is necessary to achieve the Target Excess Return but not to exceed the Marginal Risk Tolerance implied by the choice of Strategic Allocation Target.

Regular Review

To ensure that the Risk Budget continues to be appropriate:

1. It will be reviewed at least annually, coinciding with the Strategic Target Allocation review and formal asset allocation study
2. More in-depth study will be done at least every five years and coincide with the formal pension financial (asset-liability) study.

XV. INVESTMENT MANAGER RESPONSIBILITIES

A. Legal Compliance

The Managers are responsible for strict compliance with any legal requirements as they pertain to their duties and responsibilities as fiduciaries in the management of the System's assets and for strict adherence to representations made in their contracts. Violations of these representations must be disclosed in writing within 3 business days.

Managers must meet qualifications as described in this section of this IPS and will be required to disclose in writing all actual, perceived, and potential conflicts of interest, including, without limitation, the details surrounding payment of any third party marketing fees related to TMRS' potential investment with such Manager. Specific disclosure requirements and avoidance of such conflicts to the extent possible will be addressed in the Manager contracts. Selected Managers must agree to comply with ongoing reporting of conflicts as required.

B. Manager Qualifications

Managers must act as fiduciaries and be bound by prudent expert standard in the management of the TMRS account, and be registered investment advisors (RIA) under the

Investment Advisor's Act of 1940 as amended (unless properly exempted from registration by the SEC) or otherwise regulated by an appropriate governmental regulatory oversight organization. SEC registration establishes certain regulated standards that are also addressed in TMRS due diligence activities such as implementation of a compliance system, establishment of a Code of Ethics governing the Manager's employees, maintenance of a wide range of books and records regarding their business and investment activity, best execution on transactions, and certain disclosures including financial and disciplinary actions. The Manager or its key investment professionals must be recognized as providing demonstrated expertise over a number of years in the management of institutional assets in the strategies for which the firms are retained, the firm must maintain liability and fiduciary insurance coverage, and must maintain adequate controls and operational support to fully execute the requirements of the Manager contracts.

C. <u>Evaluation Timetable</u>

Managers will be expected to provide to the Board, their consultant(s), and investment staff, on a timely basis each month/quarter or as requested, such data as is required for proper monitoring and defined in each Manager contract.

D. <u>Authority of Investment Managers</u>

Subject to the terms and conditions of this IPS and a properly executed contract, Managers will have the authority to direct investment, re-invest, exchange, and liquidate the assets of the managed accounts or investment funds as described in the Manager's contract.

Regardless of whether assets are managed via separately managed accounts, fund of one structures or commingled funds and mutual funds, ownership rights, such as proxy voting, will be exercisable by the Managers with respect to such investment (see Proxy Voting, Section XX).

If the Manager believes the IPS is too restrictive or should be amended in any way, written notification must be communicated by the Manager to the appropriate asset class director and CIO immediately for consideration.

XVI. INVESTMENT MANAGER SELECTION, MONITORING, WATCHLIST AND TERMINATION

To better ensure that Managers will successfully manage to the TMRS objectives for their specific mandates, the Board supports disciplined processes for Manager selection, monitoring, watchlist and termination, which are documented in internal investment staff procedures. In addition, the process for selecting Managers is intended to protect against unethical behavior including bribery and corruption and contact between TMRS and Managers during the search process, related to the pending selection, and intended to influence the search outcome. Contact will be limited to that specified in the search process documentation. Direct inquiries by Managers to individual Board members regarding the TMRS investment program will be referred to the TMRS investment staff.

XVII. INVESTMENT MANAGER RETENTION (IMR) POLICY

Manager retention decisions have the same potential impact on returns as do the initial selection of the Manager and should be afforded the same degree of attention. As in the search process, a discipline is needed which will minimize the probability of retaining an underperforming Manager that continues to underperform or terminating a currently underperforming Manager just before a period of very strong performance.

Managers may be evaluated using these criteria or other applicable standards:

1. Against appropriate market indexes on both a risk-adjusted and nominal basis;
2. Against peers within their style groups if data is available;
3. Adherence to their stated investment styles;
4. Adherence to this IPS and compliance with their established parameters; and
5. Against the specific expectations attributed to them in the Risk Budgeting and Allocation framework.

A. Comprehensive Reviews

Comprehensive Manager reviews are to be conducted and documented at least annually, to include quantitative as well as qualitative factors and may incorporate a due diligence visit by staff to the Managers' offices and meeting with all key relevant participants in the management of the TMRS portfolio. The results of an annual or ad hoc comprehensive review will be reported to the Board along with recommended action, if appropriate.

Comprehensive reviews will include a review of the Manager's performance, current investment strategy or style, and other issues related to the Manager's organization, personnel, or investment philosophy and process including compliance with requirement for best execution. If performance or organizational issues arise for a specific Manager, investment staff should be in contact with the Manager on a regular basis until the issues are resolved.

B. Watch List Additions and Recommended Actions

A Watch List will be maintained by investment staff for the purpose of ensuring that concerns regarding any Manager are recognized, appropriately addressed and resolved. At the discretion of the CIO, a Manager may be included on the Watch List based on written internal procedures. Once a Manager is placed on a Watch List, the Board will be notified immediately and discussed at the next Board meeting. Performance will be closely monitored and scrutinized until investment staff either removes a Manager from the Watch List and notifies the Board of such action, or a recommendation to terminate the Manager is made to the Board.

1. In addition to potential quantitative factors, a significant and potentially adverse event related, but not limited to any of the following qualitative issues or events may be considered a reason to add the manager to the Watch List. Watch List additions will be reported to the Board at its next regular meeting. Examples include, but are not limited to, these events:

    a) Significant changes in firm ownership and/or structure,
    b) Loss of one or more key personnel,
    c) Significant loss of clients and/or assets under management,

d) Shifts in the firm's philosophy or process,
e) Evidence that best execution policies are not being adhered to,
f) Significant and persistent lack of responsiveness to client requests,
g) Chronic violations of this IPS or guidelines, or
h) Any other issue of which the staff and/or Consultant become aware and that are deemed material.

Each situation should be handled on a case-by-case basis. Under certain circumstances, the Executive Director may exercise his authority granted within this IPS *(see Roles and Responsibilities)* and act to terminate a Manager.

XVIII. DELEGATION OF AUTHORITY FOR INVESTMENT MANAGER TERMINATION

A. The Board delegates to the Executive Director, the authority to terminate a Manager or initiate redemption procedures from a fund in which TMRS is invested, where it would be imprudent to delay such action pending formal Board approval. Such termination or withdrawal must be based on recommendation by the CIO and consultant, supported by proper documentation and at the discretion of the Executive Director, reviewed by Fiduciary Counsel and/or General Counsel.

In the event that a Manager is terminated in accordance with this section, the Executive Director is authorized to act on the following, as appropriate, based on recommendation by the investment staff and consultant:

1. Transfer assets from the terminating Manager to another Manager under contract with the System; or
2. Initiate a Manager search to replace the terminating Manager, and for the interim, transfer the assets, or the authority to manage the assets in the existing custodial account, from the terminating Manager to another Manager under contract, pending selection of the replacement Manager.

The Executive Director is authorized to negotiate a contract with the Manager receiving the assets to reflect the scope of their responsibility and related fees in regards to the assets. In determining the proper course of action, consideration will be given to the actual asset and sub-asset allocations relative to target allocations, impending portfolio structure changes, and investment Manager exposure. In the event that any such action affects Board-approved asset and sub-asset allocation targets, the Board will ratify this action or otherwise direct investment staff at the next scheduled Board meeting.

In the event that the Executive Director terminates a Manager or initiates a fund redemption process under these circumstances, the Executive Director will immediately notify the members of the Board regarding such action, and provide a full report on the matter at the next scheduled Board meeting.

XIX. INVESTMENT MANAGER TRANSITIONS

In the event of the need to perform transition management activities (including, but not limited to, the transfer of the management of assets from one investment management firm to another, exposure management during funding or de-funding of an investment management mandate, or the like), the Executive Director and Chief Investment Officer, with advice from the Investment Consultant, will determine the most efficient and prudent manner to perform such transition, including determining whether to use a Transition Manager, the legacy Manager(s) or the target Manager(s) to effect the contemplated asset restructuring.

1. If it is determined TMRS will use a Transition Manager, investment staff will select a Transition Manager from the Board's pre-approved list of Transition Managers after review of pre-trade analysis submitted by the Transition Managers, as well as each Transition Manager's expertise for the asset class(es) to be transitioned.
2. The Executive Director is authorized to engage a Transition Manager on the Board's pre-approved list of Transition Managers under the terms of a master agreement executed with each such Transition Manager requiring that the Transition Manager: be a registered investment advisor under the Investment Advisor's Act of 1940 as amended (unless properly exempted from registration by the SEC) or otherwise regulated by an appropriate governmental regulatory oversight organization (unless exempt from such registration requirement), act as a fiduciary to TMRS, not delegate such fiduciary responsibility, and provide agency-only execution services.
3. Transition Managers are specifically authorized to utilize derivatives to efficiently manage exposures and risks in any transition.
4. Following the completion of each transition event, investment staff will report to the Board on the results of the selection process, the estimated costs of the transition, and the actual costs of the transition.
5. On a periodic and as-needed basis, investment staff and Investment Consultant will provide analysis and a written opinion to the Board as to the status of the Board's pre-approved list of Transition Managers, the qualifications and performance of its members, and other relevant information.

XX. PROXY VOTING

Active voting of proxies is an important part of the Board's investment program.

A. **Separately Managed Accounts**. As per the Authority of Investment Managers in the Investment Manager Responsibilities section of this IPS, proxy voting for separately managed accounts is delegated to investment Managers and will be authorized via the Manager's contract to represent TMRS on issues of corporate governance regarding the portfolio in a prudent manner. Records of proxy votes will be maintained by the Managers and submitted to investment staff and/or external service providers on request or at specified intervals.

Investment staff will monitor the proxy voting practices of the Managers. External service providers may be retained by the Board to assist staff in its monitoring efforts. This monitoring will be coordinated with each Manager to reasonably assure the staff that Managers are fulfilling their fiduciary responsibilities with respect to proxy voting.

Investment staff will provide a proxy voting summary report for separately managed accounts to the Chief Investment Officer and Executive Director, on an annual basis as soon as practical after fiscal year-end. At a minimum, the summary report will contain, for each applicable Manager, the number of ballots cast, the number of issues voted upon, and percent of issues voted with management, against management and designated as abstaining.

