

INVESTMENT OBJECTIVES & GUIDELINES
BOSTON RETIREMENT SYSTEM

Investment Policy Statement

The Boston Retirement System (the “System”) is a defined benefit pension plan (the “Plan”), established to provide retirement benefits to participants in accordance with the regulations outlined in Chapter 32 of the Massachusetts General Laws, the guidelines set forth by the Public Employee Retirement Administration Commission (“PERAC”), and the benefit structure adopted by its fiduciary, the Boston Retirement Board (the “Board”). The System is maintained to invest contributions and reinvest income and investment proceeds for the exclusive benefit of Plan participants and beneficiaries. The investment objectives herein are intended to provide a strategy for investing assets to reach defined investment goals consistent with the needs of beneficiaries.

This policy statement is issued by the Board for the guidance of fiduciaries in the course of investing the retirement funds of the System. The statement is consistent with the provisions of the “Prudent Expert” rule, as defined by PERAC, under current and future state and federal laws which apply to investments of the System.

Policy guidelines will be amended from time to time by the Board both upon its own initiative and upon consideration of the advice and recommendations of the Board staff, investment managers, the fund actuary, investment consultant, and accountant. Modifications should be proposed in writing and approved by the Board.

Statement of Goals & Objectives

This statement of investment goals and objectives is set forth in keeping with the fiduciary requirements under existing state and federal laws. Its purpose is to outline the System's projected financial needs; express the Board's position regarding the asset mix of the System; set forth an appropriate set of goals and objectives for the System's assets; and define guidelines within which the investment managers may formulate and execute their investment decisions.

It is the intent of the Board to revise this statement of goals and objectives to reflect modifications and revisions to the System which may develop from time to time. It is also the policy of the Board to review these goals and objectives periodically and to communicate any material changes to the investment managers and to PERAC. In the event that Massachusetts General Laws are amended such that they are in conflict with the guidelines set forth in this document, the fiduciaries associated with the System shall defer to the new regulations set forth by the Commonwealth of Massachusetts.

The System has accepted the provisions of M.G.L. c. 32, § 22D with regard to funding schedules. The Board intends the System to become fully funded by 2025. The investment goal is therefore to increase the value of the investments and thereby reduce the unfunded liability.

1. Assets of the System shall be invested to ensure that principal is preserved and enhanced, both in real and nominal terms.
2. Total return, defined as income plus realized and unrealized gains and losses, consistent with prudent investment management and the realization of the actuarial assumptions adopted by the Board, is the primary goal of the System.
3. In establishing the System's asset allocation targets, an actuarial rate of return target of 7.75% is taken into consideration. The Board is aware that there may be short term deviations from this objective given varying market environments, and shall evaluate compliance with this and other performance expectations over the time frames outlined in paragraph 7, below.
4. In addition to the total return and actuarial guidelines outlined above, the System will strive to outperform its designated policy index over a full market cycle. The current composition of the policy index is outlined in Appendix I.
5. Returns on actively managed financial assets should exceed the investment manager's respective benchmark outlined in Appendix II of this document over a full market cycle. For some investments, the Board may choose to select a different benchmark if deemed more appropriate by the investment consultant.
6. Consistent with the desire for diversification, total portfolio risk exposure and risk-adjusted returns will be regularly evaluated and compared with other Public Funds. Risk-adjusted returns are expected to consistently rank in the top half of comparable Public Funds.
7. Normally, results will be evaluated over a full market cycle, which is generally a five to seven year time horizon. However, shorter term results for the one, three and five year periods are regularly reviewed and earlier action will be taken if in the best interests of the System.
8. The Plan is not currently fully funded. The unfunded liability will be reduced by application of excess earnings as described in Chapter 661 of the Acts of 1983. Through acceptance of M.G.L. c. 32, sec. 22D, the City of Boston will contribute to the Pension Fund over time. By 2025, these contributions, combined with member contributions and growth in the value of the assets should bring the funding level to 100%. The Board's goal is to improve funding to reach 100% of the Vested Benefit Obligation and 50% of the Actuarial Accrued Liabilities by the end of FY 2025. However, the Board aims to control contributions to require the lowest maximum contribution consistent with these funding objectives

Investment Guidelines

Overall Plan structure targets and permissible ranges for eligible asset classes are detailed in Appendix I of this policy statement. Specific guidelines and performance measurement for specialist managers are included in Appendix II. The managers should determine that the securities to be purchased are consistent with the guidelines expressed in this statement and suitable for this account. .

