DALLAS POLICE & FIRE PENSION SYSTEM

March 13, 2020

Anumeha
State Pension Review Board
P.O. Box 13498
Austin, TX 78711-3498

RE: PRB notification of the Art. 6243a-1. Pension System For Police Officers And Firefighters In Certain Cities

In accordance with Article 6243a-1, Section 3.01 (j-10), this letter certifies that the information provided to the Pension Review Board is accurate and based on realistic assumptions.

Sincerely,

Kelly Gottschalk
Executive Director

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MEKETA

INVESTMENT GROUP

Dallas Police and Fire Pension System – Combined Plan

Investment Practices and Performance Evaluation – Consultant Report

Background

- To assist Dallas Police and Fire Pension System ("DPFP") with the preparation and filing of the first independent evaluation report required by Texas Government Code Section 802.109(a)(1-5), DPFP has engaged Meketa Investment Group, Inc. (the "Consultant" or "Meketa") to prepare and file with the Board a report (the "Report") that includes the topics required to be analyzed and/or reviewed by the Law
- This report was prepared in January and February 2020. Any references to current exposure, policies, or procedures were accurate or applicable at that time and may not be the same or accurate in the future.

Disclosure Statement by Independent Firm

- Meketa is a corporation organized in the Commonwealth of Massachusetts and which is owned entirely by its senior professionals. Meketa has no parent organization.
- Meketa does not have any affiliations with brokerage firms, nor any broker-dealer relationships. Meketa does not receive soft dollars, finder fees, commissions, or third-party marketing fees. Meketa's line of business is providing investment consulting and advisory services. Meketa works only for its clients.
- Effective April 16, 2018, Meketa entered into an agreement with DPFP to serve as its general investment consultant ("Agreement").
- Under the Agreement, Meketa receives its fees for the services it provides to DPFP from DPFP directly and does not receive any fees other than those set forth in the Agreement.
- Meketa does not (directly or indirectly) manage DPFP's investments. Meketa's role is strictly limited to non-discretionary advice.

Qualifications

- Meketa is a full-service independent investment-consulting firm.
- Meketa has been providing consulting services for over four decades (since 1978) and currently consults on over $1.4 trillion for over 200 institutional clients.
- Meketa has over 198 full-time employees and operates out of seven offices.
- Investment professionals at Meketa average 11 years with the firm and 21 years of investment experience. Meketa currently has 40 CFA Charter holders and 24 CAIA Charter holders.
- Meketa's mission is to provide the highest quality investment advisory services. Meketa aims to utilize, and continuously hone, the best practices that have been developed over its 40-year plus history. Meketa seeks to be a thought leader by evaluating investment industry information with healthy skepticism and performing value-added original research.

Scope

- Sec. 802.109. INVESTMENT PRACTICES AND PERFORMANCE REPORTS.

- (a) Except as provided by Subsection (e) and subject to Subsections (c) and (k), a public retirement system shall select an independent firm with substantial experience in evaluating institutional investment practices and performance to evaluate the appropriateness, adequacy, and effectiveness of the retirement system's investment practices and performance and to make recommendations for improving the retirement system's investment policies, procedures, and practices.

- Each evaluation must include:

  (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 asset 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;

Scope (continued)

(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; and

(5) a review of the retirement system's investment manager selection and monitoring process.

Section 802.109 – Subsection (a) 1

Section 802.109 – Subsection (a) 1

Law	Requirement
Sec. 802.109, Subsection (a) 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"*

Criteria or Topic	DPFP Status
Most Recent Investment Policy Statement Review?	• Started in December 2019. Minor changes were adopted in February 2020. • The Investment Policy Statement (the "IPS") was reviewed by DPFP Staff, the Investment Advisory Committee ("IAC"), investment consultant, and the Board.
Most Recent Significant Modifications?	• 4Q18 • Significant modifications were implemented after hiring a new Chief Investment Officer and new investment consultant (Meketa). • During 4Q18 the Board reviewed and discussed multiple rounds of edits including red-lined versions. • The IPS was formally adopted by the Board of Trustees on January 10, 2019. • The IPS was submitted to the Texas Pension Review Board on January 14, 2019. It was further amended in March 2019 to include modest changes regarding the IAC.

Section 802.109 – Subsection (a) 1 (continued)

Criteria or Topic	DPFP Status
Requirement for (at least) annual review?	• Yes
Compliance with annual review?	• Yes
Current IPS Structure?	Section 1 - Introduction and Purpose Section 2 - Goals, Objectives, and Constraints Section 3 - Ethics, Standards of Conduct, and Fiduciary Responsibility Section 4 - Core Beliefs and Long-Term Acknowledgements Section 5 - Roles and Responsibilities Section 6 - Strategic Asset Allocation and Rebalancing Section 7 - Investment Manager Search, Selection, and Monitoring Section 8 - Risk Management Section 9 - Approval and Effective Date Appendix A - Asset Class Descriptions Appendix B - Strategic Asset Allocation and Rebalancing Ranges Appendix B1 - Asset Allocation Implementation Plan Appendix C - Investment Consultant Reporting Requirements Appendix D - Alternative Investments

Section 802.109 – Subsection (a) 1 (continued)

Consultant Analysis

- The IPS is well thought-out and in line (or better) than industry standards.
- It is consistent with guidance from the CFA Institute.
- Roles and responsibilities of all key parties involved are clearly outlined (Board of Trustees, Investment Advisory Committee, Executive Director, Investment Staff, Consultants, Investment Managers, Custodian).
- The document is written in "plain-English" and easy for a layperson to understand.
- There is no evidence of any known compliance violations with the IPS at this time (other than asset class range threshold violations as the portfolio is undergoing a transition from a legacy allocation with substantial exposure to illiquid private markets investments to a more traditional asset allocation profile).
- DPFP is not meeting most of its investment return objectives. (As noted above, and multiple times throughout this Report, the portfolio is undergoing a multi-year transition period as it seeks to exit a number of legacy non-performing illiquid investments made at a time when there were different Board of Trustees, Staff, and investment consultant).
- It is our opinion that the Board of Trustees and Staff will be able to stay committed to the guidance detailed in the IPS during a stressed or prolonged market scenario.
- Overall: The existing Investment Policy Statement appears appropriate, adequate, and effective in our opinion.

Recommendations

- The "Core Beliefs and Long Term Acknowledgments" is thoughtful and should be reviewed any time significant investment changes are considered. It offers good guidance without being overly prescriptive or prohibitive.
- DPFP Staff and the Consultant should continue to conduct an annual review of the IPS.

Section 802.109 – Subsection (a) 2

Section 802.109 – Subsection (a) 2

Law	Requirement
Sec. 802.109, Subsection (a) 2	*"a detailed review of the retirement system's investment asset 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"*

Section 802.109 – Subsection (a) 2.A

Criteria or Topic	DPFP Status
Written policy for asset allocation development?	• Yes, outlined in the IPS.
Who has formal approval authority of the strategic policy asset allocation?	• Board of Trustees
Frequency of review?	• According to the IPS, "a formal asset allocation study will be conducted as directed by the Board, but at least every three years. Asset allocation targets will be reviewed annually for reasonableness in relation to significant economic and market changes or to changes in the investment objectives" (Section 6 Strategic Asset Allocation and Rebalancing, Subsection A.2-3)
Tactical vs. Strategic?	• Minimal tactical decisions have been implemented in the past two years. • According to the IPS "the Strategic asset allocation determines the risk reward profile of the portfolio and thus drives overall portfolio performance and volatility"

Timeline of Most Recent Asset Allocation Review and Adoption

- DPFP's approach to asset allocation is detailed in Section 6 of its IPS.
- The most recent significant asset allocation review was conducted over the second half of 2018. A detailed review of the timeline and process is listed below:
- March 2018 – During the hiring process, Meketa shared preliminary observations and recommendations on DPFP's asset allocation with a subcommittee of the Board of Trustees.
- April 2018 – Meketa presented additional thoughts to the full Board of Trustees during a Board meeting. The message focused on preservation of capital, downside risk protection, and preliminary potential long term return expectations for DPFP given its exposure to "legacy assets" as defined by Staff as illiquid investments made by the prior Board of Trustees with minimal return expectations going forward.
- May 2018 – In the first Board meeting since being formally retained, Meketa presented the concept of a Safety Reserve®. A Safety Reserve® portfolio is a mix of high quality, low volatility, short duration fixed income instruments and cash. It was established to meet ongoing expenses and benefit payments (for at least 2.5 years), ensuring that no other assets would need to be sold at a potentially inopportune time/price during a market correction. It was recommended to DPFP because of a combination of the following that limit DPFP's ability to rebound from a significant market correction: weak funded status, negative net benefit payments per year of approximately 5-6%, and illiquid legacy assets comprising approximately 25% of the Fund, with potentially binary outcomes. Meketa recommended, and the Board and Staff agreed, to source the proceeds for the Safety Reserve® from the termination of DPFP's global asset allocation ("GAA") asset class. This led to the recommendation and termination of four strategies. The decision to terminate the GAA program and move the proceeds into short-term core bonds was expected to reduce DPFP's standard deviation.
- August 2018 – DPFP Staff and Meketa conducted weekly conference calls and evaluated numerous potential asset allocation mixes that incorporated the themes and goals outlined from discussions with the Board of Trustees earlier in the year.