XXI. GENERAL INVESTMENT MANAGEMENT GUIDELINES

General investment guidelines are described within the asset class guidelines contained in this section of this IPS; in addition, guidelines more specific to a Manager's mandate may be appropriate and will be documented in the Manager's contract. The investment staff, the Consultant, and the Manager, in advance of funding, will agree upon specific parameters to be contained in the Manager's contract which will include, at a minimum, specific descriptions of the mandate and relevant restrictions reflecting the risk management policies, authority of the Manager, communication requirements, proxy voting responsibilities, benchmarks, performance standards, reporting requirements, fees, and termination clauses. This IPS and subsequent revisions must be referenced and become a part of all separately managed account agreements.

CURE FOR POLICY VIOLATIONS

Managers are expected to maintain a robust compliance system that tests compliance with TMRS guidelines on a daily basis and ideally to do so on a pre-trade basis to ensure that they are managing the portfolio in accordance with TMRS guidelines and the terms of the properly executed contract at all times. However, in the event that a TMRS guideline is violated, Managers must notify TMRS investment staff within one business day of detection of the policy violation, and must provide a written plan for curing that violation or request an exception to this policy specific to the violation, subject to approval by the CIO.

PRINCIPAL PORTFOLIO GUIDELINES

1. Funds of the System will be invested, without distinction as to source, only in securities as that term is defined in the TMRS Act, and as authorized by this IPS.

2. Leverage is prohibited unless specifically authorized in writing in the IPS, Manager guidelines or controlling documents. For the avoidance of doubt, derivatives used solely for risk management purposes are not considered leverage under this IPS.

3. The term "risk management purposes" will be defined in each Investment Management Agreement (IMA) or other contract documentation for separately managed accounts.

4. Co-investments are allowed in each asset class and will be restricted to Managers and funds previously approved by the Board for investment. A proposed co-investment Manager's most recent review by staff must be positive and have been completed within the previous 15 months. For the avoidance of doubt, a Manager's initial hire date is considered a review for these purposes. Proposed co-investments must meet policy guidelines and limitations and be consistent with overall portfolio objectives for the strategy. Co-investment fees must be at or below approved fund management fees. Co-investment size is in addition to the Board approved mandate size and is limited to 25% of current commitment of approved fund, or $25 million, whichever is lower, subject to the Delegation of Co-Investment Authority in the Executive Director section of the Roles and Responsibilities portion of this IPS.

I. US EQUITY ASSET CLASS

A. Objective:
The US Equity allocation is intended to provide capital appreciation and is structured using a Core-Satellite Approach with the overall objective of exceeding its benchmark performance net of fees over rolling five year periods.

The benchmark and expected tracking error for a specific mandate will be stated in the Manager contract or otherwise agreed to in writing between TMRS and the investment Manager.

Active and Rules-Based Strategies with an active component are expected to add excess return within established tracking error limits and will meet quality, diversification, and liquidity guidelines as specified in the Managers' contracts.

B. Asset Class Structure
US Equities target allocations are structured as follows:

	% of Asset Class
Core Component	50%
Satellite Component	50%

C. Implementation:
This allocation will be implemented as follows:

Core Component will be implemented through traditional passive strategies. Passive strategies will be diversified by replicating a broad market index.

Satellite Component will be implemented through Rules-Based (passive strategies as well as strategies with an active component) and active strategies. Strategy selection will be determined through a quantitative process to identify an optimal risk/reward mix, together with a qualitative assessment of the implementation and due diligence costs. Specific styles or strategies are expected to outperform or underperform the general market at varying times.

D. Permissible Investments:

1. Index funds of broad US market benchmarks are eligible.
2. Active and passive commingled funds are eligible.
3. Separately managed accounts for active and passive strategies are eligible.
4. Other equity instruments which qualify as a "security" under TMRS' statutory authority are eligible (including exchange traded futures and options on currencies and securities).
5. All other derivatives not listed in #4 above may be used for risk management purposes only.

II. INTERNATIONAL EQUITY ASSET CLASS

A. Objective: The international equity allocation is intended to provide capital appreciation and diversification, and is structured using a Core-Satellite Approach with the overall objective of exceeding its benchmark performance net of fees over rolling five year periods.

The benchmark and expected tracking error for a specific mandate will be stated in the Manager contract or otherwise agreed to in writing between TMRS and the investment Manager.

Active and Rules-Based Strategies with an active component are expected to add excess return within established tracking error limits and will meet quality, diversification, and liquidity guidelines as specified in the Managers' contracts or otherwise agreed to in writing between TMRS and the investment Manager.

B. Asset Class Structure

International Equities target allocations are structured as follows:

	% of Asset Class
Core Component	50%
Satellite Component	50%

C. Implementation:

This allocation will be implemented as follows:

Core Component will be implemented through traditional passive strategies. Passive strategies will be diversified by replicating a broad market index or by investing across various regional market indexes.

Satellite Component will be implemented through Rules-Based (passive strategies and strategies with an active component) and active strategies. Strategy selection will be determined through a quantitative process to identify an optimal risk/reward mix, together with a qualitative assessment of the implementation and due diligence costs. Specific styles or strategies are expected to outperform or underperform the general market at varying times.

D. Permissible Investments:

1. Index funds of broad non-US market benchmarks are eligible and may include developed and emerging markets.
2. Active and passive commingled funds are eligible.
3. Separately managed accounts for active and passive strategies are eligible.
4. Other equity instruments which qualify as a "security" under TMRS' statutory authority are eligible (including exchange traded futures and options on currencies and securities).
5. All other derivatives not listed in #4 above may be used for risk management purposes only.

III. CORE FIXED INCOME ASSET CLASS

A. Objective:

The core fixed income asset class diversifies the risk of the overall investment portfolio with a secondary goal of capital preservation. The overall objective is to exceed its benchmark performance net of fees over rolling five year periods.

B. Asset Class Structure

Core Fixed Income target allocation is structured as follows:

	% of Asset Class*
US Core Fixed Income	70%
Core Plus Fixed Income	30%

*Based on Strategic Target Allocation

US Core Fixed Income will fund diversification efforts and in the interim, actual allocation will exceed allocation targets.

The **performance objective** is to exceed the Barclays US Aggregate Bond Index net of fees over rolling five-year periods and within tracking errors as specified in the Manager contracts, determined according to the specific strategies employed.

a) **Interest Rate Risk** will be controlled through duration management. Duration must be maintained within +/- 25% of the Barclays US Aggregate Bond Index

b) **Sector Risk** will be managed through maximum sector limits as set forth below based on Barclay's US Aggregate Bond Index Sector Classification Scheme (see Glossary). Sector and subsector ranges may be further defined within the Manager's contract.

TOTAL CORE FIXED INCOME PORTFOLIO WEIGHTINGS

Sector	Sector Max vs. Index Weight
US Treasury	No Limit
Government-Related	200%
Corporates	200%
Securitized (Aggregate of RMBS, CMBS & ABS)	200%
Residential Mortgage-Backed Securities	200%
Commercial Mortgage-Backed Securities	200%
Asset-Backed Securities	200%

LIMITS AS % OF PORTFOLIO

Category/Sector	% of Portfolio
Investment Grade Securities	Minimum 85%
Non-Dollar, High Yield & Emerging Market Combined	Maximum 20%
Non-Investment Grade Corporates	Maximum 15%

c) **Credit Default Risk. When calculating/evaluating credit quality, TMRS will use the middle rating of all three agencies when three ratings are available. If only two ratings are available, the lower rating shall be used and if only one rating is available, that rating shall be used.**

The following are the minimum credit quality constraints:

i. All securities must be rated at least B- by S&P or Fitch, or B3 by Moody's
ii. The portfolio shall maintain a minimum weighted average credit quality of A+
iii. Global US Dollar Denominated Bonds: Both the issue and the national government of the country where the issuer's primary operations are located (if the issuer is not the national government itself) must be rated investment grade, at least BBB- by S&P or Fitch, or Baa3 by Moody's.
iv. Securitized: The weighted average credit quality of securitized product must be AA.
v. Municipal Bonds: Municipal issues must be rated investment grade, at least BBB- by S&P or Fitch, or Baa3 by Moody's.
vi. Non US Dollar Denominated Bonds: Both the issue and the issuer's national government (if the issuer is not the national government itself) must be rated at least A- by S&P or Fitch, or A3 by Moody's.

C. Concentration Risk

1. **Issuer risk** will be managed through the following limits.
   a) Investments in a single government related issuer (excluding US Treasuries and US Agencies) will not exceed 5% of the total market value of the Core Fixed Income and Manager mandates.
   b) Investments in a single corporate issuer will not exceed 2% of the total market value of the Core fixed income portfolio and Manager mandates.
   c) For asset-backed, non-agency mortgage-backed and commercial mortgage-backed securities, each separate trust (pool of assets) is defined as a separate

issuer and will not exceed 1.5% of the total market value of the Core fixed income portfolio and Manager mandates.

2. For purposes of these guidelines, the term "issuer" will mean a given entity and its affiliates.

D. Permissible Investments: The following are permissible investments for the fixed income portfolio, subject to minimum credit quality constraints outlined above.

1. Security types qualified as eligible for the Barclays Capital US Aggregate Bond Index ("Eligible Security Types");
2. US Treasury Futures: US Treasury Note contracts and US Treasury Bond contracts cleared on a US futures exchange, with a maximum maturity of the futures contract being no greater than 360 days. US Treasury Futures used to gain nominal exposure in a portfolio must be fully backed by Cash Equivalents equaling the notional contract value of the US Treasury Futures. US Treasury Futures used solely for risk management purposes do not need to be backed by Cash Equivalents.
3. Collateralized Mortgage Obligations created from US Agency Mortgage-Backed Pass-Thru Securities except leverage structures such as Inverse Floaters, Interest Only, Inverse Interest Only, Accrual (Z), and other residual types.
4. Forward purchase or to-be-announced (TBA) mortgages are allowed for obtaining Agency mortgage exposure for liquidity and relative value purposes. TBA mortgage transactions require positive trade date cash until settled or paired with offsetting TBA sale to avoid leverage in the overall portfolio.
5. US privately placed investment grade Mortgage-Backed Securities including single-family residences, commercial loans, and other privately placed mortgage-backed securities.
6. Eligible Commercial Mortgage-Backed Securities must be multi-borrower, multi-property, multi-property type transactions. As such this includes A1A tranches. Limits on non-agency Mortgage-Backed Securities may be specified in the Manager's contract.
7. Floating-rate issues
8. Global US Dollar Denominated Bonds
9. Municipal Bond
10. Non US Dollar Denominated Bonds
11. High Yield Corporate Bonds
12. US Treasury Inflation-Protected Securities
13. Foreign currency for purposes of settling a transaction
14. Currency forward commitments for purposes of hedging or settling a transaction
15. The portfolio may invest in non-dollar securities on a currency hedged or unhedged basis.
16. Cash equivalent securities per TMRS Cash Equivalents investment policy guidelines.

