

The Metropolitan Transit Authority Non-Union
Pension Plan

Investment Practices and Performance
Evaluation Report

Smart Management Services, Inc.
3-25-2020

Investment Practices and Performance Evaluation Report

Texas Government Code §802.109 requires Texas public retirement systems with at least \$30 million in assets to complete an Investment Practices and Performance Evaluation. The Metropolitan Transit Authority Non-Union Pension Plan and the Metropolitan Transit Authority Transport Workers Union Pension Plan are defined benefit pension plans with combined assets totaling approximately \$450 million.

The Metropolitan Transit Authority Non-Union Pension Plan (the Plan, the System) has \$186,827,304 at December 31, 2019 in assets for plan participants.

The scope of our review was in conjunction with the Texas Pension Review Board (PRB) Guidelines and the Metropolitan Transit Authority of Harris County (METRO) Pension scope of work, as follows:

- 1) **Identify and review existing investment policies, procedures, and practices.** This should include any formally established policies (e.g. Investment Policy Statement) as well any informal procedures and practices used to carry out the investment activities of the system. It is not necessary to review past policies, procedures, and practices that are no longer applicable unless they are deemed helpful to understand current policy or practice.
- 2) Compare the existing policies and procedures to industry best practices.
- 3) Generally, assess whether the board, internal staff, and external consultants are adhering to the established policies.
- 4) Identify the strengths and weaknesses of the current policies, procedures, and practices and make recommendations for improvement.
- 5) Include a detailed description of the criteria considered and methodology used to perform the evaluation, including an explanation of any metrics used and associated calculations.

The five areas required to be covered in each evaluation are:

1. An analysis of any **investment policy or strategic investment plan** adopted by the retirement system and the retirement system's compliance with that policy or plan;
2. A detailed review of the retirement system's **investment allocation**, including:
 - A. The process for determining target allocations;
 - B. The expected risk and expected rate of return, categorized by asset class;
 - C. The appropriateness of selection and valuation methodologies of alternative and illiquid assets; and
 - D. Future cash flow and liquidity needs.
3. A review of the **appropriateness of investment fees and commissions paid** by the retirement system;
4. A review of the retirement system's **governance processes related to investment activities**, including investment decision-making processes, delegation of investment authority, and board investment expertise and education;

Transparency;
Investment Knowledge/Expertise; and
Accountability.

5. A review of the retirement system's **investment manager selection and monitoring process**.

Disclosure by Independent Firm

Smart Management Services, Inc. (SMS) Qualifications

SMS is an established and respected professional services firm based in Houston, Texas. Our firm was founded over 25 years ago, in 1993. SMS has been involved in varied engagements for a wide range of clients including the Metropolitan Transit Authority of Harris County (METRO), Houston Independent School District (HISD), City of Houston, City of Dallas, City of San Antonio, Washington, D.C., the Harris County-Houston Sports Authority, and the State of Texas. Previously, SMS served as a member of the audit team for METRO. We performed federal compliance reviews under OMB Uniform Guidance and Circular A-133 in accordance with standards for risk assessment for federal funding for other designated programs. In addition, SMS performed the agreed upon procedures for the review of METRO's submission to the Department of Transportation National Transportation Database (NTD). We have a proven successful track record with multiple governmental entities. SMS is a certified Small Business Enterprise (SBE), Minority Business Enterprise (MBE) and Women Business Enterprise (WBE).

Our engagement team's experience and qualifications include previous high-level governmental financial experience, which involved monitoring investment activity and oversight of large municipal retirement plans. One team member has long-term pension plan administration experience which includes managing a pension administration department that handled more than 330 retirement plans, reviewing the preparation of quarterly and annual valuations for both defined benefit and defined contribution plans, preparing specialized plan investment tracking reports, creating and implementing an internal control manual for the plan administration department and managing the system installation, implementation and training for the transformation from annual to a daily valuation trust and pension system for a benefits consulting firm. One team member has the distinct qualification of having served on the Texas Pension Review Board.

SMS had no existing relationship with the Metropolitan Transit Authority Non-Union Pension Plan prior to undertaking this evaluation. We received no remuneration from sources other than the retirement system for services provided to the System. SMS nor its related entities are involved in directly or indirectly in managing investments of the system.

1 Analysis of the Investment Policy and Compliance with the Policy

SMS (We) reviewed the Metropolitan Transit Authority Non-Union Pension Plan's Investment Policy Statement (IPS) dated November 2019 against the Government Finance Officers Association (GFOA) Checklist for Investment Policies. The Plan had the elements contained in the Checklist including the elements of a Statement of Purpose in the Funding Policy; Roles and Responsibilities; Asset Allocation; Investment Guidelines; and Reporting/Performance Monitoring. The IPS begins with a Purpose and Policy Objectives and Delineation of Responsibilities. It incorporates a Funding Policy "to provide a roadmap to fully fund its long-term obligations and to help the plan achieve the three fundamental goals of public pension funding: benefit security, contribution stability, and intergenerational equity".

As a strength, the Metropolitan Transit Authority Non-Union Pension Plan IPS includes a Funding Policy that meets the GFOA Best Practice for Core Elements of a Funding Policy. The Funding Policy section includes the following statements: "The overall objective of the Plan's investment pool is to achieve the actuarial assumed rate of return. A 5 to 7-year period is appropriate in measuring progress toward achieving this objective." "The returns (net of manager fees and other related fees and expenses) on the traditional asset classes within the Plan investment pool (Total Domestic Equity and Total Fixed Income) should exceed the return on a composite of non-managed market indices weighted in proportion to the actual structure of the Plan portfolio." "Total Liquid and Private Alternatives should exceed the current actuarial assumption which is 6.50% in 2019. In brief, the investment portfolio should benefit from active management."

In the IPS, the System has adopted the following for the GFOA's three core elements of a comprehensive pension funding policy:

1. Actuarial Cost Method -- Entry Age Normal (Individual), level percent of pay.
2. Asset Valuation/Smoothing Method -- Five-year smoothing with direct offset of gains (losses) and a 20% soft corridor.
3. Amortization/Funding Period -- Determined based on a closed 30-year period beginning with 2013.

The Board/Committee obtains an annual actuarial valuation which provides an actuarially determined contribution from Milliman Inc. (Milliman). In general, the annual actuarial valuation determines the current level of employer contributions that, taking into account prior funding, will accumulate assets sufficient to meet benefit payments when due under the terms of the Plan. More specifically, the valuation determines the minimum contribution for the current plan year sufficient to fund the cost of benefits accruing during the year (normal cost) plus an additional amount to fund the excess of plan liabilities over plan assets (unfunded accrued liability) over a period not to exceed the remaining amortization funding period which was 24 years for the January 1, 2019 Actuarial Valuation. The Non-Union plan was 61.7% funded as of January 1, 2019. The January 1, 2020 Actuarial Valuation was not complete at the time of our review.

The IPS has a section on Portfolio Structure and Asset Allocation. The section includes a discussion on Asset Allocation with maximum and minimum ranges and a target allocation. This area is covered in depth in Section 2 of this evaluation.

The IPS clearly delineates roles and responsibilities of those involved in governance, investing, consulting, monitoring and custody. The responsibility for decisions rests with the Board/Committee. The procedures and requirements for Investment Consultants and Investment Managers are included. Investment Consultants are selected by the Board/Committee with the following requirements as stated below:

The Investment Consultant shall be a Registered Investment Advisor with demonstrated expertise in investing and investment management and will acknowledge that it is a fiduciary with respect to the plan. For each Investment Manager (a/k/a Money Managers), the Investment Consultant will regularly monitor investment performance, as well as compliance with the Investment Policy, changes in management or ownership structure, and adverse publicity. The Investment Consultant is expected to keep abreast of changing economic trends and issues and provide timely advice to the Plan regarding investment allocation, Investment Manager selection and other matters of importance.

The Investment Consultant's responsibilities are as stated below:

1. Regularly monitor Investment Manager's performance, including compliance with the Investment Policy.
2. Provide timely and regular investment reports showing the investment performance of the entire investment portfolio and each individual Investment Manager. Regular reports will also include an evaluation of compliance with the Investment Policy. Reports will be a presentation and format acceptable to the Board/Committee.
3. Provide recommended changes to the Investment Policy, including suggested changes to asset allocation ranges and targets, investment objectives and similar matters.
4. Conduct initial screening in any new Investment Manager search for the consideration and evaluation of the Plan. Assist the Plan in the final selection of Investment Managers, and in the decisions to retain or terminate the services of Investment Managers.
5. Assist in the negotiation of contractual terms and conditions for each Investment Manager, Custodians or other professionals utilized by the Plan.
6. Regularly meet with the Board/Committee and the Plan Administrator to review reports on investment performance, compliance, suggested changes to the Investment Policy, retaining or terminating specific managers, and other matters.
7. Provide, as requested, information to the Plan to prepare accurate and timely financial statements.
8. Perform special reports or studies as requested.

The Investment Consultant does acknowledge that they will not receive direct or indirect compensation from any Investment Manager whether or not it relates to an investment by the Plan, except for those financial relationships disclosed in the Investment Consultant's Form ADV part II as amended from time to time. The current Investment Consultant is Marquette Associates Inc. (Marquette). Marquette is the 20th largest investment consulting firm in the United States (as of June 2018) with \$225 billion assets under advisement as of June 30, 2019.

Investment Managers are selected after interviews with the Board/Committee with advice and counsel of the Investment Consultant. The Money Managers have separate contracts with the System. These contracts require that the Money Managers state in writing that they are fiduciaries of the Plan. Their responsibilities include:

1. Make all investment decisions and exercise other discretionary authority over the assets allocated to each individual Investment Manager in accordance with the Investment Policy, the written contract with the Plan and other requirements and restrictions adopted by the Metropolitan Transit Authority Non-Union Pension Plan.
2. Provide written documentation of portfolio activity, valuations, performance data, etc., as requested by the Plan Administrator and/or the Investment Consultant.
3. Cooperate effectively with other professionals involved in the Plan investment portfolio such as Custodians and Commission Recapture Firms.
4. Attend meetings with representatives of the Plan, as requested.
5. Act solely in the interest of the Plan.

State Street Bank and Trust Co. serves as the Custodian. The IPS defines the duties of the Custodian as follows: The Custodian shall act as the receiving and disbursing agent for the investment portfolio and shall hold all investments. Receipts can occur from funds deposited by METRO. Receipts also result from investing activity such as proceeds from investment sales, and dividend, interest and principle payments from securities owned by the Plan. Disbursements can arise from instructions from the Plan such as to transfer funds between Investment Managers as a result of portfolio rebalancing, or from the sale of investments.