Timeline of Most Recent Asset Allocation Review and Adoption (continued)

- September 2018 – Meketa presented a comprehensive asset allocation policy review and risk analysis to the Board of Trustees. The report included Mean Variance Optimization analysis, probability testing, stress testing, historical market testing, liability stress testing, Value at Risk analysis, liquidity analysis, and details on Meketa Investment Group's annual asset class capital markets assumption development. The Board evaluated the tradeoffs of three different asset mixes presented that each had varying degrees of exposure to private market assets.
- October 2018 – With feedback from the Board of Trustees, DPFP Staff and Meketa conducted additional analysis and prepared a unified recommendation for the Board to consider. The recommendation was the product of numerous discussions with DPFP Staff as well as the DPFP's actuary in regards to the projected future liabilities of DPFP. It included a policy mix for adoption that had 15% target to private market investments (relative to the ~ 50% exposure at the time). Other asset allocation mixes were shown for the Board to compare/contrast. The Board evaluated the expected impact on total DPFP standard deviation, risk budgeting, liquidity, manager transitions required, expected costs, expected timeframe, etc. With data from DPFP's actuary, Meketa conducted various stress tests to DPFP's short term returns and the potential impact on future funded status. The Board evaluated different implementation plans and discussed the potential pros/cons of four different approaches of rebalancing to target.
- November 2018 – Additional discussions ensued with DPFP Staff and Meketa on the recommended implementation plan. Meketa presented an Implementation Plan to the Board of Trustees that focused on rebalancing to the new asset allocation based on expected risk of underweight asset classes. As proceeds from the private markets are distributed to DPFP, the cash would be redeployed into lower standard deviation asset classes first (up to target weight) then into higher standard deviation asset classes. The Board had some reservations on emerging markets and recommended minor modifications to the plan.
- December 2018 – Meketa presented recommended asset class ranges and asset class benchmarks with corresponding rationale. Staff presented a revised Investment Policy Statement that included the agreed upon new policy asset allocation and implementation plan. The Board provided feedback to DPFP staff.
- January 2019 – The Board approved the new IPS inclusive of the asset allocation policy, ranges, benchmarks and implementation plan. The implementation plan is detailed below for reference in Exhibit #1.

Exhibit #1 – Asset Allocation Implementation Plan

Order of Reallocation Allocate up to Target, then Proceed to the Next Asset Class
1. Safety Reserve – Cash
2. Safety Reserve – Short-Term Investment Grade Bonds
3. Global Equity, only if current exposure is less than 22% of DPFP[1]
4. Emerging Market Equity, only if current exposure is less than 2.5% of DPFP[2]
5. Investment Grade Bonds
6. Global Bonds
7. Bank Loans
8. High Yield Bonds
9. Global Equity above 22%, contributions limited to 6% per year.
10. Emerging Markets Debt
11. Emerging Markets Equity above 2.5%, contributions limited to 2.5% per year
12. Private Real Estate (aggregate illiquid exposure must be under 20%)
13. Private Equity (aggregate illiquid exposure must be under 15%)

[1] Global Equity target weight is 40%. If current exposure is more than 22% proceed to next asset class in the matrix. The reallocation framework is designed to maintain at least the mid-2018 exposure to public equity, prior to increasing fixed-income exposure.

[2] Emerging Market Equity Target weight is 10%. If current exposure is more than 2.5% proceed to next asset class in the matrix. The reallocation framework is designed to maintain at least the mid-2018 exposure to public equity, prior to increasing fixed-income exposure.

Section 802.109 – Subsection (a) 2.B

Criteria or Topic	DPFP Status
Active vs. Passive - Policy	• According to the IPS (Section 4 Core Beliefs and Long-Term Acknowledgements, Subsection C): *"1. The opportunity for active manager risk-adjusted outperformance (alpha) is not uniformly distributed across asset classes or Investment Managers' strategies* *2. Active strategies are preferred when there is strong conviction that they can be expected to add alpha, net of fees* *3. Passive strategies should be considered if alpha expectations are unattractive."*
Active vs. Passive -Implementation	• DPFP has been 100% active over the recent history. • DPFP recently funded its first passive mandate (on a temporary basis).

Section 802.109 – Subsection (a) 2.B (continued)

Criteria or Topic	DPFP Status
Asset Class Return and Standard Deviation Expectations Development	• DPFP uses capital markets assumptions developed by its Consultant. • A summary of Meketa's process is listed below. • Meketa recommends its client use the 20 year projections. – Each year Meketa Investment Group conducts an Asset Study to attempt to forecast future expected returns, future expected risk and correlation measures for over 65 asset classes and sub-asset classes. – The process relies on both quantitative and qualitative methodologies. – First, a large set of quantitative models are used to arrive at a set of baseline expected ten-year annualized returns for major asset classes. – These models attempt to forecast a gross "beta" return for each public market asset class; that is, it does not model "alpha," nor does it apply an estimate for management fees or other operational expenses[1]. – The models are fundamentally based (based on theoretically defined return relationship with current observable factors).

[1] Our expectations are net of fees where passive management is not available (e.g., private markets and hedge funds).

Section 802.109 – Subsection (a) 2.B (continued)

Criteria or Topic	DPFP Status
Asset Class Return and Standard Deviation Expectations Development (Continued)	– Some of the models are more predictive than others. For this reason, a qualitative overlay is required, which takes the form of a data-driven deliberation among the research team at Meketa and the Investment Policy Committee at Meketa. – Return assumptions for hard-to-predict asset classes as well as those with limited data are influenced more heavily by the qualitative analysis. – As a result of this process, ten-year annualized return expectations are calculated, which serve as the foundation of the longer-term, twenty-year expectations. – The twenty-year annualized return expectations are formed by systematically considering historical returns on an asset class by asset class level. Qualitative assessments are made on the value of the historical data and the confidence we have (or lack thereof) that the historical average return is representative of future returns – Specifically, a weighted average of the ten-year expectations and average historical returns in each asset class is calculated.

Section 802.109 – Subsection (a) 2.B (continued)

Criteria or Topic	DPFP Status
Asset Class Return and Standard Deviation Expectations Development (Continued)	– The weights are determined by a qualitative assessment of the value of the historical data. Generally, if there is little confidence that the historical average return is representative of what an investor can expect,[1] the weight of the ten-year forecast will be greater. Therefore, the weight on the ten-year forecasts ranges from 0.5 to 0.9. – Volatility and correlation expectations are developed differently. These assumptions rely primarily on historical averages, with an emphasis given to the experience of the trailing ten years. – Qualitative adjustments, when applied, usually serve to increase the correlations and volatility over and above the historical estimates (e.g., using the higher correlations usually observed during a volatile market). – Adjustments to volatility are made based on the historical skewness of each asset class (e.g., increasing the volatility for an asset class that has been negatively skewed). – In the case of private markets and other illiquid asset classes where historical volatility and correlations have been artificially dampened, public market equivalents are used as a base for estimates before applying any qualitative adjustments.

[1] For example, Meketa has less confidence in historical data that do not capture many possible market scenarios or that are overly polluted by survivorship bias.