Within the parameters in the specific guidelines and the provisions of M.G.L. Chapter 32 and Code of Massachusetts Investment Regulations, full discretion for each manager is granted to the investment managers regarding the asset allocation, the selection of securities, and the timing of transactions. All investments will be made in accordance with a pre-approved investment management agreement that outlines the limitation of the investment securities. Investment managers are responsible for making an independent analysis of each security and its appropriateness as an investment for the Plan.

Investment managers are subject to Massachusetts' General Laws Chapter 32, PERAC Investment Regulations, and potential legislative changes, and the Code of Massachusetts Investment Regulations. The Board will review the appropriateness of strategies through a competitive bid and due diligence process and then on an as needed basis.

Investment managers are required to notify the Board in writing within 30 days if they are outside compliance with their stated investment management agreement. The correspondence should include a detailed recommendation to bring the portfolio back to compliance. Proposed modifications to the investment management agreement should be documented in writing.

1. **Domestic Equity Investment Mandates:** Domestic equity holdings consist of equity securities of companies that are listed on U.S. registered exchanges or actively traded in the over-the counter market. The market capitalization of securities should be largely consistent with securities held in appropriate indices. American Depository Receipts (ADRs), which are dollar denominated foreign securities traded on the domestic U.S. stock exchanges (e.g., Reuters, Nestle, Sony) may be held by each domestic stock manager in proportions which each manager shall deem appropriate.
2. **International Equity Investment Mandates:** International equity securities can be accessed through local markets or American Depository Receipts (ADRs). The manager may hedge currency exposure through the use of derivative instruments. Emerging markets equity is permitted and should be largely consistent with a pre-approved benchmark.
3. **Fixed Income Investment Mandates:** Eligible securities are broad fixed income securities publically traded in respective domestic markets and may include, but not limited to, government and agency obligations, mortgage backed securities, corporate bonds, securitized credit, debentures, commercial paper, and currencies.

The duration of the portfolio should be largely consistent with appropriate indices. Unless otherwise agreed to, the duration of the portfolio must be within 20% of the appropriate benchmark.

Compliance with classifications provided by rating agencies (Moody's, S&P, and Fitch) is not sufficient for an issue to be deemed an appropriate investment. The Manager is responsible for making an independent analysis of the credit-worthiness of securities and their appropriateness as an investment for this fund.

4. Global Asset Allocation Managers: The intent of these strategies is to give managers the ability to invest across traditional and non-traditional asset classes in order to further diversify the Plan, control risk and add return. It is understood that constraints detailed in the previous asset class sections may be relaxed within a diversified global asset allocation mandate. The managers should determine that the securities to be purchased and the strategies to be utilized are suitable for this account. The majority of the assets will be invested in global equity and fixed income mandates. From time to time, these strategies may make additional diversifying investments in other asset classes or securities such as hedge funds, etc. The Board shall approve any such investment prior to implementation and shall restrict these investments to specific managers.
5. Hedge Fund Investment Structure: In accordance with PERAC regulations and restrictions, investment in hedge funds shall only be made through hedge fund of fund vehicles or through participation in PRIT's "Absolute Return Fund" sleeve. The Board acknowledges that it cannot dictate investment policy to the underlying hedge funds. It is understood that the underlying hedge fund managers may use leverage and derivatives, otherwise prohibited by traditional investment managers, to create exposures to securities, currencies, indices, or any other financial exposures. Hedge fund of fund managers will not employ leverage at the Total Fund level. The Board will employ more than one hedge fund of fund manager to ensure appropriate diversification.

Total investment in hedge funds, based on market valuation at the time of investment, cannot exceed the existing percentage of the PRIT Core Fund allocated to hedge funds.

Provisions, including liquidity and transparency shall be reviewed and mandates will be deemed appropriate for the System's assets on an individual basis.

6. Private Equity & Debt Investment Structure: As part of a private equity and private debt plan, the Board will commit to funds on an ongoing basis. Considerations for diversification through vintage year, strategy, geography are made in the private equity plan. For commitment purposes, the System will rely on the strategic pacing plan of its investment consultant as a general guideline for the annual commitment amount and strategy types for both Private Equity and

Private Debt. The annual strategic pacing plan will be presented by the Investment Consultant for consideration to be approved by the Board.

While the current private equity and debt program is considered mature, it is understood that individual investment are returning capital to the System and sometimes prior to the full funding of the commitment, so that the outstanding invested capital of the investment may at times be substantially less than the total commitment. In recognition of private equity and debt investing characteristics, the committed allocation to private equity will typically be greater than the private equity allocation target. Under PERAC guidelines, however, the Board will consider making private equity commitments when the current allocation of private equity exceeds the target allocation.

