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Employees' Retirement Fund of the City of DALLAS

Investment Practices and Performance Review

June 2024

Cook Street Consulting, Inc. | 1.800.318.7770

Jeff Chalk | jeff.chalk@cookstreetconsulting.com
Charles Hodge | charles.hodge@cookstreetconsulting.com

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Purpose and Scope

Employees' Retirement Fund of the City of DALLAS ®

- Purpose:

Independent Review of the Investment Practices and Performance of the Employees' Retirement Fund of the City of Dallas (the "ERF" or the "Fund").

- Scope:

Identify and review existing investment policies, procedures, and practices.

  - Investment Policy Statement (IPS)
  - any informal procedures and practices
  - not necessary to review past policies, procedures, and practices that are no longer applicable

Compare the existing policies and procedures to industry best practices.

Generally, assess whether the ERF Board of Trustees (the "Board"), internal Staff, and external consultants are adhering to the established policies.

Identify the strengths and weaknesses of the current policies, procedures, and practices and make recommendations for improvement.

Include a detailed description of the criteria considered and methodology used to perform the evaluation, including an explanation of any metrics used and associated calculations.

Introduction

- The Texas Pension Review Board has provided guidance on the different areas required by statute to be reviewed by independent consulting firms. Evaluations will vary based on specific characteristics of each system's size, governance and investments.

- Cook Street's evaluation identified and reviewed the existing policies and procedures of the ERF as it relates to the oversight and management of the Fund's investments. Our examination included a review of the ERF's Investment Policy Statement and other documents related to the investment of plan assets as well as formal and informal procedures adopted by the ERF management and Staff. We compared the ERF's policies and procedures to industry best practices and assessed the likelihood the Board, internal Staff and external consultants are adhering to the established policies.

- Our evaluation considered strengths and potential weaknesses of the current policies and procedures, and where appropriate, we provided recommendations for improvements of any deficiencies we identified.

Cook Street Overview

Founded in 1999, Cook Street is one of the largest retirement consulting firms in the U.S.†

Firm Highlights

24+
Years providing investment advisory and fiduciary services

20+
Years average financial industry experience of consultants

80%+
Of consultants have earned the CFA® charterholder designation

99%
Client retention from 2006 through 2023

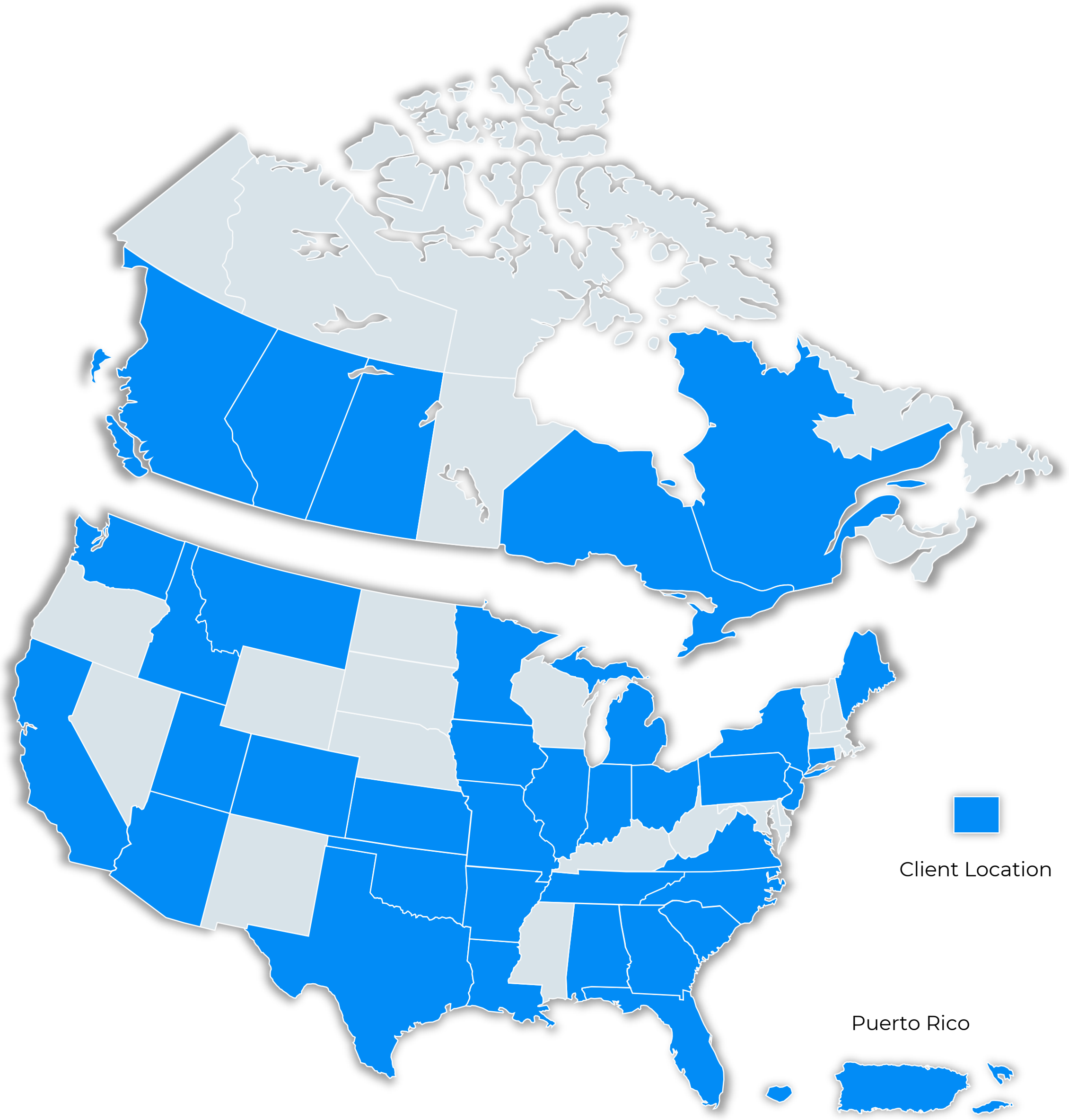
Zero
Soft dollar arrangements with other plan providers

$6.5T
Total client assets of Cook Street's parent company, Morgan Stanley (12/31/2023)

106 Billion Client Assets

242 Institutional Clients

1.2 Million Participants & Beneficiaries



†Source: Source: Pensions and Investments Magazine (November 20, 2023) 2022 Largest Worldwide Investment Consultants. The Pensions and Investments Magazine is based on assets under advisement and assets under management. Cook Street's assets are included in the "Morgan Stanley / Inst'l Consulting" category which is ranked number 14. Cook Street's standalone assets would rank the firm in the top 30. Neither Cook Street nor its consultants paid a fee to Pensions and Investments in exchange for the ratings. Cook Street is a business of Morgan Stanley. Client assets include those advised to in a discretionary and non-discretionary manner. Client assets, client count, and participants and beneficiaries are approximate and based on data as of 12/31/2023 or the most recently available (e.g. from a Form 5500) and may include clients who retained Cook Street after that date. Client location is as of March 2024.

Components of Evaluation

Accountability

- The Board and Staff operate under the authority of Dallas City Code Chapter 40A ("Chapter 40A") which addresses the creation of the Board, powers and duties of the Board, administration of the Fund, and contributions.
- The Fund has engaged an Investment Consultant, who is also a fiduciary, to review asset allocations, investment policies, and make recommendations to Staff and the Board. The Fund has also engaged outside legal counsel to review investment contracts. The Board makes all decisions with detailed and comprehensive input from Staff, Investment Consultant, and Legal Counsel.
- The ERF's Investment Consultant is independent of the investment managers and trading platforms.
- The ERF conducts a Strategic Plan each year to set goals for key issues like investments, communications, customer service, and operational management. Staff then reports to the Board each year on their progress toward these goals.
- The ERF's current governance structure strikes a good balance between risk and efficiency and is consistent with best practices.

Components of Evaluation

Investment Policy Statement (IPS)

An **Investment Policy Statement** is a manifestation of a disciplined process for selecting and monitoring the components in an investment program. It forms a foundation for a fund's investment strategy, formally establishes the governance structure and asset class representation, and defines the processes for investment manager selection and monitoring.

- The ERF has a written IPS for the overall plan as well as sub-asset classes, clearly customized for the ERF
- It is reviewed at least annually, and the files demonstrate the evolution of targets and expectations.
- The ERF has a formal funding policy, developed with input from Legal Counsel.

Components of Evaluation

Investment Policy Statement (IPS) – cont.

- The IPS is written clearly so existing as well as newly appointed or elected Trustees will find it helpful as an ongoing tool for evaluating the Fund's investment program, consistent with best practices.
- The Investment Manager Guidelines contain specific, measurable objectives for the managers, net of fees, over "a full market cycle", which is expected to be 3-5 years.
- "Discussion Sheets" in the Board materials provide an example of the Fund following its IPS.
- We found the ERF's IPS is consistent with best practices.

Components of Evaluation

Asset Allocation

- The ERF has a formal asset allocation policy defined within the IPS. It is specific in terms of asset classes used, ranges around target allocations, and evaluation criteria.
- The Staff, working with the Investment Consultant, makes recommendations to the Board for approval. They examine the asset allocation monthly and will rebalance to targets based on defined ranges.
- An asset allocation study is conducted annually, incorporating current capital market assumptions and the Investment Consultant's current views on the market. We found these assumptions to be in-line with peers.
- In the asset allocation study, the ERF will consider new asset classes and their contribution to increasing or stabilizing return and its impact on the ERF's overall risk and standard deviation.
- The ERF's Investment Consultant and Actuary communicate regularly on the expected returns for the ERF. The Actuary examines the Investment Consultant's expectations and compares them to a survey of other capital market expectations from other sources.

Components of Evaluation

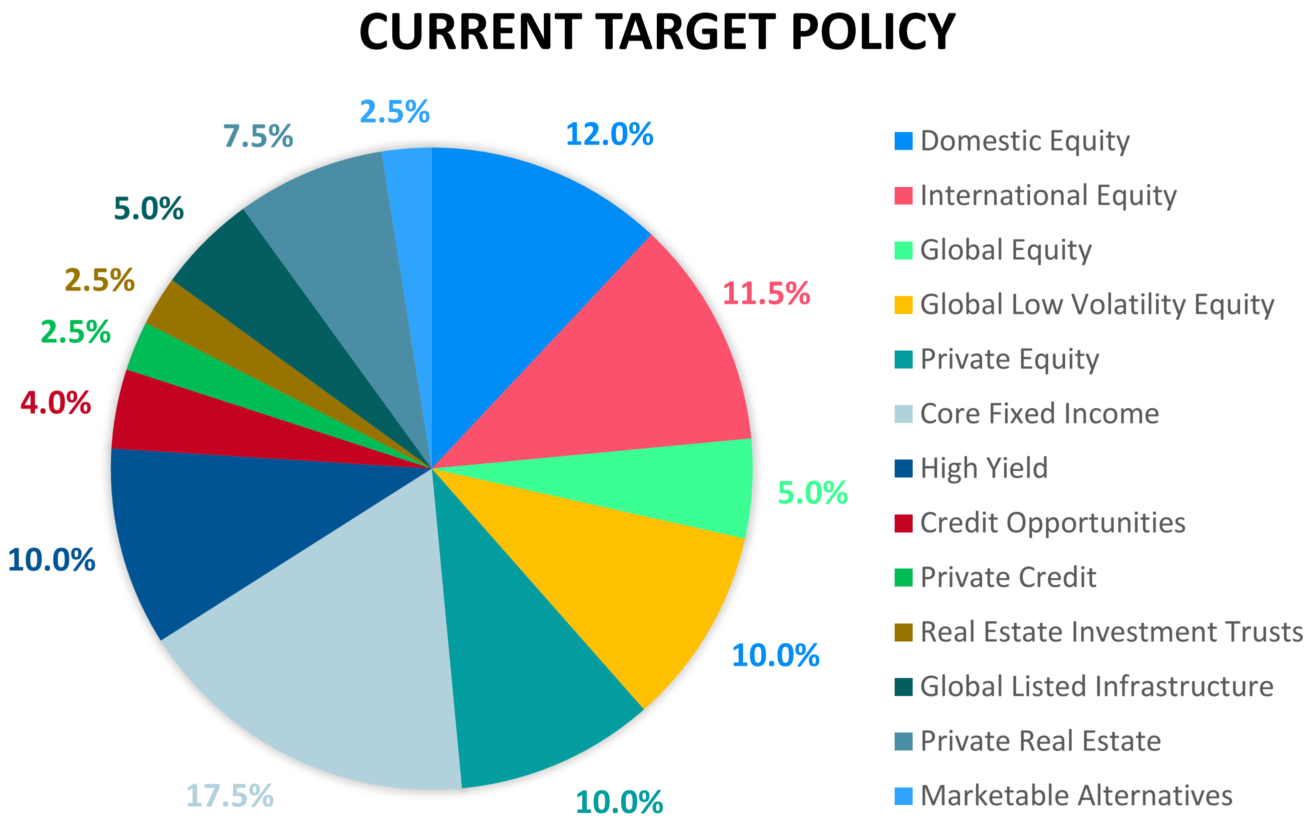
Asset Allocation – Target Allocation

- The changes in the assumed rate of return are reflected in the Actuary's modeling each year when the actuarial valuation is updated.

