



July 3, 2024

Via E-Mail: jaime.jasso@laredofire.com

Board of Trustees
Laredo Firefighters Retirement System
c/o Mr. Jaime Jasso, Administrator
P.O. Box 3069
Laredo, TX 78044

Members of the Board of Trustees:

Please see the enclosed Investment Practices and Performance Evaluation Report. We believe this report fulfills the requirements of Texas Government Code §802.109.

At FEG Investment Advisors (FEG), we collaborate with our clients to help them fulfill their missions. FEG is an independent, employee-owned, full-service investment advisory firm. We offer in-depth education on current investment strategies and trends based on sound research principles. As a 100% employee-owned firm, FEG is structured to ensure our clients-come-first model endures over the long term. We are an objective, institutional partner to our clients and we have no affiliations with broker-dealers.

FEG currently serves as the non-discretionary investment consultant for the Laredo Firefighters Retirement System and has done so since 2004. FEG does not and has not either directly or indirectly managed investments of the System. We receive no remuneration from sources other than the System for services provided to the System. 100% of FEG's revenue is derived from providing investment services to our clients. We do not charge investment managers direct or indirect fees for inclusion in client portfolios, nor are our employees incentivized to promote one firm product or service over another. It is our goal to put client interests first at all times.

As such, we believe FEG is considered an independent firm and qualified to provide this evaluation.

Best regards,

A handwritten signature in black ink that reads 'Alan Bergin'.

Alan Bergin, CFA
Senior Vice President / Consultant
FEG Investment Advisors

Investment Practices and Performance Evaluation Report

Laredo Firefighters Retirement System

May 31, 2024



Prepared by FEG Investment Advisors

This report is submitted in accordance with Texas Government Code §802.109

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Background

The Laredo Firefighters Retirement System (LFRS) has retained Fund Evaluation Group, LLC d/b/a FEG Investment Advisors (FEG), to assist with the preparation and filing of the “Investment Practices and Performance Evaluation” as required by Texas Government Code Section 802.109(a)(1-5). This report was prepared in May 2024 and 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.

FEG provides independent discretionary and non-discretionary investment advisory services to institutions throughout the nation. Since our founding in 1988, we have partnered with institutional investors to help improve their outcomes by designing globally diversified portfolios to help enhance investment returns. With 134 employees¹ and \$78 billion² in total assets under advisement (AUA) – including \$14 billion in assets under management (AUM), we are large enough to attract the resources and talent our clients require yet small enough to remain nimble and offer customized investment solutions.

FEG currently serves as the non-discretionary investment consultant for LFRS and has done so since 2004. FEG does not, either directly or indirectly, manage investments of LFRS. We receive no remuneration from sources other than LFRS for services provided to LFRS. 100% of FEG’s revenue is derived from providing investment services to our clients. We do not charge investment managers direct or indirect fees for inclusion in client portfolios, nor are our employees incentivized to promote one firm product or service over another. It is our goal to put client interests first at all times.

¹ As of March 31, 2024

² As of December 31, 2023. Assets under Advisement (AUA) include discretionary and non-discretionary assets of FEG and its affiliated entities. These assets are typically non-discretionary. Some asset values may not be readily available at the most recent quarter-end; therefore, the previous quarter’s values were used and may be higher or lower depending on current market conditions. Of the \$77.7bn in AUA, FEG’s total assets under management (AUM) of \$13.6bn includes discretionary (\$11.7bn) and non-discretionary AUM (\$1.9bn).

Section 802.109 – Subsection (a) 5 (A)

“an analysis of any investment policy or strategic plan adopted by the retirement system and the retirement system’s compliance with that policy or plan”

Background

FEG undertook a thorough evaluation of the LFRS Investment Policy Statement (IPS) and affirms LFRS is in compliance with the policies defined within the document. The IPS is reviewed annually and was last changed in 2023 and approved at the December 26, 2023 Board Meeting. LFRS hired Dr. Mary Campion of Champion Capital Research to independently review the IPS.

The IPS was initially written in 2001 and has been amended ten times since that date. The version adopted in December 2023 added a section on illiquid investments, limiting the overall exposure to illiquid investments to 25% of the portfolio value.

LFRS Status

- The IPS is written clearly, well organized, and in line with industry standards.
- The document defines responsibilities, expectations, objectives, and guidelines of the LFRS Staff, the Board of Trustees (Board) and the providers of investment services retained to assist with the management of LFRS assets.
- The IPS establishes formal yet flexible investment guidelines and investment structure for managing LFRS assets; structure includes various asset classes, investment management styles, asset allocation, and acceptable ranges expected to produce an appropriate level of overall diversification and total investment return over the investment time horizon, in order to incorporate prudent risk parameters, appropriate asset guidelines and realistic return goals.
- The IPS provides a framework for regular constructive communication between the Board, the Staff, and the LFRS’ providers of investment services.
- The statement provides rate-of-return and risk characteristics for each asset class represented by various investment options.
- The IPS provides rate-of-return and risk characteristics for the total portfolio. Relative performance benchmarks are set forth in a "Monitoring" section.
- The IPS creates standards of investment performance which are historically achievable and by which the investment managers must agree to be measured over a reasonable and consistently applied time periods.
- The statement establishes formal criteria to select, monitor, evaluate, and compare the performance results achieved by each investment manager on a regular basis.
- The LFRS quarterly performance evaluation reports include details on whether the investment managers are meeting IPS defined performance and risk objectives.