7. Real Estate Investment Structure: As part of a real estate plan, the Board will commit to real estate on an ongoing basis. The asset allocation should seek broad diversification across real estate sub-asset classes and geography as well as vehicle diversification (open-end vs. closed-end). For commitment purposes, the System considers both open-end and closed-end investment vehicles and uses the Investment Consultant's annual strategic pacing plan as general guideline for the annual commitment amount and strategy types. The annual strategic pacing plan will be presented by the Investment Consultant for consideration to be approved by the Board.
8. Use of Derivatives: Use of derivatives is permitted provided that the investment management guidelines explicitly allow derivatives. Investment managers may use derivatives to hedge the portfolio when it is exposed to clearly defined risks. If derivative contracts (i.e. futures and options) can be used to reduce those risks and achieve other portfolio structural objectives, the investment managers are permitted to use such derivatives for hedging purposes. Investment managers are also permitted to use derivatives to replicate the risk/return profile of an asset or asset class provided that the guidelines for the investment manager allow for such exposures to be created with the underlying assets themselves.

Investment managers charged with tactically changing the exposure of their portfolio to different countries and/or asset classes are permitted to use derivative contracts for these purposes.

Investment managers that are allowed currency exposure may enter into forward exchange contracts on currency provided that the use of such contracts is designed to dampen portfolio volatility rather than lever portfolio risk exposure. Currency contracts may be utilized to either hedge the portfolios currency risk exposure or in the settlement of securities transactions. Additionally, these investment managers may employ an active currency management program and deal in futures and options within the discipline of that currency management program. The use of futures and options to establish a leveraged position is prohibited.

9. Traditional investment managers should normally be fully invested, maintaining less than a target of 10% % in reserve and cash equivalent investments with a max

of 15%. Investment managers who seek to maintain above a 15% allocation in cash and cash equivalents must notify the Board in writing. The selection of particular cash-equivalent investments should be determined primarily by the safety and liquidity of the investment, and only secondarily by yield available. Such securities shall reasonably carry the equivalent of S&P A1 or A2 ratings.

Other Considerations

Commingled Funds

The Board, in recognition of the benefits of commingled funds (i.e., the ability to diversify more extensively than in a small, direct investment separate account and the lower costs which can be associated with these funds) may elect to invest in such funds on a case-by-case basis. The Board recognizes that it cannot give specific policy directives to a commingled fund with pre-established policies, outlined in each fund's prospectus or offering documents; therefore, the Board is relying on the Investment Consultant to assess and monitor the investment policies of any funds used by the Fund to ascertain whether they are appropriate for the System. The Board and its Investment Managers, where applicable, will establish a Side Letter Agreement that sets forth that the manager is aware of the Code of Massachusetts Regulations, PERAC Investment Regulations, the applicable provisions of M.G.L. Chapter 32 and that the Manager will comply with the statute and PERAC Investment Regulations wherever possible, consistent with the Manager's trust documents, prospectus, implementation documents, etc. creating the commingled fund vehicle.

Proxy Voting

Responsibility for the exercise of ownership rights through proxy voting shall rest solely with the investment managers, who shall exercise this responsibility according to CFA Institute standards and strictly for the long-term economic benefit of the System, its participants and beneficiaries. The Board considers the voting of proxies to be an integral part of the management of the System's investments, and as such, investment managers should be voting in an informed and responsible manner. Investment managers shall annually report to the Board on their standing policies with respect to proxy voting, including any changes that have occurred in those policies.

Standard of Investment Performance

Performance of this System will be evaluated on a regular basis. Consideration will be given to the degree to which performance results meet the goals and objectives established in this policy statement. Toward that end, the following standards will be used in evaluating investment performance:

1. The compliance of each investment manager with the guidelines as expressed herein.
2. The extent to which the total return and risk guidelines of the System achieve or exceed the targeted goals.

Roles and Responsibilities

Boston Retirement Board

The Board shall be responsible for the overall management of the investment portfolio in accordance with this investment policy. The Board shall be responsible for evaluating, hiring, monitoring and terminating investment consultants, managers and other service providers. The Board is also responsible for establishing and managing an asset allocation strategy that is intended to achieve the investment objectives.

Investment Consultant

The Board may retain the services of a consultant(s) in developing and modifying policy objectives and guidelines, including the development of asset allocation strategies and recommendations on the appropriate mix of investment manager styles and strategies. The Consultant shall also provide assistance in conducting manager searches and selection, and in investment performance calculation, evaluation and analysis. The consultant shall provide timely information on investment strategies, managers, instruments and other related issues, as needed by the Board. The Investment Consultant is expected to attend Board meetings as requested and to provide an investment performance summary on a quarterly basis.