- The ERF maintains a strategic asset allocation that is monitored and rebalanced as needed.

- The ERF does not implement any tactical asset allocation component but does recognize and attribute its managers' returns by their invested sectors and geographical positioning.

- The ERF's asset allocation is appropriate for a plan of its size and is consistent with best practices.



Source: City of Dallas ERF "General Investment Policy." Data as of 5/16/2023.

Components of Evaluation

Asset Allocation – Expected Risk and Return

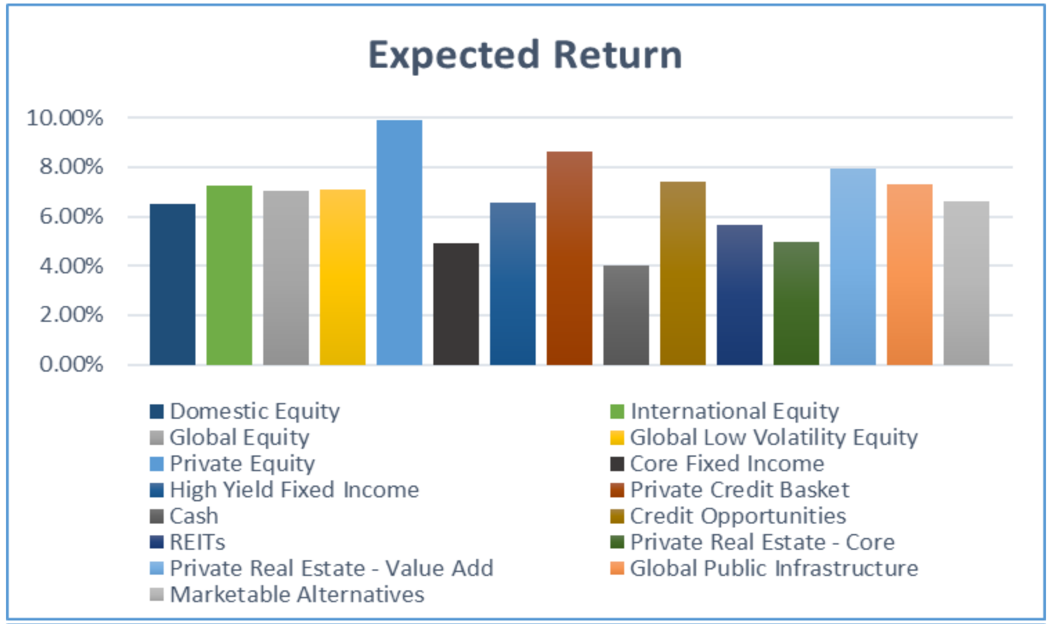
- The ERF has a target strategic allocation of 48.5% Equity, 34.0% Fixed Income, 15.0% Real Assets, and 2.5% Diversifying Strategies.
- Each sub-asset class has its own expected risk and return.
- The ERF's expectations for risk examines standard deviation and opportunities for diversification.
- The ERF is implementing its strategy using both active and passive management.
- The ERF's return and risk expectations used in the asset allocation process are stress tested under different scenarios as well as 5th and 95th percentile measurements.

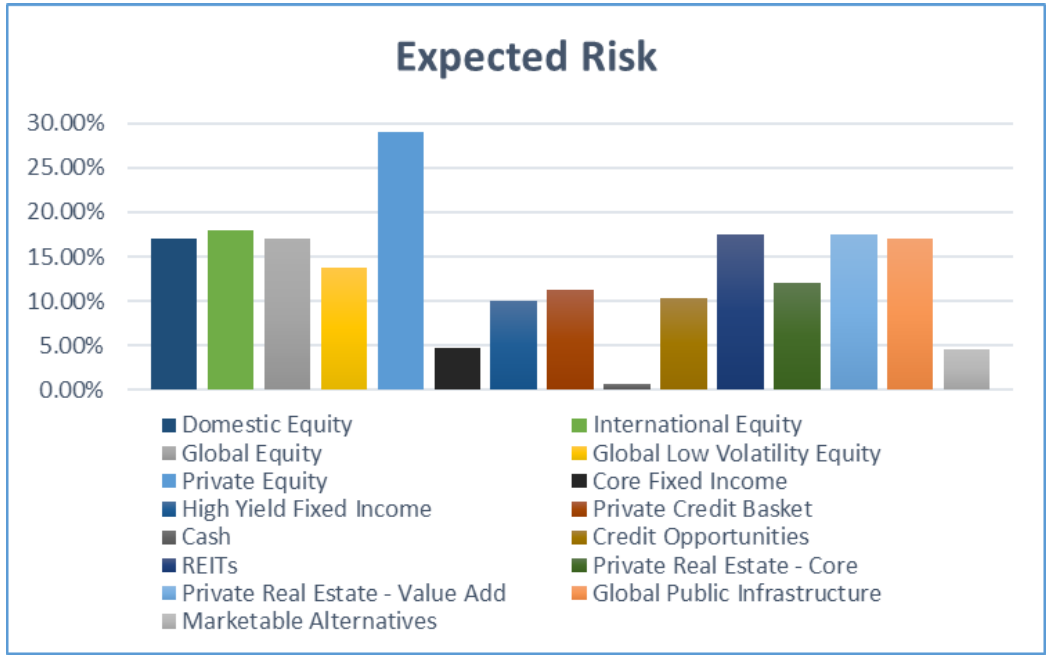
Source: City of Dallas ERF "General Investment Policy."

Components of Evaluation

Asset Allocation – Expected Risk and Return (cont.)

- The Investment Consultant develops return expectations using an Income Growth Valuation Model, Dividend Discount Model, and Cyclically Adjusted P/E Model.
- The inputs for the asset allocation modeling are reasonable, and the approach used by the system to develop the expected returns and asset mix is disciplined and reviewed regularly. It is consistent with best practices, and results in a well-diversified portfolio that is appropriate for the plan's size.
- The ERF's frequent evaluation of expected returns is an example of a Fund procedure that is consistent with best practices.





Source: Wilshire Advisors, LLC.

Components of Evaluation

Asset Allocation – Appropriateness of Alternatives and Illiquid Assets

- The IPS outlines the specific types of **alternative assets** allowed including ranges and maximum allocations. The ERF's long-term time horizon provides the context for properly setting and measuring performance of these assets as well as defining their target allocations.
- The IPS, along with Staff procedures and manager selection, help mitigate the implied risk of these asset classes. For example, Private Equity investments are managed in a fund-of-fund structure with multiple managers utilizing two layers of audit and valuation (pricing).
- The targets defined in the IPS are consistent with industry norms. The ERF's target allocations for alternatives are (as of 5-16-2023):

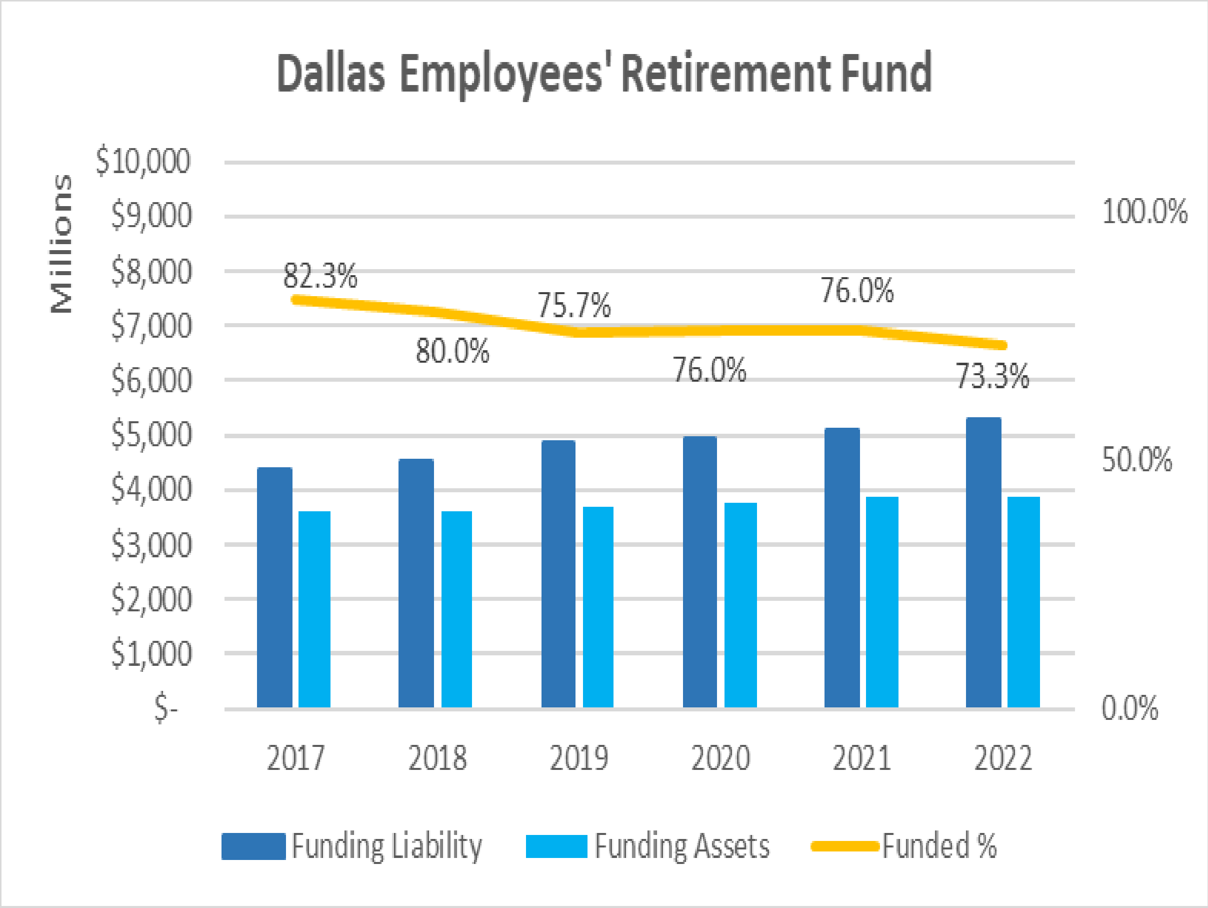
  -Private Real Estate (7.5% target) -Private Equity (10.0% target) -Private Credit (2.5% target)
  -Global Listed Infrastructure (5.0% target) -Marketable Alternatives/Hedge Funds (2.5% target)

- The ERF's Staff has extensive experience with alternative asset investing, both with ERF and prior to joining the ERF. The Staff is actively engaged in monitoring the alternatives and makes a concentrated effort to stay current with industry trends, products, and strategies.
- The ERF's alternative investments are appropriate given its size and level of investment expertise.

Components of Evaluation

Asset Allocation – Future Cash Flows and Liquidity Needs

- An **Asset Liability Study** is conducted annually, reflecting the current population and expected cash flow needs.
- Though the Fund is currently experiencing negative net cash flow due to larger benefit payments vs. current contributions, it does not offer lump-sums, and the population is very stable and predictable. This, in turn, provides predictable, stable cash requirements.
- The Asset Liability Study includes stress testing the portfolio in different market environments. The ERF does not expect any stresses applied to the portfolio in these tests to negatively impact the ERF's cash flow or liquidity requirements.
- The Funded Ratio is in line with long-term expectations.

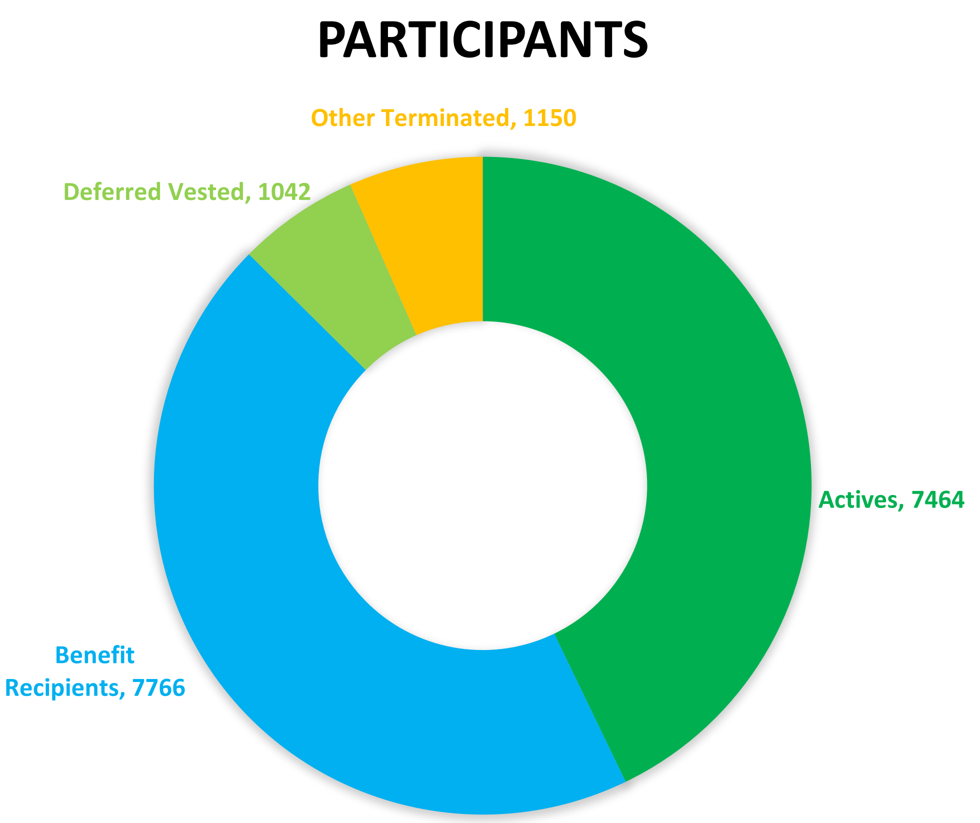


Source: Texas Pension Review Board.