Section 802.109 – Subsection (a) 2.B (continued)

Criteria or Topic	DPFP Status
Asset Class Return and Standard Deviation Expectations Development (Continued)	– These volatility and correlation expectations are then combined with our twenty-year return expectations to assist us in subsequent asset allocation work, including mean-variance optimization and scenario analyses.

Exhibit #2 – Target Asset Allocation and Minimum/Maximum Weights

Strategic Target Asset Allocation[1]	Target Weight (%)	Minimum Weight (%)	Maximum Weight (%)
Equities	55		
Global Equity	40	22	48
Emerging Market Equity	10	2.5	12
Private Equity	5	N/A[2]	N/A[2]
Safety Reserve and Fixed Income	35		
Cash Equivalents	3	0	5
Short-term Investment Grade Bonds	12	5	15
Investment Grade Bonds	4	2	6
High Yield Bonds	4	2	6
Bank Loans	4	2	6
Global Bonds	4	2	6
Emerging Market Bonds (50/50)	4	0	6
Real Assets	10		
Private Real Estate	5	N/A[2]	N/A[2]
Private Natural Resources	5	N/A[2]	N/A[2]
Expected Return (20 years)	*7.2*		
Expected Standard Deviation (20 years)	*12.3*		

[1] Expected return and standard deviation are based upon Meketa Investment Group's 2020 Annual Asset Study. Throughout this document, returns for periods longer than one year are annualized. "Private" is defined by all asset classes not traded on public exchange or broker to broker. Specifically: private equity, private debt, private real estate, private natural resources and private infrastructure.

[2] Rebalancing Ranges are not established for illiquid asset classes.

Exhibit #3 – Capital Market Assumptions

Asset Classes	20 Year Return Expectations[1] (%)	20 Year Standard Deviation Expectations[1] (%)
Global Equity	7.8	17.0
Emerging Market Equity	9.1	24.0
Private Equity	9.4	26.0
Cash Equivalents	2.4	1.0
Short-term Investment Grade Bonds	2.6	1.0
Investment Grade Bonds	3.0	4.0
High Yield Bonds	5.2	11.0
Bank Loans	5.0	9.0
Global Bonds	2.4	8.0
Emerging Market Bonds	4.7	13.0
Real Estate	7.5	15.0
Natural Resources (Private)	8.8	21.0

[1] Expected return and standard deviation are based upon Meketa Investment Group's 2020 Annual Asset Study. Throughout this document, returns for periods longer than one year are annualized. "Private" is defined by all asset classes not traded on public exchange or broker to broker. Specifically: private equity, private debt, private real estate, private natural resources and private infrastructure.

Section 802.109 – Subsection (a) 2.C

Criteria or Topic	DPFP Status
Selection process	• DPFP has not made a new alternative investment since July 2016. • The most recent private market investment was a private equity fund of funds (Industry Ventures, $5 mm commitment, July 2016). • DPFP requires a 2/3 approval of the Board for any new investments in alternative assets. DPFP does not plan to make any illiquid or alternative investments for the foreseeable future as it works to rebalance its portfolio to the new policy asset allocation. • We agree with this decision given the funded status, liquidity profile, and estimated net benefit payments.
Valuation approach	• In nearly all cases, DPFP values its alternative investments based on fair value determinations provided by audited financial statements and appraisals provided to DPFP from its alternative investment managers. • DPFP Staff has/will question managers' valuations if they feel it is warranted. • For one private equity relationship, DPFP has engaged its own valuation firm to conduct annual evaluations of DPFP's interests in the private equity funds because DPFP felt the manager (and manager's independent auditor) were overstating the investment value.
Exposure to alternative investments	• The current exposure is high relative to industry averages. • DPFP has a significantly lower target weight to illiquid investments (relative to current exposure) and has been working hard over the past few years to reduce its exposure. • The IPS outlines target weights to alternatives but does not put rebalancing ranges on illiquid assets because such assets cannot be easily traded.

Section 802.109 – Subsection (a) 2.D

Criteria or Topic	DPFP Status
Annual expected contributions	• Annual contributions into the plan (both employee and City) are expected to average $224 million per year over the next five years (2020-2024), according to the floor established by HB 3158 and the City Hiring Plan[1]. • City contributions have a minimum floor through the end of 2024. • Employees contribute 13.5% of pay[2] • The Employer (City) contributes 34.5% of pay (excluding overtime pay) plus an additional $13 million per year into DPFP through the end of 2024.
Tracking Actual Contributions vs. Hiring Plan	• To be proactive DPFP has been tracking the computation pay relative to the city's hiring plan because if hiring and pensionable compensation do not keep pace with projections less contributions will go into DPFP starting in 2025 after the contribution floor is lifted. • DPFP Staff monitors progress and reports to the Board at each meeting. • Contributions based on pensionable compensation[3] have been 97% of the Hiring Plan contributions estimate since the effective date of HB 3158 and on an improving trend (100% YTD through November 2019 and 104% in the month of November 2019). • This has resulted in $3.2 million less[3] in cumulative employee contributions into DPFP vs. the Hiring Plan estimates. • Meketa (with data from DPFP's actuary) modeled different asset-liability scenarios in 2018 based on different contribution rates.

[1] According to the January 1, 2019 Actuarial Valuation report by actuary Segal Consulting.

[2] According to Article 6243a-1 of the Texas Statutes.

[3] As reported at the December 2019 Board meeting.

Section 802.109 – Subsection (a) 2.D (continued)

Criteria or Topic	DPFP Status
Annual expected benefit payments	• Annual benefit payments are expected to average approximately $349 million per year[1] over the next five years (2020-2024).
Annual expected administration expenses	• According to the actuary, annual expected administration expenses for DPFP are projected to be the greater of $8.5 million per year[1], or 1% of computation pay. This projection excludes investment expenses.
Annual expected net cash flows	• Net expected cash flows out of DPFP to pay benefit payments are expected to average approximately -$134 million per year over the next five years (based on the contributions, benefit payments and administrative expenses in the actuarial valuation report). • On an average plan size of approximately $2 billion, net expected cash outflows per year are approximately -6.7%. (-$134 / $2,000 ≈ -6.7%).

[1] According to the January 1, 2019 Actuarial Valuation report by actuary Segal Consulting.

Section 802.109 – Subsection (a) 2.D (continued)

Criteria or Topic	DPFP Status
Asset Liability Analysis	• The most recent actuarial valuation report was published in October 2019, with data as of January 1, 2019. • Meketa included liability analysis during the asset allocation review in 2018. • The actuary (Segal) is expected to conduct a 5-year experience study in 2020 which may result in assumption changes that could positively or negatively affect the funding status and years to fully funded status.
Actuarial Assumed Rate(s) of Return	• The Board of Trustees adopted a laddered assumed rate of return over the next few years as it transitions its portfolio out of the legacy illiquid assets. • The assumed rate of return is 7.25%. However, due to the time to transition the portfolio, the portfolio's expected return is 5.25% in 2019, 5.75% in 2020, 6.25% in 2021, 6.75% in 2022 and 7.25% thereafter.
Actuarial Highlights	• Funded status is 48% based on the actuarial value of assets and 45% based on the market value of assets.[1] • Funding level is expected to drop for the next 12 years even if all assumptions are met (as it will take time for the impact of plan design changes to be fully felt). • According to the actuary, the projected year of full funding is 2057, if all assumptions are met.

[1] According to the January 1, 2019 Actuarial Valuation report by actuary Segal Consulting.