Investment Managers

The investments will be managed by multiple managers, and may be invested through separately managed accounts or in commingled vehicles, including mutual funds and limited partnerships. Managers will be selected and retained not only on the basis of their investment records, but also on the basis of their integrity, intellectual strength and stability of their organizations.

Managers will have the discretion (subject to the usual standards of fiduciary prudence) to make decisions as to individual security selection, security size and quality, number of industries or holdings, current income levels, turnover, and whether or not to hold physical securities or cash. Managers will be monitored for consistency of investment philosophy and its implementation, returns relative to objectives, and investment risk as measured by asset concentration, exposure to extreme market conditions, and market volatility. The Board will monitor and review the managers regularly in order to confirm that the factors underlying the performance expectations remain in place.

Managers will be retained with the expectation of a long term commitment provided that the fundamentals of the investment approach, key personnel, organizational approach, etc., remain unchanged even if short term performance should disappoint.

Each investment manager is expected to meet with the investment consultant or the Board at least annually to review the portfolio and to discuss the investment environment, outlook and results within the context of these goals, objectives and policies.

Statements are to be supplied monthly by the investment managers or the custodian to the Board when possible. The Board recognizes that certain investments, including private equity and real estate, may only provide statements on a quarterly basis. Statements should include:

- a. The Fund composition, i.e., at "book" or cost and at market value by sector, including, minimally, equity, fixed income, cash equivalents, and "pure" cash balances.
- b. Position, by individually-named securities, showing both their respective "book" and market values.
- c. All principal and income cash transactions, including sources of all interest and dividends in sufficient descriptive detail.

Investment managers are expected to be able to produce, upon written request of the Board, documentation in support of buy, sell, and hold decisions. Each investment manager will notify the Board of material changes in ownership, organizational structure, financial condition, senior staffing and management.

Investment Custodian

The Board is responsible for selecting a bank or banks to serve as custodian of certain invested assets. The custodian may hold securities of actively managed accounts and assist in the accounting of mutual fund and commingled fund investments.

The custodian bank(s) will be responsible for performing the following functions:

1. Accepting instructions only from authorized Board staff
2. Processing of investment manager transactions for investments in custody
3. Managing the daily cash sweep of idle balances
4. Providing monthly statements by investment account
5. Reconcile performance with the investment managers, consultant, and the Board staff to ensure accuracy in reporting



BOSTON RETIREMENT BOARD

One City Hall Square, Room 816
Boston, Massachusetts 02201
T: 617.635.4311 F: 617.635.4318

Board Members

Daniel J. Greene, Chair
Sally D. Glora
Michael W. McLaughlin
Thomas V. J. Jackson
Michael D. O'Reilly

Executive Officer

Timothy J. Smyth, Esquire

Implementation

All monies invested for the System by its investment managers after the adoption of this Investment Policy shall conform to this policy, M.G.L. Chapter 32 and the Code of Massachusetts Investment Regulations.

Adoption

The foregoing Investment Policy was unanimously adopted by the Boston Retirement Board at their meeting held on September 20, 2017.

Approved By: Boston Retirement Board of Trustees

Daniel J. Greene, Chairman

Sally D. Glora

Michael W. McLaughlin

Tom V.J. Jackson

Michael D. O'Reilly

APPENDIX I

In order to have a reasonable probability of achieving the target return at an acceptable risk level, the Board has adopted the asset allocation policy outlined below. The actual asset allocation will be reviewed formally on an annual basis by the Board. However, the System's Investment Consultant will continually monitor the System's asset allocation more frequently and recommend potential changes when appropriate. .

As it relates to liquidating investments for immediate cash needs (i.e. payroll, benefits, capital calls on investment commitments, etc.), Board and Staff shall act within the guidelines stated below. The Board will be advised of any inter-meeting rebalancing at the next scheduled meeting.