The Investment Consultant, Marquette, performs stress tests on the Plan's asset allocations to test that the Plan will be able to sustain a commitment to the IPS under stress test scenarios. These tests show that the Plan's long-term objectives are reasonable and are expected to be achieved over the long term. The expected target rate of return is currently being reviewed and discussed by the Board/Committee and Milliman. Should the discount rate be revised downward, the asset allocation will be revisited. The stress tests are discussed in more detail under Asset Allocation in Section 2, but the Plan should be able to sustain a commitment to the Investment Policy under stress scenarios and the Investment Policy should achieve its stated investment objectives. Further, the Investment Managers should be able to maintain commitment to the Investment Policy under the stress tested scenarios.

As a strength, there is evidence that the system is in compliance with its IPS because Marquette advises the Board/Committee by reporting on compliance with the IPS. At each monthly Board/Committee meeting, Marquette provides reports which address the status of investments and provide an indication of whether the investment objectives are being met and the System's IPS is being followed. The full executive summary report Marquette provides and discusses with the Board/Committee includes the following:

- Market environment overview by asset class;
- Summary of the overall investment pool since the last report;
- Total fund review and performance attribution;
- Overview of the performance of the individual managers;
- List of outstanding action/decision items;
- Analysis of the overall asset allocation;
- Historical performance; and
- Performance attribution summaries of each individual manager.

SMS attended two Board/Committee Meetings and reviewed the documentation provided by Marquette at those meetings. We also reviewed the audit opinion on the Comprehensive Annual Financial Report for the year ending 2018, Actuarial Valuation Report, the Investment Consultant contract, and the contracts of the Investment Managers and found no indication of non-compliance. Recommended changes to the Investment Policy may result from changing market conditions or changing financial objectives or needs of the Plan.

The IPS is reviewed annually and when material changes occur with the asset allocation framework. The last substantial change to the IPS occurred during the 3rd quarter of 2016 in tandem with the approval of the new asset allocation.

2 Review of the System's Investment Asset Allocation

(A) The Process for determining target allocation

Although there is no written policy for determining and evaluating the System's asset allocation, the System's practice is similar to the GFOA Best Practice for Asset Allocation for Defined Benefit Plans, which states: "Asset allocation, the practice of dividing an investment portfolio among the major asset categories of equities, fixed income, cash equivalents, and alternatives is a fundamental principle of sound investing. Diversifying the investment portfolio by including asset categories with investment returns that increase or decrease under different market conditions can protect a DB plan against significant investment losses. That is because historically, the returns of the major asset categories have not all experienced investment gains and losses at the same time. A portfolio should be diversified not only among asset categories, but also within asset categories. The key is to identify investments in segments of each asset category that may perform differently under different market conditions (for example, equity investments would be divided among large-cap, midcap, and small-cap stocks, and those investments would be further divided between growth and value)."

We recommend that the System include in its IPS a written policy for determining and evaluating the asset allocation similar to the GFOA recommendation. The GFOA recommends that retirement systems establish, within their overall investment policy, an asset allocation plan based on the following best practices:

- 1) Prior to developing an asset allocation plan, review and evaluate the following issues: legal framework and fiduciary standards; actuarial return and risk expectations; need for growth of principal; need for income; need for liquidity (the ability to convert an asset to cash quickly); tolerance for risk; tolerance for volatility (the amount of uncertainty or risk about changes in the value of a security); investment time horizons (the length of time over which an investment is made or held before it is sold); monitoring guidelines; and compliance procedures.
- 2) Work closely with actuaries and other advisors to determine the plans expected rate of return (estimated long-term investment yield for the plan, net of fees, with consideration given to the nature and mix of current and expected plan investments), the expected variation or level of volatility of returns, cash needs for several years out, and the expected time horizon for achieving return objectives.
- 3) Develop a long-term strategic asset allocation policy that identifies the broad mix of assets (equities, fixed income, cash equivalents and alternatives) necessary to achieve the plans investment return and risk objectives. Evaluate all investments in light of the system's time horizon, which will help determine the proper balance between equity and fixed-income investments. When determining the number of investments to be chosen, and their complexity, consider the ability of plan decision makers to properly monitor the strategies.
- 4) Review the portfolio performance, at least annually (preferably quarterly), to ensure compliance with the strategic and annual investment targets. Avoid market timing (buying and selling securities based on an attempt to predict the future direction of the market).

In practice, the Board/Committee uses information from the actuarial valuation and works with the Investment Consultant to determine the system's target allocation. Marquette provided the

Board/Committee with an Asset Allocation Study. The most recent Asset Allocation Study for the Non-Union Plan is dated October 2, 2019 with data as of June 30, 2019. The asset allocation was developed over a six-month period and was discussed over three Board/Committee meetings. Marquette's asset allocation studies evaluate potential client portfolios under a variety of macroeconomic environments, which directly impact the performance of asset classes. The studies are built to analyze features of portfolio construction, including liquidity, rebalancing, and net cash flow. Their asset allocation studies offer an analysis that formulates effective portfolios to achieve the Plan's goals. Specifically, the following initiatives are included in their asset allocation studies:

- Identify and quantify sources of risk, beyond the use of standard deviation as the sole risk metric
- Establish a forward-looking methodology that is not anchored by pre-determined expected returns, standard deviations and correlations
- Recognize the illiquid nature of alternative asset classes, along with the liquidity needs
- Incorporate the return goals, liabilities, and cash flows
- Allow for portfolio re-balancing to keep asset allocations within target ranges
- Allow for non-normal return patterns
- Reflect current economic conditions in the analysis

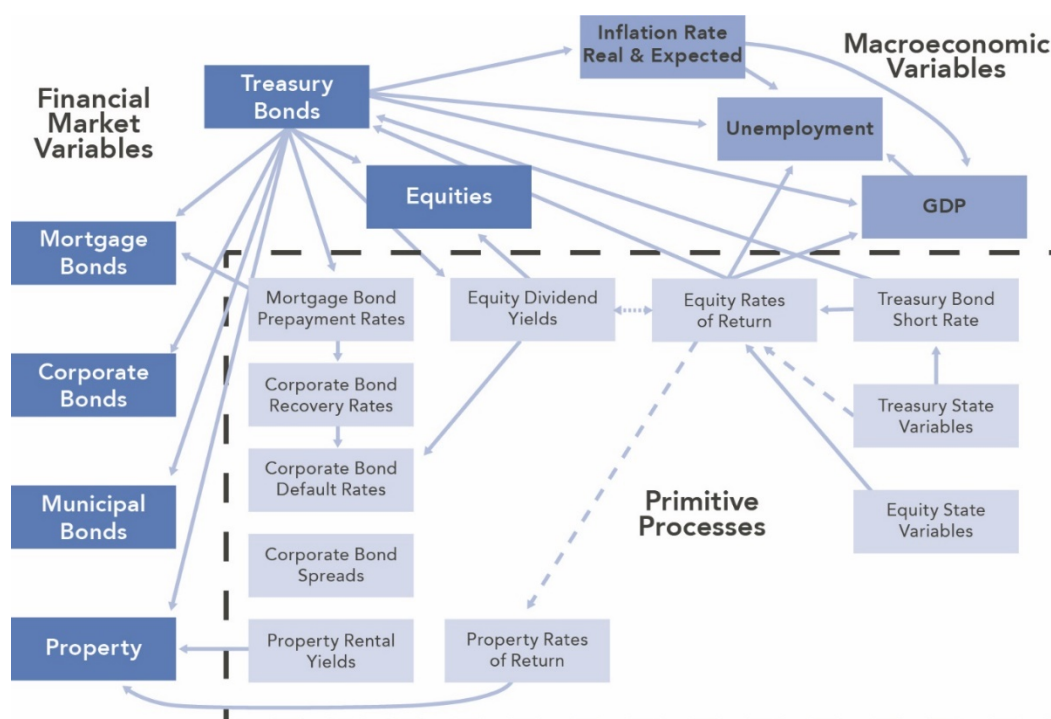
Marquette's software is based on a Monte Carlo simulation of macroeconomic factors, which are used to model monthly return outcomes of capital markets. The simulations are created by an economic scenario generator ("ESG"), which is the driving force behind their asset allocation model. The economic scenario generator simulates the future performance of the capital markets and macro-economy; the underlying models are calibrated based on the long-term historical record, so that they will reproduce the kinds of volatility and stress scenarios that have been observed over the 20th and 21st centuries. The models are linked and correlated so that the behavior of different asset classes and economic variables is consistent within each random scenario.

The ESG utilized in their studies is the GEMS[®] Economic Scenario Generator, which is developed and managed by Conning, a risk solutions group based in Hartford, Connecticut. Conning's Risk Solutions Group has been developing and using financial modeling systems since 1995 to perform economic capital analyses, strategic asset allocation analyses, and other types of risk analyses for a wide range of institutional clients. Their software products, including the GEMS[®] Economic Scenario Generator, are licensed and run internally by insurance companies, pension funds, and consulting firms across Europe, North America and Asia. It has won InsuranceRisk's "Best ESG Software" award three times.

The primary models that drive the analysis are the following:

- Interest rates and non-defaultable bonds
- Equity indices and dividends
- Corporate bonds, credit spreads, prices and transition and default
- Sovereign debt, including spreads and defaults
- Inflation (core, medical, wage)
- GDP
- Unemployment
- U.S. Mortgage backed bonds
- U.S. Municipal bonds
- Covered Bonds
- Real Estate
- FX

These models are the most commonly used for evaluating asset allocation structures. They are introduced through a cascade structure, wherein each economic model forms an interconnected network. In a cascade structure, scenario generation is governed by a well-defined sequence in which variables at the top of the structure can only influence those below. The exact sequence of the variables is to some extent arbitrary; however, interest rates are often used as a starting position, and since one may need to calculate discounted cash flows through the life of a simulation, it is for practical reasons an obvious choice. Within the GEMS® ESG the cascade structure, shown below, begins with the non-defaultable term structure model, proceeds through equities and macroeconomic variables to end with unemployment (see the diagram below). The result of this approach enables GEMS® to show realistic relationships between variables on average, over different time horizons, and in tail events.



The results of the simulations are then used to calculate a variety of risk and return statistics which allow for a comparison of portfolios in the study. The following statistics most useful in evaluating portfolios against each other:

- Risk adjusted return
- Downside probability and risk
- Risk and return distributions
- Risk and return decomposition by asset class
- Risk and return decomposition by market factor
- Funding ratio projections (pensions only)
- Pension surplus projections (pensions only)
- Spending projections (rate and dollar amount; endowments/foundations only)

Statistics are developed annually and for the cumulative horizon of the study (typically ten years); results are shown graphically as well as numerically.