Components of Evaluation

Asset Allocation – Future Cash Flows and Liquidity Needs (cont.)

- The ERF has a formal cash management policy to manage the benefit payments and expenses which includes a process for systematically raising cash from investment managers and rebalancing as needed.
- The ERF examines expected cash flows each year and models the plan's cash timing needs in light of contributions, expected income, and dividends. The ERF's policy for future cash flow and liquidity needs is adequate for the plan's size and consistent with best practices.
- The plan has about the same number of retirees and non-retirees.
- The ERF's annual Asset Liability Study is an example of a Fund procedure that is consistent with best practices.



Source: "Actuarial Valuation Report" by Gabriel, Roeder, Smith & Company. Data as of 12/31/2022.

Components of Evaluation

Appropriateness of Investment Fees and Commissions

- The ERF has a disciplined and detailed evaluation procedure to **measure, reconcile, and benchmark fees.**
- Applicable investment fees and commissions have been assessed against appropriate benchmarks. Such fees and commissions within the Plan have been deemed reasonable.*
- The ERF's custodian provides reporting on securities trading, brokerage fees, and other risk measures, such as sector weights, country weights, cash levels, etc.
- All fees are transparent and reconciled with service agreements. The ERF does not use commission recapture or directed trades.
- Manager fees as well as trading and commissions are reported monthly and evaluated formally each quarter.
- Staff monitors the utilization of brokers by the managers, noting both new brokers and long-tenured providers.
- Fees deemed to be outside of acceptable variances are flagged, questioned, and reconciled.
- The ERF's discipline around fees is very thorough, and we consider these Fund procedures to be consistent with best practices.

*For a specific assessment of investment fees and commissions relative to appropriate benchmarks, please reference the Appendix.

Components of Evaluation

Governance Related to Investment Activities and Transparency

- The ERF and the Board are organized under Chapter 40A.
- The ERF has Investment Policies related to all asset classes (e.g. International Equity, REITs, Private Equity, Real Assets, etc.) as well as a Manager Selection and Monitoring Policy.
- The ERF's Code of Ethics (this "Code") covers the Board and Staff and addresses topics such as travel, gifts, prohibited transactions, and conflicts of interests.
- This Code also covers the ERF's consultants, advisors, vendors, employees, and other fiduciaries of the ERF.
- This Code is read and enforced together with the code of ethics found in Chapter 12A of the Dallas City Code and the travel policy adopted by the Board for itself and its Staff.
- Meeting agendas, minutes, and report materials are easily available to the Board and the public online.
- The ERF's governance policy and transparency of practices is adequate for a plan of its size and is consistent with best practices.

Components of Evaluation

Investment Knowledge/Expertise

- The Board members are required to complete the **PRB Trustee education** with the ERF filing annual disclosure statements.
- Many members come to the Board with prior professional investment experience.
- The Board members and Staff attend educational training and conferences and are required to report back on what they learn.
- The Board and Staff also frequently attend their Investment Consultant’s Client Conference covering investment and fiduciary topics.
- The ERF issues RFPs for their Investment Consultant typically every 5 years.

Components of Evaluation

Manager Selection and Monitoring Process

- Managers are selected by issuing an RFP for each asset class. Working with the Investment Consultant, Staff will recommend candidates for due diligence visits for Board approval. After conducting due diligence, Staff then recommends finalist candidates to present to the Board.
- Once hired, managers are required to meet with the Board as needed, typically once every two years.
- The ERF reviews performance monthly, examining both gross-of-fee and net-of-fee returns compared to index benchmarks.
- Quarterly, the ERF examines managers compared to peer groups, net of fees, attributing returns to sector, timing, and manager skill.
- Managers can be placed on "watch" for different periods of time depending on the market environment for that manager's asset class. The Board is provided special information related to watch manager evaluation criteria and the expectations on timing and conditions for improvement.
- The manager selection and monitoring process is consistent with best practices.

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SB 322 Evaluation Summary

Employees' Retirement Fund of the City of DALLAS

Investment Practices and Performance Review

- The ERF's current governance structure strikes a good balance between risk and efficiency.
- It is consistent with best practices and is ample for a plan of its size.
- We found that the ERF Investment Policy Statement is consistent with other plans and best practices, and their asset allocation is appropriate for a plan of its size and is consistent with best practices.
- The Capital Market Assumptions are reasonable and consistent with best practices, and results in a well-diversified portfolio appropriate for the plan's size.
- The ERF's alternative investments are appropriate given its size and level of investment expertise.

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SB 322 Evaluation Summary

Employees' Retirement Fund of the City of DALLAS

Investment Practices and Performance Review (cont.)

- The manager selection and monitoring process is consistent with the Investment Policy Statement and in-line with industry standards.

- The ERF's discipline around fees is very thorough and consistent with best practices.

- The ERF confirms the services and fees provided by its independent Investment Consultant by periodically soliciting open bids through an RFP process.

- In our review of the ERF's processes, procedures and documentation, we found no clear deviances from industry standards or prescribed norms for similar funds. The ERF's management and Staff maintain a well-defined set of policies and procedures designed to oversee, manage, and report the performance and current status of the ERF.

SB 322 Evaluation Summary

Investment Practices and Performance Review (cont.)

Recommendations:

- Maintain current rigorous reviews of the ERF's performance, providers, and consultants.
- Maintain a focus on transparency.
- Continue to monitor training and education requirements and make adjustments as needed to stay abreast of evolving investment strategies in a very dynamic and global environment.

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Thank You!

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Appendix

Appendix – Fee Benchmarking

Asset Class, Fund	Dallas ERF Fee (bps)	Morningstar Category Instl Share Class Only (bps)
US Large Blend	**-**	**65**
T. Rowe Price	28	65
US Small Value	**-**	**95**
Channing Capital	100	95
US Small Blend	**-**	**91**
Systematic Financial	84	91
Foreign Large Blend	**-**	**82**
Acadian	55	82
AQR	53	82
Ativo	60	82
Earnest Partners	60	82
Foreign Large Growth	**-**	**85**
Baillie Gifford	53	85
Global Large Stock Value	**-**	**90**
Ariel	64	90
Global Large Stock Blend	**-**	**83**
Acadian Low Volatility	35	83
BlackRock Low Volatility	4	83
Global Large Stock Growth	**-**	**90**
Wellington	63	90
US Intermediate Core Bond	**-**	**44**
Garcia Hamilton	25	44
Wellington	17	44
Western Asset	25	44

Asset Class, Fund	Dallas ERF Fee (bps)	Morningstar Category Instl Share Class Only (bps)
US High Yield Bond	**-**	**69**
BlackRock	45	69
Oaktree Capital	49	69
US Multisector Bond	**-**	**69**
Neuberger Berman	27	69
US Infrastructure	**-**	**97**
Atlantic Trust	64	97
Cohen & Steers	59	97
Harvest Fund Advisors	74	97
US Real Estate	**-**	**86**
Adelante	59	86
CenterSquare	50	86

Asset Class, Fund	Dallas ERF Fee (bps)	Wilshire Median (bps)
Private Real Estate (Core)	**-**	**100 + 10% Carry**
Heitman	86	100 + 10% Carry
Invesco	83	100 +10% Carry
Private Real Estate (Value-Add)	**-**	**100 + 10% Carry**
AEW	79	100 + 10% Carry
Brasa	140	100 + 10% Carry
Long Wharf	150 + 2% Carry	100 + 10% Carry
Virtus	135	100 + 10% Carry
Private Equity	**-**	**200 + 20% Carry**
Fairview	60	200 + 20% Carry
Grosvenor	80	200 + 20% Carry
Hamilton Lane	95	200 + 20% Carry
Private Credit	**-**	**TBD**
MGG	100 + 10% Carry	TBD
Silver Point	150 + 20 Carry	TBD
Vista	150 + 15% Carry	TBD
Marketable Alternatives	**-**	**150 + 17.5% Incentive**
Davidson Kempner	150	150 + 17.5% Incentive
Hudson Bay	200	150 + 17.5% Incentive

Source: Morningstar, Wilshire Advisors, LLC.

Evaluation Footnotes and Disclosure

1. The Pension Review Board has provided guidance on the different areas required by statute to be reviewed by independent consulting firms. The PRB recognizes that evaluations should and will vary significantly based on the specific characteristics of each system's size, governance structure, and investment program.

2. This evaluation of the Employees' Retirement Fund of the City of Dallas was conducted independently by Cook Street Consulting based on guidelines provided by the Pension Review Board and legislation enacted in the State of Texas under Senate Bill 322 (86R).

3. SB 322 requires systems with assets of at least $100 million must complete an evaluation once every 3 years.

4. Information for this review was found in public filings of Board agendas, meeting minutes and other supporting documentation including meetings with Staff, and transcripts of Board meetings.

Employees' Retirement Fund of the City of Dallas

Actuarial Valuation Report as of December 31, 2023

P: 469.524.0000 | www.grsconsulting.com

June 13, 2024

Board of Trustees
Employees' Retirement Fund of the City of Dallas
1920 McKinney Avenue
10th Floor
Dallas, Texas 75201

Dear Members of the Board:

We are pleased to present our report of the actuarial valuation of the Employees' Retirement Fund of the City of Dallas ("ERF" or the "Fund") as of December 31, 2023.

This valuation provides information on the financial health of ERF. It includes a determination of the actuarially calculated contribution rates for the 2024 calendar year. In addition, it also contains the information necessary to determine the current total obligation rate and the current adjusted total obligation rate for the fiscal year beginning October 1, 2024 per City Ordinance. The current adjusted total obligation rate is a function of the previous year's adjusted total obligation rate, this year's actuarially calculated contribution rate, and the rate necessary to make the debt service payment on the previously issued pension obligation bonds for fiscal year 2025.

In addition, the report provides various summaries of the data. A separate report is issued with regard to valuation results determined in accordance with Governmental Accounting Standards Board (GASB) Statements 67 and 68. Results of this report should not be used for any other purpose without consultation with the undersigned. Valuations are prepared annually as of December 31st, the last day of the ERF plan year. This report was prepared at the request of the Board and is intended for use by the ERF staff and those designated or approved by the Board. This report may be provided to parties other than ERF staff only in its entirety and only with the permission of the Board.

As authorized in Chapter 40A-4(a)(16) of the Dallas City Code, the actuarial methods and assumptions are set by the Board of Trustees, based upon recommendations made by the plan's actuary. An experience study was performed for the five-year period ending December 31, 2019. As a result of that study, revised assumptions were adopted by the Board effective with the valuation as of December 31, 2019. There were no changes in the actuarial assumptions or methods since the prior valuation.

We believe the assumptions are internally consistent, reasonable, and, where appropriate, based on the actual experience of the ERF. All of the methods and assumptions used for funding purposes meet the parameters set by the Actuarial Standards of Practice. All actuarial methods and assumptions are described under Section P of this report. The results of the actuarial valuation are dependent on the actuarial assumptions used. Actual results can and almost certainly will differ, as actual experience deviates from the assumptions.

5605 North MacArthur Boulevard | Suite 870 | Irving, Texas 75038-2631

Even seemingly minor changes in the assumptions can materially change the liabilities, calculated contribution rates and funding periods. Due to the limited scope of this assignment, GRS did not perform an analysis of the potential range of such possible future differences. The actuarial calculations are intended to provide information for rational decision making. Other than the sensitivity analysis shown in Section L, this report does not include a more robust assessment of the future experience not meeting the actuarial assumptions. Additional assessment of risks was outside the scope of this assignment.

This valuation is based on the provisions of ERF in effect as of the valuation date, data on the ERF membership and information on the asset values of the Fund as of December 31, 2023. The member, annuitant and asset data used in the valuation were all prepared and furnished by ERF staff. While certain checks for reasonableness were performed, the data used was not audited.

To the best of our knowledge, this report is complete and accurate and was conducted in accordance with the Actuarial Standards of Practice as set forth by the Actuarial Standards Board and in compliance with the provisions of the Dallas City Code. The undersigned are independent actuaries and consultants. Mr. White is a Fellow of the Society of Actuaries, an Enrolled Actuary, and a Member of the American Academy of Actuaries and he meets the Qualification Standards of the American Academy of Actuaries. Both Mr. White and Mr. Ward have significant experience in performing valuations for large public retirement systems.