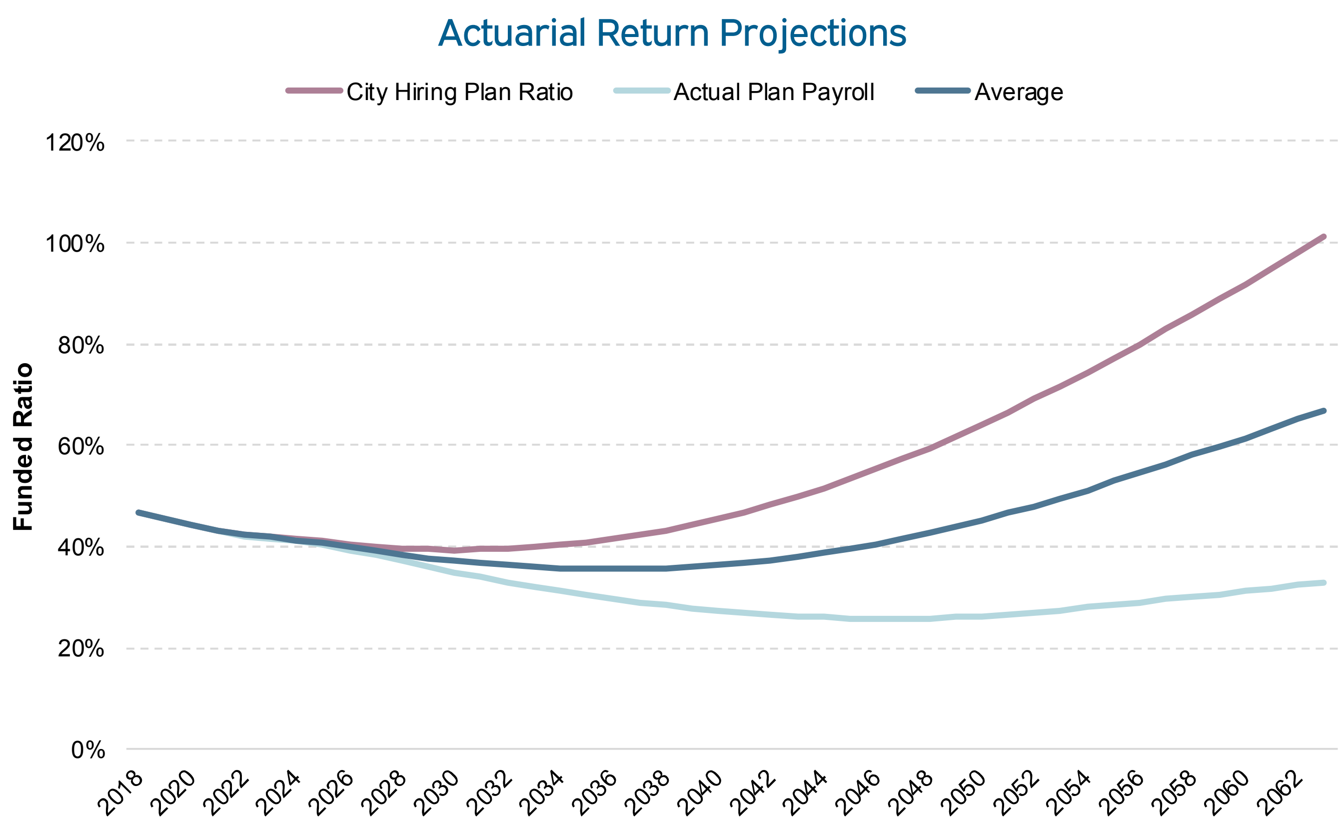
Section 802.109 – Subsection (a) 2.D (continued)

Criteria or Topic	DPFP Status
Actuarial Highlights (continued)	• The actuary highlighted in its report that funded status could be significantly lower (than forecast) if the City Hiring Plan is not met and contributions (starting in 2025) are based solely on computation of pay going forward (i.e. once the minimum contribution floor is lifted). • Article 6243a-1 requires an analysis in 2024 to gauge whether the funding plan is on track. *"In 2024, an independent actuarial analysis shall be conducted with the actuary making recommendations to the Board for changes to bring the plan in line with funding guidelines set by the Texas Pension Review Board if needed."* • HB 3158 added a requirement to Article 6243a-1 that mandates the Board adopt changes if DPFP is not on track to meet the Texas Pension Review Board funding guidelines in 2024. Potential changes include increases to City contribution rates, increases to member contribution rates, or benefit decreases. • As detailed in the 2018 DPFP CAFR: *"the Board believes it's certain that additional changes will be required. The member contributions are approximately equal to the normal cost of their benefit, therefore the most appropriate option is additional funding from the City. The Board also believes that it is prudent to explore options, including pension obligation bonds, for additional City funding as soon as possible and not wait until 2024."*
Funding Policy	• The Board of Trustees adopted a funding policy in December 2019, as required by SB 2224, which was passed by the Texas Legislature in 2019.

Section 802.109 – Subsection (a) 2.D (continued)

Criteria or Topic	DPFP Status
Stress Testing	• As noted previously, the Consultant conducted significant stress testing surrounding the anticipated liabilities of DPFP and the impact of not earning the plan's actuarial return. • In response to the analysis, the Board adopted a Safety Reserve® portfolio and is following a risk-based implementation plan designed to minimize the potential impact of a severe near-term market correction. A sample of the analysis conducted in 2018 is included in Exhibits #4 – 6 on the following pages.

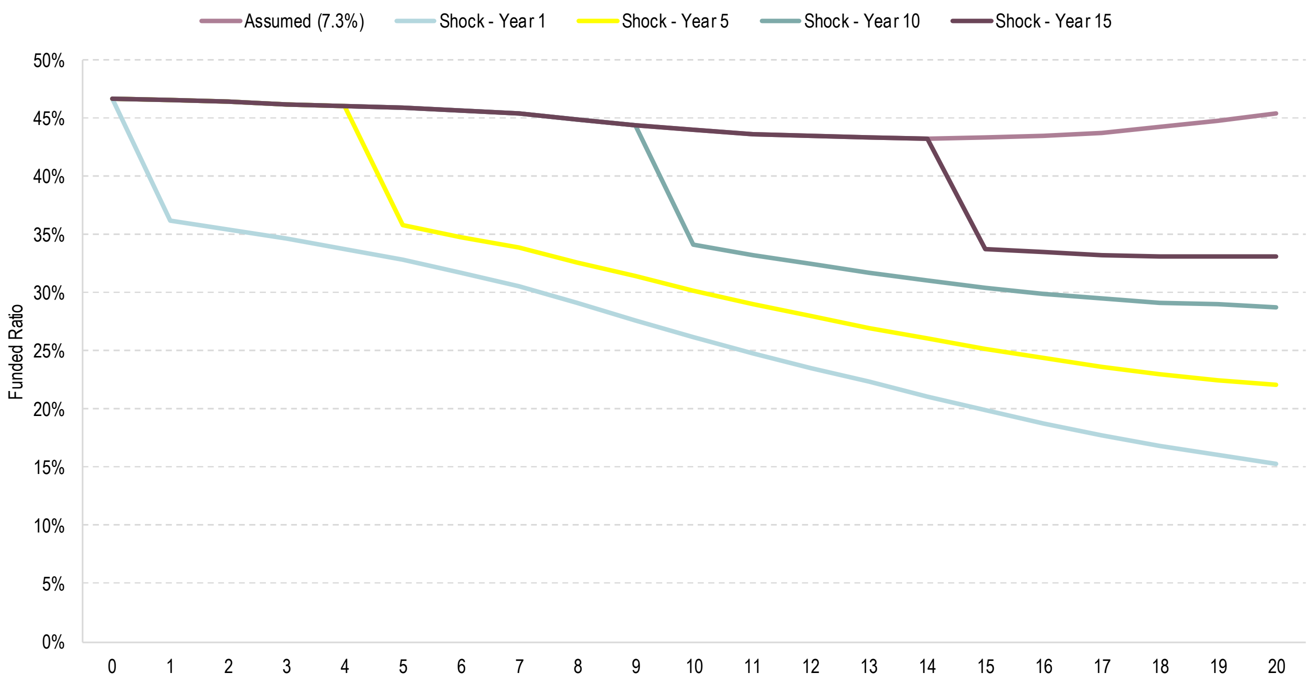
Exhibit #4 - Example of Stress Testing Conducted in 2018



- The chart above projects the funded status (under different contribution rates) with the assumption DPFP earns the actuarial return every year.
- With higher contributions into the plan, the funded status is expected to improve faster.

Exhibit #5 - Example of Stress Testing Conducted in 2018

Funded Status[1] Under Different "Shock" Time Points



- The timing of a potential equity shock is impactful. A shock now is much worse than a shock in the future.
- All the "shock" lines above have the exact same total annualized return[2].

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[1] Model assumes the average contribution rate of the city payroll forecast and the actual payroll contributions net of expected benefit payments.

[2] Returns modeled as 7.3% in 19 of 20 years, but one year of -15.8%. The total twenty-year return decreases to 6.0%, annualized.