Using the resources and advice of the Investment Consultant, the Board/Committee is responsible for making the decisions regarding the strategic asset allocation. The system's overall risk tolerance is discussed during the asset allocation review and during monthly performance updates. The asset allocation is reviewed at each monthly Board/Committee meeting. *The asset allocation is tailored to meet the desired actuarial expected return on assets.*

The IPS provides the minimum and maximum authorized investment exposures and target allocation for the various asset classes in which Plan may invest as categorized by management style are as follows:

<u>Asset Class</u>	<u>Target Allocation</u>	<u>Maximum</u>	<u>Minimum</u>
Broad Fixed Income	20%	25%	15%
Global Aggregate	15%	20%	10%
<u>Total Fixed Income</u>	35%		
U.S. Large-Cap Core	9%	14%	4%
U.S. Large -Cap Value	6%	11%	1%
U.S. Mid-Cap Core	7%	12%	2%
U.S. Small-Cap Value	5%	10%	0%
<u>Total U.S. Equity</u>	27%		
Developed Large-Cap	9%	14%	4%
Non-U.S. Small-Cap	9%	14%	4%
Emerging Market	6%	11%	1%
<u>Total Non-U.S. Equity</u>	24%		
GTAA	4%	9%	0%
<u>Total Hedge Funds</u>	4%		
Real Estate - Core	10%	15%	5%
<u>Total Real Assets</u>	10%		
<u>Total</u>	100%		

The IPS states: Each quarter, the Plan Administrator and Investment Consultant review the actual target allocations for each Fund and make any recommended changes to the Board/Committee. The target allocation must be within the minimum and maximum asset class exposure and must conform to all other provisions of this Investment Policy. Any approved changes to the target allocation must be documented in the official Board/Committee minutes.

Marquette does not advocate tactical management of the portfolio. While narrow rebalancing ranges (+/- 5%) exist to allow for market movement and the ability to rebalance in a cost-efficient manner, they do not advocate for tactical timing of the markets.

Per Marquette, who as of September 30, 2019 advised clients holding over \$103 billion of public retirement fund assets; the median allocation of the System's peers is higher in private equity, as well as, other alternative asset classes. Marquette states that although the peer group reference point is useful, a plan's asset allocation includes key factors such as fee sensitivity, risk sensitivity, and projected cash flows.

SMS reviewed the National Association of State Retirement Administrators (NASRA) Public Funds Survey dated December 2019 (which is a summary of findings for FY 2018). The data shows the average pension fund asset allocation for 2018 as follows:

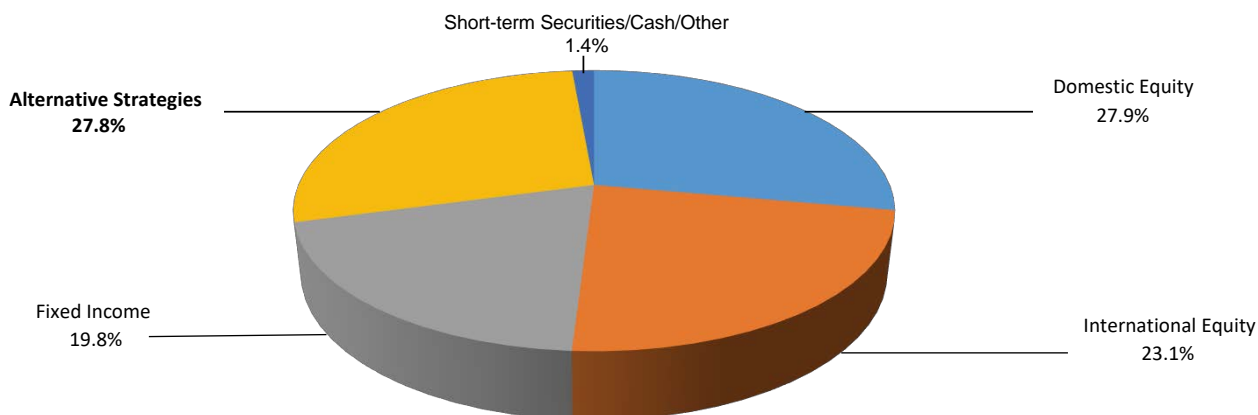
- Public Equities: 48.4%
- Fixed Income: 23.3%
- Real Estate: 7.3%
- Alternative Investments: 18.9%
- Cash and Other: 2.1%

Per that study, sustained low interest rates have caused most public pension funds to seek higher returns in other asset classes. One of those classes is real estate, the allocation to which has grown steadily in recent years and remained above 7 percent for two to three years. The average allocation to alternatives, composed primarily of private equity and hedge funds, also continues to grow steadily.

Texas Association of Public Employee Retirement Systems' (TEXPERS) Report on the Asset Allocation and Investment Performance of Texas Public Employee Retirement Systems for periods ending September 30, 2018 provides an illustration below showing the average dollar-weighted* asset allocation of survey respondents as a composite group. The Domestic and International Equity asset classes include investments such as U.S. and Non-U.S. common stocks. Fixed Income includes investments such as government and corporate bonds from domestic and international issuers. Alternative Strategies include private equity, real estate, venture capital, marketable alternative strategies and commodities.

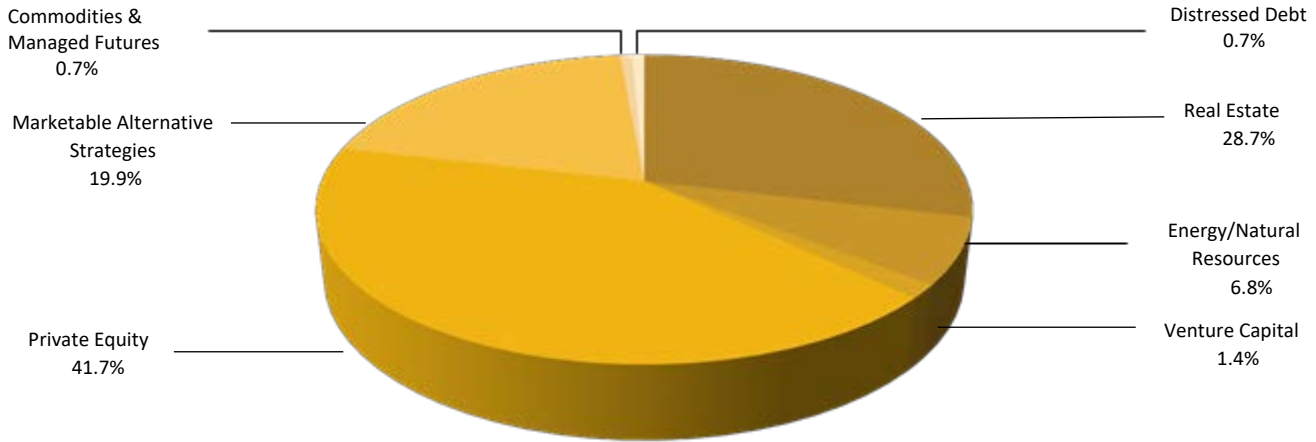
** Dollar-weighted means that individual responses are weighted according to size of the asset base when calculating the average results – meaning that responses from large participants have a greater impact on average results than those of smaller participants*

Market Value \$58.45 Billion

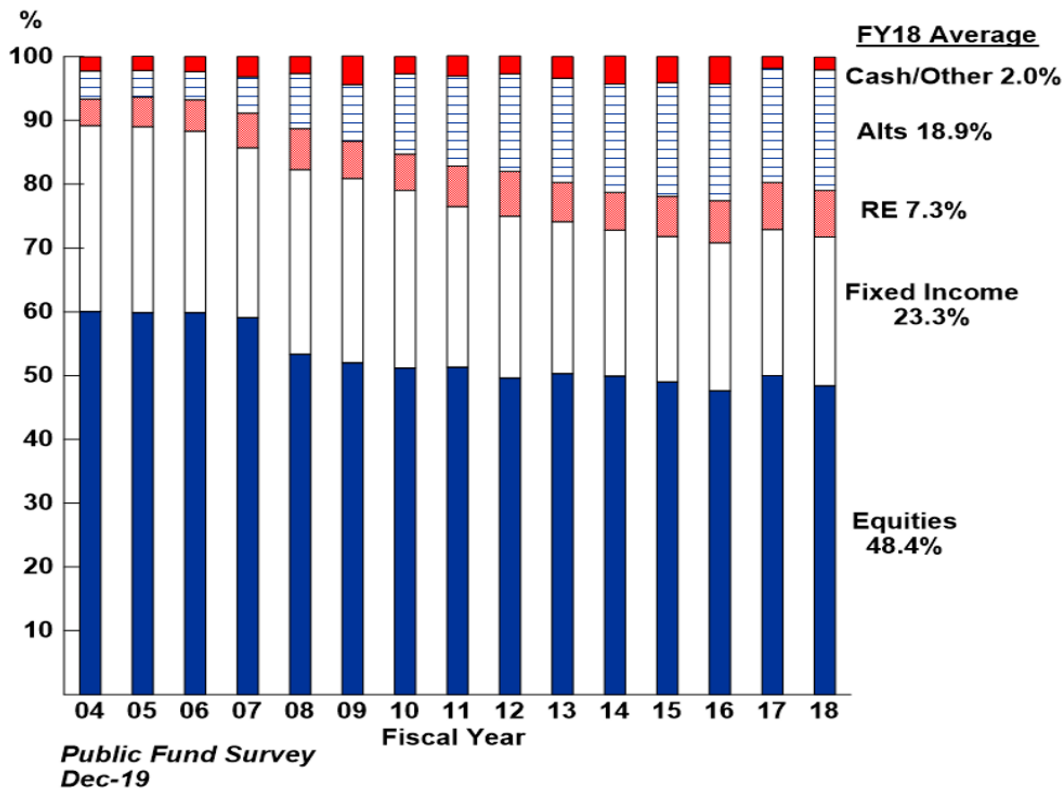


The asset allocation demonstrates that, in aggregate, the respondents have a level of diversification within the norm for public pension systems.

Breakout of Alternative Strategies



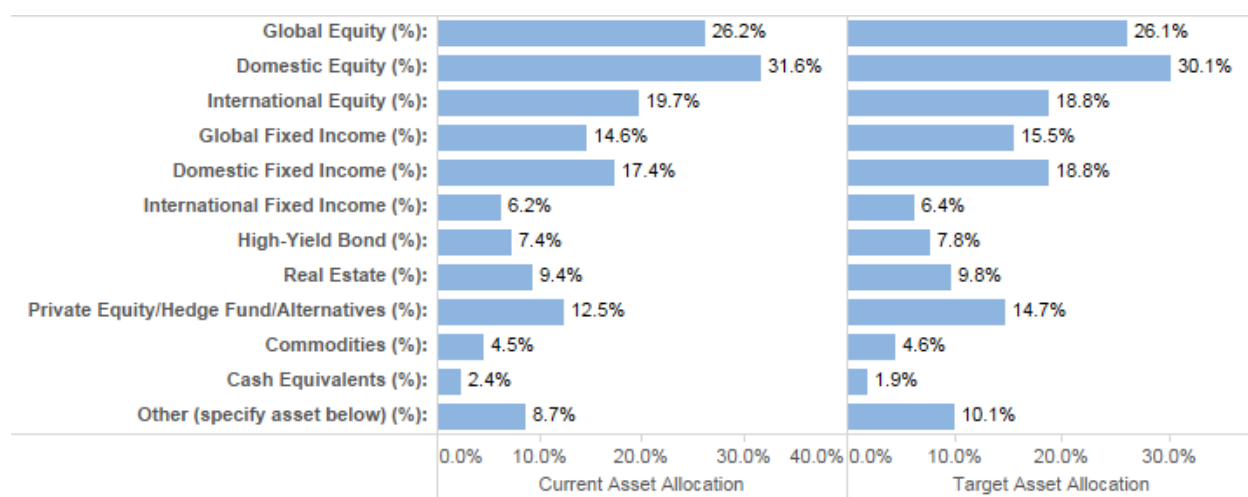
The NASRA Public Fund Survey plotted the average asset allocation of 90+ funds since its inception. The results are illustrated below:



The average allocation to public equities remains approximately 50 percent, while Fixed Income remains below 25 percent for the sixth consecutive year. Sustained low-interest rates have caused most public

pension funds to seek higher returns in other asset classes. One of those asset classes is Real Estate, the allocation to which has grown steadily in recent years and remained above 7 percent for the second consecutive year. At nearly 19 percent, the average allocation to Alternatives, composed primarily of private equity and hedge funds, also continues to grow steadily.