IV. NON CORE FIXED INCOME ASSET CLASS

A. Objective:

The non-core fixed income asset class diversifies the risk of the overall investment program and is designed to provide both income and capital appreciation. The overall objective is to exceed its benchmark performance net of fees over rolling five year periods.

B. **Performance Objective**

The **performance objective** is to exceed the returns of a blended benchmark comprised of the Barclays US Corporate High Yield Index 50%, the JPM GBI-EM Global Diversified Index (USD Unhedged) 25%, and JPM CEMBI Broad Diversified Index 25%, net of fees over rolling five-year periods and within tracking errors as specified in the Manager contracts or otherwise agreed to in writing, determined according to the specific strategies employed.

C. Eligible Markets

Against the policy benchmark for the Non-Core Fixed Income asset class, the following fixed income sub-sectors will be eligible in the overall construction of the portfolio.

a) US Government, Agency and Global Sovereign Securities
b) Global Corporate Investment Grade Debt
c) Global High Yield Debt
d) Loans
e) Emerging Market Debt
f) Opportunistic Fixed Income (distressed, mezzanine, multi-strategy, etc.)
g) Structured Credit (CLO's, RMBS, CMBS, ABS, etc.)

Sub-asset class limits are outlined below:

Sector	Guidance Allocation Limit
Global High Yield Debt	0%-25%
Loans	0%-50%
Emerging Market Debt	0%-20%
Opportunistic Fixed Income	0%-50%
Structured Credit	0%-40%

D. Interest Rate Risk

Interest rate risk will be controlled through duration management in certain sub non-core fixed income asset class. If appropriate, any limitations will be specified in each individual Manager agreement.

V. <u>REAL RETURN ASSET CLASS</u>

A. Objective:

The Real Return asset class is used for, return enhancement, diversification and inflation protection.

The Real Return portfolio will include strategies that provide both favorable stand-alone risk-adjusted returns as well as the benefit of hedging inflation for the System. Real Return strategies are not necessarily a separate asset class but may include real assets as well as financial assets that have a positive correlation to inflation. Additionally, real return Managers may attempt to add value by tactically allocating to various asset classes according to how each asset class performs across an economic cycle and the Manager's perception of where we are in the cycle. The goal is to invest in inflation sensitive assets during inflationary periods, and avoid those assets in deflationary periods, thus providing a positive real return across the cycle.

The Real Return opportunity set includes, but is not limited to, the following:

- GTAA (Global Tactical Asset Allocation)/ Global Macro
- Inflation Linked Securities
- Inflation Sensitive Equities
- Commodities
- Private Real Estate / REITS
- Private Infrastructure / Listed Infrastructure
- Natural Resources
- Private Assets
- Financing Strategies

The Real Return allocation shall seek to achieve the following:

1. Short-term benchmark: For periods less than five years or a full market cycle, the allocation should achieve an annual rate of return that exceeds the appropriate benchmark (the weighted average return of the underlying investment benchmarks) annually over a complete market cycle, net of all investment management fees.

2. Strategic benchmark: For periods greater than five years or a full market cycle, the allocation should not only outperform the short-term benchmark, but also achieve a rate of return that exceeds the appropriate inflation protection oriented long-term benchmark (CPI + 400 basis points) as well.

B. Portfolio Guidelines

No more than 35% of the total net assets of the Real Return portfolio may be invested in any one registered investment vehicle, mutual fund, or separately managed account.

No more than 15% of the total net assets of the Real Return portfolio may be invested in any single closed-end or open-end private investment vehicle.

No investment in any commingled open-ended investment vehicle may account for more than 20% of the net assets in that investment vehicle.

No investment with any one single Manager may account for more than 25% of that Manager's total assets under management.

VI. ABSOLUTE RETURN ASSET CLASS

A. Objective:

The Absolute Return portfolio is to identify strategies that provide both favorable stand-alone risk-adjusted returns as well as the benefit of diversification for the overall plan. Absolute Return Strategies, by definition, are not necessarily a separate asset class, but broaden the opportunity set within existing asset classes or exposures such as stocks, bonds, currencies and commodities by going both long and short, employing derivatives and leverage, shortening and extending investment horizons, and moving across public and private markets, amongst others. By focusing on the idiosyncratic risks of security selection and often attempting to minimize systematic market risks through hedging activities, absolute return Managers can make investment decisions unconstrained by restrictive relative benchmarks such as the S&P 500 or Barclay's Aggregate Bond Index, and add value to portfolios by achieving favorable risk-adjusted returns in most market environments while also reducing overall portfolio volatility.

The Absolute Return opportunity set is generally considered to include hedge funds and other strategies attempting to achieve positive returns without heavy reliance on the assumption of traditional systematic risk factors. Investment vehicles used to access this opportunity set can include limited partnerships, but also mutual funds, ETFs, and separately managed accounts, amongst others. Absolute return strategies are extremely heterogeneous, as Managers have both greater variability within a strategy and the flexibility to evolve across styles and asset classes. This is a key benefit of Absolute Return Strategies however, it also makes strategy classifications less meaningful and Manager selection significantly more important. It also necessitates relatively broader allowable strategy ranges than in other more traditional asset classes.

TMRS can only invest in securities as defined in the TMRS Act. The list of strategies that the TMRS Absolute Return Portfolio may utilize includes, but is not limited to:

- Equity Strategies
- Event Driven
- Credit Strategies
- Relative Value:
- Multi-Strategies:
- Global Macro: and
- CTA/Commodity/Currency.

B. The Absolute Return allocation shall seek to achieve the following.

1. Short-term benchmark: For periods less than five years or a full market cycle, the allocation should achieve an annual rate of return that exceeds the appropriate benchmark (HFRI Fund of Fund: Diversified Index), net of all investment management fees, with similar risk relative to the benchmark.

2. Strategic benchmark: For periods greater than five years or a full market cycle, the allocation should not only outperform the short-term benchmark, but also achieve a rate of return that exceeds the appropriate long-term benchmark (3-month LIBOR + 500 basis points) as well.

C. Portfolio Guidelines

No more than 10% of the total net assets of the Absolute Return portfolio allocation may be invested with any single separately managed account.

No more than 15% of the total net assets of the Absolute Return portfolio allocation may be invested (through multiple products) with any single hedge fund Manager (excluding Funds of Funds).

No more than 20% of the total net assets of the Absolute Return portfolio allocation may be invested with any mutual fund or similarly registered investment vehicle.

No investment in any investment vehicle may account for more than 25% of the net assets in that commingled fund or limited partnership.

No investment with any single Manager may account for more than 25% of that Manager's total assets under management (including Funds of Funds).

Policy allocations and ranges for the strategies in the Absolute Return allocation are:

Allocation Targets		Range
Equity Strategies	15.0%	5.0% to 35.0%
Event Driven Strategies	15.0%	5.0% to 35.0%
Credit Strategies	15.0%	5.0% to 35.0%
Relative Value Strategies	15.0%	5.0% to 35.0%
Multi-Strategies	10.0%	5.0% to 35.0%
Global Macro	15.0%	3.5% to 30.0%
CTA/Commodity/Currency	0.0%	0.0% to 20.0%

Important note: The Allocation Targets are not intended to add up to 100%.

As the Absolute Return allocation can invest in various investment vehicles and strategies with differing liquidity profiles, it is important to consider liquidity as a separate risk spectrum. In order to manage the portfolio and provide the System liquidity as necessary, but remain flexible enough to capture returns available in moderately illiquid opportunities, the Absolute Return allocation will adhere to the following liquidity targets:

No more than 60.0% of the Absolute Return portfolio as a whole is to be committed to vehicles that provide liquidity on a greater than annual basis.

No more than 20% of the portfolio may be committed to vehicles with a greater than 3 year lock-up in the Absolute Return portfolio.

VII. <u>REAL ESTATE ASSET CLASS</u>

A. Objective

The purpose of the real estate allocation is to enhance total return and provide diversification to the overall investment portfolio. Due to the illiquid and cyclical nature of the real estate asset class, investment staff and the Real Estate Investment Consultant ("RE Consultant") recommend that the Strategic Target Allocation be invested over a multi-year period in order to avoid considerable vintage year risks.

B. Return Objective

1. **Return expectations**

    a) The long-term objective for the TMRS real estate portfolio is a real rate of return (adjusted for inflation) of five percent (5%), net of investment management fees.

    This return shall be calculated on a time-weighted basis using industry standard reporting methodologies as defined by Global Investment Performance Standards ("GIPS") and the National Council of Real Estate Investment Fiduciaries ("NCREIF") on a three, five and ten year basis.

    b) The real estate portfolio is also expected to generate returns, net of all fees and expenses, in excess of the National Council of Real Estate Investment Fiduciaries Open End Diversified Core Equity Index ("NCREIF ODCE") over rolling five year investment time horizons.

    c) US public market investments should exceed the FTSE NAREIT US Real Estate Index over rolling five year investment time horizons net of fees and expenses and global public market investments should exceed the FTSE EPRA/NAREIT Global Real Estate Index over rolling five year investment time horizons net of fees and expenses.

C. Investment Sectors

TMRS' allocation to real estate will be diversified among a variety of private and public market investment types in order to reduce the volatility of real estate returns and the risk of loss of capital. The following are general categories used for diversification of the real estate portfolio:

1. **Core Investments.** Stable and Income Producing with Limited Risk.

2. **Value-Added Investments.** Generally core property types with an identifiable deficiency that can be corrected and converted to Core.

3. **Opportunistic Investments.** Similar to Value-Added investments but with greater risk characteristics such as distressed assets, development, land and international properties.

4. **Public Real Estate Securities.** Publicly listed and traded global real estate securities.

D. Investment Structures. Due to the size of the TMRS portfolio, the preferred investment structure for private real estate investments is commingled funds. Both Commingled Fund and Separate Account Structures may include private real estate investments including but not limited to Co-Investments, public real estate securities, or commercial mortgages.

E. Diversification and Risk Management Guidelines

TMRS will seek to control risk in its real estate investment program by diversifying the investments through investments in the following:

1. **Sector Diversification** - Core, Value-Added, and Opportunistic.