Exhibit #6- Example of Stress Testing Conducted in 2018

Scenario Analysis

- Meketa analyzed several scenarios for DPFP over the next 20 years.
- In each case we modeled different return paths in years 1-5.
- In each case[1] we assume that DPFP earns the expected return rate for the recommended long-term mix (7.3%) in years 6-20.
- The most optimistic scenario evaluated is the baseline actuarial return assumption.
- The most dire (worst case) scenario is a full write-off all the legacy assets over the five years with the rest of the Fund generating a zero percent return.
- Each scenario is detailed below.

"Grade"	Scenario Description	2018 DPFP Return	2019 DPFP Return	2020 DPFP Return	2021 DPFP Return	2022 DPFP Return	*Years 6-20*
A	Actuarial Base Line	5.0%	5.25%	6.25%	7.25%	7.25%	*7.25%*
B	Bond-like performance for 5 years	4.0%	4.0%	4.0%	4.0%	4.0%	*7.30%*
C	Legacy assets negate performance of rest of portfolio for 5 years	0.0%	0.0%	0.0%	0.0%	0.0%	*7.30%*
D	1/2 of legacy assets is written off over next 5 years	-2.5%	-2.5%	-2.5%	-2.5%	-2.5%	*7.30%*
F	All legacy assets are written off over next five years	-5.0%	-5.0%	-5.0%	-5.0%	-5.0%	*7.30%*

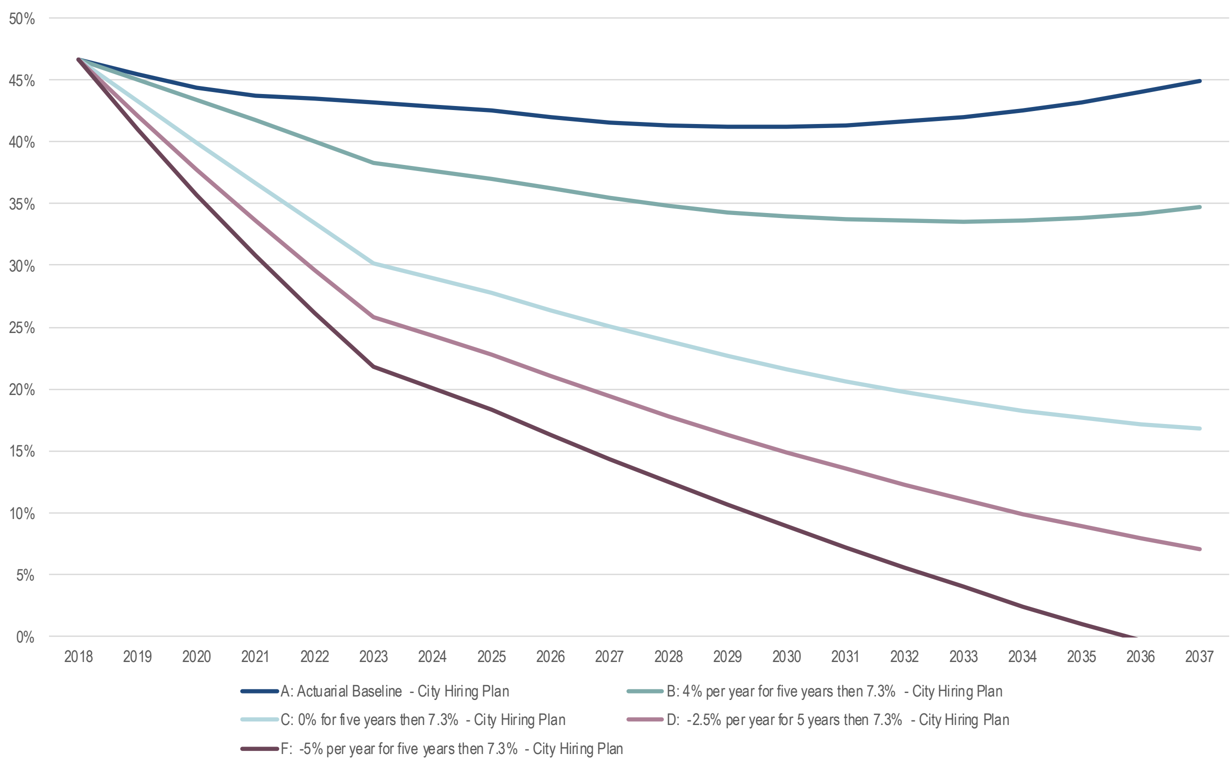
- A chart on the following page details the expected impact of each scenario on funded status.

[1] For Path A "Actuarial Base Line" we used 7.25% instead of the recommended long-term mix 7.3% assumed return for years 6-20.

Exhibit #6 (continued)

- If DPFP earns the actuarial baseline return for the next five years or 4% annualized for the next five years (Paths A and B), the funded status takes a moderate hit but begins to eventually rebound.
- Flat or negative returns in years 1-5 could put DPFP into a severe unfunded situation (paths C, D, F below).

Funded Status with City Hiring Plan Contributions



Section 802.109 – Subsection (a) 2

Consultant Analysis

- DPFP staff and Board recognize their current exposure is very different from policy weights and have been working very hard to shift the portfolio (out of illiquid investments).
- DPFP's current approach to asset allocation (2018) is thorough and robust.
- It is on par (or better) than industry standards.
- In our opinion, the approach DPFP takes to formulate asset allocation is sound, consistent with best practices, and leads to a well-diversified portfolio.
- The existing exposure is very different than target weights, but that is a residual of past decisions made many years ago by Trustees, Staff and Consultants that are no longer a part of DPFP.
- Current DPFP Staff is doing a commendable job with a very challenging situation, as it works to liquidate private market investments at the best possible price.
- The Board is kept informed on all progress, challenges, and general developments.

Section 802.109 – Subsection (a) 2 (continued)

Consultant Analysis (continued)

- The current asset allocation targets are consistent with peer systems of similar size. The existing exposure of DPFP is an outlier relative to peers (as it pertains to private markets exposure) but all constituents involved recognize this and are working to move DPFP closer to its new target weights in a prudent and measured fashion.
- DPFP's Board of Trustees acknowledgement and understanding of the plan's funded status and cash flow situation were crucial data points that helped guide the overriding theme of the most recent asset allocation decision-making process.
- The Board is mindful of adopting a return expectation that is realistic given capital market return expectations.
- The target asset allocation is well diversified and built with a global perspective in mind given the globally investable universe.
- DPFP's approach to passive management makes it an outlier among other public pension plans.
- DPFP has less than 2% total passive exposure (in an Investment Grade Bond index) that is only a temporarily place holder while an active core bond manager search is conducted.

Section 802.109 – Subsection (a) 2 (continued)

Recommendations

- We recommend the Board consider increasing passive exposure in efficient asset classes where the likelihood of risk-adjusted outperformance, net of fees, is lowest. A recent survey[1] of similar sized public pension plans showed that the average passive exposure is 18% of total plan assets.
- We recommend DPFP Staff continue its process of working with the Board of Trustees and external advisors to prudently exit illiquid investments to the extent possible.
- We recommend the Board remains patient with asset allocation as the portfolio is transitioned and doesn't feel obligated to conduct comprehensive asset allocation overhaul every year. (Surveys have shown many large state plans are moving towards once every three - five years).
- We recommend the Board and Staff closely monitor contribution levels and maintain constructive and open dialogue with the City.
- If (based on the actuary's advice) it becomes likely that DPFP is not on track to meet targets by 2024, we encourage the Board to act as soon as reasonably possible to discuss and implement additional plan design changes to avoid delaying and compounding any known shortfalls.
- We recommend DPFP consider adjusting actuarial valuation assumptions as necessary based on the outcomes and advice of the actuary upon conclusion of the experience study expected in 2020.

[1] Greenwich Associates 2018 U.S. Institutional Market Trends Survey. Universe is public defined benefit plans with assets between $1 - $5 billion. Majority of the passive exposure is from U.S. equities.