The following schedules in the actuarial section of the ERF Annual Comprehensive Financial Report were prepared by GRS: Executive Summary, Report Highlights, Summary of Actuarial Values, Demonstration of Actuarially Required Contribution Rate, Information for City Ordinance 25695, Net Assets Available for Benefits, Change in Assets Available for Benefits, Development of Actuarial Assets, Historical Investment Performance, Analysis of Change in Unfunded Actuarial Accrued Liability, Investment Experience (Gain) or Loss, Analysis of Actuarial (Gains) or Losses, Schedule of Funding Status, Summary of Data Characteristics, Distribution of Active Members and Payroll by Ange and Years of Service, Distribution of Benefit Recipients, Schedule of Active Member Valuation Data, Schedule of Retirees and Beneficiaries Added to and Removed from Rolls, Solvency Test, Analysis of Pay Experience (Valuation Pay), Analysis of Retirement Experience – Each Age, Analysis of Retirement Experience - Age Groups, Analysis of Turnover Experience, Analysis of Active Mortality Experience, Analysis of Disability Experience, Analysis of Retiree Mortality Experience.

We would like to thank the ERF staff for their assistance in providing all necessary information to complete this valuation. Their courteous help is very much appreciated. We look forward to discussing this actuarial valuation report with you at your convenience. Please do not hesitate to let us know if you have any questions or need additional information.

Respectfully submitted,
Gabriel, Roeder, Smith & Company

Lewis Ward

Lewis Ward
Consultant

Daniel J. White

Daniel J. White, FSA, EA, MAAA
Senior Consultant

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EXECUTIVE SUMMARY

($ in 000s)

The key results from the actuarial valuation of the Employees' Retirement Fund of the City of Dallas as of December 31, 2023 may be summarized as follows:

	December 31, 2022	December 31, 2023
Members		
- Actives	7,464	7,894
- Benefit recipients	7,766	7,914
- Deferred vested*	1,042	1,095
- Other terminated*	1,150	1,012
- Total	17,422	17,915
Covered payroll (including overtime)	$ 476,601	$ 530,702
Normal cost	$ 89,856	$ 96,851
as % of expected payroll	19.17%	18.58%
Actuarial accrued liability	$ 5,276,469	$ 5,483,251
Actuarial value of assets	$ 3,866,412	$ 3,842,459
Market value of assets	$ 3,516,280	$ 3,649,102
Unfunded actuarial accrued liability (UAAL)	$ 1,410,057	$ 1,640,792
Estimated yield on assets (market value basis)	(9.25)%	9.96%
Estimated yield on assets (actuarial value basis)	5.36%	4.87%
Contribution Rates		
- Prior Adjusted Total Obligation Rate	36.00%	36.00%
- Current Total Obligation Rate	43.62%	44.17%
- Current Adjusted Total Obligation Rate	36.00%	36.00%
Actuarial gains/(losses)		
- Assets	$ (71,539)	$ (89,836)
- Actuarial liability experience	$ (55,128)	$ (71,075)
- Assumption and method changes	$ 0	$ 0
30-year level % of pay funding cost	$ 172,945	$ 195,463
as % of payroll (Employee + City)	35.40%	35.93%
Funded ratio		
- Based on actuarial value of assets	73.3%	70.1%
- Based on market value of assets	66.6%	66.5%

** Deferred vested are members who have applied for a deferred pension. Other terminations are other members who have terminated and still have contribution balances in the Fund.*

PURPOSES OF THE ACTUARIAL VALUATION

At your request, we have performed the actuarial valuation of the Employees' Retirement Fund of the City of Dallas ("ERF" or the "Fund") as of December 31, 2023.

The purposes of an actuarial valuation are as follows:

- To determine the funding status of ERF as of the valuation date;
- To develop the actuarially determined level of contributions for ERF for the 2024 calendar year; and
- To develop the current total obligation rate and the current adjusted total obligation rate for the fiscal year beginning October 1, 2024.

REPORT HIGHLIGHTS

($ in 000s)

The following is a set of key actuarial results from the prior year's valuation as compared to the current year:

	Valuation Date	
	December 31, 2022	December 31, 2023
Contribution Rates (% of Payroll)		
Normal Cost (including administrative expense)	20.89%	20.31%
Total Actuarial Contribution Rate	35.40%	35.93%
Total Projected Actuarial Contribution	$172,945	$195,463
Funded Status (on AVA basis)		
Actuarial Accrued Liability	$5,276,469	$5,483,251
Actuarial Value of Assets	3,866,412	3,842,459
Unfunded Actuarial Accrued Liability	$1,410,057	$1,640,792
Funded Ratio	73.28%	70.08%

FUNDING PROCESS

Based on the previous work of the Employees' Retirement Fund Study Committee, which was ratified by the ERF Board, the Dallas City Council and the voters of Dallas, a new funding process commenced October 1, 2005. From this date forward, a new "current adjusted total obligation rate" will be contributed jointly by the City (63%) and the Membership (37%). This current adjusted total obligation rate will cover both the debt service tied to the pension obligation bonds issued in 2005 and the contributions to the ERF. In subsequent years, the contribution rate changes only if the actuarial valuation develops a "current total obligation rate" which differs from the "prior adjusted total obligation rate" by more than 3.00% (plus or minus).

As shown in Section N – Table 3 and discussed later in this report, the "current total obligation rate" (Item 4 in Table 3) exceeds the "prior adjusted total obligation rate" (Item 1 in Table 3) as of December 31, 2023. This means that the "current adjusted total obligation rate" will remain at 36.00% of active member payroll for the fiscal year beginning October 1, 2024. It should be noted that under the contribution corridor methodology, the "current adjusted total obligation rate" would have been higher if not for the maximum rate of 36.00% allowed under Chapter 40A of the Dallas City Code.

ACTUARIAL CONTRIBUTIONS

As shown in Section N – Table 2, the Actuarially Required Contribution Rate developed in this actuarial valuation is 35.93% of active member payroll. This rate excludes the amount needed to make the City's debt service payment on the pension obligation bonds in fiscal year 2025. This rate is the total level rate of pay (member + City) that would need to be contributed each of the next 30 years to pay off the unfunded liability of the Fund over that 30-year period. Note that because the total rate is assumed to remain level and the average normal cost as a percentage of pay is expected to decline over that time period (due to Tier B), the payment towards the unfunded liability as a percentage of pay is expected to increase over the 30-year period. In our opinion, this contribution rate satisfies the reasonable contribution rate requirements of ASOP No. 4.

As shown in Section N – Table 3 of this report, the debt service payment is determined to be 8.24% of projected payroll. The sum of these rates is 44.17% (the Current Total Obligation Rate), which is 8.17% more than the Prior Adjusted Total Obligation Rate of 36.00%. Because the total contribution rate cannot exceed 36.00%, the total contribution rate in fiscal year 2025 (the Current Adjusted Total Obligation Rate) to fund the ERF and make the debt service payment on the pension obligation bonds will be 36.00%, which is the maximum rate allowed under Chapter 40A of the Dallas City Code.

The members contribute 37% of the Current Adjusted Total Obligation Rate and the City contributes 63%. Hence, the members' portion of the 36.00% total contribution rate will be 13.32% and the City portion will be 22.68%. All of the member contribution rate will be contributed to the ERF. As noted above, 8.24% of the City's contribution rate will go towards the debt service on the pension obligation bonds and the remaining 14.44% will be contributed towards the ERF. This means a total contribution rate of 27.76% will be contributed to the ERF for the 2025 fiscal year, which compares to the actuarially calculated rate of 35.93%.

ACTUARIAL ASSUMPTIONS

Section P of this report includes a summary of the actuarial methods and assumptions used in this valuation. In short, costs are determined using the Entry Age Normal actuarial cost method. The assumed annual investment return rate is 7.25% and includes an annual assumed rate of inflation of 2.50%.

There were no changes in the actuarial assumptions since the prior valuation report. Please see Section P of this report for a summary description of these methods and assumptions.

ERF BENEFITS

There were no changes in the benefit provisions of ERF since the prior valuation. Please see Section Q for a summary description of the ERF benefits.

EXPERIENCE DURING PREVIOUS YEARS

An Actuarial (Gain)/Loss Analysis [(G)/L] reviews the effects of the actual experience on the expected Unfunded Actuarial Accrued Liability (UAAL). If any unexpected difference increases assets or reduces liabilities (i.e., reductions in the UAAL), we have an actuarial gain. Unexpected increases in the UAAL results in an actuarial loss.

On a market value return basis, the Fund returned approximately 9.96% (calculated on a dollar-weighted basis, net of investment expenses). Given this return, the actual investment income was $92 million more than the expected investment income on the market value of assets; therefore, an investment gain occurred. Please see Section N – Table 6 for the determination of the actuarial value of assets (AVA) and page 48 for a description of the AVA methodology. As developed on Section N – Table 9a, there was a $89.8 million loss on the actuarial value of assets as of December 31, 2023 due to deferred investment losses incurred prior to fiscal year 2023. The rate of return on the actuarial value of assets for 2023 was 4.87% (calculated on a dollar-weighted basis, net of investment expenses). Since this result was less than the investment return assumption of 7.25% there is an actuarial loss on the actuarial value of assets in 2023.

As developed on Section N – Table 8, ERF experienced an overall actuarial experience loss in calendar year 2023 in the amount of $160.9 million. Since there was a $89.8 million loss on the actuarial value of assets, this implies there was a liability actuarial loss of about $71.1 million derived from demographic assumptions and non-investment economic assumptions (cost-of-living-adjustment). Please see Section N – Table 9b for an analysis of the experience loss by source.

The total (G)/L for the prior 5 years is broken down as follows ($ in millions):

		2019	2020	2021	2022	2023
1)	Actuarial (Gain)/Loss on Assets	$35.80	$16.03	($52.23)	$71.54	$89.84
2)	Actuarial (Gain)/Loss on Liabilities	(6.16)	(69.81)	29.37	55.13	71.07
3)	Total Actuarial (Gain) or Loss (1+2)	$29.64	($53.78)	($22.86)	$126.67	$160.91

The unfunded actuarial accrued liability (UAAL) also increased $41 million due to the shortfall between the calculated contribution rate and the actual contributions during calendar year 2023.

ASSET INFORMATION

The assets of the Fund (on a market value basis) increased from $3,516 million as of December 31, 2022 to $3,649 million as of December 31, 2023.

An asset smoothing method (adopted by the Board) is used to recognize asset gains and losses. The purpose of such a smoothing method is to allow the use of market values, but to dampen the effect of the typical year-to-year market fluctuations. Please see page 48 of this report for a description of the smoothing method (actuarial value of asset method). See Table 6 in Section N of this report for the determination of the actuarial value of assets as of December 31, 2023.

The actuarial value of assets has decreased from $3,866 million to $3,842 million during 2023. The actuarial assets are less than the expected actuarial assets, $3,933 million, due to unfavorable investment experience in calendar year 2022. This resulted in an actuarial loss on the actuarial assets of $89.8 million.

The rate of return on investments for 2023 on the actuarial value of assets was 4.87%, compared to 5.36% in 2022. The detailed determinations of asset values utilized in this valuation and the change in assets in the last year are exhibited in Tables 4 and 5 of Section N of this report.

FUNDED STATUS

The funded status of ERF is measured by the Funded Ratio and the Unfunded Actuarial Accrued Liability (UAAL). The Funded Ratio is the ratio of the actuarial value of assets available for benefits to the actuarial accrued liability (AAL) of the Fund on the valuation date. Therefore, it reflects the portion of the AAL that is covered by ERF assets. The UAAL is the difference between these two amounts.

A Funded Ratio of 100% means that the funding of ERF is precisely on schedule as of the particular valuation date. In addition, an increasing funded ratio from year-to-year may also mean that the funding of ERF is on schedule. By monitoring changes in the Funded Ratio each year, we can determine whether or not funding progress is being made.

Based on the market value of assets, the Funded Ratio of ERF of 66.6% as of December 31, 2022 and 66.5% as of December 31, 2023. Based on the actuarial value of assets, the Funded Ratio of ERF decreased from 73.3% as of December 31, 2022 and 70.1% as of December 31, 2023.

The UAAL increased from $1,410.1 million as of December 31, 2022 to $1,640.8 million as of December 31, 2023. Since the UAAL is positive, this implies the actuarial accrued liabilities exceed the actuarial assets of the Fund as of December 31, 2023.

The actual $230.7 million increase in the UAAL was more than the expected increase of $69.8 million ($28.8 million due to negative amortization and $41.0 million as a result of the actual contributions being less than the actuarially determined contribution rate), resulting in a net actuarial experience loss in total. The primary reasons the increase in the UAAL was more than expected were continued recognition of the unfavorable investment experience from 2022, the cost of living adjustment being greater than assumed and the larger than expected salary increases for employees.

The funded status is one of many metrics used to show trends and develop future expectations about the health of a retirement system. The funded status measure itself is not appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations or assessing the need for or the amount of future contributions since it does not reflect normal cost contributions, the timing of amortization payments, or future experience other than expected.

GASB DISCLOSURE

Governmental Accounting Standards Board (GASB) Statement Numbers 67 and 68 detail the current accounting standards for ERF and the Fund's sponsor, the City of Dallas, Texas. These standards were effective with the plan year ending December 31, 2014 for the Fund and the fiscal year ending September 30, 2015 for the City. The standards created a clear distinction between the funding requirements of a pension plan and the accounting requirements. As a result, the GASB disclosure information is provided in a separate report.

Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions

The determination of the accrued liability and the actuarially determined contribution requires the use of assumptions regarding future economic and demographic experience. Risk measures, as illustrated in this report, are intended to aid in the understanding of the effects of future experience differing from the assumptions used in the course of the actuarial valuation. Risk measures may also help with illustrating the potential volatility in the accrued liability and the actuarially determined contribution that result from the differences between actual experience and the actuarial assumptions.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions due to changing conditions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period, or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. The scope of an actuarial valuation does not include an analysis of the potential range of such future measurements.