   TMRS shall seek diversification in Real Estate sectors as follows:

Sector	Target Allocation Range
Core	50-100%
Value-Added	0-50%
Opportunistic	0-25%
Public Securities	0-20%

2. **Property Type Diversification** – TMRS shall seek diversification through investments in the following property types:

Type	Target Allocation Range
Office[a]	10-50%
Retail	10-35%
Multi-family[b]	10-45%
Industrial	10-35%
Other[c]	0-30%

a Office includes medical office
b Multi-family includes for-rent student housing
c Other includes hotel, land, self-storage, senior housing, etc.

3. **Geographic and Economic Location Diversification**. The TMRS' real estate portfolio shall seek to include investments diversified across various locations with different economic concentrations. The portfolio shall be at least 80% invested in US markets.

4. **Real Estate Investment Manager Diversification**. TMRS shall utilize various investment Managers for real estate. TMRS will limit the amount committed to one investment Manager to no more than twenty percent (20%) of the total allocation for real estate investments.

5. **Vintage Year Diversification**. To avoid excessive exposure to any one real estate cycle, TMRS shall not commit more than 30% of the total real estate allocation for investment during any one calendar year.

6. **Public Real Estate Security Limits.** TMRS shall not invest more than 20% of the TMRS real estate portfolio in public real estate securities.

7. **Commercial Mortgage Limits**. TMRS shall not invest more than 20% of the TMRS real estate portfolio in commercial mortgages.

8. **Leverage.** TMRS recognizes that leverage is an inherent component of real estate investments and the use of leverage can be an effective means to increase overall returns from time to time on a risk-adjusted basis. There will be a limit of 65% loan to value of the total real estate portfolio.

   All portfolio leverage will be secured through the individual fund investments. There will be no recourse debt to TMRS permitted.

9. **Investment Size.** The maximum investment size for any single investment (e.g. commingled fund, commercial mortgage account, real estate securities account) shall be limited to fifteen percent (15%) of the total real estate allocation at the time of Board approval.

10. **Valuation Policy.** Consistent with best practices for valuation of real estate investments, TMRS requires that real estate values be reported by the Real Estate Funds in which it invests (the "Real Estate Funds") on a quarterly basis. Quarterly valuations are preferred but must be conducted no less than semi-annually. Exceptions to this policy include non-stabilized properties which can be held and valued at cost by the Real Estate Funds and so will not be externally valued until stabilized. Non-stabilized properties may include but are not limited to those under construction or renovation as well as land held for future expansion or entitlement.

    a) **Valuation Requirements.** The scope must be sufficient to demonstrate that the value of each property held has been appropriately determined. The scope should include, but not be limited, to the following:
       i. Must have and follow their own written valuation policies
       ii. Must notify TMRS if the written internal valuation policy is changed
       iii. Must use appropriate, established valuation techniques
       iv. Valuation process oversight, review, and approval must be independent of the portfolio Manager with approval so documented
       v. Sufficient documentation for Real Estate Fund auditors to re-compute the calculations during audit
       vi. Reconciliation of any significant variance from the previous appraisal
       vii. If an external valuation firm is used to conduct any part of the appraisal process they must:
          a. be performed in accordance with Uniform Standards of Professional Appraisal Practice (USPAP) for US investments and either the International Valuation Standards as set forth by the International Valuation Standards Committee (IVSC) or the appropriate authoritative standard in the country in which the property exists, and

b. Differences between external valuation and the valuation used in reporting by the Real Estate Funds, and the reason for the differences, must be disclosed by the Real Estate Funds.

b) TMRS' real estate consultant in conjunction with investment staff is required to confirm compliance by the Real Estate Funds with appropriate valuation procedures on an annual basis.

VIII. PRIVATE EQUITY ASSET CLASS

A. Objective

The Private Equity asset class is intended to enhance the total fund performance through investment in non-publicly traded securities by generating a long-term rate of return that exceeds that of publicly-traded equities. Private equity investments are expected to be illiquid and long-term in nature.

Private equity strategies generally include, but are not limited to, buy-outs in private companies, venture capital, growth oriented or minority equity investments; and special situations or opportunistic investments such as distressed securities and lending strategies, mezzanine and hybrid positions or other structured investments. The private equity market can be accessed using the primary market as well as secondaries and co-investments.

The long term policy objective is Russell 3000 + 3.00% over periods of five years and greater.

B. Structure

Strategy	Range
Control/Buy-out	40.0% to 75.0%
Venture/Growth/Minority	5.0% to 25.0%
Special Situations/Opportunistic	10.0% to 35.0%

Geography	
U.S.A.	Min. 80%
International	Max. 20% (measured as a % of Net Asset Value)

C. Guidelines

No more than 35% of the total net assets of the Private Equity portfolio may be invested with any one Manager across multiple funds, except for Managers of a fund-of-funds, secondaries funds or funds-of-one established to buy fund-of funds or secondaries.

No more than 25% of the total net assets of the Private Equity portfolio may be invested in any one investment vehicle, including limited partnerships or limited liability companies, with the exception of a fund-of-funds, secondaries funds or funds-of-one established to buy fund-of funds or secondaries.

No investment with any one Manager may account for more than 25% of that Manager's total assets under management.

No more than 35% of the total net assets of the Private Equity portfolio may be committed on a primary basis in any one calendar year. Secondary funds and fund-of-funds that have, or will have, vintage year diversification, are excluded from this calculation.

IX. CASH EQUIVALENTS

A. Objective:

Cash balances are generated for the purpose of satisfying cash flow requirements of the System, reallocating assets between portfolios, and from ordinary investment activity within a Manager's portfolio. The investment objective is to safeguard principal, maintain adequate liquidity to meet anticipated needs, and earn incremental yield.

The performance objective for the commingled vehicles individually, and for the unallocated cash investments in the aggregate, is to exceed the return of 30-day T Bills.

B. Unallocated Cash will be invested by investment staff in the following commingled vehicles.

1. Custodian bank's STIF vehicles,
2. AAA-rated money market mutual funds registered with the US Securities and Exchange Commission under Section 2(a)-7 as an investment company under the Investment Company Act of 1940, when authorized by the CIO.
3. **Concentration Limits**
   a) Investments in the Custodian Bank's short-term investment fund and investments in AAA-rated SEC registered 2(a)-7 money market funds are limited to 5% of the money market fund size at the time of purchase; except that
   b) Investments in 100% US Treasury or 100% US Agency only funds are limited to 10% of the money market fund size at time of purchase.

C. Manager Guidelines for Investment of Cash Equivalents

Note: Managers apply different strategies to meet cash flow liquidity needs. For the purposes of this IPS, cash balances and Cash Equivalents within a Manager's mandate are defined as:

1. those necessary to fully support derivatives and unsettled trades as well as withdrawal requirements;
2. having maturities of up to 397 days;
3. securities that satisfy the Credit Risk requirements in this section;
4. listed as Permissible Investments within this section.

Cash equivalents will fall within the concentration limits of the Manager's mandate.

D. **Credit Risk** will be controlled by requiring minimum ratings by sector as outlined below and through rigorous credit analysis. A downgrade of a security which creates a violation in the guidelines shall not require an immediate sale if the Manager determines that risk of further credit deterioration does not exist and obtains TMRS approval with appropriate documentation to continue holding the security. The following is the minimum credit quality for each of the sectors.

1. Commingled Vehicles
   a) The minimum credit quality of SEC registered 2(a)-7 Money Market Funds is AAA.
   b. The Custodian Bank's short term investment fund can be non-rated but will maintain a minimum average credit quality of A1/P1.
   2. Money Market Instruments, and Notes, Bonds, and Debentures shall have a minimum short-term rating as provided by a Nationally Recognized Statistical Rating Organization ("NRSRO") as follows:
   a) Any two of the following: A-1 by Standard & Poor's ("S&P"), P-1 by Moody's Investor Services ("Moody's"), F-1 by Fitch or an equivalent rating by another NRSRO.
   b) For securities with stated maturity 366 days or more from time of purchase, long-term ratings shall be used only if a security is not short-term rated and no security of the same issuer that is comparable in priority with such security is rated. Where a long-term rating is used, the issuer must have a minimum investment grade rating.

E. Permissible Investments. The following are permissible investments as cash equivalents, subject to credit quality restrictions outlined above.

1. Debt obligations issued by the US Government, its agencies and instrumentalities
2. Debt obligations of a US state or local government
3. Commingled Vehicles
   a) Money market mutual funds registered with the US Securities and Exchange Commission under Section 2(a)-7 as an investment company under the Investment Company Act of 1940
   b) Custodian bank's short term investment funds.
4. Money Market Instruments:
   a) Bankers' Acceptances
   b) Certificates of Deposit
   c) Commercial Paper
   d) Time Deposits
5. Notes, Bonds, Debentures:
   a) Corporate Bonds
   b) Medium Term Notes
   c) Floating Rate Corporate Bonds
6. Repurchase Agreements
   Repurchase Agreements with a maximum term of seven (7) days and subject to the following requirements:
   a) Permitted Collateral:
   b) US Government Securities, which will include securities issued or guaranteed as to principal and interest by the United States Government, its agencies, instrumentalities, establishments or the like, marked to market on a daily basis.
   c) Manager must monitor and manage counterparty risk in the context of the total portfolio.
   d) Margin Requirements: Collateral must have an initial collateral margin of 102%.

X. SECURITIES LENDING

A. Objective

The objective of the securities lending program is to generate incremental income from overnight and certain term loans of securities held, subject to guidelines described herein, utilizing a high-quality and reasonably conservative cash collateral re-investment program that safeguards the return of principal and maintains adequate daily liquidity to support trade settlement activity and portfolio restructuring activities.

B. Lending Agent

1. Agent Qualifications

The Securities Lending Agent or its parent organization must:

a) be experienced in the operation of a fully secured securities lending program;
b) indemnify the System against any loss resulting from borrower default or from its own failure to properly execute its responsibilities under the lending agreement;
c) maintain a favorable SSAE16 or ISAE 3402 report reflecting appropriate risk controls;
d) be rated at least "A" by two of the following nationally recognized rating services: Moody's Investors Service, Standard and Poor's Corporation, and Fitch Ratings; and
e) maintain Tier 1 and Total Capital Ratios of 7% and 10%, respectively.