Section 802.109 – Subsection (a) 5 (B)

“a detailed review of the retirement system's investment asset allocation, including:

- i. the process for determining target allocations;
- ii. the expected risk and expected rate of return, categorized by asset class;
- iii. the appropriateness of selection and valuation methodologies of alternative and illiquid assets; and
- iv. future cash flow and liquidity needs;”

Background

The LFRS IPS defines the process for determining and evaluating its asset allocation. While it is the Board that ultimately establishes asset allocation ranges and investment guidelines, the investment consultant is tasked with making recommendations as to the appropriate target portfolio weightings among the various major asset classes (e.g., stocks, bonds, and cash) within the portfolio. These recommendations are to be supported with materials including asset class performance expectations (risk, return and correlations) for broad and various asset classes within the portfolio. The LFRS asset allocation is strategic and reviewed annually, although it does not change every year. LFRS does not approve of short-term, tactical asset allocation changes.

i. the process for determining target allocations;

LFRS relies on its investment consultant to provide it with forward looking expected rates-of-return and risk. The current investment consultant, FEG Investment Advisors, provides the following on its process for developing asset allocation inputs. All assumptions assume a seven to ten-year time horizon.

CLIENT OBJECTIVES: STRATEGIC CONSIDERATIONS

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Laredo Firefighters Retirement System	
Objective	Growth without undue exposure to risk
Return Goal	7.4% actuarial rate of return
Time Horizon	Long-term
Considerations	
• <i>Volatility</i>	Balance returns versus impact on contributions
• <i>Cash Flow</i>	Monthly contributions cover most monthly distributions
• <i>Liquidity</i>	No near-term liquidity needs
• Liquid	At least 75% of the portfolio
• Illiquid	No more than 25% of the portfolio

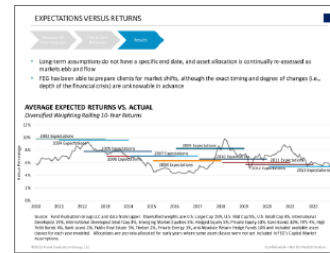
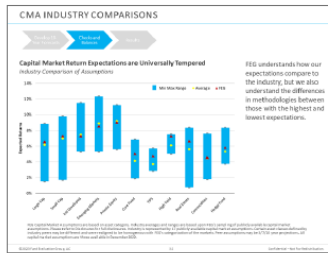
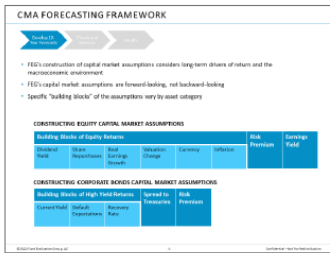
Recognizing the importance of sound capital market assumptions, FEG has a team and process in place to research and publish capital market assumptions. While FEG’s expected returns have historically been within the return range of the actual results 7-10 years later, the process does not “stop” once we issue these assumptions. We continually refine our models and evaluate our success.



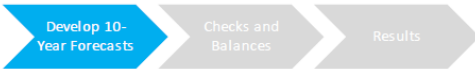
STEP 1: DEVELOP FORECASTS
Evaluate long-term drivers of return by asset category and frame within the broader macroeconomic environment.

STEP 2: CHECKS AND BALANCES
Review internally and externally – checking assumptions and methodologies against others in the investments industry.

STEP 3: RESULTS
Evaluate past results, determine if any deviations were a function of unique markets or embedded within FEG’s forecasting framework. Keep what is working but isolate and correct any issues.



CMA FORECASTING FRAMEWORK



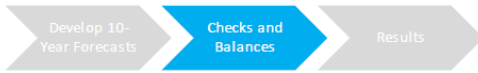
- FEG’s construction of capital market assumptions considers long-term drivers of return and the macroeconomic environment
- FEG’s capital market assumptions are forward-looking, not backward-looking
- Specific “building blocks” of the assumptions vary by asset category

CONSTRUCTING EQUITY CAPITAL MARKET ASSUMPTIONS

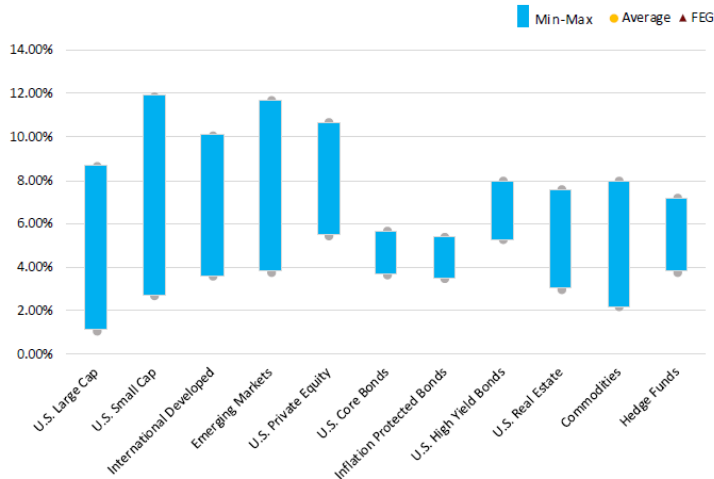
Building Blocks of Equity Returns						Risk Premium	Earnings Yield
Dividend Yield	Share Repurchases	Real Earnings Growth	Valuation Change	Currency	Inflation		