Examples of risk that may reasonably be anticipated to significantly affect the plan's future financial condition include:

1. Investment risk – actual investment returns may differ from the expected returns;
2. Asset/Liability mismatch – changes in asset values may not match changes in liabilities, thereby altering the gap between the accrued liability and assets and consequently altering the funded status and contribution requirements;
3. Contribution risk – actual contributions may differ from expected future contributions. For example, actual contributions may not be made in accordance with the plan's funding policy or material changes may occur in the anticipated number of covered employees, covered payroll, or other relevant contribution base;
4. Salary and Payroll risk – actual salaries and total payroll may differ from expected, resulting in actual future accrued liability and contributions differing from expected;
5. Longevity risk – members may live longer or shorter than expected and receive pensions for a period of time other than assumed;
6. Other demographic risks – members may terminate, retire or become disabled at times or with benefits other than assumed resulting in actual future accrued liability and contributions differing from expected.

Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions (Continued)

The effects of certain trends in experience can generally be anticipated. For example, if the investment return since the most recent actuarial valuation is less (or more) than the assumed rate, the cost of the plan can be expected to increase (or decrease). Likewise, if longevity is improving (or worsening), increases (or decreases) in cost can be anticipated.

The Current Adjusted Total Obligation Rate shown in the Executive Summary may be considered as a minimum contribution rate that complies with Chapter 40A of the Dallas City Code. However, due to the contribution rate cap, this is less than the actuarially calculated rate. The timely receipt of the actuarially determined contributions is critical to support the financial health of the plan. Users of this report should be aware that contributions made at the actuarially determined rate do not necessarily guarantee benefit security.

PLAN MATURITY MEASURES

Risks facing a pension plan evolve over time. A young plan with virtually no investments and paying few benefits may experience little investment risk. An older plan with a large number of members in pay status and a significant trust may be much more exposed to investment risk. Several generally accepted plan maturity measures are described below and are followed by a table showing a 10-year history of the measurements for ERF.

RATIO OF MARKET VALUE OF ASSETS TO PAYROLL

The relationship between assets and payroll is a useful indicator of the potential volatility of contributions. For example, if the market value of assets is 2.0 times the payroll, a return on assets 5% different than assumed would equal 10% of payroll. A higher (lower) or increasing (decreasing) level of this maturity measure generally indicates a higher (lower) or increasing (decreasing) volatility in plan sponsor contributions as a percentage of payroll.

RATIO OF ACTUARIAL ACCRUED LIABILITY TO PAYROLL

The relationship between actuarial accrued liability and payroll is a useful indicator of the potential volatility of contributions for a fully funded plan. A funding policy that targets a funded ratio of 100% is expected to result in the ratio of assets to payroll and the ratio of liability to payroll converging over time.

Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions (Continued)

The ratio of liability to payroll may also be used as a measure of sensitivity of the liability itself. For example, if the actuarial accrued liability is 2.5 times the payroll, a change in liability 2% other than assumed would equal 5% of payroll. A higher (lower) or increasing (decreasing) level of this maturity measure generally indicates a higher (lower) or increasing (decreasing) volatility in liability (and also plan sponsor contributions) as a percentage of payroll.

RATIO OF ACTIVES TO RETIREES AND BENEFICIARIES

A young plan with many active members and few retirees will have a high ratio of active to retirees. A mature open plan may have close to the same number of actives to retirees, resulting in a ratio near 1.0. A super-mature or closed plan may have significantly more retirees than actives, resulting in a ratio below 1.0.

RATIO OF NET CASH FLOW TO MARKET VALUE OF ASSETS

A positive net cash flow means contributions exceed benefits and expenses. A negative cash flow means existing funds are being used to make payments. A certain amount of negative net cash flow is generally expected to occur when benefits are prefunded through a qualified trust. Large negative net cash flows as a percent of assets may indicate a super-mature plan or a need for additional contributions.

DURATION OF PRESENT VALUE OF BENEFITS

The duration of the actuarial accrued liability may be used to approximate the sensitivity to a 1% change in the assumed rate of return. For example, duration of 10 indicates that the liability would increase approximately 10% if the assumed rate of return were lowered 1%.

ADDITIONAL RISK ASSESSMENT

Additional assessment may include scenario tests, sensitivity tests, stochastic modeling, stress tests, and a comparison of the present value of accrued benefits at low-risk discount rates with the actuarial accrued liability. While a robust measurement of additional risk assessment is outside the scope of the annual actuarial valuation, we have included a scenario test of a 1% increase or 1% decrease in the investment return assumption. The results of this test are shown at the end of this section.

Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions (Continued)

	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Ratio of the market value of assets to total payroll	6.88	7.38	9.24	8.64	8.43	7.71	8.55	8.13	8.12	9.34
Ratio of actuarial accrued liability to payroll	10.33	11.07	11.50	11.50	11.21	10.68	10.39	10.48	10.50	11.03
Ratio of actives to retirees and beneficiaries	1.00	0.96	0.94	0.96	1.00	1.05	1.11	1.10	1.11	1.09
Ratio of net cash flow to market value of assets	-5.7%	-5.9%	-4.7%	-4.9%	-4.8%	-5.1%	-4.3%	-4.4%	-4.5%	-4.2%
Duration of the actuarial present value of benefits*	12.52	12.47	12.54	12.69	12.37	NA	NA	NA	NA	NA

*Duration measure not available prior to 2019

Impact on Funding Metrics of Investment Return Assumption +/- 1%

	Investment Return Assumption		
Cost Item	6.25%	7.25%	8.25%
Normal Cost % (excluding admin expenses)	22.94%	18.58%	15.34%
UAAL ($ in millions)	$2,275.3	$1,640.8	$1,108.5
30-year funding rate (employee + City)	43.87%	35.93%	28.72%
Funded Ratio	62.8%	70.1%	77.6%
Funding Period	Infinite	51 years	34 years

Low-Default-Risk Obligation Measure

Actuarial Standards of Practice No. 4 (ASOP No. 4) was revised and reissued in December 2021 by the Actuarial Standards Board (ASB). It includes a new calculation called a low-default-risk obligation measure (LDROM) to be prepared and issued annually for defined benefit pension plans. The transmittal memorandum for ASOP No. 4 includes the following explanation:

"The ASB believes that the calculation and disclosure of this measure provides appropriate, useful information for the intended user regarding the funded status of a pension plan. The calculation and disclosure of this additional measure is not intended to suggest that this is the "right" liability measure for a pension plan. However, the ASB does believe that this additional disclosure provides a more complete assessment of a plan's funded status and provides additional information regarding the security of benefits that members have earned as of the measurement date."

The LDROM estimates the amount of money the plan would need to invest in low risk securities to provide the benefits with greater certainty. The current model expects lower costs but with higher investment risk, which creates less certainty and a possibility of higher costs. Thus, the difference between the two measures (Valuation and LDROM) is one illustration of the possible costs the sponsor could incur if there was a reduction in the investment risk in comparison to the current diversified portfolio. However, the downside risk would be limited in the scenarios where the current portfolio would fail to achieve returns in excess of the low-default-risk discount, in this case 4.80%.

The following information has been prepared in compliance with this new requirement. Unless otherwise noted, the measurement date, actuarial cost methods, and assumptions used are the same as for the funding valuation covered in this actuarial valuation report.

Valuation Accrued Liability	LDROM
$5,483,251,000	$7,279,757,000

Again, the difference between the two measures, or $1,796,506,000, is one illustration of the savings the sponsor anticipates by assuming investment risk in a diversified portfolio.

Disclosures: Discount rate used to calculate LDROM: 4.80% Intermediate FTSE Pension Discount Curve as of December 31, 2023. This measure may not be appropriate for assessing the need for or amount of future contributions as the current portfolio is expected to generate significantly more investment earnings than the low-default-risk portfolio. This measure is also not appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligation as this measure includes projections of salary increases and the ability for current members to continue to accrue eligibility and vesting service.

CLOSING COMMENTS

The unfunded actuarial accrued liability of the Fund has increased by more than expected due to unfavorable experience from both the investments and liabilities.

The calculated contribution rate necessary to pay the Fund's normal cost and amortize the UAAL over 30 years is 35.93% of pay. When the debt service payment on the Pension Obligation Bonds is considered, the total contribution rate is 44.17% of payroll. However, Chapter 40A of the Dallas City Code limits the contribution rate to 36.00% of payroll, therefore, the total rate to be contributed by the employees and the City for fiscal year 2025 will be 36.00% of pay.

Based on the current benefit and contribution provisions of the Fund, and assuming the actuarial assumptions are exactly met (including a 7.25% return on the actuarial value of assets), ERF is expected to be fully funded in approximately 51 years.

Given this calculated funding period and the risk the financial condition of ERF will continue to deteriorate, we recommend the ERF continue to have discussions with the City about ways to improve the sustainability of the Fund. Improvements to the Fund's sustainability includes increased contributions as well as a possible review of the benefits provided.

ACTUARIAL TABLES

Summary of Actuarial Values
As of December 31, 2023

	APV* of Projected Benefits	Entry Age Actuarial Values: Actuarial Accrued Liability (AAL)	Normal Cost $	Normal Cost % of Pay**
1 Active Members				
a. Retirement	$ 2,037,004	$ 1,532,641	$ 69,833	13.40%
b. Death	21,676	12,208	1,250	0.24%
c. Disability	14,270	5,184	1,223	0.23%
d. Termination	167,576	(7,227)	22,902	4.40%
e. Health Subsidy	37,061	28,559	1,643	0.31%
Total	$ 2,277,587	$ 1,571,365	$ 96,851	18.58%
2 Benefit Recipients	3,758,969	3,758,969		
3 Other Inactive	152,917	152,917		
4 Total Actuarial Values of Benefits	$ 6,189,473	$ 5,483,251	$ 96,851	18.58%
5 Actuarial Value of Assets		$ 3,842,459		
6 Unfunded Actuarial Accrued Liability (4 - 5)		$ 1,640,792		
7 Funding Ratio		70.08%		
8 Market Value Measurements				
UAAL on market value		$ 1,834,149		
Funded Ratio on market value		66.55%		

* *APV – Actuarial Present Value*

** *Percentage of expected payroll for continuing active members.*

Demonstration of Actuarially Required Contribution Rate for FY 2025

Valuation as of December 31,	Actuarially Determined Total Contribution Rate	Projected Compensation for Plan Year (in $M)	Total Contributions to Fund for Plan Year (in $M)	Actuarial Accrued Liability (AAL $M)	Actuarial Value of Assets (AVA $M)	Unfunded Actuarial Accrued Liability (UAAL $M)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
2023	35.93%	$ 530.7	$ 190.7	$ 5,483.3	$ 3,842.5	$ 1,640.8
2024	35.93%	547.1	196.6	5,603.3	3,927.9	1,675.5
2025	35.93%	565.0	203.0	5,726.1	4,017.8	1,708.3
2026	35.93%	582.8	209.4	5,842.8	4,104.3	1,738.5
2027	35.93%	600.9	215.9	5,953.7	4,187.6	1,766.0
2028	35.93%	619.3	222.5	6,059.0	4,268.4	1,790.6
2029	35.93%	638.6	229.5	6,159.9	4,347.7	1,812.2
2030	35.93%	658.2	236.5	6,256.6	4,426.3	1,830.3
2031	35.93%	678.6	243.8	6,349.8	4,505.2	1,844.6
2032	35.93%	699.5	251.4	6,440.2	4,585.4	1,854.8
2033	35.93%	720.4	258.9	6,527.3	4,667.1	1,860.2
2034	35.93%	741.9	266.6	6,612.2	4,751.6	1,860.6
2035	35.93%	764.1	274.5	6,695.3	4,839.7	1,855.6
2036	35.93%	787.1	282.8	6,776.7	4,932.1	1,844.7
2037	35.93%	810.7	291.3	6,856.9	5,029.8	1,827.1
2038	35.93%	835.1	300.1	6,936.7	5,134.2	1,802.5
2039	35.93%	860.4	309.2	7,017.2	5,247.1	1,770.2
2040	35.93%	886.8	318.6	7,099.4	5,370.0	1,729.4
2041	35.93%	914.1	328.4	7,184.3	5,504.9	1,679.4
2042	35.93%	941.9	338.4	7,272.6	5,653.3	1,619.4
2043	35.93%	970.6	348.8	7,365.3	5,816.9	1,548.4
2044	35.93%	1,000.5	359.5	7,464.0	5,998.3	1,465.8
2045	35.93%	1,031.2	370.5	7,570.5	6,200.2	1,370.3
2046	35.93%	1,062.8	381.9	7,686.1	6,425.2	1,261.0
2047	35.93%	1,095.2	393.5	7,812.2	6,675.6	1,136.6
2048	35.93%	1,128.3	405.4	7,949.8	6,953.8	996.0
2049	35.93%	1,162.2	417.6	8,099.5	7,261.6	837.9
2050	35.93%	1,196.8	430.1	8,261.9	7,601.1	660.8
2051	35.93%	1,232.6	442.9	8,437.7	7,974.4	463.2
2052	35.93%	1,269.1	456.0	8,627.1	8,383.6	243.5
2053	35.93%	1,306.5	469.5	8,830.6	8,830.6	0.0

Information for City Ordinance 25695
For the Fiscal Year Commencing October 1, 2024

1 Prior Adjusted Total Obligation Rate			36.00%
2 Actuarially Required Contribution Rate*			35.93%
3 Debt Service			
a Scheduled Debt Service Payment for FY 2025	$	44,821,069	
b Projected Payroll	$	543,969,644	
c Pension Obligation Bond Credit Rate (a/b)			8.24%
4 Current Total Obligation Rate (2 + 3c)			44.17%
5 Current Adjusted Total Obligation Rate			36.00%
6 Allocation of Contribution Rates Commencing October 1, 2024			
a Employee (5 x .37)			13.32%
b City (5 x .63)			22.68%

* Actuarially determined level contribution rate as demonstrated on Table 2.