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

2. General Standards of Care and Practices of Securities Lending Agent

a) **Lending Agent as Fiduciary**
The Securities Lending Agent must act as a fiduciary in the management of the TMRS account, and will manage the market risk of the reinvestment of cash collateral through careful monitoring and consideration of the maturity structure of the reinvested cash collateral relative to the System's outstanding loans.

b) **Collateral Segregation**
Cash Collateral or US Government securities must be received by the Securities Lending Agent and held in a fully-paid segregated account invested according to approved guidelines described below.

C. Program Guidelines

1. Borrower Limits and Collateralization

The securities lending agent will be responsible for in-depth ongoing credit review of borrowers, independent of the agent's securities lending decision-makers. TMRS investment staff will work with the securities lending agent to create and maintain a custom approved borrower list. The lending agent cannot make loans to borrowers who do not appear on TMRS' approved borrower list, and will regularly report to TMRS investment staff regarding counterparty exposures. TMRS investment staff will review the custom borrower list with the lending agent on at least a semi-annual basis to make revisions as agreed upon by TMRS and the lending agent.

The market value of TMRS' securities loans outstanding to an approved borrower at the end of each business day should be no greater than 25% of the total market value of TMRS' securities on loan. Market price volatility and fluctuating demand for securities may cause the market value of TMRS' securities lent to an approved borrower to temporarily exceed these limitations. If such an event occurs, the securities lending agent will reduce the amount of loans outstanding to that borrower to comply with the stated limits.

Because the securities lending agent provides borrower default indemnification, the securities lending agent has the ability to reduce the amount of loans it makes to borrowers on TMRS' behalf, without approval from TMRS investment staff.

The Securities Lending Agent will collect and maintain proper overcollateralization as follows:

a) Domestic (United States domiciled and Non-US domiciled issued in US dollars) securities: Initial Margin of 102%
b) International (non-United States domiciled) securities: Initial Margin of 105%

2. Eligible Collateral

a) Cash (US dollars)
b) US Government Securities

3. Cash Collateral Reinvestment Guidelines

Cash collateral may be reinvested through a pooled fund managed by the Securities Lending Agent or through a separately managed account structure. Investment staff will evaluate and may recommend the use of a commingled pool considering the benefits of liquidity that a pool structure offers in conjunction with its investment objectives, guidelines, restrictions, and strategy. Such analysis will also consider transparency of the investment process and internal controls.

GLOSSARY OF TERMS

Absolute Return Strategies – strategies that seek to deliver positive returns regardless of market conditions across a wide range of asset classes and trading techniques. Absolute return Managers focus on absolute risks and returns, instead of viewing risk relative to a benchmark. Since these strategies are less constrained, they rely more on Manager skill. Funds of hedge funds are a common method of gaining exposure to absolute return strategies and are generally comprised of a diversified pool of hedge funds that may include the use of derivatives, leverage, and short selling.

Active Risk - the risk due to any departure from the Policy Index including:

i. Allocation differences due to policy implementation schedule
ii. Allocation differences due to timing of rebalancing decisions
iii. Active Manager performance

Agent – any individual or entity acting on behalf of another.

Asset Allocation Decision – choosing among broad asset classes such as equities, fixed-income securities and real estate.

Asset-Backed Security (ABS) – bonds that are securitized by receivables – such as credit cards, second mortgages, automobile loans, equipment leases, airline ticket receivables, boat and recreational-vehicle loans, unsecured personal loans, automobile and truck dealer inventories, and mobile homes. These securities are typically structured to offer high credit ratings.

Asset-Backed Commercial Paper - issued by a special purpose vehicle or conduit that generally uses the proceeds of issuance to obtain interest in various types of assets.

Asset Class Structure – strategic target allocations of sub-asset classes and implementation strategies within a specific asset class. The asset class structure objective is to improve on the risk and return profile of the asset class benchmark.

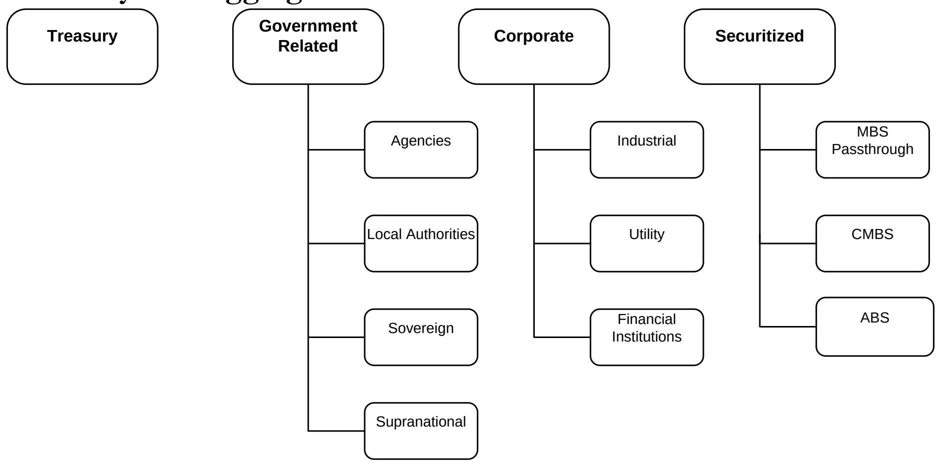
Auction Rate Securities - debt instruments with a long-term nominal maturity whose interest rate is regularly reset through a dutch auction.

Bank Loans – common term for high yield or leveraged bank loans; although they are senior secured instruments, they can be highly volatile and experience equity-like returns as well as significant price erosion and permanent loss of capital.

Benchmark – a gauge in the securities market by which investment performance can be measured. The following benchmarks apply to the TMRS investment program:

- **Barclays US Aggregate Bond Index -** generally represents investment grade bonds being traded in the United States and includes Treasury securities, Government Related bonds, Mortgage-backed bonds, and Corporate bonds.

Barclays US Aggregate Bond Index Sector Classification Scheme



- **Barclays US Aggregate Corporate Index** – Broad-based benchmark that measures the investment grade, U.S. dollar-denominated, fixed-rate, taxable corporate bond market. Issuers must meet specified maturity, liquidity, and quality requirements.

- **Barclays U.S. Corporate High Yield Index** – measures the market of U.S. dollar-denominated, non-investment grade, fixed rate, taxable corporate bonds. The middle rating of Moody's, Fitch, and S&P is Ba1/BB+/BB+ or below, excluding emerging market debt.

- **Barclays Global Aggregate Bond Index –** a broad-based measure of global investment grade fixed-rate debt and includes Treasury, government-related, corporate, and securitized in the following markets: Australia, Canada, Chile, Czech Republic, Denmark, Eurozone (Austria, Belgium, Cyprus, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Malta, Netherlands, Portugal, Slovakia, Spain), Hong Kong, Hungary, Japan, Malaysia, Mexico, New Zealand, Norway, Poland, Singapore, South Africa, South Korea, Sweden, Switzerland, Taiwan, Thailand, UK, and the US.

- **Barclays US Long Government/Credit Bond Index** - a subset of the Barclays US Aggregate Bond Index reflecting a longer average maturity. It includes Treasuries, Government Related and Corporate issues that have remaining maturities of 10 years or more.

- **Barclays US TIPS Index** – a rules-based, market value-weighted index that tracks inflation-protected securities issued by the U.S. Treasury. TIPS are indexed to the non-seasonally adjusted Consumer Price Index for All Urban Consumers, or the CIP-U.

- **Barclay's World Government Inflation-Linked Bond Index –** includes only government issuers of inflation-linked bonds in the following major markets: Australia, Canada, France, Germany, Italy, Japan, Sweden, UK, and the US.

- **Consumer Price Index –** inflation indicator that measures the change in the price of a fixed basket of goods and services including housing, electricity, food, and transportation.

- **Credit Suisse Leveraged Loan Index** – designed to mirror the investable universe of the U.S. dollar denominated leveraged loan market. Maximum ratings by Moody's/S&P are

Baa1/BB+ or Ba1/BBB+; all loans are funded term loans with a tenor (time to maturity) of at least one year and all issuers must be domiciled in developed countries.

- **DJ-UBS Commodity Index** – composed of futures contracts on physical commodities, with concentration limits by any one commodity of 2%-15% of the index and by sector of 33% of the index.

- **iMoneyNet Money Fund Average** – average yield of a comprehensive database of institutional money market funds and widely used by the cash investment industry as an index for benchmarking performance.

- **HFRI FOF Composite Index** - average is created by Hedge Fund Research, Inc. and is a broad representation of funds that are each invested in multiple hedge funds across investment strategies.

- **J.P. Morgan Global Bond Index (GBI) Emerging Markets Global Diversified Index ($)** – comprehensive index of emerging market government bonds excluding China and India.

- **J.P. Morgan Corporate Emerging Markets Bond Index (CEMBI) Broad Diversified Index ($)** – index of liquid corporate emerging markets issuers.

- **MSCI-ACW ex US IMI (All Country World ex US Investable Market Index)** - a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed and emerging markets. As of August 31, 2016 the MSCI ACWI-ex US IMI consisted of 45 country indices comprising 22 developed and 23 emerging market country indices. Note: Free float adjustment of outstanding shares excludes shares held by strategic investors such as governments, corporations, controlling shareholders, and management, and shares subject to foreign ownership restrictions.

- **MSCI EAFE (Morgan Stanley Composite Index)** – Europe, Australasia, and Far East Index includes 21 MSCI country indices, representing the developed markets outside of North America.

- **NCREIF FI-ODCE (National Council of Real Estate Investment Fiduciaries Fund Index- Open End Diversified Core Equity)** - includes 26 open-end commingled funds pursuing a core investment strategy.

- **FTSE NAREIT US Real Estate Index**– reflects exposure to all investment and property sectors across the US economy.

- **FTSE EPRA/NAREIT Global Real Estate Index** – currently represents over 400 stock-exchange listed real estate companies in 37 countries around the globe and is widely used by institutional investors, money Managers and funds.

- **Russell 3000 Index** – includes 3,000 publicly held US companies based on total market capitalization, which represents approximately 98% of the investable US market.

- **S&P 500 Index** – capitalization-weighted index of the prices of the top 500, in terms of capitalization, actively traded US stocks.

Buy-out – the purchase of a controlling interest in the stock of a targeted firm, often utilizing some borrowed funds, and generally to effectuate some corporate change.

Caps – an over-the-counter investment instrument designed to provide insurance against the rate of interest on a floating rate loan rising above a certain level.

Cap Rate - for real estate investments, any rate of return used to convert income into value.

Closed End Real Estate Fund - a private real estate fund with a fixed fund size and a limited term, typically 8-15 years.