CONSTRUCTING CORPORATE BONDS CAPITAL MARKET ASSUMPTIONS

Building Blocks of High Yield Returns			Spread to Treasuries	Risk Premium
Current Yield	Default Expectations	Recovery Rate		



Capital Market Return Expectations Increased Universally
Industry Comparison of Assumptions



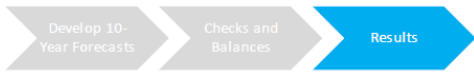
FEG understands how our expectations compare to the industry, but we also understand the differences in methodologies between those with the highest and lowest expectations.

Source: FEG. FEG Capital Market Assumptions are based on asset category. Industry averages and ranges are based upon FEG's sampling of publicly available capital market assumptions. Please refer to Disclosures for full disclosures. Industry is represented by 32 publicly available capital market assumptions. Certain asset classes defined by industry peers may be different and were realigned to be homogenous with FEG's categorization of the markets. Peer assumptions may be 5/7/10-year projections. All capital market assumptions are those available in December 2023.

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EXPECTATIONS VERSUS RETURNS



- Long-term assumptions do not have a specific end date, and asset allocation is continually re-assessed as markets ebb and flow
- FEG has been able to prepare clients for market shifts, although the exact timing and degree of changes (i.e., depth of the financial crisis) are unknowable in advance

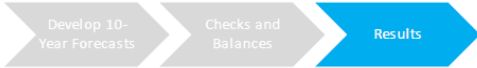
AVERAGE EXPECTED RETURNS VS. ACTUAL
Diversified Weighting Rolling 10-Year Returns



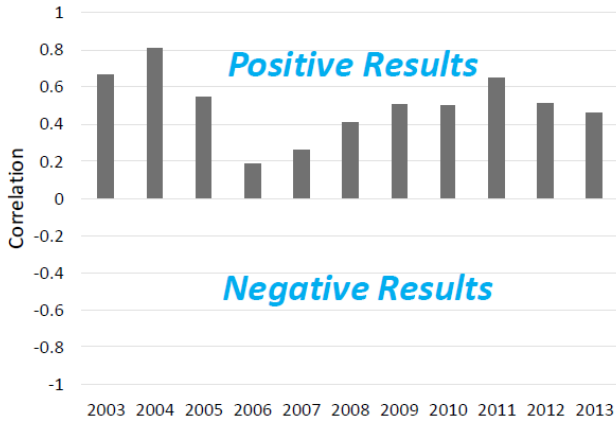
Source: Fund Evaluation Group LLC and data from Lipper. Diversified weights are U.S. Large Cap 15%, U.S. Mid Cap 5%, U.S. Small Cap 3%, International Developed 14%, International Developed Small Cap 3%, Emerging Market Equities 5%, Hedged Equity 5%, Private Equity 10%, Core Bonds 10%, TIPS 4%, High Yield Bonds 4%, Bank Loans 2%, Public Real Estate 5%, Timber 2%, Private Equity 3%, and Absolute Return Hedge Funds 10% and included available asset classes for each year modeled. Allocations are pro-rata allocated for early years where some asset classes were not yet included in FEG's Capital Market Assumptions.

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**CAPITAL MARKET ASSUMPTIONS:
RANK CORRELATION OF EXPECTED VS. ACTUAL**

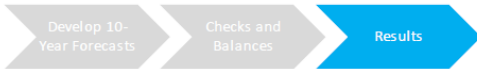


Because every asset allocation decision is relative, one method we use to evaluate our results is rank order (the order in which asset classes fall when ranked by return versus the order of actual returns, e.g., 1st, 2nd, 3rd).

Suppose a market shock, the Great Financial Crisis, for example, dramatically shifts markets and returns, but our relative ranking is accurate. In that case, our assumptions should nevertheless position our clients well (i.e., favor those with the best risk/reward trade-offs) regardless of unique market events.