The National Conference on Public Employee Retirement Systems (NCPERS) undertook a comprehensive study exploring retirement practices of the public sector in partnership with Cobalt Community Research. The 2018 National Conference on Public Employee Retirement Systems' *Public Retirement Systems Study* had 167 responding funds. The following shows their responding funds asset allocations.

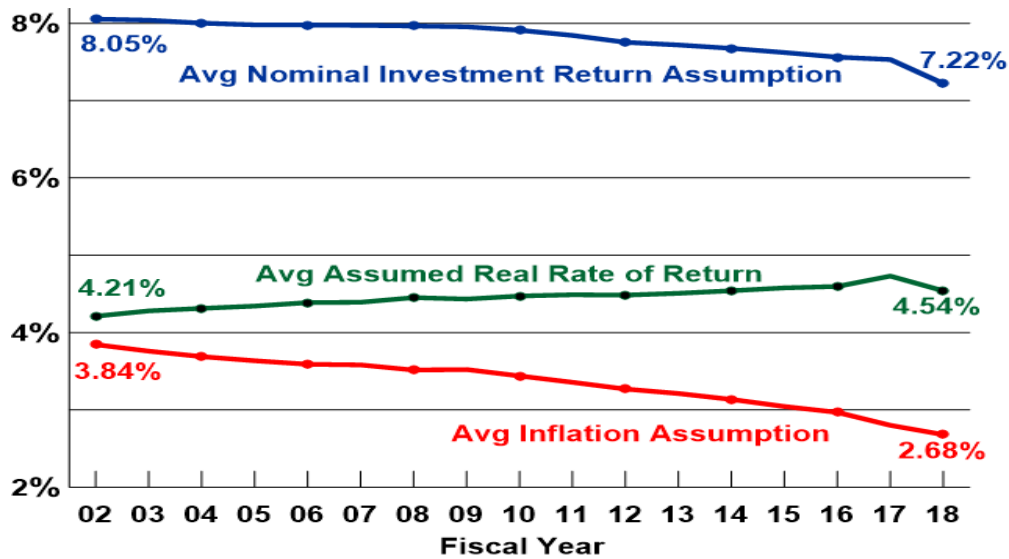


The System is much more conservative than their peers. All comparisons shown above have considerable assets in alternative investments. Further, the System's investment return assumption, discussed next, is lower than most peer plans. The portfolio will be less likely to outperform because the asset allocation is chosen to meet the desired actuarial expected rate of return.

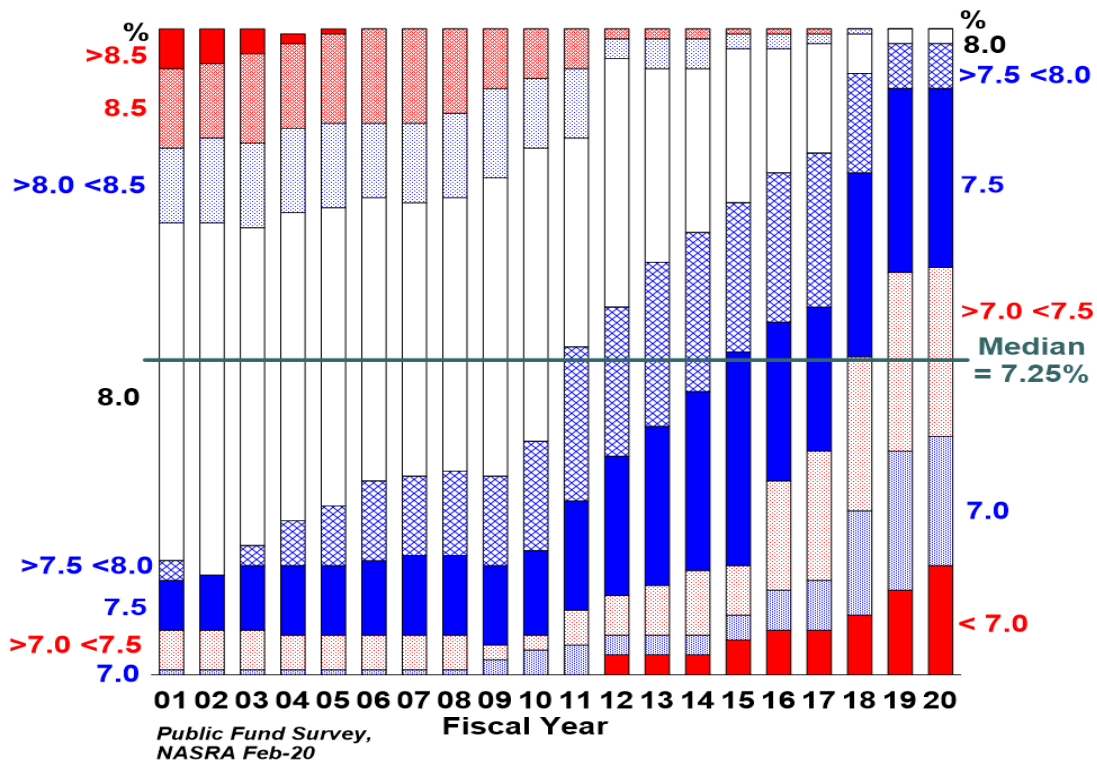
Investment Return Assumption

Because investment earnings account for a majority of revenue for a typical public pension fund, the accuracy of the return assumption has a major effect on a plan's finances and actuarial funding levels. The investment return assumption is a key actuarial assumption which directly impacts a plan's liability calculation and contribution requirement. A higher return assumption leads to a lower liability calculation and therefore a lower contribution requirement and vice versa. In response to projected market conditions and actual plan experience, retirement systems have reduced return assumptions in recent years.

NASRA issued a brief titled Public Pension Plan Investment Return Assumptions as of February 2020. There were 130 plans in the dataset including the Houston Firefighters Relief and Retirement Fund, Texas County and District Retirement Systems, Texas ERS, Texas Law Enforcement Custodial Officers System (LECOS), Texas Municipal Retirement System (TMRS), and Teachers Retirement of Texas plans. In that update, **the national average investment return assumption is 7.22%. The median investment return assumption is 7.25%.** The investment return assumption used by public pension plans typically contains two components: inflation and the real rate of return. The sum of these components is the nominal rate of return, which is the rate that is most often used and cited. See the chart below:



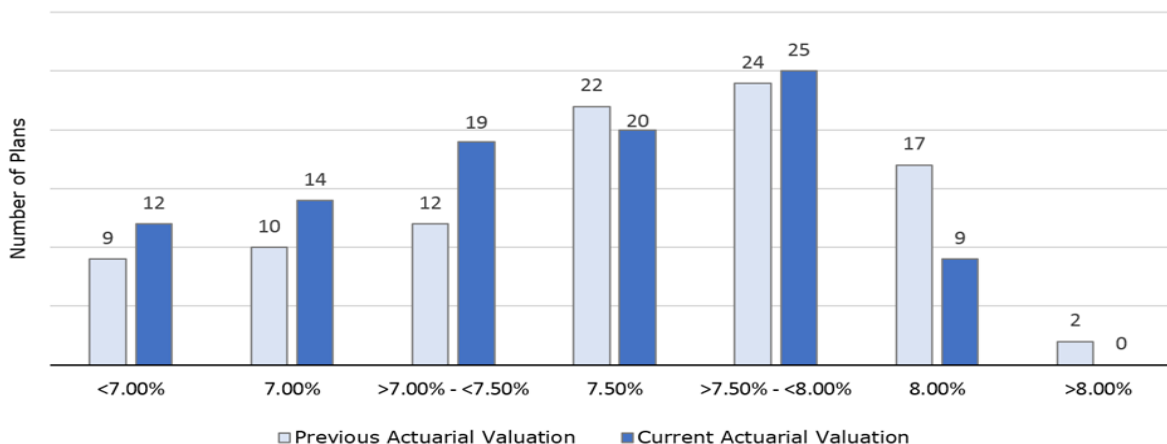
The change in distribution of Public Pension Investment Return Assumptions in the NASRA update- FY 01 to FY20:



The Texas Pension Review Board's (PRB) Texas Public Pension Data Center says the average **investment return assumption** for Texas systems is currently **7.37%**.

Further, the PRB states: return assumptions are reported in actuarial valuations, which are conducted by Texas plans at least every 3 years according to law. Return assumptions displayed below are from the most recent and previous valuations received by the PRB as of December 2018.

Investment Return Assumptions



The PRB's **October 2019 Actuarial Valuation Report** shows that, for the first time in at least 10 years, no Texas pension fund has a target rate of return above eight (8) percent. Only five (5) systems have an eight (8) percent target. Lowering system target rates helps pension systems manage their investments in more conservative ways, but sometimes require additional contributions from public employees and/or their governmental-employer sponsor.

The Texas Association of Public Employee Retirement Systems (TEXPERS) shows the following target rates:



Target rates of return for Texas state and local pension funds

Plan Target Rates	Oct. 2017	Oct. 2018	Oct. 2019
> 8.0%	3	1	0
8%	21	11	5
< 8% > 7.5%	26	28	24
7.5%	16	18	23
<7.5% >7	11	17	19
7%	7	12	16
< 7%	9	12	12
Total Plans Registered	93	99	99

From data reviewed, the System has a lower target rate of return than at least 87 of the 99 plans registered with the PRB. The Dallas Area Rapid Transit system (DART) and Port of Houston Authority Retirement Plan had a rate of return of 6.75% for 2018. The San Antonio Metropolitan Transit Retirement Plan had a rate of 7.5% in 2018.

(B) Expected risk and expected rate of return, categorized by asset class

Public retirement systems manage a variety of risks, including those relating to investments, operational issues, and the funding or financing of pension benefits. Identifying and measuring these risks is key to successful administration of a retirement system.