** If the absolute value of the difference between the Prior Adjusted Total Obligation Rate (PATOR) and the Current Total Obligation Rate (CTOR) is less than or equal to 3.0% then:

Current Adjusted Total Obligation Rate (CATOR) = PATOR

otherwise:

1) If PATOR - CTOR > 3.00% then the CATOR is set equal to the greater of:
   a) the average of the Prior Adjusted Total Obligation Rate and the Current Total Obligation Rate; or
   b) 90% of the Prior Adjusted Total Obligation Rate

or

2) If PATOR - CTOR < -3.00% then the CATOR is set equal to the lesser of:
   a) the average of the Prior Adjusted Total Obligation Rate and the Current Total Obligation Rate; or
   b) 110% of the Prior Adjusted Total Obligation Rate

Additionally, the CATOR cannot exceed 36.00%.

Excerpts from City Ordinance 25695

ACTUARIALLY REQUIRED CONTRIBUTION RATE – means, for any fiscal year, a rate of contribution to the fund, expressed as a percentage of members' projected wages for such fiscal year, which is the sum of the following as determined in the actuarial valuation report for the preceding plan year:

(A) the actuarial present value of the pension plan benefits and expenses that are allocated to a valuation period by the actuarial cost method; and

(B) the contribution that will amortize the difference between the actuarial accrued liability of the fund and the actuarial value of the assets of the fund over the period of years required by generally accepted accounting principles.

CITY CONTRIBUTIONS – means, for each pay period ending during a transition year, the city shall contribute to the retirement fund an amount equal to:

(A) 63% times the current total obligation rate for that fiscal year times the members' wages for the pay period, minus

(B) The pension obligation bond credit rate for that fiscal year times the members' wages for the pay period;

and, for each pay period ending during each fiscal year, except for a transition year, the city shall contribute to the retirement fund an amount equal to:

(C) 63% times the current adjusted total obligation rate for that fiscal year times the members' wages for the pay period, minus

(D) The pension obligation bond credit rate for that fiscal year times the members' wages for the pay period.

EMPLOYEE CONTRIBUTIONS – means, for each pay period ending during a transition year, each member shall contribute to the retirement fund an amount equal to:

(A) 37% times the current total obligation rate for that fiscal year times the member's wages for the pay period;

and, for each pay period ending during each fiscal year, except for a transition year, the member shall contribute to the retirement fund an amount equal to:

(B) 37% times the current adjusted total obligation rate for that fiscal year times the member's wages for the pay period.

CURRENT ADJUSTED TOTAL OBLIGATION RATE – means, for any fiscal year, the rate determined by the board as follows, using whichever formula is applicable:

(A) If the current total obligation rate minus the prior adjusted total obligation rate is greater than three, then the current adjusted total obligation rate for such fiscal year is equal to the lesser of:

(i) the prior adjusted total obligation rate plus one-half times the difference of the current total obligation rate minus the prior adjusted total obligation rate; or

(ii) 110 percent times the prior adjusted total obligation rate; or

(iii) 36 percent.

(B) If the difference between the current total obligation rate and the prior adjusted total obligation rate is less than three, then the current adjusted total obligation rate for such fiscal year is equal to the prior adjusted total obligation rate.

(C) If the prior adjusted total obligation rate minus the current total obligation rate is greater than three, then the current adjusted total obligation rate for such fiscal year is equal to the greater of:

(i) the prior adjusted total obligation rate minus one-half times the difference of the prior adjusted total obligation rate minus the current total obligation rate; or

(ii) 90 percent times the prior adjusted total obligation rate.

CURRENT TOTAL OBLIGATION RATE – means, for any fiscal year, the rate adopted by the board that is equal to the sum of the pension obligation bond credit rate for such fiscal year plus the actuarially required contribution rate for such fiscal year.

PENSION OBLIGATION BOND CREDIT RATE – means, for any fiscal year, the rate adopted by the board that is a percentage calculated by dividing:

(A) the debt service due during such fiscal year on any pension obligation bonds, the proceeds of which have been deposited in the fund, by:

(B) the total members' projected wages for such fiscal year, as reported in the relevant actuarial valuation report.

PRIOR ADJUSTED TOTAL OBLIGATION RATE – means:

(A) for the fiscal year commencing October 1, 2006, the current total obligation rate that was effective for the prior fiscal year; and

(B) for each fiscal year commencing on or after October 1, 2007, the current adjusted total obligation rate that was effective for the prior fiscal year.

PROJECTED PAYROLL – means the covered payroll for the valuation proceeding the fiscal year multiplied by the payroll growth assumption.

TRANSITION YEAR – means each of the following:

(A) the first fiscal year in which debt service payments related to pension obligation bonds are due from the city;

(B) the first fiscal year in which no debt service payments related to pension obligation bonds are due from the city; and

(C) the fiscal year beginning October 1, 2005.

Net Assets Available for Benefits

	December 31, 2022	December 31, 2023
1 Assets		
a. Cash & Short-Term	$ 458,347	$ 338,462
2 Receivables		
a. Accrued Investment Income	$ 16,036	$ 18,942
b. Securities Sold	18,065	14,218
c. Employer Contribution	785	878
d. Employee Contribution	740	808
e. Pending Contracts	278,970	585,983
	$ 314,596	$ 620,829
3 Investments		
a. Index Funds	$ 93,082	$ 116,640
b. Fixed Income	894,597	1,048,551
c. Equities	1,710,927	1,684,942
d. Real Estate	346,345	339,922
e. Private Equity	381,814	371,556
	$ 3,426,765	$ 3,561,611
4 Total Assets	$ 4,199,708	$ 4,520,902
5 Liabilities		
a. Accounts Payable	$ 10,872	$ 7,270
b. Investment Transactions	672,556	864,530
	$ 683,428	$ 871,800
6 Net Assets Available For Benefits	$ 3,516,280	$ 3,649,102

Change in Assets Available for Benefits
Fiscal Year Ending December 31, 2023

($ in 000s)

	2022	2023
1 Assets Available at Beginning of Year	$ 4,093,215	$ 3,516,280
Adjustment *	0	0
	$ 4,093,215	$ 3,516,280
2 Revenues		
a. Employer Contributions	$ 67,288	$ 73,939
b. Employee Contributions	63,427	70,025
c. Investment Income	114,233	133,707
d. Investment Expense	(19,621)	(20,924)
e. Realized and Unrealized Gains (Losses)	(464,890)	225,507
f. Other (Security Lending)	1,349	1,589
Total Revenues	$ (238,214)	$ 483,843
3 Expenses		
a. Benefits	$ 317,528	$ 328,296
b. Refunds	12,158	12,700
c. Administrative Expenses	8,209	9,184
d. Depreciation Expense	826	841
Total Expense	$ 338,721	$ 351,021
4 Assets Available at End of Year (1 + 2 - 3)	$ 3,516,280	$ 3,649,102

* *Change due to difference between unaudited asset value used for prior valuation and audited asset value reported the following year.*

Development of Actuarial Value of Assets

Development of Actuarial Value of Assets
($ in 000s)

		December 31, 2023
1.	Market value of assets at beginning of year	$ 3,516,280
2.	External cashflow	
	a. Contributions	$ 143,964
	b. Benefits and refunds paid	(340,996)
	c. Administrative and miscellaneous expenses	(10,025)
	d. Subtotal	(207,057)
3.	Assumed investment return rate for fiscal year	7.25%
4.	Assumed investment income for fiscal year	$ 247,556
5.	Expected Market Value at end of year (1+ 2 + 4)	$ 3,556,779
6.	Market value of assets at end of year	$ 3,649,102
7.	Difference (6 - 5)	$ 92,323

8. Development of amounts to be recognized as of December 31, 2023:

Fiscal Year End	Remaining Deferrals of Excess (Shortfall) of Investment Income	Offsetting of Gains/(Losses)	Net Deferrals Remaining	Years Remaining	Recognized for this valuation	Remaining after this valuation
	(1)	(2)	(3) = (1) + (2)	(4)	(5) = (3) / (4)	(6) = (3) - (5)
2019	$ 0	$ 0	$ 0	1	$ 0	$ 0
2020	0	0	0	2	0	0
2021	0	0	0	3	0	0
2022	(350,132)	92,323	(257,809)	4	(64,452)	(193,357)
2023	92,323	(92,323)	0	5	0	0
Total	$ (257,809)	$ 0	$ (257,809)		$ (64,452)	$ (193,357)

9.	Final actuarial value of plan net assets, end of year (Item 6 - Item 8, Column 6)	$ 3,842,459
10.	Ratio of actuarial value to market value	105.3%

Notes: Remaining deferrals in Column (1) for prior years are from last year's report Table 6, column 6. The number in the current year is Item 7, above. Column 2 is a direct offset of the current year's excess/(shortfall) return against prior years' excess/(shortfall) of the opposite type.

Historical Investment Performance

Dollar Weighted Basis Net of Investment Expenses

Calendar Year	On Market Value	On Actuarial Value
2004	15.22%	9.38%
2005	7.93%	13.71%
2006	16.90%	13.03%
2007	3.56%	9.58%
2008	-31.31%	-3.76%
2009	30.35%	6.79%
2010	15.77%	4.30%
2011	0.86%	1.15%
2012	14.29%	2.82%
2013	16.75%	10.65%
2014	6.14%	10.29%
2015	-1.83%	7.02%
2016	8.65%	8.51%
2017*	12.34%	8.99%
2018	-5.15%	5.23%
2019	17.30%	6.74%
2020	6.42%	6.81%
2021	16.01%	8.68%
2022	-9.25%	5.36%
2023	9.96%	4.87%
5-year average ending in 2023	7.64%	6.48%
10-year average ending in 2023	5.71%	7.24%
20-year average ending in 2023	7.59%	6.69%

*The yield on the actuarial value of assets for 2017 includes the impact of the method change for the Actuarial Value of Assets.

Analysis of Change in Unfunded Actuarial Accrued Liability
For the Year Ending December 31, 2023

($ in 000s)

1. UAAL as of December 31, 2022		$ 1,410,057
2. Expected Change in UAAL during 2023		
a. Expected Amortization Payment for CY 2023 based on the Actuarially Determined Contribution Rate	(70,882)	
b. Interest adjustments on 1 & 2a to Year End @ 7.25%	99,705	
c. Expected change in UAAL		28,823
3. Increase/(Decrease) in UAAL Due to Difference Between the Actuarially Determined Contribution Rate and Actual Contribution Rate		41,001
4. Net Actuarial Experience (Gains) & Losses		160,911
5. Assumption and Method Changes		0
6. UAAL as of December 31, 2023		$ 1,640,792

Investment Experience (Gain) or Loss

($ in 000s)

Item	Valuation as of December 31, 2023
1. Actuarial assets, beginning of year	$ 3,866,412
2. Contributions	143,964
3. Benefits and refunds paid with administrative expenses	(351,021)
4. Assumed net investment income at 7.25% on	
a. Beginning of year assets	280,315
b. Contributions	5,127
c. Benefits and refunds paid with administrative expenses	(12,502)
d. Total	$ 272,940
5. Expected actuarial assets, end of year (Sum of Items 1 through 4)	3,932,295
6. Actual actuarial assets, end of year	3,842,459
7. Asset experience (gain)/loss for year	89,836

Analysis of Actuarial (Gains) and/or Losses for 2023

($ in 000s)

	2023
Investment Return	$ 89,836
Salary Increase	52,299
Age and Service Retirement	(1,511)
General Employment Termination	(4,055)
Disability Incidence	(236)
Active Mortality	(93)
Benefit Recipient Mortality	(10,464)
Actual vs. Expected Cost of Living Adjustment (COLA)*	45,368
Other	(10,233)
Total Actuarial (Gain)/ Loss	$ 160,911

* Actual COLA of 4.43% for Tier A and 3.00% for Tier B versus expected COLAs of 2.50% for Tier A and 2.20% for Tier B.