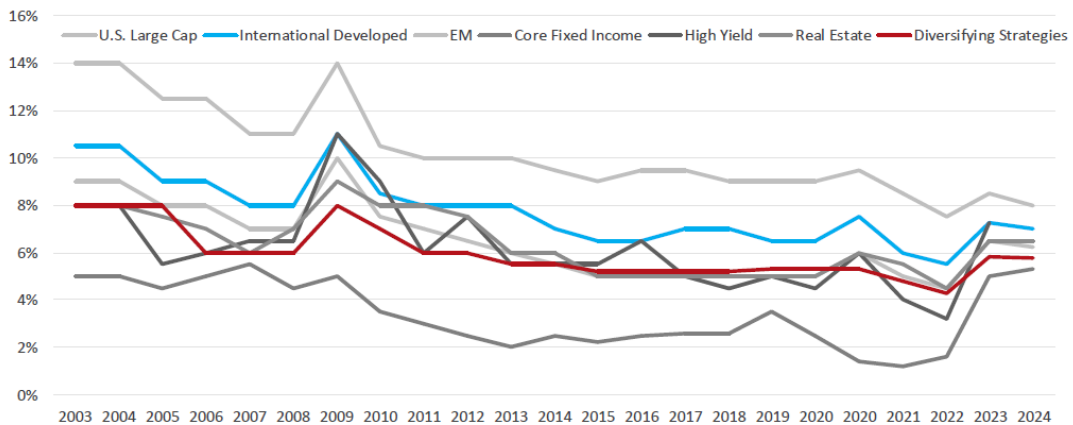
As such, we review the correlation between the rank order of our expectations to the rank order of actual results.

Source: Fund Evaluation Group LLC and data from Lipper as of December 2023



FEG’s capital market assumptions have reflected the impact of significant market events as well as improvements in our methodology over time

7- to 10-Year Capital Market Assumptions by Year

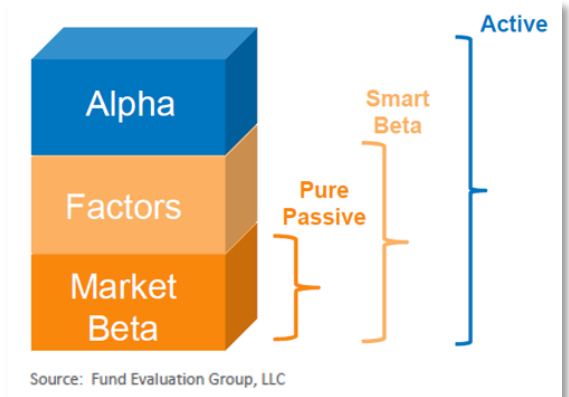


Data Source: FEG Data. As of December 2023. FEG Capital Market Assumptions are hypothetical based on asset category. The expected return is the result of a hypothetical allocation of investments represented solely by financial market data, underlying public indices, and FEG expectations in each asset category. The expected return does not include or represent investments made in any specific security within each asset category. Please refer to Disclosures for full disclosures.

Active versus Passive Investments

- Return differences between active and passive strategies are not modelled in asset allocation assumptions. FEG’s philosophy incorporates both active and passive investment strategies but applies them to different aspects of portfolio construction. Although active management has the potential to add value over strictly passive means, FEG believes it should be applied appropriately. FEG also believes incentives should be aligned so that investors are paying for outperformance (alpha), as opposed to beta gained inexpensively through passive strategies. Ultimately, FEG focuses on active management strategies in less

efficient asset classes to help drive alpha. FEG recommends passive and “Smart Beta” strategies in more efficient areas (e.g. large cap equity) to help keep fees low. When utilizing active management strategies, FEG seeks to identify and invest in high conviction active managers with strong possibilities of outperformance. FEG also works to screen out any “closet indexers” (i.e., active managers delivering index-like performance). Though FEG believes active management can generate alpha across a variety of asset categories, geographies and market environments, FEG remains prudent in our approach and place particular emphasis on sourcing skilled active managers within areas of the market where inefficiencies are most pronounced.



i. the expected risk and expected rate of return, categorized by asset class;

Asset Allocation and Return Assumptions

as of March 31, 2024

	LFRS Strategic Allocation	Expected Rate-of- Return	Expected Risk
Global Equity			
U.S. Large Cap	31%	6.25%	15.0%
U.S. Mid Cap	4%	6.50%	18.0%
U.S. Small Cap	6%	7.00%	24.0%
Non-U.S. Developed	12%	7.00%	20.0%
Emerging Markets	5%	8.00%	33.0%
Private Equity	5%	9.00%	17.0%
	<u>63%</u>		
Fixed Income			
Core Fixed Income/Cash	15%	5.30%	6.0%
Private Debt	2%	8.50%	15.0%
	<u>17%</u>		
Real Assets			
Public Real Estate	4%	6.50%	20.0%
Energy Infrastructure	3%	6.75%	23.0%
Private Real Estate	1%	8.50%	18.0%
Private Energy	2%	9.50%	18.0%
	<u>10%</u>		
Diversifying Strategies			
Multi-Strategy Hedge Fund	10%	6.00%	9.5%
	<u>10%</u>		
Laredo Firefighters Retirement System	100%	7.40%	11.9%

³ Source: FEG

ii. the appropriateness of selection and valuation methodologies of alternative and illiquid assets; and

- LFRS has a 20% target asset allocation to alternative investments, defined as either hedge funds (10%) or private capital investments (10%). As of March 31, 2024, the actual allocation was 15.0% (hedge funds: 8.7%, private equity: 2.3%, private energy: 1.4%, private real estate: 0.2%, and private debt: 2.4%).
- LFRS values its alternative investments based on fair value determinations provided by audited financial statements or appraisals provided to LFRS from its alternative investment managers.