The expected risk and expected rate of return of each asset class are included in Marquette's Asset Allocation Study as discussed in section (A) above. A weakness in the IPS regarding asset allocation is the lack of a discussion on how the System's overall risk tolerance is expressed and measured. The expected risk is not mentioned per asset class. Currently, the Investment Consultant takes risk into consideration, but, *we recommend that the Board/Committee add a discussion of risk to the IPS*. For providing assistance to the Board's/Committee's consideration, we have provided the Statements of Key Risk and Common Practices to Address Those Risks to the Chair under separate cover. The document is endorsed by NASRA, the GFOA the Association of Public Pension Fund Auditors (APPFA), and the National Council on Teacher Retirement.

On a quarterly basis, Marquette analyzes and reports on risk as measured by standard deviation for the total fund portfolio relative to its peers. The fund's absolute risk and relative risk ranks can be monitored over time for as long as the fund has the historical data. They can also compare the total fund to all total fund portfolios in the universe to see where the fund plots in the following categories: excess return over investment policy, tracking error, and information ratio.

Risk metrics can also be calculated relative to policy for total fund and investment mandate composites, as well as asset class managers. Relative risk metrics include:

- Sharpe ratio
- Historical beta
- Historical alpha
- R-squared/diversification
- Tracking error
- Information ratio
- Downside probability
- Downside risk
- Sortino ratio

For fixed income, U.S. equity, and non-U.S. equity managers, Marquette evaluates risk concentration by issuer. Risk concentration examines all types of capital exposure to each company in a total fund and is useful when large events occur. For U.S. equity and non-U.S. equity managers, they also look at common holdings between managers on both a number and percentage basis. This is useful to see if managers are selecting stocks from the same universe and not adding diversification to the system's portfolio.

The primary sources of risk are controlled through Marquette's asset allocation studies, investment policy development, investment manager due diligence, and program implementation. Marquette actively manages risk through re-balancing and on-going investment manager due diligence.

Marquette stress tests portfolios based on various market conditions. This is a way to quantify several types of risk (interest rate risk, etc.) and identify portfolio sensitivities that may not show up in an asset allocation study.

The system uses both active and passive managers within its pools- passive management provides a cost-effective means to gain asset class exposure while active management is used where a manager is believed to be in the best position to outperform over the long term and net of fees.

(C) Appropriateness of selection and valuation methodologies of alternative and illiquid assets

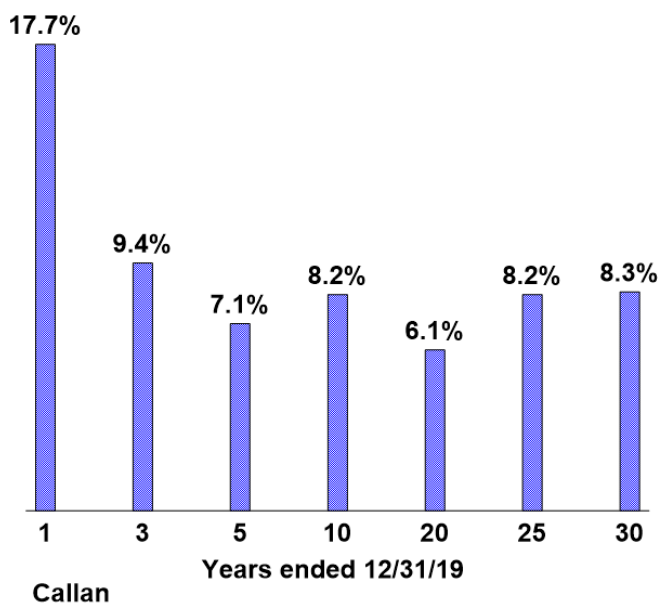
The System has exposure to core real estate, but does not currently invest in alternative strategies such as private equity and/or hedge funds. The Non-Union Plan's Target Asset Allocation allows for up to 4% investment in alternative investment in hedge funds.

(D) Future cash flows and liquidity needs

The Plan's anticipated future cash flow and liquidity needs are developed as a part of the annual actuarial valuation as they are preparing the actuarially determined contribution. The actuarial valuation addresses the anticipated cash flow and liquidity needs. The Plan is closed to new participants.

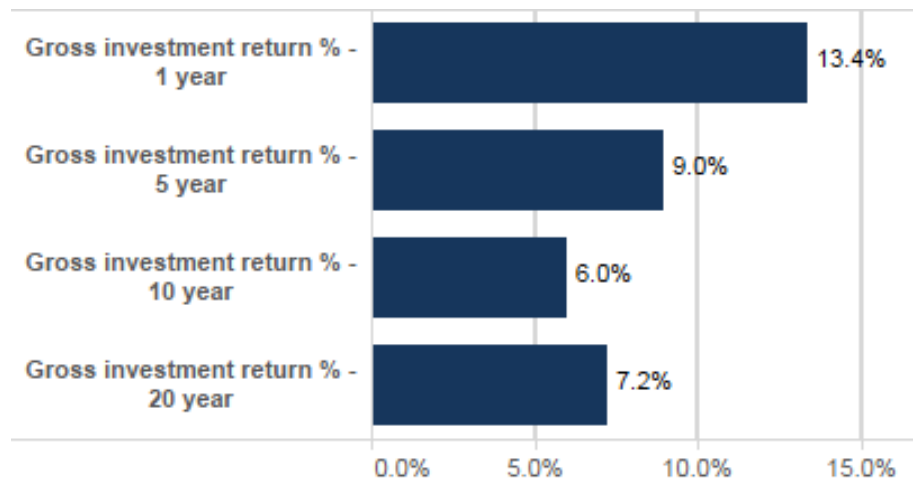
As a best practice, the GFOA recommends that those with decision-making authority carefully review and understand the actuarial valuation report and use the information it contains to make policy decisions to ensure that pension benefits are funded in a sustainable manner, consistent with the pension funding guidelines developed by GFOA and other major state and local government professional organizations.

The System uses the actuarial valuation to review cash flow and liquidity needs. Contributions along with investment earnings are the funding source for investments which are governed by the IPS and Asset Allocation guidelines. Investment earnings are a significant part of cash flow for the Plan. When the portfolio returns less than expected, the plans don't have the money they were anticipating, and the plan's sponsor must make up the difference or the unfunded liability rises. The NASRA **median public pension annualized investment returns for the period ended December 31, 2019 is 17.7%**. The following chart provides the 3, 5, 10, 20, 25, and 30 year returns as well:



In contrast, key findings from the 2018 NCPERS Public Retirement Systems Study found one-year investment returns **averaged 13.4% for plans reporting in 2018**, which was above the 7.8% reported in 2017.

2018 Study Investment Returns:

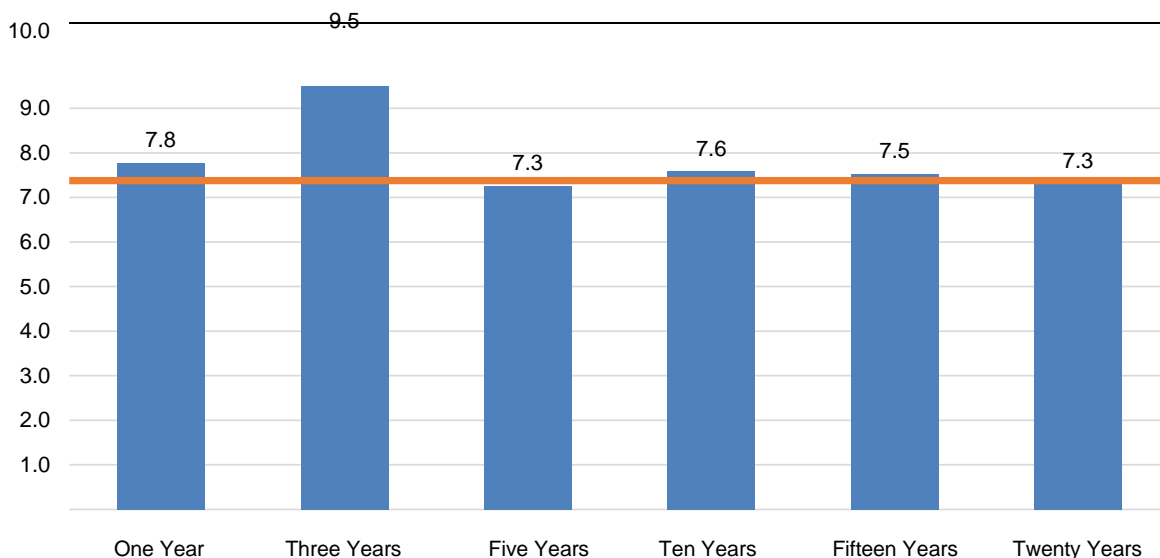


TEXPERS Report on the Asset Allocation and Investment Performance of Texas Public Employee Retirement Systems dated March 2019, shows the weighted average returns for periods ending September 30, 2018:

Annualized Returns for the Periods Ending 9/30/2018	One Year	Three Years	Five Years	Ten Years	Fifteen Years	Twenty Years
TEXPERS Weighted Average	7.8	9.5	7.3	7.6	7.5	7.3
Actuarial Assumption*	7.4	7.4	7.4	7.4	7.4	7.4

TEXPERS Returns vs. Average Actuarial Assumption*

For periods ending September 30, 2018:



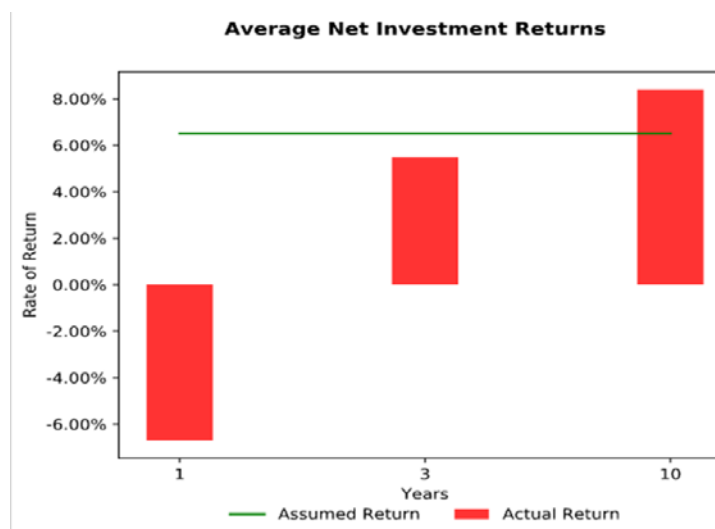
* This year's actuarial assumption of 7.4% is the average of what was reported among participating TEXPERS members.

The PRB's Texas Public Pension Data Center is where the 99 actuarily funded defined benefit public pension plans registered with the PRB report data to the PRB in annual financial reports, actuarial valuations and other studies, and investment and membership reports. This data center presents the reported information by plan and comparatively by plan type and asset group.