Commercial Mortgages. Commercial mortgages are a type of real estate investment and can be classified as Core, Value Added or Opportunistic as discussed herein. The attributes for commercial mortgages are summarized below.

a. Commercial Mortgage returns are sensitive to interest rates, spreads and credit quality. The duration of a Commercial Mortgage portfolio can be high due to yield maintenance pre-payment penalties in many commercial mortgages.

b. Commercial Mortgages have bond-like risk/investment characteristics, with real estate serving as collateral. Commercial Mortgage backed securities may be priced from time to time with varying upside potential.

c. Investment in Commercial Mortgages can be accomplished through public or private market vehicles and can be investment grade (Core) or non-investment grade (value-add or opportunistic).

d. The long-term expected return from mortgages, depending on the strategy, is 150-300 basis points over comparable treasuries or considerably higher for value added and opportunistic debt strategies.

Commercial Mortgage Backed Securities (CMBS) - securitized form of commercial real estate debt in which multiple loans are placed in a pool, which typically secures multiple tranches of higher rated publicly traded bonds plus lower rated or unrated bonds with limited liquidity.

Commitment - limited partner's obligation to provide a certain amount of capital to a fund as the fund requests it.

Committed Capital - total capital committed to a fund by both the limited and general partners.

Co-investment - investments alongside other partnerships in all types of private equity and private real estate, leveraging their due diligence, usually on a non-promoted basis; co-investment allocations lower the overall cost of private equity and real estate programs.

Commingled Fund – a pooling of funds from multiple investors, managed as one account. The client owns units in the pool. Similar to a mutual fund. The commingled funds shall be structured as limited partnerships, limited liability companies, private REITs, corporations or other investment vehicles provided that the commingled funds are structured in a manner enabling TMRS to comply with Texas law requiring investments be structured as securities.

Constant Maturity Treasury (CMT) Floaters - floating rate securities whose interest rate reset provisions are tied to long-term interest rates so that a change in the slope of the yield curve could result in the value of the instrument falling below par.

Convertible securities – securities, usually bonds or preferred stock, which can be converted into common stock.

Convexity – a measure of the shape of the curve that describes the relationship between bond prices and bond yields.

Core Fixed Income – an approach to fixed income portfolio management that typically limits the investment opportunity set to those securities eligible for inclusion in the Barclays US Aggregate Bond Index (defined previously).

Core Investments - Operating, substantially leased office, retail, industrial or multi-family properties. Generally have institutional qualities for size, physical attributes and location. Target unleveraged total returns of 7%-9% per year, gross of fees, with a high proportion of the total return to be generated from current income with a smaller portion of the total return generated from appreciation. Target leverage for Core investments is limited to no more than 50% loan to value at acquisition with comfortable debt service coverage ratios, depending on property type, cash flow coverage and interest rate environment. Exceptions will be considered by the Specialty Consultant and investment staff based on characteristics of individual investments. Core may include property types other than traditional Core investments when the cash flow or appreciation characteristics are similar to traditional core property types. Core has historically been accessed through the private real estate funds or separate accounts, although public market securities and certain low risk commercial mortgages will be classified as core to the extent they have investment attributes consistent with traditional core investments.

Core Plus Fixed Income – an approach to fixed income portfolio management that allows some percentage of a Core Fixed Income portfolio to be invested in securities outside the Barclays US Aggregate Bond Index (defined previously).

Core-Satellite Approach - refers to controlling asset class exposure through low risk or passive (core) allocations and using less constrained (satellite/active) mandates for excess return.
It is a method of portfolio construction designed to minimize costs and volatility while providing an opportunity to outperform the broad stock market as a whole. The core component of the portfolio consists of passive allocations that provide broad market exposure, while mandates within the satellite component consist of actively managed allocations to provide excess return.

Counterparty – the entity that is in the opposing position to a transaction.

Counterparty Risk – the risk that the counterparty fails to make required payments, experiences rating downgrades, or files for bankruptcy protection.

Country Risk – the risk that a country or entity within a country will not be able to honor its financial obligations.

Coupon Rate – the stated interest rate on a bond at issue. Coupon payments are typically made semiannually.

Credit Default Swaps (CDS) – a type of credit derivative that allows the transfer, between parties, of the credit risk of a referenced bond. CDS are used by some investors as risk management tools and by others to speculate about the credit quality of a referenced bond.

Credit Quality – the assessed level of credit worthiness or risk of default, as assigned by a rating agency resulting from a formal evaluation of the ability to meet obligations.

Currency Forward Contract – an agreement to buy or sell a specified amount of a foreign currency at a specified future date at an agreed upon price.

Currency Risk – the risk that a domestic investor's holding of foreign currency will change in purchasing power when converted back to the home country's currency.

Directed Commissions (Soft Dollars) - commissions generated by an investment Manager executing trades through a specific broker for the benefit of the Manager or a client if directed by the client. In such arrangements, the Manager of client receives a benefit in addition to execution services, such as research products, information services, etc.

Distressed securities – securities of companies or government agencies that are under financial or operational distress, in default or undergoing a restructuring or bankruptcy process.

Diversification – spreading a portfolio over many investments to avoid excessive exposure to any one source of risk.

Debt Service Coverage Ratio - the annual net operating income divided by the annual debt service.

Drawdown Schedule - plan for the actual transfer of funds from the limited partners' to the general partners' control -- with most private equity and real estate funds, capital is called on an as-needed basis.

DOL Prohibited Trade Exemptions - While the US Department of Labor allows transition Managers to cross Employee Retirement Income Security Act (ERISA) transition accounts with the flow from internally managed index funds, it does not allow ERISA clients to cross transition order flow with other ERISA transition flow.

Dual Index Floaters - floating rate securities whose interest reset provisions are tied to more than one index so that a change in the relationship between these indexes may result in the value of the instrument falling below par.

Duration – the average time to receipt of all the cash flows of a bond weighted by the present value of each of the cash flows. The duration value of the bond gives bond investors an indication of how interest rate changes will affect the bond's price. It is the percentage by which the bond's price will move, given a 100 basis point change in yield.

Due Diligence in Private Equity or Real Estate Fund Selection - detailed research of the business or property, the management team, and other factors to insure their accuracy, completeness, and soundness; or the investigation and evaluation of a management team's characteristics, investment philosophy, and terms and conditions prior to committing capital to a fund.

Economic Cycle - a period during which a country's economy moves from strength to weakness and back to strength, driven by many forces including inflation, the money supply, domestic and international politics, and natural events The length of the cycle is difficult to predict and may be measured in months or in years. Certain investments that thrive in one phase of the cycle may lose value in another. When evaluating the aggregate of different investment types, it is important to do so through a full economic cycle.

Eligible Security Types - refers to fixed income security classes that are components of the Barclays Capital U.S. Aggregate Bond Index.

Empirical Duration - the calculation of a bond's sensitivity to interest rates based on historical data. Empirical duration is estimated statistically using historical market based bond prices and historical market-based Treasury yields.

Equity Investment – claims held by the residual owners of a firm. May also be referred to as common stock. Investments in Real Estate and certain Private Markets classifications may also be considered equity.

Extendible Notes (EN)/Secured Liquidity Notes (SLN) - short-term bonds in which the maturity date may be extended.

External Crossing Networks - allow traders to fill trade orders anonymously without incurring market impact or bid/ask spread. The Securities and Exchange Commission defines crossing networks as "systems that allow participants to enter unpriced orders, which are then executed with matching interest at a single price, typically derived from the primary public market for each crossed security."

External Investment Risks - Except for Counterparty Risk these are all risks which are taken in the investment portfolio for the purpose of, and with the expectation of, earning returns. The strategy chosen by the Board has been developed by combining investments with the best risk return tradeoffs and the least amount of interdependence.

- **a.** Capital Market Risk is the risk that stock, fixed income or alternative investment markets go down in value. This risk includes economic risk in that poor economic growth typically has negative effects on most if not all capital markets. For virtually all securities, market risk (measured by the rise or fall of market indices) explains most of the rise or fall of the securities price.
- **b.** Foreign Currency Risk is the risk due to changes in currency exchange rates. Currency risk is generally considered in the diversification benefits of foreign investments and so is not expected to be hedged except as specifically authorized by TMRS and according to the

relevant asset class sections of this IPS. Otherwise, foreign securities managers may engage in forward currency transactions only to eliminate foreign currency risk in the settlement of trades.

c. Counterparty Risk is the risk that a counterparty to an investment contract defaults and does not fulfill their obligation. Where derivatives have been used to hedge against an exposure (such as currency) this risk is highest exactly when the contract is most valuable. This type of risk is only assumed by TMRS through outside managers and the securities lending agent and is managed through oversight of the managers' counterparty risk management process.

d. Credit Default Risk is the risk that the bond issuer will not be able to fulfill its payment obligations of principal and interest over the life of the security. Typically investment grade bonds have lower probabilities of default and their pricing reflects lower risk premiums relative to non-investment grade bonds. This risk is managed primarily through security concentration and credit rating limits in manager guidelines.

e. External Manager Risk refers to the risk taken by external managers relative to their benchmark and within their management guidelines. The incremental return managers deliver relative to the incremental risk is expected to be better than purely passive opportunities in the capital markets. This tradeoff is included in the risk monitoring and reporting of the Risk Management function.

f. Legal Risk involves the legal documentation for all accounts, investment subscriptions, external managers, investments in private investment funds and derivatives. Investment staff in consultation with internal or external legal counsel, or both, will review and negotiate all such documents to ensure that they reflect TMRS positions on business issues, legally protect TMRS interests to the extent reasonably possible, and are legally binding and enforceable in an acceptable venue.

Eurobond – a bond issued in a currency other than the currency of the country or market in which it is issued.

Fiduciary – one who can exercise discretionary authority or can control important aspects of a pension plan's management.

Fixed Income Investment – a security issued by a borrower that obligates the issuer to make specified payments to the holder over a specific period. May also be referred to as "debt" or "bonds."

Floors – an over-the-counter investment instrument designed to provide insurance against the rate of interest on a floating rate loan dropping below a certain level.

Forward Commitment – a contract between two (or more) parties who agree to engage in a transaction at a specified later date and at a specified price.

Futures Commission Merchant - an individual or organization which solicits or accepts orders to buy or sell futures contracts, options on futures, retail off-exchange forex contracts or swaps and accepts money or other assets from customers to support such orders. Registration is required for firms dealing with U.S. clients, and provides oversight addressing minimum financial standards and documentation supporting regulatory compliance in a broad list of areas.

Global Bond – bonds that can be offered within several markets simultaneously.