Alternative Investment Investing and Initial Diligence

- LFRS relies on its investment consultant for recommending and monitoring alternative investments. FEG believes alternatives can be beneficial when utilized as part of a holistic portfolio solution and have been advising and educating clients on such strategies for nearly 30 years. FEG recommends LFRS incorporate exposure to alternative investments (including hedge funds and private capital), as they can provide the potential for increased portfolio returns (illiquidity premium), niche opportunities, diversification, and reduced volatility. FEG employs a multi-disciplinary approach and maintains an ever-evolving roster of recommended alternative investment strategies spanning private capital (including private equity, private debt, private natural resources, etc.), real assets, and hedge funds. All recommended hedge fund / alternative investment managers must meet operational “best practices” and maintain an institutional infrastructure that provides LFRS the confidence needed to make significant investments. The evaluation criteria that recommended alternative investment managers must meet as part of FEG’s initial and ongoing due diligence process are highlighted below:
 - OPERATIONAL – FEG considers managers of institutional caliber and focuses on those with an organized and thorough back office. FEG’s onsite due diligence reviews best practices and confirms relationships with quality brokers, accountants, etc.
 - TRANSPARENCY – FEG requires access to pertinent information regarding all investment issues.
 - FRAUD – FEG performs a thorough review and checks industry references. FEG also assesses valuation policies and procedures for illiquid investments.
 - LIQUIDITY – The liquidity match between the fund strategy and investor terms are reviewed and verified.
 - LEVERAGE – The use of leverage is consistently monitored and must remain in an appropriate range for both the fund’s strategy and risk profile.
 - KEY-MAN RISK – FEG assesses each employee’s impact on the management firm / fund.
 - EXIT PROVISIONS – FEG compares all notice requirements against the fund’s strategy and liquidity provisions.
 - HEADLINE RISK – Proper and timely due diligence can help significantly reduce the likelihood of a market, or fraud-related, “blow-up.”

Alternative Investment Performance Reporting / Benchmarking

- FEG generates an IRR for all private capital managers using System-specific valuations and cash flows. Since these valuations are provided on a quarter-lag, FEG uses the previous quarter’s data and adjusts the market value by any contributions or distributions that took place during the

current quarter. FEG believes this best represents the System's true month-end market value. Upon receipt of the next quarterly valuation, we retroactively adjust the values.

- FEG tracks several performance measures on a fund-level basis. FEG's fund-specific reports (included in the back section of the quarterly performance report) incorporate the IRR and distributions / total value as a multiple of called capital. These values are then compared to vintage-year peer universe benchmarks from Thomson One.
- FEG calculates a comparative return pattern (best described as an "opportunity cost" measure) and matches the fund's cash flows against an equivalent public market benchmark. This report (1) tracks capital that has been committed, called, distributed, and the total value in graphic form; (2) charts the historical LFRS-specific investment balances; and (3) notes certain total fund data; such as percent called, vintage year, and strategy.

iii. future cash flow and liquidity needs;"

- The contribution policy of the System requires contributions equal to 16% of pay by the firefighters, the rate elected by the firefighters according to TLFFRA. The city currently contributes a percentage of pay for each active firefighter according to a collective bargaining agreement (CBA). The contribution rate for the year ending 30 September 2022 was 21.10%. The CBA has four increases in the city contribution rate, to 21.60% in June 2023, to 22.10% in October 2023, to 22.35% in October 2024, and to 22.60% in October 2025. The actuarial valuation includes the assumption that the city contribution rate will continue to be 22.60% over the unfunded liability amortization period. The costs of administering the plan are paid from the System assets.
- For fiscal year 2023, the city contributed \$9.1 million and firefighters contributed \$6.6 million. Benefit payments were \$18.9 million. Total general and administrative expenses were \$307,142.
- As of September 30, 2023, the Plan Fiduciary Net Position as a Percentage of the Total Pension Liability was 56.8%. At that funding level, the Trustee's focus has been on maximizing investment returns for an acceptable level of risk. As the System approaches full funding, a less risky asset allocation would likely be adopted.

Section 802.109 – Subsection (a) 5 (C)

“a review of the appropriateness of investment fees and commissions paid by the retirement system”

Background

LFRS places great emphasis on monitoring investment fees. However, LFRS recognizes its mission is to provide benefits to its members and their beneficiaries, requiring a 7.4% required rate-of-return, net of fees. In seeking this return, LFRS has chosen to invest in many actively managed investment portfolios, some of which can have above average investment fees. LFRS’s Board has historically chosen investments based on the highest expected net-of-fees return, not the lowest fee.

LFRS’s Investment Policy Statement requires the Board to monitor all expenses associated with the Plan. The Board relies on Staff and the Investment Consultant to determine investment fees. As most of LFRS assets are invested in public securities, calculating investment fees is relatively straightforward. Fees are typically a percentage of assets invested in the strategy.