Section 802.109 – Subsection (a) 3

Section 802.109 – Subsection (a) 3

Law	Requirement
Sec. 802.109, Subsection (a) 3	*"a review of the appropriateness of investment fees and commissions paid by the retirement system"*

Criteria or Topic	DPFP Status
Policy Language	• According to the IPS, *"Investment costs will be monitored and minimized with the context of maximizing net return."* (Section 4 Core Beliefs and Long Term Acknowledgements, Subsection B.2).
Internal process for paying and monitoring fees	• Fees that are paid via invoice are reviewed by the appropriate DPFP analyst based on the assigned asset class coverage. • According to conversations with Staff, the analyst will typically calculate the expected quarterly fee via an excel spreadsheet and reconcile with what is billed by the investment manager. • Any external wire to pay fees requires a three person authorization. • DPFP Staff keeps an excel sheet with all investment related fees paid (direct investment management fees, incentive fees, commissions, custodian fees, investment consultant fees, legal related investment fees). • DPFP publishes summary fee information in its annual CAFR in a clear and understandable way.

Section 802.109 – Subsection (a) 3 (continued)

Criteria or Topic	DPFP Status
Public Markets Fees	• DPFP Staff and Consultant monitor investment manager fees and appropriateness relative to similar investment strategies. • The Consultant provided a fee review as part of its Initial Fund Review of DPFP in the summer of 2018. • Each public markets manager fee was calculated (in annual terms, in dollars) and compared relative to peer percentiles (Source: eVestment). • In total, nine of the eleven public markets managers charge less than the median manager for their respective peer groups. Of the two that were more expensive than median, DPFP restructured one of those fee arrangements to a performance-based fee within the past year.
Private Markets Fees	• As is expected in the industry, private market strategies represent a larger proportion of fees than their pro-rata market value exposure. • DPFP has little to no control on the fee arrangements of private market strategies that were committed to many years ago with contractually required fees detailed in previously executed Limited Partnership Agreements or other governing documents. • Where possible, DPFP Staff and the Board of Trustees have been able to receive discounted fee (or no fees) on extension periods for select private markets strategies. • DPFP has incurred additional legal costs the past few years related to litigation and/or disposition of private market investments. • These costs are communicated by DPFP staff to the Board and are included in annual budgets.

Subsection 802.109 – Subsection (a) 3 (continued)

Criteria or Topic	DPFP Status
Total Fees Paid	• DPFP paid a blended average fee of 0.74% bps in calendar year 2018. This is above the industry average of 0.60% (according to the latest available NCPERS survey conducted)[1]. • The biggest source of fees was in private real estate and private equity. • Fees for calendar year 2019 are still being invoiced and paid but are expected to be lower due to the elimination of the Global Asset Allocation strategies and a decrease in private market investments. • Total fees paid for calendar year 2018 are detailed in Exhibit #7 (sourced from 2018 CAFR Report).
Communication to the Board	• Total fees paid are detailed to the Board of Trustees as part of the annual budget. • The Board of Trustees has access to a summary fee grid that lists each investment strategy's fee schedule.
Brokerage Fees and Commissions	• The public market equity managers pay explicit commission costs and implicit opportunity costs inherent in bid-ask spread differentials (equity and fixed income strategies). • These cost are shared by all investors in a commingled trust or specific to DPFP in the investments that are structured as separately managed accounts. • Commission costs are tracked by Staff (from data provided by the custodian JP Morgan). • Total commissions paid are listed in DPFP's annual CAFR. • 2018's brokerage fees and commissions are detailed below in Exhibit #8.
Legal Review	• Internal DPFP legal counsel reviews all legal contracts and fee arrangements for new investments.

[1] The 2018 NCPERS Public Retirement Systems Study includes responses from 167 state and local government pension funds with more than 18.7 million active and retired members and total assets of $2.6 trillion. Roughly half the survey participants were Police/Fire pension plans.

Exhibit #7 –Investment Management Fees Paid in 2018

Asset Class	Total Investment Management Fee Paid (000's)[1]	2018 Average Market Value (000's)	Total Management Fee Paid as a Percent of Average Market Value
Equity (public and private)	$7,303	$736,922	0.99%
Fixed Income and Cash	$1,506	$538,634	0.28%
Real Assets	$5,734	$724,561	0.79%
Global Asset Allocation	$736	$51,786	1.42%
Total	**$15,279**	**$2,051,903**	**0.74%**

[1] All dollar are expressed in thousands, sourced from DPFP 2018 CAFR. According to the CAFR, investment management fees includes incentive, performance and/or disposition fees.

Exhibit #8 – Brokerage and Commissions Paid in 2018

Brokerage Firm	Number of Shares Traded (000' s)[1]	Total Fees and Commissions (000's)	Fees and Commissions Per Share ($)
J.P. Morgan Securities, Ltd.	1,752	44	0.025
Citigroup Global Markets, Ltd.	635	28	0.044
Credit Suisse Securities (USA) LLC	846	16	0.019
Citigroup Global Markets Inc, NY	1,362	15	0.011
Jefferies International London	132	10	0.080
Morgan Stanley and Co International	67	8	0.125
Stifel Nicolaus & Co Inc	253	8	0.031
Morgan Stanley and Co., Inc.	279	7	0.026
Goldman Sachs New York	249	7	0.028
Davy Stockbrokers	73	7	0.092
All other firms	9,466	158	0.017
Total	15,114	$308	$0.020

[1] All dollar are expressed in thousands, sourced from DPFP 2018 CAFR.

Subsection 802.109 – Subsection (a) 3 (continued)

Consultant Analysis

- DPFP has done a good job of identifying public market's managers with competitive fees.
- DPFP's process for reconciling and paying fees appears in-line with industry standards.
- DPFP's tracking and monitoring of fees appears in-line with industry standards.
- The private markets related fees are expensive but not surprising.
- Private market fees will decrease as exposure to the asset class decreases.
- The commissions paid appear reasonable and in-line with industry norms.
- The transparency and disclosure of fees in the annual CAFR are clear and unambiguous.

Recommendations

- Passive strategies could reduce overall investment related fees for DPFP.
- We recommend that Staff, the Board, and the Consultant all remain diligent in monitoring fees.
- We recommend continued efforts on seeking no fee or discounted fee arrangements on private market investments that enter extension periods.
- We recommend DPFP staff document its internal process for fee reconciliation and payment in a formal procedure document or memo.

Section 802.109 - Subsection (a) 4

Section 802.109 - Subsection (a) 4

Law	Requirement
Sec. 802.109, Subsection (a) 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"*

Criteria or Topic	DPFP Status
Website and transparency	• The website is easy to navigate and user friendly. • DPFP is as transparent, if not more, than most similar sized pension public plans. • The website includes (non-exhaustive list): – Board meeting calendar – Board meeting agendas – Board meeting materials – Board meeting minutes – Trustee biographies – Investment Advisory Committee ("IAC") biographies – DPFP Staff information – Consultant performance reports

Section 802.109 - Subsection (a) 4 (continued)

Criteria or Topic	DPFP Status
Website and Transparency (continued)	– Actuarial valuation reports – Comprehensive Annual Financial Reports – Investment Policy Statement – Contractor's Statement of Ethics – DROP Policy – Uniformed Services Leave and Payback Policy – Governance and Board Conduct Policy – Trustee Election Procedures – Annual budgets – Plan documents – Description of 2017 plan design changes and ancillary documents – Frequently Asked Questions links – Recent events and news – Notification of trustee elections

Section 802.109 - Subsection (a) 4 (continued)

Criteria or Topic	DPFP Status
Delegation of Investment Authority?	• The Board of Trustees has investment authority. • Any action by the Board, except those where the Plan specifically requires approval by 2/3 of all the Trustees of the Board (e.g. benefit or contribution changes), is required to be approved by a majority of all the Trustees of the Board, i.e. at least six Trustees must approve any Board action regardless of the number Trustees present. • DPFP Staff is authorized to rebalance the portfolio. • DPFP staff is responsible for submitting a rebalancing recommendation to the Consultant and must receive signoff from the Consultant before implementing. • All rebalancing recommendations and activity shall be reported to the Board and IAC.
Investment Decision Making Process	• Most investment decisions are based on the recommendation of DPFP Staff and/or Consultant upon the guidance of the Board of Trustees. • The Board of Trustees frequently debates the pros-and-cons of each investment decision in open public meetings. • All investments (except one) are managed by external investment managers. See directly below. • DPFP owns three condo units (that it has been seeking to exit) in a condo building in downtown Dallas. The assets are not managed by an external institutional real estate manager. DPFP has been selling its interest in the property over the past few years.