Global Investment Performance Standards (GIPS) - a set of standardized, ethical principles promulgated by the CFA Institute that provide investment firms with guidance on how to calculate and report their investment results.

Hedging – buying or selling a product or security to offset a possible loss from price changes on a corresponding asset.

Hotel Property Type - includes budget, mid-scale, upscale, luxury, and extended stay properties. May include attached convention centers, retail, parking structures and entertainment facilities. Development projects (vertical construction) which are primarily hotels are included in this category.

Industrial Property Type - multi-tenant or single tenant buildings including manufacturing, warehouse (logistics), light industrial/assembly, truck terminals, trailer storage lots and bulk distribution. Also includes Research and Development, Flex and Office Showroom space. Typically a portion of the building is finished out into office space. Development projects (vertical construction) which are primarily industrial are included in this category.

Inflation-linked Bonds – issued by governments, agencies, municipalities, and corporations, whose principal and/or interest payments automatically adjust with changes in some measure of inflation.

Information Ratio - The standard calculation for the risk-adjusted excess (active) rate of return is the "Information Ratio (IR)", defined as the excess return divided by the standard deviation of the excess return.

Internal Crossing - the ability of an investment or transition Manager to match transactions with internally managed index funds or current transition order flow.

Inverse Floaters, Reverse Floaters or Leveraged Floaters - floating rate instruments where the coupon rate moves in the opposite direction of the change in the reference rate. These may also be referred to as "yield curve notes." Leveraged floaters have provisions that magnify changes in interest rates.

J-Curve - typical profile of private equity or real estate fund returns over the life of a partnership; IRR at the initial investment is 0%, then drops during drawdowns for fees, then trends upward with value creation, and finally plateaus as distributions are made and the fund is liquidated. The plot of the partnership values over time generally resembles a letter J.

Joint Venture - a partnership, limited liability company or corporation formed by two or more entities for the purpose of investing or operating a business as co-owners.

Leverage – the use of borrowed money to make an investment, including all forms of debt and financing structures. In other words, this is the control of a large amount of money by a smaller amount of money, such as buying on margin. In finance, this is the relationship of debt to equity on a company's balance sheet in the form of the debt/equity ratio.

Gross Leverage – the use of borrowed money to make both long and short term investments, including all forms of debt and financing structures. This concept is important in funds where both long and short investments are allowed. Important distinction from Net leverage where the long and short leverage is "netted."

Liquidity Risk - the risk that there will be insufficient cash on hand to meet TMRS' disbursement requirements. This risk will be managed based on periodic reviews by investment staff with each manager regarding future cash payout requirements based on net cash flow projections of the System by the Finance Department. It is also the risk that securities cannot be bought or sold without affecting their market price. Each public market manager will select securities within the authority granted in their contract, which, in the manager's opinion, have a capitalization sufficient to enable the manager to purchase or sell such securities expeditiously without significantly affecting the market price. Within Fixed Income, Cash Equivalents, and Securities Lending liquidity risk is managed by maturity and asset type limits as described in the guideline sections to this IPS. For Separately Managed Accounts (SMA), where liquidity has been determined to be a concern by Investment Staff or the Investment Consultant, specific criteria for measuring liquidity of the portfolios will enable TMRS to more effectively monitor the manager's process for managing liquidity risk.

Loan to Value (LTV) - a lending risk assessment comparing the portion of the amount borrowed to the cost or value of the property purchased. The calculation for LTV is mortgage debt divided by the value of the property.

Local Currency Debt – debt issued by a national government, subnational entity or corporation denominated in local currency and issued in the local market.

Long Position – a party who buys a traded asset has a long position in the asset. In the case of a forward purchase of an asset, the long position holder has a future entitlement to receive the asset, under the terms of the forward purchase contract.

Marginal Risk Tolerance - the minimum incremental return required to compensate incremental risk.

Market Cycle – the movement from a period of increasing prices and strong performance (bull market), through a period of weak performance and falling prices (bear market), and back again to new strength. Different markets or strategies (stocks vs bonds, growth vs value, small cap vs large cap) often operate on different cycles and should be evaluated through a full market cycle.

Mezzanine financing – a hybrid of subordinated debt and equity capital that is typically used to finance the expansion of existing companies. It is typically senior to only the common stock.

Metropolitan Statistical Area (MSA) - MSA's are established by the US Office of Management and Budget for population census and compilation of related statistical data. MSAs define specific geographic areas with a population in the urban center of at least 50,000 and a total MSA population of 100,000 or more.

Mixed Use Property Type - properties that are any mix of the five product types: office, retail, industrial, multifamily and hotels. Properties that include only a small percentage of a second product type are generally not considered mixed use (for example, an office building with a retail shop).

Mortgage-Backed Security (MBS) – a debt instrument with a pool of real estate loans as the underlying collateral. These financial instruments are designed to channel funds from the capital markets to the mortgage borrowers.

Multi-Family Property Type - includes high-rise, low rise and garden style rental residential properties. May be specialized rental properties such as student housing, military housing, affordable housing or age restricted housing. Development projects (vertical construction) which are primarily multifamily are included in this category.

Nominal Basis - an investment return that does not account for risk or inflation.

Non-deliverable forwards (NDFs) – cash settled forward contracts, used predominately with respect to foreign exchange forwards.

Office Property Type - includes central business district high-rise and suburban low and mid-rise buildings with finished office space. May be single tenant or multi-tenant. Includes specialized buildings such as medical office buildings and government buildings. May include attached parking structures and miscellaneous uses. Development projects (vertical construction) which are primarily office are included in this category.

Operational Risk

- **a.** Custody Risk is the risk associated with owning and safeguarding assets. This risk is managed through appropriate qualifying standards and controls. The bank selected as the custodian for TMRS investment securities must be financially sound and TMRS Staff will evaluate the creditworthiness of the custodian bank on an annual basis. For the purpose of this IPS, the custodian bank must maintain a favorable SSAE16 report reflecting satisfactory internal operational controls and must maintain above satisfactory ratings by TMRS Investment and Finance Departments' staff in all areas critical to a custody relationship, including but not limited to the settlement of trades, collection of investment-related cash flows, custody of all securities in which TMRS is invested, a sub-custodian network consistent with the standards of the Code of Federal Regulations §270.17f-5, accurate and timely record-keeping, and overall customer service. Custodial Risk is not strictly a function of credit or operational quality, however. The legal agreements in place between TMRS and its custodial bank, if properly constructed and effective, serve to minimize the risks connected with the use of a custodial bank.
- **b.** Investment Administration Risk is the risk associated with accuracy and timeliness of recording and reporting of investment activity. The Accounting Agent (also the System's custodian bank) is responsible for accurate and timely accounting of portfolio activity, accurate and timely performance reporting, and overall customer service. The roles and responsibilities of the Investment and Finance Departments in this respect, as defined in the relevant section of this IPS are the first part of addressing this risk. The second part of managing this risk is adherence to documented policies and procedures, maintained by the Investment and Finance Departments, which include the specification of internal and external deliverables, accountability, reconciliations, accuracy requirements and timing.

Opportunistic Investments - Opportunistic investments can be comprised of any property sector. Opportunistic investments can include office, retail, industrial and multi-family with high-risk attributes. These high risk attributes may include a combination of hotels, international and domestic non-performing loans, operating companies, development, land and distressed properties and other high risk investments. Target leverage for Opportunistic investments can be up to 80% loan to value at acquisition (property and portfolio level). Exceptions will be considered by the Specialty Consultant and investment staff based on characteristics of individual investments. Target gross-of-fee total returns for Opportunistic investments are at least 600 basis points or higher than for Core Properties per year in order to compensate for the increased risk. Opportunistic investments have historically been accessed through the private real estate funds, although non-US public market securities and certain higher risk commercial mortgages will be classified as Opportunistic to the extent they have investment attributes consistent with Opportunistic investments.

Option Adjusted Duration - the price sensitivity of a security to changes in interest rates after accounting for all embedded call, put, prepayment and extension features.

Passive strategies – an investment strategy that attempts to replicate a selected index performance, in contrast with active management which attempts to better the performance of an index benchmark. Passive strategies are less expensive than active strategies.

Policy Benchmarks - Capital market indices that represent the broad investment opportunities of each asset class in which the Board has chosen to invest.

Preferred Stock – class of stock which provides priority over common stockholders on earnings in the event of liquidation; preferred stock typically has less potential for appreciation and does not provide voting rights.

Primary commitment – a commitment made to a investment vehicle during its normal fundraising period.

Principal trades - when a broker/dealer buys or sells for its own account and at its own risk rather than as an agent on behalf of a client. Transition Managers will typically solicit principal bids from broker/dealers when a small basket of securities left at the end of a transition event represent a high percentage of average daily volume and thus, present a challenge to trade at a reasonable cost. While there is little transparency in a principal trade, and costs are higher, this may be the optimal way to complete the transition.

Private Equity - seeks to gain from investments in private companies. Investments range from debt to equity instruments across a broad spectrum of company types and uses of capital. Examples of private equity strategies include venture capital, leveraged buyouts, and distressed debt. Private equity may be used for financing of start-ups, the purchase of significant portions of companies for control, or the purchase of troubled companies' debt at a fraction of face value. Private equity investments are commingled funds structured as limited partnerships with capital commitments that are drawn down over time based on Manager discretion. Potential distributions are made as a fund matures and investments are realized over an 8-12 year horizon. Investments in private equity can offer high returns and diversification, but lack liquidity, have infrequent valuation, are slow to generate initial returns and therefore have significant risk.

Private Equity Secondaries – the buying and selling of pre-existing limited partner investments and/or commitments to private equity funds or partnerships. In the secondary market, buyers and sellers do not typically transact through the private equity manager, but transfer ownership of their partnership stakes directly.

Private Placement – issuance of debt or equity directly to an investor or investors without registration with a governmental body. SEC Rule 144-a permits large institutions to trade privately placed securities among themselves that might otherwise be restricted.

Proxy – an instrument empowering an agent to vote for a shareholder.

Qualitative Analysis – a subjective analysis of a security, with the judgment not based on financial information, such as that found on a balance sheet or income statement. Instead, the judgment may be based on such issues as labor relations.

Quantitative Analysis – an analysis of a security, with the judgment based on financial information such as that found on a balance sheet or an income statement.

Quasi-sovereigns – entities that possess legal characteristics of both governmental and private sectors. Their credit risk is driven by both sovereign and standalone credit trends.

Range Notes - floating rate instruments where at each reset date the reference rate is compared to an upper limit and lower limit. At the time of reset, if the reference rate is either higher than the upper limit or below the lower limit, the coupon rate is zero for that period.