However, LFRS also invests in private partnerships (hedge funds and private capital funds). The managers of these funds are paid a management fee based on the market value, but also are paid an incentive fee based on fund performance. In addition, in some instances, fund-of-funds are utilized. In these funds, fees are also paid to underlying investment managers. These fees are disclosed to LFRS at least annually but can be obtained from the investment managers upon request. For hedge funds, incentive fees are typically 15% to 20% of returns greater than 0%. A high-water mark structure often exists to ensure fees are only paid on new returns, not the recovery of prior losses. For private equity funds, incentive fees are also typically 15% to 20%, but only on returns greater than a hurdle rate. There are many ways to define a hurdle rate, but rates are typically around 6% to 8%.

- The first page of the System’s Investment Policy Statement includes the following language:
 - “In making investments for the System, the Board shall discharge its duties:
 - For the exclusive purposes of:
 - providing benefits to members and their beneficiaries; and
 - defraying reasonable expenses of administering the System”
- The Board is further required to:
 - Monitor investment, record keeping & administrative expenses associated with the plan.
- LFRS Staff are required to:
 - Coordinate with consultant(s) on the System’s annual report detailing all costs associated with the management of the Fund’s investment program. These fees and expenses include but are not limited to custodial, investment manager(s), mutual fund, consultant(s), all vendor activities.
- The IPS also requires the Investment Consultant to “review at least annually all costs associated with the management of the plan, including:
 - Expense ratios of each Manager and/or mutual fund
 - Administrative fees: costs to administer the plan, including record keeping, custody, and trust services
 - The proper identification and accounting of all parties receiving soft dollars and/or 12b-1 fees generated by the plan
- As a part of initial due diligence on all investment managers, the IPS states “Consultant will assist Staff and the Board in compensation negotiations with Investment Managers, Custodians and

other service providers. Fees paid to investment vendors should never be among the highest quartile relative to peers.”

- Additionally, the IPS includes the following for both mutual and commingled funds: “The System will monitor both management fees and administrative expenses, to ensure that expenses are within stated criteria. Each Investment Manager's fees are expected to be lower than the top 25% percentile of peers.”
- The Investment Consultant, as a part of the quarterly reporting to the Board, details all investment expenses, including custody and consulting.

Section 802.109 – Subsection (a) 5 (D)

“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”

Background

The System has a number of governance policies separate from policies embedded within the Investment Policy Statement. These policies cover long term Board goals, elections, funding, gifts, attendance, travel and expense reimbursement. Additional policies cover non-endorsements, non-participation in entities employed the System, and a separate code of ethics. Collectively, these documents, along with adherence to Texas Pension Review Board and Texas Local Fire Fighters Retirement Act requirements and guidance, create a strong governance structure. These documents are all available on the System’s website. Additionally, the website contains all meeting agendas and minutes, actuarial valuations, financial reports, investment reports, and other reports required by the Pension Review Board. The System is transparent in all activities. Board meetings are open to public and the public is invited to make comments at each meeting.

The Investment Policy Statement contains clear language defining the Board’s responsibilities concerning selecting investments (asset allocation and investment manager selection) and the monitoring of investments. Board members are elected representatives of the System’s beneficiaries, a representative of the city manager’s office, and a representative appointed by the mayor. There are no requirements that Board members have investment expertise. Investment education is very important to the Board and all Board members meet the requirements of the Minimum Educational Training (MET) Program of the Pension Review Board. The MET program requires all new Trustees to receive seven hours of training in their first year and other Trustees to receive four hours of training every two years. Areas of training include “Core” content areas of Fiduciary Matters, Governance, Ethics, Investments, Actuarial Matters, Benefits Administration, and Risk Management and “Non-Core” content areas of Compliance, Legal and Regulatory Matters, Pension Accounting, Custodial Issues, Plan Administration, Texas Open Meetings Act, and Texas Public Information Act. Training is typically received during annual meetings and dedicated training seminars of the Texas Association of Public Employee Retirement System (TEXPERS) and the Texas Local Fire Fighters Retirement Act (TLFFRA).

- The System Board meets monthly to discuss Plan financials and expected cash flows over the next month. Estimated investment results are reviewed, but no actions are typically taken. On average, monthly meetings last about an hour. Once a quarter, the investment consultant presents the investment performance evaluation report and makes recommendations on asset allocation or investment managers, using the process defined in the IPS. These quarterly meetings tend to last about two hours.
- The investment portfolio is externally managed and the Board and Staff do not select individual securities. The Board relies on its investment consultant for advice and recommendation on the investment portfolio. As defined in the IPS, the investment consultant is to be independent and not take discretion over portfolio investments. The investment consultant is paid a percentage of overall investment assets and is not allowed to receive brokerage commissions, soft dollar payments, or any compensation from investment managers or marketing firms representing

managers. Together with specific criteria for investment manager selection (see next section), the Board receives impartial investment advice and guidance.

- There is no set time frame for issuing RFPs for evaluating the investment consultant. The investment consultant is continuously reviewed, using LFRS's investment performance as the primary measurement criteria. Investment performance is measured against both the required rate-of-return and returns of LFRS peers.
- As discussed in previous sections, the IPS clearly defines the investment decision making process. The Board retains all discretion over the investment portfolio. The investment consultant is tasked with educating and making recommendations to the Board. LFRS staff is tasked with implementing all actions taken by the Board, often with the assistance of the investment consultant.
- The IPS clearly defines portfolio measurement, including appropriate benchmarks and procedures for investments failing to meet IPS defined performance goals (see next section).