Per the PRB, in the past year, Texas plans have generated positive net returns. However, unweighted average returns have been below their assumed rates of return over the past three to ten years. Any market volatility can result in plan investment returns that are greater or less than their long-term averages. Actual returns obtained from the most recent fiscal year-end investment return and assumptions reports. Long-term return is 30 years or longest term available. All figures are net of fees. Assumed returns obtained from most recent actuarial valuation reports.

Average Actual Investment Returns					
Plan Type	1-Year	3-Year	10-Year	Long-Term	Assumed Return
Statewide	12.35%	7.63%	6.47%	8.13%	7.46%
Municipal	12.32%	6.17%	5.08%	7.91%	7.45%
Local Firefighter	13.09%	5.26%	4.58%	6.62%	7.61%
District/Supplemental	13.11%	6.42%	5.57%	6.80%	7.01%
All	12.94%	5.94%	5.10%	6.92%	7.37%

The System did not reach its goal in 2018, but exceeded it in 2019. The Plan had a negative (6.6%) return, resulting in an investment loss of approximately \$28.4 million, net of fees, with a positive 8.9% return over the last 10 years through 2018 (per PRB and Marquette). The PRB table shows the most recently reported short- and medium-term investment rates of return compared with the rate of return the plan assumes it will make on its investments. Figures are obtained from the most recent investment return and assumptions reports. Long-term return is 30 years or longest term available. All figures are net of fees.



The System might adjust its asset allocation target or investments for changes in the investment rate of return or if an unexpected, significant change occurred in the asset valuation. Any adjustments would be made taking all relevant facts into consideration.

Annually, an Actuarial Valuation is prepared by Milliman and the report is presented to the Board/Committee during a monthly Board/Committee meeting. In the Milliman report cash flow includes contributions, investment returns, benefit payments, and administrative expenses. The January 1, 2019 Actuarial Valuation by Milliman shows in Exhibit 5 - 2018 Inflows of contributions of \$11,073,255, \$(11,885,822) in investment returns, and other income of \$665,810 for a total inflow of \$(146,757). It shows outflows of \$12,735,227 for benefit payments to participants; investment management fees of \$328,255; trustee fees/expenses of \$131,203 and other expenses of \$110,776 for total outflows of \$13,305,461. There were no changes to the actuarial method (Asset valuation method for contributions and the Entry Age Normal actuarial cost method for costs). This is one view of the cash flow requirement included in the valuation report.

The actuarially determined contribution for plan year 2019 was \$12,628,619. It includes normal costs of \$3,347,621; \$8,510,237 for contribution toward the unfunded liability and \$770,761 interest on the contribution. The funding cost of the Plan is derived by making certain specific assumptions as to rates of interest, mortality, plan turnover, etc. In this valuation the investment rate of return assumption was changed from 6.75% to 6.50% by the Board/Committee after considering input from Milliman and KPMG (via their audit of Metro) along with performance results and market information. In addition, the mortality table was updated. Demographic assumptions are based on Milliman's Demographic Assumptions Study dated June 22, 2016 and on the actuary's judgement and continual review of experience including for the plan year ending December 31, 2018. The last complete experience study was performed on June 22, 2016 using 2015 data. The experience studies are generally performed every five years and so it is anticipated that the next one will be performed during 2020.

The actuarial valuation also contains the actuarial accrued liability (AAL), the actuarial value of assets (AVA) and the unfunded actuarial accrued liability (UAAL). The actuarial value of assets divided by the actuarial accrued liability calculates the funded ratio. In other words, how much of the total liability is funded. The January 1, 2019 Actuarial Valuation by Milliman states that for plan year 2019 the Plan was 61.7% funded. The actuarially determined contribution includes a level dollar amortization of the Unfunded Actuarial Accrued Liability as of January 1, 2019. The asset valuation method is a five-year smoothed market value method. As stated previously, the January 1, 2020 Actuarial Valuation is not yet available.

Current personnel are not aware of whether an asset-liability study was performed. The Statement of Key Risks and Common Practices to Address Those Risks (provided separately) includes Asset/liability studies as a point of focus for the risk category Assets Do Not Support Liabilities which is the primary risk to a defined benefit public pension system. It notes that studies are generally performed periodically to identify changes in the relationships between the assets and liabilities of a pension fund. Asset-liability modeling (ALM) is a tool that shows the potential consequences of different investment strategies. Those consequences include the plan's future funded status and resulting contribution requirements.

ALM allows a system to coordinate investments with plan liabilities in order to achieve desired financial goals. Those financial goals often involve finding the best combination of reduced risk and maximized

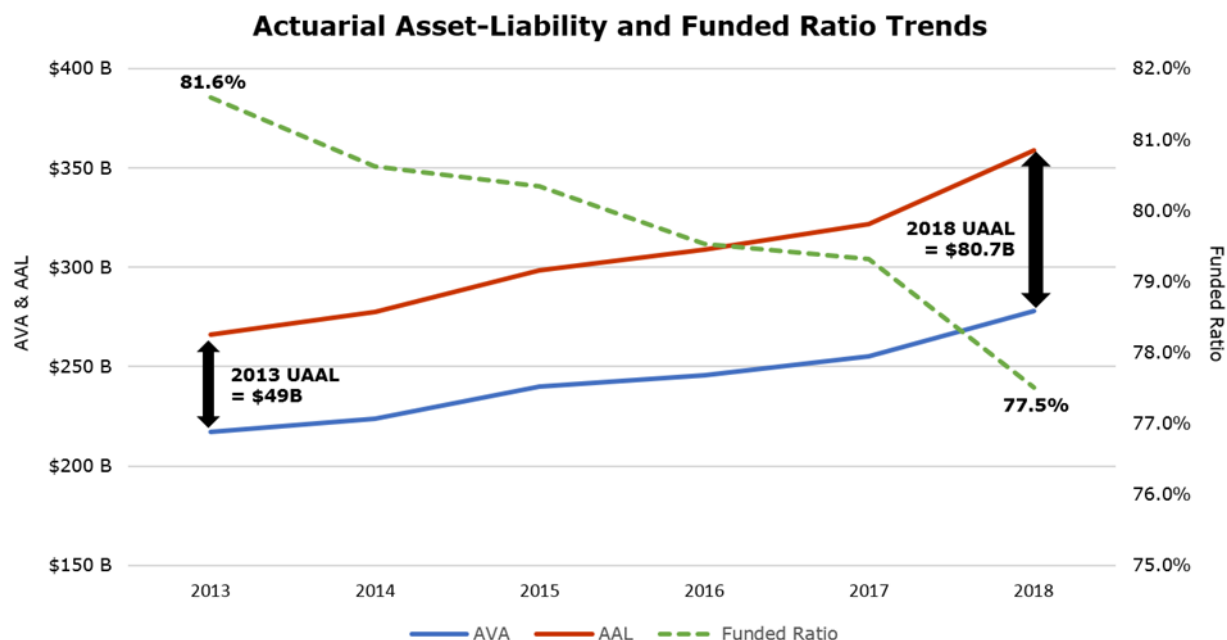
investment return. Investment managers can then implement strategies that are projected to meet those financial goals. ALM provides the tools to manage pension funding volatility. An asset-liability study can benefit a pension plan in the following ways:

- By quantifying the level and sources of investment risk and return relative to the plans' liabilities and analyzing the financial efficiency (risk/return) of the current asset allocation, an effective strategy that recognizes that both assets and liabilities can be employed to reduce volatility in contributions or on financial statements.
- It can analyze the effect on key risk/return metrics of making changes to the current asset allocation. This provides a more comprehensive understanding of the potential impact to the plan of altering the plan's asset allocation.
- Selecting the optimal asset allocation policy will help to control financial risks (funding, balance sheet, and pension expense) and maximize surplus returns to reduce the long-term cost of the plan.

It will provide an understanding of the tradeoffs between minimizing the volatility of contributions and maximizing returns to reduce the long-term cost of the plan. *We recommend the System consider having an Asset/Liability study performed after assessing the benefits of these studies for closed plans.* The System already uses the other two basic procedures of Actuarial Review and Asset Allocation Models.

Milliman provided a 2019 METRO Pension Plans Review dated November 8, 2019. Within this report are cash flow projections calculated through 2028 and additional projections for years 2044 and 2045. The projection for 2021 is \$155M, projection peaks at \$160M in year 2027, and the ending projection in 2045 is \$109M. The actuarial firm determined that the projections show that the Plan will have enough assets to make the projected benefit payments. These projections are based on the 2019 GASB 68 Valuation, prepared by Milliman. Milliman presented the report to the Board/Committee at its November 8th meeting.

Per the 2019 Actuarial Valuation, the Plan was 61.7% funded at January 1, 2019. The Plan is a closed plan, when reviewing the funding percentages below they were determined using both open and closed funds. The NCPERS Public Retirement Systems Study found: The average funded level to be 72.6% for 2018, up from 71.4% in 2017. Per Milliman's 2019 Public Pension Funding Study of the top 100 public pension funds, 60 of the plans had funding ratios between 60% and 90%; 27 had ratios lower than 60%, and 13 plans had ratios higher than 90%. The PRB Texas Public Pension Data Center: The aggregate funded ratio has decreased over time.



Actuarial Standard of Practice (ASOP) No. 51, *Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions*, defines risk as "The potential of actual future measurements deviating from expected future measurements resulting from actual future experience deviating from actuarially assumed experience." Milliman's Actuarial Valuation and calculation of the actuarially determined contribution does include a section on risks that might be significant to the Plan.

Actuarial Standard of Practice No. 51 defines a sensitivity test as a process for assessing the impact of a change in an actuarial assumption on an actuarial measurement. A sensitivity analysis typically focuses on a handful of actuarial assumptions that are most consequential to the condition of a pension plan. These assumptions typically include those for investment return, inflation, population growth, payroll growth, and employer contribution effort.

New GASB standards, Statements 67 and 68, require plans to calculate and report their funding level based on a projected investment return of plus and minus one percent from their assumed investment return; this also is a basic form of sensitivity testing.

One such risk is Interest Rate Risk. Their assessment is that if the interest rate changes by 1%, the estimated percentage change in pension liability is a plan's duration in years. The approximate duration of the Plan is 8.8 years. As such, if the interest rate changes by 1%, the estimated change in pension liability is 8.8%. The cash flows and liquidity needs are incorporated in the stress testing performed by the Investment Consultant.

3 A Review of the Appropriateness of Investment Fees and Commissions Paid by the System

Per the IPS, the Plan Administrator is charged with negotiating written contracts with the Investment Managers that include fees and approving all Investment Manager, Custodian, and Investment Consultant fees. The Investment Consultant is an active participant in the process of negotiating fees, as well as seeking the lowest-cost account structure. Marquette reports investment fees in their reports in both expense ratios and hard dollars. They compare actuals versus industry averages to ensure they are continually at the appropriate level. In their performance reports, they include a comparison, by asset class, between the Plan's asset management fees and the industry average. A review of their Fee Schedule, in the December 2019 Board/Committee Report, shows the expense ratios are .25% compared to the 2019 Marquette Associates Investment Management Fee Study-Industry Median of .33%. A Public Retirement Systems Study dated January 22, 2020 conducted by the National Conference on Public Employee Retirement Systems and Cobalt Community Research found investment fee fund expense to average .40% for investment fees and .19% for administrative fees.