Asset Allocation Policy

Asset Class	Target Allocation	Allocation Range	Benchmark Index
Total Equity	52%		
Domestic Large Cap Equity	19%		Russell 1000 Index
Domestic Small Cap Equity	6%		Russell 2000 Index
Developed International Equity	19%		MSCI EAFE (net)
Emerging International Equity	8%		MSCI EM (net)
Total Fixed Income	24%		
Core Bonds/TIPS	11%		60% BC Aggregate & 40% BC TIPS
High Yield/Credit Strategies	9%		Barclay's Capital High Yield
Global Bonds	0%		Citi WGBI
Emerging Market Debt	4%		50% JPM GBI-EM / 50% JPM EMBI
Alternative Assets	24%		
Real Estate	10%		NCREIF Property Index (1 Qtr Lag)
Private Equity	7%		Cambridge Associates US All PE (1 Qtr Lag)
Private Debt	2%		Credit Suisse Leveraged Loan Index
Hedge Funds	5%		HFRI Fund of Funds Index
Cash/Other	0%		

The System's Policy Index is a custom benchmark designed to indicate the returns that a passive investor would earn by consistently following the asset allocation targets set forth in this investment policy statement. It is useful in separating the impact of investment policy from execution of the investment strategy in evaluating the performance of the System's investment

program. The Policy Index is calculated by multiplying the target weight to each asset class by the rate of return of the appropriate market index, as listed above, on a monthly basis.

APPENDIX II

The following table outlines the current managers and their respective benchmarks. This table will be amended subsequent to any manager additions/terminations.

<u>Manager</u>	<u>Product</u>	<u>Benchmark Index</u>
Total Equity		
Rhumblin Advisors	S&P 500 Pooled Index Fund	S&P 500
Columbia Management Investment Advisors	Seligman Large Cap Value	Russell 1000 Value
Zevenbergen Capital Investments, LLC	Zevenbergen Growth Equity	Russell 1000 Growth
INTECH Investment Management, LLC	INTECH Large Cap Growth	Russell 1000 Growth
DE Shaw	DE Shaw Large Cap Core Enhanced	S&P 500
DE Shaw	DE Shaw Broad Market Core (130/30)	Russell 1000
JP Morgan	Large Cap 130/30	S&P 500
Westfield Capital Management	Small Cap Growth	Russell 2000 Growth
Bernzott Capital	Bernzott Small Cap Value Equity	Russell 2000 Value
Aristotle Capital Management	Aristotle Small Cap Core	Russell 2000
Panagora Asset Management	Dynamic International Equity	MSCI EAFE
Fisher Investments	Foreign Equity	MSCI EAFE
Todd Asset Management LLC	International Intrinsic Value	MSCI ACWI ex USA Gross
Vontobel Asset Management	Emerging Markets Equity	MSCI Emerging Markets
Polunin Capital Partners Limited	Polunin Developing Countries Fund	MSCI Emerging Markets
State Street Global Advisors	SSgA Emerging Markets Equity	MSCI Emerging Markets
Lazard Asset Management	Emerging Markets Small Cap Equity	MSCI EM Small Cap
Total Fixed Income		
Wells Capital Management	Montgomery Core Fixed Income	BBgBarc US Aggregate TR
BlackRock	BlackRock SIO	BBgBarc US Aggregate TR
Income Research & Management	IR&M Aggregate Strategy	BBgBarc US Aggregate TR
Loomis Sayles	Loomis Sayles Bank Loan	S&P/LSTA U.S. Leveraged Loan
Crescent Capital Group LP	Crescent High Yield Bond Strategy	50/50 S&P/LSTA Leveraged Loan/BBgBarc High Yield
DDJ Capital Management, LLC	DDJ U.S. Opp High Yield Strategy	75% BC HY 25% S&P Leverage Loan
GoldenTree Asset Management, LP	GoldenTree Credit Opp Fund	3-Month LIBOR + 7%
Perella Weinberg Partners	ABV Opportunity Fund II, LP	HFRI Fixed Income Asset Backed
Loomis Sayles	EM Debt Local Currency	Custom EMD
Loomis Sayles	Loomis Sayles Global Bond Fund	Citigroup WGBI

Total Alternatives Assets		
Mesirow Absolute Return	Mesirow Absolute Return	HFRI Fund of Funds
Federal Street Offshore Fund, LTD	Federal Street Associates Offshore, Ltd.	HFRI Fund of Funds
GAM	GAM U.S. Institutional Diversity	HFRI Fund of Funds
Permal	Permal Fixed Income Holdings	HFRI Fund of Funds
EnTustPermal	Entrust Capital Diversified Fund	HFRI Fund of Funds
Grosvenor Capital Management	Grosvenor Institutional Partners	HFRI Fund of Funds
Private Real Estate Composite	N/A	NCREIF Property Index (1 Qtr Lag)
Private Equity Composite	N/A	Cambridge Associates US All PE (1 Qtr Lag)

The System's Allocation Index is a custom benchmark designed to indicate the returns that a passive investor would earn at their actual asset allocation. It is useful in determining the impact of active management on the performance of the System's investment program. The Allocation Index is calculated by multiplying the actual weight to each manager by the rate of return of the appropriate market index, as listed above, on a monthly basis.