Schedule of Funding Status

($ in 000s)

End of Year	Actuarial Value of Assets (a)	AAL (b)	UAAL (b-a)	Funding Ratio (a/b)	Payroll* (c)	UAAL as % of Payroll ((b-a)/c)
2004	2,482,082	2,488,270	6,188	99.75%	331,201	1.87%
2005	2,739,269	2,606,173	(133,096)	105.11%	332,446	-40.04%
2006	2,998,099	2,761,404	(236,695)	108.57%	344,997	-68.61%
2007	3,183,260	2,915,164	(268,096)	109.20%	370,150	-72.43%
2008	2,957,506	3,075,385	117,879	96.17%	389,362	30.27%
2009	3,031,652	3,192,120	160,468	94.97%	375,164	42.77%
2010	3,027,439	3,282,126	254,687	92.24%	332,045	76.70%
2011	2,916,746	3,391,652	474,906	86.00%	318,972	148.89%
2012	2,846,124	3,518,356	672,232	80.89%	340,452	197.45%
2013	3,074,284	3,610,845	362,477	85.14%	352,486	102.83%
2014	3,241,053	4,004,055	763,002	80.94%	374,002	204.01%
2015	3,320,387	4,129,133	808,746	80.41%	404,981	199.70%
2016	3,451,463	4,291,802	840,339	80.42%	420,693	199.75%
2017	3,601,612	4,377,844	776,232	82.27%	432,854	179.33%
2018	3,620,319	4,526,996	906,677	79.97%	435,375	208.25%
2019	3,682,959	4,863,325	1,180,366	75.73%	444,737	265.41%
2020	3,747,078	4,932,886	1,185,808	75.96%	439,544	269.78%
2021	3,872,601	5,094,362	1,221,761	76.02%	453,934	269.15%
2022	3,866,412	5,276,469	1,410,057	73.28%	488,516	288.64%
2023	3,842,459	5,483,251	1,640,792	70.08%	543,970	301.63%

* *Projected to following year.*

Summary of Data Characteristics

As of December 31,	2021	2022	2023
Active Members			
Number	7,175	7,464	7,894
Total Annualized Earnings of Members as of 12/31 (000s)	$ 442,863	$ 476,601	$ 530,702
Average Earnings	61,723	63,853	67,229
Benefit Recipients			
Number	7,655	7,766	7,914
Total Annual Retirement Income (000s)	$ 294,130	$ 309,799	$ 327,190
Total Annual Health Supplement (000s)	11,077	11,234	11,440
Average Total Annual Benefit	39,870	41,338	42,789
Inactive Members*			
Deferred Vested	974	1,042	1,095
Deferred Nonvested	1,007	1,150	1,012
Total	1,981	2,192	2,107

** The number of inactives on 12/31/2023 includes 1,095 members who have applied for a deferred pension and 1,012 other members who have terminated and still have contribution balances in the Fund.*

Distribution of Active Members and Payroll by Age and Years of Service

Age	Years of Service								
	Under 1	1-4	5-9	10-14	15-19	20-24	25-29	30 & Over	Totals
Under 20	13								13
	$531,002								$531,002
20-24	181	121							302
	$8,122,438	$6,339,316							$14,461,754
25-29	270	369	75						714
	$13,185,283	$20,051,313	$4,547,084						$37,783,680
30-34	229	377	223	38					867
	$12,231,255	$22,277,962	$14,258,962	$2,742,994					$51,511,173
35-39	162	335	225	110	58				890
	$9,064,054	$21,398,127	$15,408,573	$8,269,330	$4,483,010				$58,623,094
40-44	161	271	203	127	134	26	3		925
	$9,009,653	$17,933,198	$14,886,100	$9,809,239	$10,820,165	$2,237,859	222,851		$64,919,065
45-49	124	247	219	126	163	106	50	1	1,036
	$6,647,336	$16,000,945	$15,815,463	$10,343,277	$12,527,696	$9,003,262	$3,878,477	$109,632	$74,326,088
50-54	113	242	189	106	159	125	95	19	1,048
	$6,047,377	$15,972,010	$14,368,091	$8,151,533	$12,688,896	$9,234,718	$7,300,009	$1,526,505	$75,289,139
55-59	78	199	198	110	193	106	65	27	976
	$4,275,784	$13,557,054	$13,559,331	$8,125,906	$15,568,673	$8,855,191	$5,509,334	$2,244,123	$71,695,396
60-64	56	139	165	86	154	56	48	24	728
	$3,211,508	$9,696,280	$11,648,108	$5,766,389	$11,320,272	$4,440,812	$3,931,896	$2,212,373	$52,227,638
65&Over	17	52	75	58	74	50	32	37	395
	$952,177	$3,376,875	$5,161,338	$4,685,520	$5,627,032	$3,989,947	$2,458,299	$3,082,875	$29,334,063
Totals	1,404	2,352	1,572	761	935	469	293	108	7,894
	$73,277,867	$146,603,080	$109,653,050	$57,894,188	$73,035,744	$37,761,789	$23,300,866	$9,175,508	$530,702,092

Distribution of Benefit Recipients as of December 31, 2023

Age	Number	Annual Benefit*	Annual Average Benefit*
Under 50	31	$ 613,682	$ 19,796
50-54	131	6,186,722	47,227
55-59	528	27,447,996	51,985
60-64	1,296	56,144,796	43,322
65-69	1,657	70,298,468	42,425
70-74	1,719	72,644,100	42,260
75-79	1,293	53,942,932	41,719
80-84	706	23,552,340	33,360
85-89	344	10,779,264	31,335
90 & Over	209	5,579,510	26,696
Total	7,914	$ 327,189,809	$ 41,343

* *Does not include Health Benefit Supplement.*

Schedule of Active Member Valuation Data

Year Ending December 31,	Active Participants	Percent Change	Covered Payroll	Percent Change	Average Salary	Percent Change
2007	8,117	-	$ 359,369,000	-	$ 44,274	-
2008	8,371	3.1%	378,021,000	5.2%	45,158	2.0%
2009	7,654	-8.6%	364,237,000	-3.6%	47,588	5.4%
2010	7,034	-8.1%	322,374,000	-11.5%	45,831	-3.7%
2011	6,745	-4.1%	309,682,000	-3.9%	45,913	0.2%
2012	6,864	1.8%	330,536,000	6.7%	48,155	4.9%
2013	6,993	1.9%	342,219,000	3.5%	48,937	1.6%
2014	7,180	2.7%	363,109,000	6.1%	50,572	3.3%
2015	7,477	4.1%	393,186,000	8.3%	52,586	4.0%
2016	7,619	1.9%	409,433,000	4.1%	53,738	2.2%
2017	7,838	2.9%	421,269,000	2.9%	53,747	0.0%
2018	7,584	-3.2%	423,723,000	0.6%	55,871	4.0%
2019	7,427	-2.1%	433,890,000	2.4%	58,421	4.6%
2020	7,244	-2.5%	428,824,000	-1.2%	59,197	1.3%
2021	7,175	-1.0%	442,863,000	3.3%	61,723	4.3%
2022	7,464	4.0%	476,601,000	7.6%	63,853	3.5%
2023	7,894	5.8%	530,702,000	11.4%	67,229	5.3%

Schedule of Retirees and Beneficiaries Added to and Removed from Rolls

	Added to Rolls		Removed from Rolls		Rolls-End of Year			
Year Ending December 31,	Number	Annual Allowances	Number	Annual Allowances	Number	Annual Allowances	% Increase in Annual Allowances	Average Annual Allowances
2007	239	$ 7,250,468	205	$ 4,551,742	5,304	$142,267,609	-	$ 26,823
2008	383	8,905,680	211	4,684,964	5,476	154,692,846	8.7%	28,249
2009	446	9,268,740	216	4,795,982	5,706	165,826,328	7.2%	29,062
2010	508	12,798,268	221	4,907,000	5,993	179,730,384	8.4%	29,990
2011	404	10,012,165	198	4,396,317	6,199	193,851,170	7.9%	31,271
2012	325	9,795,464	204	4,529,539	6,320	202,120,582	4.3%	31,981
2013	324	11,246,955	197	4,327,990	6,447	210,027,512	3.9%	32,578
2014	370	12,415,771	219	4,821,713	6,598	219,150,070	4.3%	33,215
2015	476	13,777,204	318	6,847,464	6,756	226,019,290	3.1%	33,455
2016	384	12,746,549	237	5,562,549	6,903	237,992,528	5.3%	34,477
2017	383	9,893,931	244	6,375,641	7,042	244,768,143	2.8%	34,758
2018	402	14,905,595	220	5,976,286	7,224	258,085,328	5.4%	35,726
2019	478	17,715,050	297	8,368,302	7,405	269,263,106	4.3%	36,362
2020	455	28,634,730	308	11,614,128	7,552	277,428,698	3.0%	36,736
2021	424	16,109,924	321	8,655,976	7,655	294,130,270	6.0%	38,423
2022	384	14,364,767	273	8,500,245	7,766	309,799,134	5.3%	39,892
2023	404	15,039,143	256	8,098,656	7,914	327,189,809	5.6%	41,343

Solvency Test

	Aggregated Accrued Liabilities for				Portions of Accrued Liabilities Covered by Reported Assets		
Valuation Date	Active and Inactive Members Contributions	Retirees and Beneficiaries	Active and Inactive Members (Employer Financed Portion)	Reported Assets	(5)/(2)	[(5)-(2)]/3	[(5)-(2)-(3)]/(4)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
December 31, 2007	$ 206,090	$ 1,591,731	$ 1,117,343	$ 3,183,260	100.0%	100.0%	100.0%
December 31, 2008	221,667	1,707,599	1,146,119	2,957,506	100.0%	100.0%	89.7%
December 31, 2009	228,666	1,834,491	1,128,963	3,031,652	100.0%	100.0%	85.8%
December 31, 2010	232,727	2,041,322	1,008,077	3,027,439	100.0%	100.0%	74.7%
December 31, 2011	240,821	2,181,731	969,100	2,916,746	100.0%	100.0%	51.0%
December 31, 2012	257,716	2,250,533	1,010,107	2,846,124	100.0%	100.0%	33.4%
December 31, 2013	278,892	2,319,424	1,012,529	3,074,284	100.0%	100.0%	47.0%
December 31, 2014	301,567	2,578,071	1,124,417	3,241,053	100.0%	100.0%	32.1%
December 31, 2015	325,607	2,650,638	1,152,888	3,320,387	100.0%	100.0%	29.9%
December 31, 2016	350,646	2,770,533	1,170,623	3,451,463	100.0%	100.0%	28.2%
December 31, 2017	373,193	2,854,818	1,149,833	3,601,612	100.0%	100.0%	32.5%
December 31, 2018	392,004	2,989,597	1,145,395	3,620,319	100.0%	100.0%	20.8%
December 31, 2019	408,984	3,228,576	1,225,766	3,682,959	100.0%	100.0%	3.7%
December 31, 2020	430,411	3,312,228	1,190,247	3,747,078	100.0%	100.0%	0.4%
December 31, 2021	448,149	3,456,659	1,189,554	3,872,601	100.0%	99.1%	0.0%
December 31, 2022	467,549	3,603,830	1,205,090	3,866,412	100.0%	94.3%	0.0%
December 31, 2023	490,401	3,758,969	1,233,881	3,842,459	100.0%	89.2%	0.0%

EXPERIENCE TABLES

Pay Experience for Employees who are Active at Beginning and End of Year
Valuation Pay Analysis
Analyzed by Years of Service

Service Beginning of Year	Number	Expected Pay	Actual Pay	Ratio A/E
	Experience for 2023			
Under 5	2,167	$ 125,952,594	$ 133,911,334	106%
5-9	1,632	107,232,638	112,642,488	105%
10-14	832	60,485,012	63,092,682	104%
15-19	912	67,846,736	70,752,867	104%
20-24	477	36,969,925	38,189,786	103%
25-29	346	27,386,177	28,079,642	103%
30 & Over	121	9,936,744	10,138,345	102%
Total	6,487	$ 435,809,826	$ 456,807,144	105%
Over 10 Years	2,688	$ 202,624,594	$ 210,253,322	104%

Service Beginning of Year	Number	Expected Pay	Actual Pay	Ratio A/E
	Experience for 2020-2023			
Under 5	7,594	$ 424,110,637	$ 438,604,014	103%
5-9	6,720	413,282,858	421,643,673	102%
10-14	3,514	239,619,785	242,640,709	101%
15-19	3,438	243,996,803	247,686,994	102%
20-24	2,326	165,625,696	166,742,830	101%
25-29	1,291	98,826,398	99,238,392	100%
30 & Over	517	43,231,924	42,994,523	99%
Total	25,400	$ 1,628,694,101	$ 1,659,551,135	102%
Over 10 Years	11,086	$ 791,300,606	$ 799,303,448	101%

Table 15

Analysis of Retirement Experience

Each Age

	2023 Retirement			2020-2023 Retirement		
Age	Actual	Expected	Ratio A/E	Actual	Expected	Ratio A/E
46	-	-	N/A	-	-	N/A
47	-	-	N/A	-	-	N/A
48	-	-	N/A	-	-	N/A
49	-	0.10	0%	1	0.80	125%
50	2	2.45	82%	15	19.10	79%
51	3	8.35	36%	17	33.15	51%
52	13	12.10	107%	36	37.90	95%
53	6	8.00	75%	35	43.40	81%
54	4	8.85	45%	32	39.65	81%
55	10	11.20	89%	49	44.95	109%
56	14	13.25	106%	47	49.50	95%
57	11	10.60	104%	60	52.95	113%
58	12	10.45	115%	45	45.05	100%
59	7	10.45	67%	42	50.20	84%
60	30	19.59	153%	109	79.14	138%
61	15	16.03	94%	62	66.78	93%
62	13	16.18	80%	62	65.21	95%
63	16	12.69	126%	53	56.93	93%
64	13	13.10	99%	39	59.11	66%
65	21	16.02	131%	69	67.11	103%
66	17	14.64	116%	59	60.64	97%
67	17	15.56	109%	49	50.22	98%
68	8	10.76	74%	33	33.80	98%
69	6	5.70	105%	21	22.36	94%
70 & Over	22	94.00	23%	80	355.00	23%
Total	260	330.07	79%	1,015	1,332.95	76%
Total Under 70	238	236.07	101%	935	977.95	96%