Section 802.109 – Subsection (a) 5 (E)

“a review of the retirement system's investment manager selection and monitoring process”

Background

Investment managers are selected by the Board of Trustees, with guidance from the investment consultant. To reduce conflicts of interest between the investment consultant and investment managers, the Investment Policy Statement clearly defines a manager selection criterion. This includes an eleven-step screening process to eliminate from consideration managers who are not “institutional” in quality (i.e. lack of track record, experience of managers, assets under management, and various performance metrics). Using this screening process, the investment consultant typically presents two to four different investment managers to the Board for discussion. The Board can choose to interview each investment manager. Following discussion, the Board chooses one or more investment managers. The System staff works with the investment consultant, custodian, and investment managers to transition to the new investment manager(s). The process is similar for “alternative” investment managers, but depending on the asset class, multiple managers may not be reviewed, particularly with regards to private capital managers.

Performance measurement is driven by the investment consultant. Following industry return calculation guidelines, the investment consultant calculates the returns of all investment managers, asset class composites, and the overall investment portfolio on a monthly basis. Working with the Board, and defined in the IPS, each manager, asset class, and the overall portfolio are compared to appropriate benchmark indexes. The investment results are published and presented to the Board quarterly. The performance evaluation report summarizes key investment data so all Trustees, regardless of investment experience, can understand key points. For Trustees with significant investment expertise, the performance evaluation report contains a thorough return and risk analysis of each investment manager.

Investment manager retention guidelines are detailed in the IPS. Faced with a manager that has underperformed expectations, the Board is required to take one of four actions. The first is to discuss the manager’s performance and take no action, continuing to monitor the manager on a quarterly basis. This is commonly the action for investment managers with a distinct investment style, such as a concentration in certain economic sectors, which can deviate from benchmark indexes over short time periods. The second action is to formally place the manager on a “Watch List”. This requires the manager to be discussed quarterly for one year. At the end of one year, the manager is either removed from the Watch List and retained or terminated. The third option is to place the investment manager under “Formal Review”. This process requires notifying the manager of the review and requiring their presence at the next Trustee meeting. Following that meeting, the manager either goes on the Watch List, is retained, or is terminated. The final option is the immediate termination of the investment manager.

- According to the IPS, the Board is required to:
 - “Select consultants, investment managers and all vendors and other services providers.
 - Diversify, select, and maintain a general investment strategy consistent with allocation ranges and investment guidelines.”
- As defined in the IPS, the Investment Consultant is to:
 - “Serve as objective, third-party professionals retained to assist the Board in managing the overall investment process. The Consultant(s) are responsible for guiding the Board

through a disciplined and rigorous investment process to enable the Board to meet the fiduciary responsibilities outlined above. Investment Consultant(s) will act as co-fiduciary”

- The IPS has the following language regarding manager selection:
 - “Consistent with TLFRRRA statute, each investment option should be managed by: (i) a bank; (ii) an insurance company; (iii) a registered investment company (mutual fund); or (iv) a registered investment adviser.
 - Assist the Board through the selection process by identifying and screening candidates for appropriate portfolio and organizational characteristics. Attend formal presentations of finalists, if required. Perform due diligence checks. Help quantify the trade-offs between expected returns and risks among various alternatives. Gather and submit information as requested by the Board.
 - The investment manager screening criteria include:
 - Inception Date: The investment must have at least a 3-year track history.
 - Manager Tenure: The investment Manager must have at least a 2-year track history (Most senior Manager's tenure)
 - Assets: The investment must have at least \$75 million under management. {Total across all share classes for funds/ETFs}
 - Composition: The investment's adherence to its asset class should be at least 80% as indicated by statistical measurements including by not limited to R^2
 - Style: The investment's style should match peers or sub-asset classes.
 - Prospectus Net Expense Ratio: The investment should be lower than the top 25th percentile (most expensive) of its peers.
 - Alpha: The investment should place in the top 50% relative to peers over five years,
 - Sharpe: The investment should place in the top 50% relative to peers over five years,
 - 1 Year Return: The investment should place in the top 50% of its peer group.
 - 3 Year Return: The investment should place in the top 50% of its peer group.
 - 5 Year Return: The investment should place in the top 50% of its peer group.
- The IPS has the following language regarding monitoring investment performance:
 - “A performance evaluation report of the System and its investment component parts will be conducted quarterly. The Consultant(s) written report will cover four basic areas:
 - Returns and other performance metrics - Total time-weighted returns over specified short, intermediate and long-term periods;
 - Comparisons - Returns will be compared to appropriate benchmark indices and a statistical universe of similar systems;
 - Diagnostics - Measurement of risk-adjusted performance, analyses of risks, style characteristics, and return attribution;
 - Compliance - Portfolios will be checked for compliance with the objectives, targets, and policy guidelines specified in this Statement; and
 - The total returns of each asset class and the System will be compared to the distribution of returns represented by an appropriately balanced universe of similarly managed systems that are not subject to capital gains or income taxes.