Marquette reports performance both as gross-of-fees and net-of-fees. Using a net-of-fees performance evaluation allows the Plan to determine if the Investment Managers can consistently add value after fees. Marquette is willing to recommend that the Plan pay a slightly higher fee level for a manager that exhibits the ability to add value after fees are considered.

Fees include investment management fees, participant reporting and portfolio administration. The Plan does not currently invest in alternative investments; so, the sometimes-substantial performance-based fees, known as carried interest, to manage those investments have not been experienced the system.

GFOA's Best Practice on Investment Fee Guidelines for External Management of Defined Benefit Plans recommends defined benefit plans with alternative investment strategies adopt an investment management fee policy that will allow them to negotiate competitive fees. They recommend the following strategies to ensure the Plan is paying a reasonable, competitive fee:

1. When using a separate account structure (professional investors managing an investment portfolio solely for the plan), establish fee break points as the portfolio amount increases.
2. When investing in commingled and mutual funds (investment vehicles that pool assets of multiple investors), require the manager to identify and to quantify all fees.
3. Identify all fees and focus on aligning the interests of the plan with those of the investment manager through a performance fee structure, potentially including fulcrum fees, hurdle rates, fee caps, and clawback provisions.
4. Any fees that aren't directly related to the management of the portfolio should be considered for elimination.
5. Seek access to the lowest-cost share class and require that any fees related to services provided to retail investors be refunded to the plan.
6. Ask if the investment manager offers a performance fee structure and, if so, analyze the provisions to assess whether it meets the defined benefit plan's needs.

7. Have an attorney review any investment fee arrangements for alternative investments.

SMS observed the Board/Committee discussing and approving a Fee Proposal Recommendation from Marquette on a fee discount proposed by one of the Funds in the February 2020 Board/Committee meeting. The fees paid by the Plan are lower than industry averages.

4 A Review of the System's Governance Processes Related to Investment Activities

Governance is defined as the systems and processes that comprise the oversight and control of an organization. Board/Committee members are, by definition, fiduciaries and operate under rules consistent with general trust principles inherent in common law. These rules stipulate that Board/Committee members shall operate a) solely in the interest of plan participants; b) for the exclusive purpose of providing benefits to participants and their beneficiaries; c) using the care, skill, and prudence that a prudent person or investor would use under like circumstances, etc. In addition to fiduciary and prudence standards, public pension trustees also are subject to ethics standards and conflict of interest laws, and to numerous oversight and reporting requirements. Overall governance includes, the Texas Pension Review Board which is an independent state agency charged with reviewing state and local retirement systems' actuarial soundness and compliance with state laws.

The Plan's Board/Committee also has authority to set actuarial assumptions, which are projections about future demographic and economic events used to calculate the cost of the plan and to determine its financial condition. Actuarial assumptions that are especially consequential include the investment return assumption and mortality assumption, which projects how long plan participants will live.

The Board/Committee is also responsible for overseeing the management and investment of System assets and is tasked with developing investment strategies and monitoring investment processes. Michael Drew and Adam Walk who wrote *Investment Governance for Fiduciaries* published by the Chartered Financial Analysts (CFA) Institute Research Foundation define Investment governance as "the effective use of resources—people, policies, processes, and systems—by the Board seeking to fulfil a fiduciary duty to a principal or beneficiary in addressing an underlying investment challenge".

The System does not have a written governance policy statement outlining the governance structure; however, the IPS outlines some of the governance structure by including the roles and responsibilities of the Board/Committee, staff, and external participants in oversight and control of the System. See Accountability section below.

Transparency

Regarding transparency, the IPS and investment related processes are not accessible by the public via ridemetro.org or other electronic means. The METRO intranet and internet website contains links to the Comprehensive Annual Financial Reports (CAFRs), auditor statements, and actuarial valuations providing access to both the public and plan participants. Notice of Board/Committee meetings is posted and included on the intranet under Coming Events. Meeting agendas and minutes are not available to the public. Board/Committee members did seem interested in providing information to the public on the website(s). *We recommend the Board/Committee make additional information available to the public. At a minimum this information should include the Investment Policy Statement, meeting agendas, and the Non-Union one-page Flash Report from Marquette.*

Pension Plan Board/Committee meetings are held monthly typically in the same location at the METRO administration building. Topics discussed in the meetings vary, but generally every meeting has a presentation from the Investment Consultant. In most cases, investment discussions are the primary focus of the meetings. The consultants provide substantial information on the performance of the

investments and fees. Marquette representatives lead the discussion with the use of printed materials on the Market Environment overall and then Portfolio Review for approximately 40 minutes covering both Union and Non-Union Plans. Recommendations regarding portfolio changes are also offered by the Investment Consultant. Ample time is allowed for questions during the presentation. Additional time may be devoted to any recommendations brought forth by Marquette.

Upon review of Board/Committee meeting minutes from 2017-2019, other topics include, but are not limited to the following:

- Member educational requirements;
- Incorporation of Labor Amendments;
- Adoption of an Ethics & Conflict of Interest Policy;
- Actuarial assumptions;
- Procedures for engaging security litigation firms;
- Plan financial statement audit; and
- Peer comparisons, peer group analysis.

The minutes include extensive information regarding the investment presentation data provided by the Investment Consultant.

Investment Knowledge/Expertise

The Board/Committee of the Non-Union Plan has seven (7) members. The members have strong educational backgrounds. Four (4) of the members are employed by METRO, the remaining three (3) work in the private sector. All of the METRO representatives have a long-term association with METRO, and they maintain high-level positions. Many of the Board/Committee members have strong financial backgrounds (including portfolio management); some of which hold positions in financial and/or investment area. The Non-Union Committee's and the Union Board's usual practice is to meet together, so expertise of Non-Union members is available to Union members and vice versa.

Members are not required to have an investment background. For the most part Board/Committee competency involves a completely different skill set. The principal function of a public pension fund trustee is to work with his/her peers on the Board/Committee to establish the strategic direction of the System, to hire the necessary staff and consultants with the expertise to carry out that direction and administer the system on a day-to-day basis, and then to oversee the work being done to ensure the Board/Committee's directions are implemented.

As required by the PRB, Board/Committee members are required to have a minimum of four (4) continuous hours of investment related education every two years. Should an individual have been a member for less than one (1) year, eight (8) hours of basic trustee training is required. The Plan Administrator maintains the records of training for all members to ensure compliance. SMS also noted that within Board/Committee minutes, reminders of training were given to the Board/Committee members. The Plan pays for one training session per year.

As a strength, the System has an Ethics and Conflicts of Interest Policy. The Policy includes all of the recommended areas to be covered under Ethical and Fiduciary Conduct in the American Federation of State, County and Municipal Employees, AFL-CIO (AFSCME) Best Practices Policies for Trustees and Pension Systems except for Prohibitions of Campaign Contributions. The Policy includes a Code of Ethics;

General Standards of Conduct; Fiduciary Duties; Conflicts of Interest; Prohibited Transactions and Interests; Disclosure; Confidential Information (Privacy); Nepotism; Gifts; and Training. Information included is follows the PRB Model Ethics Policy.

The Plan's investment management model is to employ external Investment Managers. The Investment Consultant provides impartial investment management advice and guidance. Marquette provides the initial screening of Money Managers who will provide investments within the target allocation of the Investment Policy. The Investment Managers come in to be screened by the Board/Committee and discuss their firm and investment strategy. The Board/Committee holds the Investment Consultant accountable who in turn holds the Investment Managers accountable. The Board/Committee is consistent in its use of the structure/delegation of authority. Marquette and the Plan Administrator draft contracts with the Investment Managers which the Board/Committee reviews and approves. Marquette monitors the investments and performance of the Money Managers and notifies the Plan Administrator and the Board/Committee of changes in management or status of the Manager(s).

The Investment Consultant contract is typically for five (5) years. A Request for Proposal (RFP) is issued in time to have a Consultant in place upon expiration of the contract. The Plan has issued an RFP for an Investment Consultant and has just received responses. The Board/Committee Chair has appointed a Committee, consisting of Union and Non-Union Board/Committee members, to score the responses in accordance with the Technical Evaluation Criteria and recommend a short list to the Board/Committee. The Union Board and Non-Union Committee will then conduct interviews and vote to approve the final selection. *We recommend the System document its Guidelines for Selection of External Investment Professionals.* The current practices could be compared to the GFOA Guide for Establishing a Pension Investment Policy Appendix E. These Guidelines can be, but do not have to be a part of the Investment Policy.

Accountability

The GFOA, NASRA, AFSCME, CFA and NCPERS all are providing recommendations to systems to develop a governance framework. All have best practices related to governance. All recommend the development of a Governance Manual. *We recommend that the System develop, at a minimum, a governance framework.* The development of a Governance Manual might be considered over time in association with the costs of development. Below are the generally recommended items to be documented in governance by the entities named above:

- I. The **Governance Manual** serves as a central repository for the fund's primary governance documents. A well-designed governance manual facilitates effective management and provides a tool to educate trustees and stakeholders on fund operations. Key components include:
 - Summaries of statutes, regulations, the plan document, and board practices
 - The systems' mission statement and, if applicable, its vision and guiding principles
 - The organization chart, lines of authority, job descriptions, and summaries of contracts
 - Board policies, key procedures and, if applicable, charters for committees of the board
 - References to rulings and agreements that determine benefits and contribution levels

II. **Board Practices.** A pension fund should establish, document, and adhere to a set of practices that have a proven impact on performance and risk oversight. Some of these practices are mandatory (e.g. actuarial valuations), while others may be optional. Recommended practices include:

- Development of a strategic plan or equivalent that guides the fund towards its goals
- Undertaking board evaluations to ensure board governance is optimal and aligned to current best practices
- Adoption of a fiduciary education program to continuously improve fiduciaries' skill sets
- A program of assessments and audits to evaluate internal controls, performance, and risk
- Adoption of governance, administration, and communication technologies to improve efficiencies and reduce risk
- Actuarial valuations to inform the board of the fund's future financial needs
- Asset allocation studies to identify asset mixes for meeting future financial needs
- A corporate governance approach under which the fund votes its proxies
- Succession plans for key executive and board roles
- Plans for strengthening the fund's compliance program and internal controls

The System has a strategic plan in the form of its IPS; has Actuarial Valuations performed; and uses asset allocation studies. We have recommended the System include in its IPS a written policy for determining and evaluating the asset allocation in section 2 (A). The other items are presented for consideration in light of best practices. In some instances, the System would just be documenting the practices it already employs. Many of these best practices have potential recommended language as well.