Section 802.109 - Subsection (a) 4 (continued)

Criteria or Topic	DPFP Status
Investment Decision Making Process (continued)	• For all other directly owned real estate investments DPFP has hired external institutional quality real estate experts to manage the operations, and/or disposition of the assets.
Investment Consultant	• DPFP hired Meketa Investment Group in May 2018 after conducting a national RFP process. • Prior to the hire of Meketa, the most recent investment consultant search occurred in 2006. • Currently, there is requirement for the Board to conduct a competitive selection process for each Advisor to the board at least once every five years (on a rotational basis). However the Board has the authority to postpone or waive the five year requirement. • Meketa Investment Group receives a hard dollar fee (specified in advance) from DPFP and does not receive any additional fees (unless pre-approved by the Board of Trustees for projects beyond the scope of the investment advisory agreement). • Meketa's fee is included in the annual budget disclosure to the Trustees and reported in the annual CAFR. • Meketa Investment Group is an independent employee owned organization with no affiliation to investment managers or brokerage firms.

Section 802.109 - Subsection (a) 4 (continued)

Criteria or Topic	DPFP Status
Board Composition	• 11 member Board of Trustees • Six are appointed by the Mayor, one police representative is elected by active members, one fire representative is elected by active members, three non-members are selected by a nominations committee representing various associations in the city and elected by active members and pensioners. • Term limits of 6 consecutive years apply to non-police and firefighter trustees. • Election notices (and the Trustee election procedures) are posted on the DPFP website. • A new board of Trustees was appointed following House Bill 3158 in September 2017, with the exception of one police trustee and one fire trustee from the prior Board of Trustees. • The Board went through quite a bit of turnover in late 2019, with only five trustees remaining from the 11 appointed/elected just two years ago. • Six board members have less than six months tenure on the Board (as of the start of 2020).
Board Leadership and IAC Appointment	• Board leadership appointments (Chairman, Vice Chairman and Deputy Chairman) are conducted in an open and transparent manner during board members upon the vote of fellow Trustees. • Investment Advisory Committee members are appointed by the board of Trustees. (Additional information to follow on role of the IAC).

Section 802.109 - Subsection (a) 4 (continued)

Criteria or Topic	DPFP Status
Board Investment Expertise	• Numerous board members have significant investment expertise across asset classes. • Some board members sit on other pension trustee boards. • Board member specialties include: equities, fixed income, private equity, and hedge funds. • A number of trustees have legal experience. • According to Article 6243a-1 Trustees must have demonstrated financial, accounting, business, investment, real estate or actuarial experience.
Board Education	• The Board is expected to be educated on investment matters applicable to overseeing a pension fund such as DPFP. • DPFP Staff typically meets with new trustees and provides a primer on DPFP history and recent activity.
Governance and Conduct Policy	• The Board is expected to abide by the Board of Trustees Governance and Conduct Policy. • The policy was last amended February 2018. • It summarizes the expected conduct and procedures Trustees are expected to follow in their role as Trustees to DPFP both during Board meetings and communication outside of meetings. • It states that Trustees should refrain from communicating directly with DPFP staff other than through the Executive Director, the Chief Investment Officer, the Chief Financial Officer, the General Counsel or another designee of the Executive Director.

Section 802.109 - Subsection (a) 4 (continued)

Criteria or Topic	DPFP Status
Governance and Conduct Policy (continued)	• It also provides guidance on communication with external parties and plan participants. • Trustees are entitled to information necessary to make informed decisions relating to their role and responsibilities as Trustees to DPFP.
Contractor's Statement of Ethics	• The Board of Trustees has a policy that provides guidance on the dealings between Trustees and all contractors who provide, or actively seek to provide, goods or services to DPFP. • Contractor must be honest in their dealings with DPFP, comply with applicable laws, and maintain proper ethical standards of behavior. • Trustees and Staff are prohibited from receiving any gifts or anything of substantial/material value where the clear purpose of such expense is to affect the determination of the selection of a new contractor or continuation, or additional business to an existing contractor. • It is expected that at all contracts with Contractors will have the Statement of Ethics as an exhibit to said contract. • While Meketa has not independently verified all contracts DPFP has on file, we confirm that the contract with Meketa does include this Statement of Ethics as an exhibit.

Section 802.109 - Subsection (a) 4 (continued)

Criteria or Topic	DPFP Status
Frequency of board meetings	• Monthly meetings are required.
Board meeting dynamics	• Most Board meetings contain a mix of investment and non-investment related agenda items. • Most investment related decisions are accompanied by spirited debate between Trustees, Staff and Consultant. • There is very little (to no) "rubber stamping." • The agenda for each Board meeting is set by the Executive Director. • The Executive Director is required to consult with the Chairman on the agenda. • Any Trustee may file a written request with the Chairman asking that a particular item be placed on the agenda for a future meeting.
Role of the IAC	• The IAC meetings are still in a development phase. All positions on the IAC were recently filled in 4Q19. Its roles and responsibilities are detailed in the IPS but its interplay with the broader Board of Trustees is still yet to be applied in practice.

Section 802.109 - Subsection (a) 4 (continued)

Criteria or Topic	DPFP Status
Frequency of IAC Meetings	• Quarterly
Transparency of Board Activities	• Board meeting agendas (with open session meeting materials) are posted to the DPFP website at least 72 hours prior to board meetings. • Materials include minutes from prior meetings. The minutes are sufficiently detailed.
House Bill 3158	• Effective September 2017, resulted in numerous plan design changes.

Section 802.109 - Subsection (a) 4

Consultant Analysis

- Monthly meetings are common for public pension plans.
- DPFP's website and transparency are better than most similar sized public pension plans.
- The meeting minutes (posted to the website) are sufficiently detailed to get a good sense of the discussion and decisions conducted at a meeting.
- They are also published in a reasonable amount of time following each meeting (typically within 30 days).
- Not granting investment authority to staff is common for a $2 billion pension with investment staff of four people.
- DPFP's Staff is appropriately following the rebalancing protocol and does a great job of conveying all rebalance recommendations with appropriate supporting data and rationale.
- DPFP's board members are more sophisticated and knowledgeable than most similar sized public pension plans.
- The Board composition appears sufficiently diversified in terms of subject matter expertise.
- DPFP's meeting frequency is standard for public pension meetings. We have conducted surveys of large public pension plans and found that many are moving towards less frequent meetings but more in depth (lengthy) meetings.

Recommendations

- To the extent possible, we would like to see increased continuity of Trustees on the Board.

Section 802.109 - Subsection (a) 5

Section 802.109 - Subsection (a) 5

Law	Requirement
Sec. 802.109, Subsection (a) 5	*"A review of the retirement system's investment manager selection and monitoring process"*

Criteria or Topic	DPFP Status
Responsibility for selecting investment managers?	• Board of Trustees, with the advice and recommendation of the Investment Advisory Committee, Staff, and investment consultant. • According to the IPS, *"The Board…prudently hires, monitors, and terminates key investment service providers including: Consultant(s), Investment Managers and Custodian"* (IPS Section 5, A. Board of Trustees, subsection 3). • *"The IAC will advise regarding the search and selection process for investment managers"* (IPS Section 5, B. Investment Advisory Committee (IAC), subsection 2.b).

Section 802.109 - Subsection (a) 5 (continued)

Criteria or Topic	DPFP Status			
	Date[1]	Strategy	Funding Amount ($ mm)	Asset Class
Last Five Manager Hires	09/2019	Vanguard Total Bond	37	Fixed income- IGB
	12/2017	RBC Emerging Mkts	50	Public Equity- EM
	11/2017	Ashmore EMD	20	Fixed Income- EMD
	7/2017	Pacific Bank Loans	50	Fixed Income- Bank Loans
	6/2017	IR+M 1-3Yr	50	Fixed Income- Short Term IGBs

Evaluation process

- No active managers have been hired since the formation of the Investment Advisory Committee and the hiring of the current investment consultant.
- Investment manager search and selection criteria is detailed in Section 7 of the IPS
- According to the IPS, *"Staff and Consultant shall define and document the search process, including evaluation criteria, prior to initiating the search process."*
- The Consultant *"Assists in the selection process and monitoring of Investment Managers"* (IPS Section 5, E. Consultant(s), subsection 7).