- A quarterly report will be analyzed to ensure that each component employed by the System is ranked in the top 50% of the appropriately balanced universe over a five-year time period.”
- The Consultant is also tasked with the following:
 - “Monitor risk-adjusted performance and place investment option on a watch list for more thorough or ongoing review and analysis when it fails to meet aforementioned objective criteria.
 - Each Manager's Sharpe Ratio should exceed its respective benchmark 's Sharpe ratio for five year rolling time periods.
 - Monitor the diversification, quality, duration, and risk of fixed income holdings.”
 - “The Consultant(s) in consultation with the Board will meet to review each investment for:
 - Adherence to the Watch List Criteria identified below;
 - Material changes in the investment option's organization, investment philosophy and/or personnel; and
 - Any legal and/or regulatory proceedings affecting the investment option's organization.”
- With regards to report, all investment managers are required by the IPS to do the following:
 - “For actively managed, separate accounts, produce a statement at the end of each month describing the portfolio asset class weightings, individual security positions showing both cost and market value, and all principal cash transactions, including all buys and sells in sufficient descriptive detail. For commingled assets, this statement should show unit position, unit value and relevant portfolio characteristics. These reports shall include for comparison purposes, for each Manager or asset class, the performance of each Manager or asset class compared to the relevant Benchmark Index as described in Section XI.”
- Investment managers are also required to submit themselves for ongoing diligence purposes, as required by the IPS:
 - “At the request of the Board, but not less than once each year, each Investment Manager will participate in a due diligence review meeting, the agenda to include:
 - A review and re-appraisal of the investment program;
 - A commentary on investment results in light of the appropriate standards of performance;
 - Annually, a summary of these review meetings will be made available to the Board.
 - A synopsis of the key investment decisions made by the Manager, his or her underlying rationale, and how those decisions could affect future results; and
 - A discussion of the Manager's outlook, what specific investment decisions this outlook may trigger and how these decisions could affect future results.”
- Regarding communications, investment managers are required by the IPS to do the following:
 - “Each Investment Manager is responsible for maintaining frequent and open communication with Staff and/or Consultant(s) on all material matters pertaining to investment policies and the management of System's assets. In particular, each Investment Manager will:
 - Provide notice of any material changes in its investment outlook, strategy, and portfolio structure; and

- Provide notice of material changes in its firm ownership, organizational structure, financial condition, senior staffing and management, or substantial involvement in any litigation or regulatory investigation.”
 - IPS Defined Benchmark Indexes:

U.S. Large Cap Stocks	S&P 500 Index
U.S. Mid Cap Stocks	Russell Mid Cap Index
U.S. Small Cap Stocks	Russell 2000 Index
Non-U.S. Developed Stocks	MSCI EAFE Index
Non-U.S. Emerging Stocks	MSCI Emerging Markets Index
Private Equity	Thomson One All Private Equity Index
Fixed Income - Core	Bloomberg U.S. Aggregate Index
Private Debt	Thomson One Distressed Index
Diversifying Strategies	HFRI Fund of Funds Index
Public Natural Resources	Tortoise North American Pipeline Index
Private Natural Resources	Thomson One Private Natural Resources Index
Public Real Estate	FSTE NAREIT All Equity Index
Private Real Estate	Thomson One Private Real Estate Index
Cash	91-Day Treasury Bill
- The IPS defines an automatic review process for investment funds:
 - “Investment performance reviews of all portfolios will be conducted at least quarterly to ascertain progress against the return objectives of each component and at any time a formal review may be requested of any Manager. The quarterly reports cover four basic areas: returns, comparisons of returns to benchmarks and a statistical universe of similar portfolios, diagnostic risk analyses, and compliance with relevant policies and objectives and risk-adjusted performance.
 - Beyond these customary reviews, certain circumstances or events, as outlined below, will trigger automatic formal reviews and where appropriate, reconsideration by the System of the appropriateness of continuing to use the affected Manager in the investment structure. None of these circumstances or events shall serve as automatic causes for changing investment managers, but will merely indicate the need for review.
 - Disappointing relative performance
 - Percentile ranking of portfolio's five-year cumulative return against peer group is below median;
 - Percentile ranking of portfolio's one-year return against peer group is at or below 50; and
 - Disappointing risk-adjusted performance
 - Sharpe: The investment must place in the top 50% relative to peers over five years
 - Fund management organization changes
 - Turnover of portfolio Manager or other personnel significant to the portfolio management process;
 - Ownership change; and
 - Involvement in relevant regulatory investigation or litigation
 - Deviation from investment methods that built historical records
 - Aggregate assets in product are insufficient to ensure broad diversification, efficient trading, and economies of scale;

- Assets in product either fall or grow too large to be managed in manner similar to methods that built historical record;
- Portfolio characteristics do not match stylistic expectations; and
- Significant increase in fees
- Relative performance in excess of expectations
 - Percentile ranking of portfolio's five-year cumulative return is in the upper quintile (above the 20th percentile);
 - Percentile ranking of portfolio's quarterly return versus peer portfolios is in the upper decile (above the 10th percentile)