III. **Board Policies.** A fund should adopt and adhere to a set of policies designed to guide system operations toward the achievement of stated goals within established risk tolerances. While their form may vary, a board's key policies and procedures should include:

- Standards of conduct, ethics, and conflicts of interest rules to codify the duties of fiduciaries
- A communication policy that outlines standards and procedures for trustees and executives
- An investment policy that includes goals, monitoring procedures, and board risk tolerances
- Procurement guidelines that document procedures for selecting and monitoring contractors
- A privacy policy that sets forth procedures for protecting members' confidential data
- Whistle blower; discovery of errors and illegal acts; and special investigations policies to protect strong financial oversight
- Board Member Education
- A risk policy (or equivalent) that defines fund risks along with measures and processes

The System already has an IPS and an Ethics and Conflicts of Interest Policy which includes Standards of Conduct. Section 4 includes a recommendation for documenting the Guidelines for Selection of External Investment Professionals which is a part of the procurement guidelines. The System does have a Procurement Guideline for Investment Management Services "Garcia Rule" – Emerging Managers which documents that the Plan shall solicit bids, proposals, offers or other provision of service from at least one Emerging Manager as defined in the Guideline. General procurement practices are not documented.

IV. **Risk Oversight.** A fund should adopt a risk management framework and document it in a risk policy or within other policy documents (e.g. investment policy, privacy policy). The board should

delegate accountability for management of market, credit, operational, asset / liability, liquidity, and other risks through job descriptions, contracts, and charters. Key components include:

- A governance approach that defines risk categories, accountabilities and reporting
- Risk assessments (e.g. audits) to test controls and potential outcomes of risk events
- Key measures to assess market, operational, credit, and asset / liability risk exposures
- Access to information technology to collect and distribute risk data across the fund

Section 2 (B) addresses a recommendation for adding a discussion of risk to the IPS.

The effectiveness of the investment program is reviewed at the monthly Board/Committee meetings, during the presentation of the information provided by the Investment Consultant. Overall portfolio performance is also monitored while reviewing the Investment Consultant's information. Although the reviews take place monthly, the Board/Committee is not making monthly adjustments. The performance is being reviewed, over a time horizon that considers current market conditions and how well the objectives are being met, over a five to seven-year timeframe. The Board/Committee responds to recommendations or concerns brought forth by the Investment Consultant.

5 Investment Manager Selection and Monitoring Process

The Investment Consultant has the responsibility for searching for and screening potential Investment Managers. In conjunction with the Plan, Marquette develops the criteria for the selection process based on the circumstances and allocation preferences. Marquette's research analysts will then identify candidates who best meet these criteria. The System does have a Procurement Guideline for Investment Management Services "Garcia Rule" – Emerging Managers which documents that the Plan shall solicit bids, proposals, offers or other provision of service from at least one Emerging Manager as defined in the Guideline.

Per Marquette, as selection criteria, their asset class analysts use both quantitative and qualitative criteria when evaluating Investment Managers:

Quantitative criteria

- In business for five years or more
- GIPS® verification
- Appropriate use of soft-dollar commission budget
- Reasonable fees
- Favorable risk-adjusted performance results
- Excess Return
- Standard Deviation
- Batting Average
- Up and Down-Market Capture Ratio
- Information Ratio
- Rolling three-year Risk and Return
- Alpha, Beta, R-Squared

Qualitative criteria

During their due diligence process, their asset class analysts will thoroughly question the investment manager on every aspect of the firm and process. The following are examples of some of the criteria used in their evaluations:

- **Does the investment manager's strategy make sense?**
Gimmicks, "hot" strategies, or otherwise unfounded investment platforms do not make their lists. We look for managers of all types, quantitatively or qualitatively based, who stick to their stated investment strategies, even during challenging times.
- **Are there experienced investment professionals at the helm?**
Experience counts in the capital markets. They prefer portfolio managers who have been in the business for at least five years with successful track records. A strong staff of analysts or other portfolio managers is also a positive. In addition, they prefer managers who invest heavily in their investment products or are owners of their investment firms.
- **What is the overall strength of the organization?**
A successful investment firm is about more than just selecting securities; it's also about running a business. They like to see organizations with strong disaster recovery plans and the appropriate technology resources to handle any disruption. They also pay close attention to asset and client

growth. Concerns can often arise if a firm has grown too quickly and cannot handle the asset flows. Likewise, they pay careful attention when a firm starts to lose assets.

- **Do they have a solid long-term record?**

Knowing that every active investment strategy falls out of favor from time to time, they focus on long-term results. They also pay attention to how well a manager has performed during down markets. It's key to also explore how a manager achieved a solid record. A strong five-year annualized return could be four years of poor returns with one year of outstanding returns. They prefer managers with a consistent approach and consistent returns.

Following the search for potential candidates:

- Marquette prepares a side-by-side comparison of candidates, their professional staffs and historical turnover, portfolio composition, fees, past performance (both absolute and relative), and other firm characteristics.
- Marquette reviews these materials with the System in person to determine which manager(s) the Board/Committee would like to select for interviews.
- Marquette arranges and coordinates Board/Committee interviews with the selected investment firms and ensures the presentations cover all appropriate issues. Marquette discusses the presentations and the candidates' characteristics with the System and assists in making a final determination.

The Plan Administrator is responsible for reviewing Investment Managers' contracts. Marquette assists in fee negotiations with selected managers and assists in the transfer of funds to any new organizations.

The Investment Consultant is responsible for monitoring individual and overall fund performance. Besides performance, they monitor changes in an investment manager's portfolio characteristics, deviation from investment style, change in philosophy, change in ownership, and departure of key investment professionals.

Marquette uses the Investment Metrics Portfolio Analytics & Reporting Platform to calculate the System's investment portfolio performance. It is an advanced and comprehensive analysis and performance management platform comprised of over 100 different investment management firms located throughout the United States. Investment Metrics provides investment performance calculation and analysis software and peer group data for roughly 14,000 asset owner plans and over \$10 trillion in assets. Their network's statistics also are comprised of accounts ranging from domestic equity to venture capital.

The software uses a returns-based analysis to identify trends and monitor potential deviations versus the stated benchmark for a given investment manager portfolio's style, growth or value (earnings growth-focused versus valuation-focused), and capitalization (large-cap versus small-cap). This analysis helps Marquette ensure investment management firms are adhering to the mandates for which they were hired.

Each Investment Manager and asset class composite has an appropriate benchmark that it is measured against. The Board/Committee is provided monthly performance reports by the Investment Consultant. The monthly performance reports provide net-of-fee and gross fee performance. This performance data is a part of the data Board/Committee members use to make investment decisions and it is integrated

with the monthly review of the asset allocation and investment risk to make overall decisions about the sustainability of the Plan.

Investment Managers are continuously monitored, and Marquette strives to be proactive about making recommendations to downgrade and eventually terminate Investment Managers that have performance, guideline, personnel, or organizational issues. On at least a quarterly basis, Marquette notifies the Board/Committee of any changes to the status of the Investment Managers and the reasons why the status needs to be changed. If it is necessary to notify the Board/Committee earlier than on the quarterly cycle, Marquette will draft a memo to the Board/Committee notifying them of the situation with a recommendation for further action.

Marquette uses the following language to communicate each Investment Managers' status to the Board/Committee on a quarterly basis:

- **IN-COMPLIANCE.** To the best of our knowledge, the investment manager is acting in accordance with the Investment Policy Guidelines.
- **ALERT.** Marquette notifies the investment manager of a problem due to performance (usually related to a benchmark or volatility measure), a change in investment characteristics, an alteration in management style or key investment professionals, and/or any other irregularities. The investment manager completes a monthly compliance checklist to ensure thorough oversight.
- **ON NOTICE.** Marquette notifies the investment manager of continued concern with one or more Alert issues. Failure to improve upon stated issues within a specific time frame justifies termination.
- **TERMINATION.** Marquette formally recommends terminating the investment manager; however, it is up to the Board/Committee to heed their advice.

The typical criteria for placing a manager on "Alert" (notification of concern) and "On Notice" (probation) are changes in the following components:

- Inferior performance versus an appropriate index or peer-group universe
- Significant or inappropriate change in portfolio investment characteristics
- Deviation from investment style or change in philosophy
- Change in ownership, investment professionals, or other irregularities

Typically, the removal from "On Notice" occurs after at least two quarters of assessing the issues of concern (improvement in performance, increased organizational stability, addition of resources, return to appropriate investment style, etc.). Usually, if the manager does not specifically address or improve upon the concern after at least two quarters, Marquette will work with the System to change the Investment Manager status to "Termination." At that point, Marquette will coordinate the details of the transition with the Board/Committee and the terminated Investment Manager. Traditionally, Marquette likes to monitor investment managers throughout an entire business cycle.

Summary of Recommendations

We have summarized our recommendations here for ease of review. Our recommendations are as follows:

Section 2 (A)

We recommend that the System include in its IPS a written policy for determining and evaluating the asset allocation similar to the GFOA recommendation

Section 2 (B)

We recommend that the Board/Committee add a discussion of risk to the IPS.

Section 2 (D)

We recommend the System consider having an Asset/Liability study performed after assessing the benefits of these studies for closed plans

Section 4

We recommend the Board/Committee make additional information available to the public. At a minimum, this information should include the Investment Policy Statement, meeting agendas, and the Non-Union one-page Flash Report from Marquette.

We recommend the System document the Guidelines for Selection of External Investment Professionals. Appendix E of the GFOA Checklist provides a list of considerations to be included in such a process.

We recommend the System develop, at a minimum, a governance framework. The development of a Governance Manual might be considered over time in association with the costs of development.

Description of Criteria Considered and Methodology Used

Our services were performed in accordance with the Statements on Standards for Consulting Standards issued by the American Institute for Certified Public Accountants (“AICPA”).

In accordance with the Scope of Services, we:

- Identified and reviewed the existing investment policies, procedures, and practices of the Metropolitan Transit Authority Non-Union Pension Plan retirement system;
- Compared the existing policies, procedures or practices to industry best practices;
- Generally, assessed whether the Board/Committee, internal staff, and external consultants are adhering to the established policies; and
- Identified best practices that would improve current policies, processes, or practices.

Further, we:

- Attended two Board/Committee meetings;
- Spoke at length with the Investment Consultant - Marquette Associates, Inc. and reviewed and documented their processes and reports;
- Met with the actuaries that prepared the Actuarial Valuation from Milliman, Inc.;
- Met with selected Board/Committee members including the Chair;
- Met with the Plan Administrator regarding processes and practices;
- Reviewed studies performed by several entities on public retirement plans both nationally and statewide for metrics including but not limited to:
 - Funded status,
 - Asset allocation,
 - Expected return assumptions, and
 - Investment performance.
- Reviewed studies performed by several entities on public retirement plans both nationally and statewide for governance, best practices, and policy attributes;
- Reviewed the System’s Ethics and Conflict of Interest Policy; and
- Reviewed the contracts for the Investment Consultant, Investment Managers, and the Actuary.