[1] Dates in the table above are inception/ funding dates. Each strategy was funded intra-month so performance start dates are the first of the next month.

Section 802.109 - Subsection (a) 5 (continued)

Criteria or Topic	DPFP Status
Evaluation Process (Continued)	• In addition the Consultant "*documents and delivers to Staff written recommendations on Investment Manager new hire, hold and termination reviews*" (IPS Section 5, E. Consultant(s), subsection 8). • Meketa has a process where it continuously monitors and reviews investment managers in the industry. From this work, Meketa creates a "bullpen" of high conviction products that have been thoroughly vetted through Meketa's multi-phase process. • According to the IPS, each hiring recommendation will include information on Investment Manager's organization, key people, investment process, philosophy, past performance, future expectations, risks, proper time horizon for evaluation, comparative measures such as benchmarks and peer groups, role within the relevant asset class and expected costs. • While no active managers have been hired during Meketa's tenure as DPFP's current consultant, the Consultant typically produces a "search document" that compares and contrasts eligible strategies on the basis of firm ownership/structure, investment teams, investment philosophies, processes/risk management, performance, fees, and strengths & weaknesses.
Benchmarking	• Policy benchmarks for each asset class and the total DPFP are included in the IPS. • The Consultant identified recommended benchmarks, per asset class, which were presented and discussed with DPFP Staff in 4Q18.

Section 802.109 - Subsection (a) 5 (continued)

Criteria or Topic	DPFP Status
Benchmarking (continued)	• Individual manager benchmarks are determined based on each investment strategy's mandate and will generally, but not always, match the recommended benchmark identified by the investment manager. • Example: in April 2019, the Consultant conducted a comprehensive review of the four global equity strategies and each manager's recommended benchmark. In one case, Walter Scott, the Consultant recommended a different benchmark due to subtle (but potentially significant) regional weight differences between the historic exposure in the strategy and the manager's recommended benchmark.
Performance measurement	• DPFP's total fund performance and individual manager performance is monitored by Staff, Consultant, IAC and the Board of Trustees. • The Consultant produces a quarterly performance report that is shared with Staff, Board of Trustees, and IAC. • Among other things, the report includes: – Net of fees performance – Executive Summary with a one page green/red flash summary (for the quarter) along with similar metrics for trailing one-year and three-year periods – Quarterly cash flow summary – Summary of asset classes absolute and relative performance for the quarter

Section 802.109 - Subsection (a) 5 (continued)

Criteria or Topic	DPFP Status
Performance Measurement (continued)	– Total fund performance relative to peer pension plans (InvestorForce Public Pension net performance for plans between \$1 bb- \$5 bb) as well as multiple fund level benchmarks (Policy Index, Allocation Index, Total Fund Ex- Private Markets, and a 60% MSCI ACWI IMI Net/40% Barclays Global Aggregate Index) – Total exposure vs. target weights – Asset allocation history over trailing five years – Trailing time weighted returns for investment managers, and asset classes, over recent trailing time periods (QTD, FYTD, 1 YR, 3 YR, 5 YR, 10 YR and Since Inception) relative to benchmarks and peer groups – Attribution effects for the quarter vs. policy benchmarks – Risk statistics over trailing five year period including annualized standard deviation, information ratio, share ratio, beta and tracking error
Performance monitoring	• DPFP Staff and investment consultant are primarily responsible for monitoring the performance of the investment managers and reporting to the Board of Trustees and IAC. • Over the course of calendar year 2019 DPFP staff presented an overview and deep dive into each asset class (and investment managers) at the majority of the Board of Trustees meetings. • The Consultant conducts periodic meetings, conference calls and constant oversight of the investment managers.

Section 802.109 - Subsection (a) 5 (continued)

Criteria or Topic	DPFP Status
Investment Manager Termination/Replacement	• DPFP staff and investment consultant discuss individual strategies in more depth, as warranted. • Discussions are also held with the IAC. • In the past two years, only four investment managers were terminated (prior to the formation of the IAC). • The Consultant prepared a written recommendation citing the reasons for the termination recommendation. It was primarily an asset allocation decision that led to the elimination of the global asset allocation ("GAA") portfolio. At the time, a report was prepared that detailed the terminated strategies' collective exposure, historical performance, fees, forward looking return/risk expectations, and forward looking correlation expectations to global equities and global bonds. • It was discussed with DPFP Staff and went through a round of edits and further evaluation. • The Board evaluated the expected total Fund return expectations pre- and post- termination and rebalance. The decision to terminate the GAA program and move the proceeds into short-term core bonds was expected to reduce the standard deviation of DPFP. • The recommendation to terminate, and reallocate, was approved by the Board of Trustees in May 2018.

Section 802.109 - Subsection (a) 5

Consultant Analysis

- The evaluation process for new investment manager hires is untested in its current form, but appears adequate (as written on paper) and in-line with industry best practices.
- DPFP Staff is very knowledgeable and informed on the investment activities of its individual investments and investment managers.
- Performance monitoring and benchmarking is in-line with industry best practices.
- Evaluation (and thoughtful discussion) by DPFP Staff on performance drivers and considerations for need for any portfolio adjustments is measured, well thought out, and more complete than typical for similar sized pension plans.

Recommendations

- We recommend Staff continue to prepare deep dive reviews into each asset class with the goal of covering the entire portfolio in each calendar year.
- We recommend DPFP formally documents the rationale for all hiring and firing decisions.

Conclusions

Subsection	Overall Status	Adhering to established policies?
1. Investment Policy Statement analysis	Meets Industry Best Practices	Yes
2. Asset allocation (and liability) process review and execution	Meets Industry Best Practices	Yes
3. Fees review and procedures	Meets Industry Best Practices	Yes
4. Governance processes	Meets Industry Best Practices	Yes
5. Investment manager selection and monitoring	Meets Industry Best Practices	Yes

Summary of Recommendations

Subsection (a) 1

- The "Core Beliefs and Long Term Acknowledgments" is thoughtful and should be reviewed any time significant investment changes are considered. It offers good guidance without being overly prescriptive or prohibitive.
- DPFP Staff and the Consultant should continue to conduct an annual review of the IPS.

Subsection (a) 2

- We recommend the Board considers increasing passive exposure.
- We recommend DPFP Staff continues its process of working with the Board of Trustees and external advisors to prudently exit illiquid investments to the extent possible.
- We recommend the Board remains patient with asset allocation as the portfolio is transitioned and doesn't feel obligated to conduct comprehensive asset allocation overhaul every year. (Surveys have shown many large state plans are moving towards once every three years.
- We recommend the Board and Staff closely monitor contribution levels and maintain constructive and open dialogue with the City.
- If (based on the actuary's advice) it becomes likely that DPFP is not on track to meet targets by 2024, we encourage the Board to act as soon as reasonably possible to discuss and implement additional plan design changes to avoid delaying and compounding any known shortfalls.
- We recommend DPFP consider adjusting actuarial valuation assumptions as necessary based on the outcomes and advice of the actuary upon conclusion of the experience study expected in 2020.

Subsection (a) 3

- Passive strategies could reduce overall investment related fees for DPFP.
- We recommend that Staff, the Board, and the Consultant all remain diligent in monitoring fees.
- We recommend continued efforts on seeking no fee or discounted fee arrangements on private market investments that enter extension periods.
- We recommend DPFP staff documents its internal process for fee reconciliation and payment in a formal procedure document or memo.

Subsection (a) 4

- To the extent possible, we would like to see increased continuity of Trustees on the Board.

Subsection (a) 5

- We recommend staff continue to prepare deep dive reviews into each asset class with the goal of covering the entire portfolio in each calendar year.
- We recommend DPFP formally documents the rationale for all hiring and firing decisions.

Sources Reviewed in Creation of the Report

Files	Files
Investment Policy Statement	Texas PRB Guidance for Inv. Practices and Perf. Evaluations
Annual CAFR reports	Conversations with Staff
Board Meeting minutes	Segal Actuarial Valuation Report
IAC Meeting Minutes	DROP policy
DPFP website	Board of Trustees Governance and Conduct Policy
Meketa performance reports	Trustee Election Procedures
Meketa attendance at Board meetings	Contractors Statement of Ethics
Meketa attendance at IAC meetings	Funding Policy
Statute Article 6243a-1	
HB 3158 Pension Changes presentation	