Real Estate Operating Company (REOC) - a company that invests in real estate and whose shares trade on a public exchange. Similar to a real estate investment trust (REIT) except in two regards: the absence of the pass-through benefit afforded REITs and exemption from the requirement that REITs pay back 90% of income to shareholders.

Real Return - a disparate group of strategies with a generally common theme of investing with an orientation towards inflation or other macroeconomic environments. While there are a wide variety of real return strategies, one common theme is their goal to generate a return premium over inflation (or deflation). Real return strategies invest in a variety of securities such as Treasury inflation protected securities (TIPS), commodities, natural resource stocks, currencies, and traditional asset classes. Real return strategies may be pursued through a series of dedicated sub-asset class mandates, or through broader globally and tactically managed mandates.

Real Estate (Private) - aims to provide income and capital appreciation through investments in diversified properties or debt securities. Valuations of private real estate are infrequent and done through an appraisal method. Open-end, core real estate funds may generate income through rental agreements of high quality, well leased properties. Debt interest maybe be gained via the purchase of whole mortgages or portions of mortgages and other real estate debt (e.g. commercial mortgage backed securities, or mortgage backed securities). Closed-end, value added real estate investment properties can vary by quality, occupancy, leverage, and income. Closed-end funds are considered higher risk due to generally higher levels of leverage and the potential of developments, improvements or re-positioning efforts not being successful. Investors in open-end funds tend to have moderate fees and liquidity while private real estate structures are more similar to private equity with a lack of liquidity, higher fees and a longer-term investment horizon, capital commitments and capital calls.

Real Estate Investment Trusts (**REITs**) - securities that sell like a stock on major exchanges and invest in real estate directly, either through real estate operating companies, properties or mortgages. REITs are companies that own and most often manage commercial real estate. REITs receive special tax considerations and typically offer investors moderate yields as they are required to distribute at least 90% of their taxable income to shareholders annually in the form of dividends. REITs offer a daily-valued and liquid method of investing in real estate.

Real Estate Securities (Public) – securities that can be classified as Core, Value Added or Opportunistic. The attributes for public real estate securities are summarized below.

a. Public real estate investment trusts ("REITs") and real estate operating companies ("REOCs") have modestly higher risk and return characteristics than core properties due to leverage and operating company risks.

b. Daily pricing and public market trading provide liquidity. However, due to the small float and limited market capitalization of REITs and REOCs relative to the companies in other sectors, liquidity may come at a price.

c. The emergence of the international Public Real Estate Securities market has broadened the universe to include Asia, European, Australian and North and South America property companies.

d. Historical returns are approximately 9%-11% over 10-year periods of time. Public real estate securities are generally considered to have risk/return attributes consistent with core real estate.

Rebalancing – realigning the proportions of assets in a portfolio as needed.

Reference rate – an interest rate benchmark for a floating-rate security or interest rate swap. The reference rate is tied to index rates such as LIBOR, prime, or Treasuries.

Retail Property Type - multi-tenant or single tenant buildings where tenants sell goods, food, services, or entertainment. Includes enclosed malls, open air malls, power centers, neighborhood centers and street retail. Also includes theaters and entertainment centers. Development projects (vertical construction) which are primarily retail are included in this category.

Risk – the uncertainty of outcome or the likelihood of a loss.

Risk Adjusted Return - For two investments having an equal total return over an investment period, that investment which experiences the least volatility of returns has the higher risk-adjusted rate of return. The standard calculation of risk-adjusted total rate of return is the "Sharpe ratio," defined as the difference between the investment return and the average T-Bill rate over the same period, divided by the standard deviation of the investment return over the period.

Risk Tolerance - the degree of uncertainty that an investor can handle in regard to a negative change in the value of his or her portfolio. For institutions this is typically determined based on financial consequences of the negative changes in the investment portfolio over a specific time horizon.

Rules-Based Strategies – investment strategies that adhere to a strict set of rules governing the trading decisions within a specific strategy. Some examples of rules-based strategies are Equal Weighted Indexes, Fundamental Indexing, Low-Volatility, and Efficient Indexing.

Security futures contract - a legally binding agreement between two parties to buy or sell a specific quantity of shares of an individual stock or a narrow-based security index at a specified price, on a specified date in the future (known as the settlement or expiration date).

Separate Account – funds managed on an individual account basis; no pooling with other investors. The client owns the securities.

Separate Account for Real Estate Investments - A separately managed account is an arrangement between an investor and a real estate manager through which the real estate manager is responsible for managing individual investments (i.e., individual properties, single public securities account) for the investor. The manager makes the investment, disposition, and debt financing decisions on behalf of the investor following guidelines developed by the investor. The investor may be the only investor in the property or may have other partners invested in the property. A legal opinion may be required to determine the legality of this structure for TMRS.

Senior Housing Property Type - includes independent living, assisted living, skilled nursing, and congregate care facilities. Development projects (vertical construction) which are primarily senior housing are included in this category.

Short Position – a position that is owed or borrowed or results from selling what is not owned.

Short selling –selling an asset that one does not already own. The short seller will have to close out the position prior to settlement, or purchase the asset in order to deliver.

Short-Term Investments – any fixed income investment with less than one year to maturity.

Spot Market – commodities or securities that are traded for immediate delivery and payment, also known as the cash market.

Sovereign bond – a security issued by a foreign government or government sponsored agency.

Sovereign Risk – the additional risk assumed by investors with funds invested in foreign countries. Sovereign risk includes currency translation losses, default on foreign government debts, and misuse of company assets by foreign governments.

Standard Deviation – a measure of the degree to which an individual probability value varies from the distribution mean. The higher the number, the greater the risk.

Strategic Target Allocation – the percentage allocation to each asset class, based on long-term capital market assumptions, designed to achieve risk and return objectives over a long time horizon. Ranges around the target allocations are typically allowed to accommodate market volatility and violations are addressed through rebalancing policies. This is distinguished from tactical asset allocation which over- or under-weights asset classes relative to the strategic target allocation, based on shorter-term market conditions.

Strategy Implementation Risk

- **a.** Manager Selection Risk is the risk that the manager's capabilities to produce performance are different than our expectations. Operational Risk and Governance Risk (organizational structure and oversight mechanisms) exist in both manager and consultant relationships and are addressed in other sections of this IPS and in the manager and consultant search/review due diligence policies maintained by the Investment Department.
- **b.** IPS Compliance Risk addresses compliance with the guidelines of this IPS. This IPS prescribes numerous requirements in the form of due diligence, monitoring, reporting and holdings guidelines with the purpose of minimizing the risk of avoidable errors. Compliance risk is the risk that any part of these requirements is not properly followed. To manage this risk, a compliance checklist created by the Compliance function refers to the due diligence, monitoring, reporting and portfolio holdings guideline requirements which collectively are sufficient to demonstrate compliance with the provisions and guidelines of this IPS. Furthermore, this checklist is used to produce a quarterly report of compliance covering each item of the checklist.
- **c.** Legal Compliance Risk addresses compliance with all legal documents related to the investment program. A compliance checklist will be created to address key terms and provisions such as the term of the agreement and notification and reporting requirements, and will be reviewed no less than annually.

Supranational Bonds - the debt of international organizations whereby member states transcend national boundaries or interests; examples are the World Bank and the International Monetary Fund.

Swap – agreement between two parties to exchange a series of future cash flows based on pre-determined market-related benchmarks.

T-Charter - a voluntary Code of Best Practice for Transition Managers, adopted by the Transition Management industry to encourage good market practice.

T-Standard - within the T-Charter, formalizes a code of best practices for transparency of pre-trade cost estimates and post-trade performance in transition management.

Target Excess Return - the gap between the expected annualized compound return of the Policy Index based on the Investment Consultant's capital market assumptions and the assumed long-term rate of return on TMRS assets established by the actuary.

Time-weighted returns - a time-weighted return is determined by calculating the rate of return between two or more periods, multiplying those returns together geometrically, and then taking the geometric mean of the result. Example: [(1.15*1.20*1.25)1/3]-1 = 20% return. Time-weighted returns are an approximation of an IRR and are usually easier to calculate than the IRR. The term is a misnomer as it does not consider the time value of money, but rather produces a return that does not penalize fund Managers for timing decisions; the calculation treats a dollar distributed today the same as a dollar distributed ten years ago. Time-weighting was created to overcome the fact that the public securities Manager has no control over the timing of the cash flow into or out of his management by his clients due to liquid secondary markets. The investment Manager's performance is therefore measured strictly on the investment decisions they make, not on the timing of cash flows.

Total Return – interest or dividend income plus any realized or unrealized capital gain (or loss) on an investment, net of any capital contributions or distributions from the corpus.

Unhedged Benchmark – a benchmark in which the underlying securities' returns are translated from their local currency back to US dollars at each measurement date.

Value-Added Investments - Office, retail, industrial or multi-family properties that have moderate risk associated with their investment.. The additional risk associated with Value-Added investments is generally a deficiency that is identifiable and correctable through leasing, re-development, management and/or recapitalization. Value-Added investments may include property types other than traditional Value-Added investments when the risk/return characteristics are similar to traditional value added property types. Target gross-of-fee total returns for Value-Added investments are at least 200 basis points per year higher than for Core Properties. Target leverage for Value-Added investments is up to 70% loan to value at acquisition (portfolio and property level). Exceptions will be considered by the Specialty Consultant and investment staff based on characteristics of individual investments. Value-Added investments have historically been accessed through the private real estate funds or separate accounts, although public market securities and certain moderate risk commercial mortgages will be classified as Value-Added to the extent they have investment attributes consistent with Value-Added properties.

Venture or Venture Capital – a kind of equity investment made to seed, early-stage and emerging companies. This often involves a partial equity stake in order to fund expansion for an entrepreneurial firm whose management does not want to sell all of the equity to external investors.

Vintage Year - the period that the closed-end fund first draws down or calls capital from the investors and makes the initial investment in real estate.

Yankee Bonds – a bond denominated in US dollars that is publicly issued in the US by foreign banks, corporations, and governments, and must first be registered with the SEC.

Yield Maintenance Pre-payment Penalty - the prepayment penalty applies because the borrower is paying off the loan prior to the maturity date; it allows the lender to attain the same yield as if the borrower had made all scheduled mortgage payments until maturity. The penalty is based on the difference between the interest rate on the loan and a specified reference rate (generally defined in the "NOTE"), and the remaining payments on the loan multiplied by this interest rate differential.