Analysis of Retirement Experience

Age Groups

Age Group	2023 Retirements Actual	2023 Retirements Expected	2023 Retirements Ratio A/E	2020-2023 Retirements Actual	2020-2023 Retirements Expected	2020-2023 Retirements Ratio A/E
Under 55	28	39.85	70%	136	174.00	78%
55-59	54	55.95	97%	243	242.65	100%
60-64	87	77.59	112%	325	327.17	99%
65-69	69	62.68	110%	231	234.13	99%
70 & Over	22	94.00	23%	80	355.00	23%
Total	260	330.07	79%	1,015	1,332.95	76%
Total Under 70	238	236.07	101%	935	977.95	96%

Analysis of Turnover Experience

Years of Service	2023 Quits Actual	2023 Quits Expected	2023 Quits Ratio A/E	2020-2023 Quits Actual	2020-2023 Quits Expected	2020-2023 Quits Ratio A/E
0-4	463	444.67	104%	1,857	1,545.34	120%
5-9	167	121.13	138%	683	502.64	136%
10-14	38	27.23	140%	164	109.08	150%
15-19	24	13.21	182%	81	52.06	156%
20-24	5	4.01	125%	26	19.22	135%
25-29	1	0.53	187%	4	1.97	203%
Total	698	610.79	114%	2,815	2,230.30	126%

Analysis of Active Mortality Experience

Age	2023 Deaths			2020-2023 Deaths		
	Actual	Expected	Ratio A/E	Actual	Expected	Ratio A/E
20-24	1	0.04	2752%	2	0.11	1749%
25-29	0	0.10	0%	2	0.41	485%
30-34	0	0.21	0%	2	0.83	242%
35-39	1	0.31	320%	6	1.22	494%
40-44	0	0.48	0%	2	1.97	102%
45-49	2	0.84	239%	7	3.40	206%
50-54	3	1.34	224%	13	5.63	231%
55-59	3	1.87	160%	11	7.94	139%
60 and Over	6	3.60	167%	27	13.52	200%
Total	16	8.79	182%	72	35.02	206%

Analysis of Disability Experience

	2023 Disabilities			2020-2023 Disabilities		
Age	**Actual**	**Expected**	**Ratio A/E**	**Actual**	**Expected**	**Ratio A/E**
20-24	0	0.00	0%	0	0.01	0%
25-29	0	0.03	0%	0	0.10	0%
30-34	0	0.13	0%	0	0.49	0%
35-39	0	0.29	0%	0	1.12	0%
40-44	0	0.53	0%	0	2.15	0%
45-49	0	0.93	0%	0	3.75	0%
50-54	0	1.29	0%	0	5.23	0%
55-59	1	1.43	70%	1	5.82	17%
60 and Over	1	1.14	88%	1	3.84	26%
Total	2	5.77	35%	2	22.52	9%

Analysis of Retiree Mortality Experience*

Age	2023 Experience			2020-2023 Experience		
	Actual	Expected	Ratio A/E	Actual	Expected	Ratio A/E
Under 60	5	2.38	210%	17	9.55	178%
60-64	18	8.56	210%	52	32.82	158%
65-69	22	18.15	121%	98	70.78	138%
70-74	31	33.18	93%	155	120.28	129%
75-79	48	37.76	127%	146	119.30	122%
80-84	36	36.18	100%	121	113.76	106%
85-89	39	30.94	126%	120	93.17	129%
90 & over	43	44.26	97%	117	117.04	100%
Total	242	211.39	114%	826	676.70	122%

**This analysis does not include beneficiary, QDRO, or disabled deaths.*

ACTUARIAL METHODS AND ASSUMPTIONS

The most recent experience study was completed in conjunction with the December 31, 2019 actuarial valuation. Please see our experience study, dated June 2020, to see more detail of the rationale for the current assumptions. As authorized under Sec. 40A-9 of Chapter 40A, the actuarial methods and assumptions are established set by the Board of Trustees based upon recommendations from the Fund's actuary.

Entry Age Normal Method

The Entry Age Normal actuarial cost method is the actuarial valuation method used for all purposes under ERF. The concept of this method is that funding of benefits for each member should be affected as a, theoretically, level contribution (as a level percentage of pay) from entry into ERF to termination of active status.

The Normal Cost (NC) for a fiscal year under this method is determined as described in the prior paragraph for each individual member. The ERF NC for the year is the total of individual normal costs determined for each active member. The Actuarial Accrued Liability (AAL) under this method is the theoretical asset balance of the normal costs that would have accumulated to date based upon current actuarial assumptions. To the extent that the current assets of the fund are insufficient to cover the AAL, an Unfunded Actuarial Accrued Liability (UAAL) develops.

Actuarially Determined Contribution

The actuarially determined contribution rate is developed using an open group projection. The total contribution rate (member plus City) is the level percentage of pay needed to fund the Normal Cost for each year and pay off the UAAL over 30 years.

In the open group projection, the demographic assumptions are applied to the current active employees and any employees that are assumed to leave employment are replaced one for one with a new employee. Over time this results in the change of the employee group from mostly Tier A members to Tier B members. The projection is built to assume no gains or losses on the actuarial accrued liability or the actuarial value of assets.

In the projection, new members' pay is assumed to increase at 3.00% year over year (i.e. a new employee in 2024 is assumed to be hired at a salary that is 3.00% greater than a new employee hired in 2023). The 3.00% growth rate is equal to our wage inflation assumption of 3.00% (ultimate salary increase assumption). Note that this is not an assumption that payroll will grow at 3.00% per year. Payroll could grow more slowly in the near-term due to membership demographics.

New Entrant Profile

For the purposes of determining the funding period, an open group projection is used which replaces on a one-to-one basis each active member who leaves employment with an average new hire. The average new hire is determined based on a new entrant profile, which is created from the valuation data by determining the entry age and entry pay for anyone with between one and six years of service as of the valuation date, with salaries normalized to the valuation date. A summary of the new entrant profile is shown in the table below, with 60% of the population being male. The salaries below would be applicable for the year preceding the valuation date. Future cohorts of new hires have starting salaries that are assumed to grow at the General Wage Inflation of 3.00% over the salaries of the previous year.

New Entrant Profile		
Entry Age	**# of Employees**	**Average Salary**
15-19	7	$51,244
20-24	278	49,616
25-29	440	52,096
30-34	409	55,477
35-39	334	60,163
40-44	313	61,928
45-49	282	61,221
50-54	274	61,956
55-59	195	61,816
60-64	109	64,260
65-69	10	50,491
Total	**2,651**	**$57,731**

Actuarial Value of Asset Method

The method for determining the actuarial value of assets in future years is equal to the market value of assets less a five-year phase in of the excess (shortfall) between expected investment return and actual income. The actual calculation is based on the difference between actual market value and the expected market value of assets each year, and recognizes the cumulative excess return (or shortfall) at a minimum rate of 20% per year. Each year, a base is set up to reflect this difference. If the current year’s base is of opposite sign to the deferred bases, then it is offset dollar for dollar against the deferred bases. Any remaining bases are then recognized over the remaining period for the base.

ACTUARIAL METHODS AND ASSUMPTIONS (cont.)

Annual Rate of Investment Return: For all purposes under the Fund, the rate of investment return is assumed to be 7.25% per annum, net of investment expenses. This rate includes an annual assumed rate of inflation of 2.50%. In addition, annual cost-of-living adjustments are assumed to occur on average at the rate of 2.50% per annum for Tier A members and 2.20% for Tier B members (due to the lower maximum on cost-of-living-adjustments).

Annual Compensation Increases: Each member's compensation is assumed to increase in accordance with a table based on actual ERF experience. Sample rates follow:

Years of Service	Merit, Promotion, Longevity	General	Total
0	5.25 %	3.00 %	8.25 %
1	4.25	3.00	7.25
2	3.25	3.00	6.25
3	2.50	3.00	5.50
4	2.00	3.00	5.00
5	1.75	3.00	4.75
6	1.75	3.00	4.75
7	1.25	3.00	4.25
8	1.25	3.00	4.25
9	1.00	3.00	4.00
10	1.00	3.00	4.00
11	1.00	3.00	4.00
12	0.75	3.00	3.75
13	0.75	3.00	3.75
14	0.75	3.00	3.75
15	0.75	3.00	3.75
16	0.75	3.00	3.75
17	0.75	3.00	3.75
18	0.50	3.00	3.50
19 & Over	0.00	3.00	3.00

ACTUARIAL METHODS AND ASSUMPTIONS (cont.)

Mortality:

Disabled Lives: The gender-distinct 2019 Texas Municipal Retirees Mortality Table for males and females respectively, set forward 4 years for males and 3 years for females. Generational mortality improvements in accordance with the ultimate rates from the scales published through 2019 by Retirement Plans Experience Committee of the Society of Actuaries ("Ultimate MP") and projected from the year 2019.

Sample rates as of 2023 follow (rate per 1,000), with projected mortality applied:

	Disability Mortality Rate	
Age	**Male**	**Female**
20	35	30
30	35	30
40	35	30
50	35	30
60	35	30
70	35	30
80	81	49
90	232	158

Other Benefit Recipients: The gender-distinct 2019 Texas Municipal Retirees Mortality Tables are used for males and females respectively. Generational mortality improvements in accordance with the ultimate rates from the scales published through 2019 by Retirement Plans Experience Committee of the Society of Actuaries ("Ultimate MP") and projected from the year 2019.

Sample rates as of 2023 follow (rate per 1,000), with projected mortality applied:

	Mortality Rate	
Age	**Male**	**Female**
30	0.4	0.1
40	0.8	0.3
50	2.7	1.1
60	7.2	3.4
70	19.4	10.8
80	53.7	34.4
90	151.4	110.0

ACTUARIAL METHODS AND ASSUMPTIONS (cont.)

Mortality, Continued:

Active Members: The PubG-2010 Employee Mortality Table for General Employees tables are used for males and females respectively. Generational mortality improvements in accordance with the ultimate rates from the scales published through 2019 by Retirement Plans Experience Committee of the Society of Actuaries ("Ultimate MP") and projected from the year 2010.

Sample rates as of 2023 follow (rate per 1,000), with projected mortality applied:

	Mortality Rate	
Age	**Male**	**Female**
30	0.3	0.1
40	0.6	0.3
50	1.3	0.7
60	2.8	1.6
70	6.2	4.3
80	15.2	11.7
90	129.9	101.7

10% of active deaths are assumed to be service related.

Disability: A client-specific table of disability incidence with sample rates follows (rate per 1,000):

Age	Disability Rate
30	0.1
40	0.5
50	1.2
60	2.2

20% of disabilities are assumed to be service related. There is a 0% assumption of disability for members who have over 10 years of service and are eligible for retirement.

Retirement: Upon eligibility, active members are assumed to retire as follows (rate per 1,000):

Tier A:

Age	Male		Female	
	First Year Eligible	Thereafter	First Year Eligible	Thereafter
48-49	100	100	100	100
50	550	550	450	350
51	500	450	400	350
52	500	300	400	300
53	400	300	350	300
54	350	250	350	200
55	300	250	350	250
56	300	250	350	250
57	300	250	350	250
58-59	300	250	250	200
	Service < 18 yrs.	Service 18 yrs.+	Service < 18 yrs.	Service 18 yrs. +
60	80	230	90	200
61	90	230	90	180
62	100	230	90	200
63	100	230	150	150
64	150	230	120	130
65	150	230	120	300
66	200	230	150	300
67	200	230	250	300
68	200	230	150	300
69	200	230	150	300
70	1,000	1,000	1,000	1,000

ACTUARIAL METHODS AND ASSUMPTIONS (cont.)

Retirement, Continued:
Upon eligibility, active members are assumed to retire as follows (rate per 1,000):

Tier B:

Age	Male		Female	
	Service < 40 yrs.	Service 40 yrs. +	Service < 40 yrs.	Service 40 yrs. +
<55	10	350	10	350
55-56	20	350	20	350
57-58	30	350	30	350
59-60	40	350	40	350
61-62	50	350	50	350
63-64	60	350	60	350
65	180	600	200	450
66	200	250	250	250
67	200	250	250	250
68	200	250	150	250
69	200	250	150	250
70	1,000	1,000	1,000	1,000

*For service < 40 yrs, rates shown are for those who met the rule of 80.

Retirement of Deferred Vested Members:
All deferred vested members are assumed to commence payment at their normal retirement age, which is age 60 for Tier A members and age 65 for Tier B members.

ACTUARIAL METHODS AND ASSUMPTIONS (cont.)

General Turnover: A table of termination rates based on ERF experience as shown below.

	Terminations (per 1,000)	
Years of Service	**Male**	**Female**
0	228	200
1	180	165
2	144	150
3	110	120
4	90	95
5	75	90
6	67	80
7	60	65
8	51	48
9	43	48
10	33	45
11	33	32
12	30	30
13	30	30
14	22	20
15	22	14
16	19	14
17	19	14
18	19	14
19	19	14
20	12	14
21	12	14
22	12	6
23	12	6
24	12	6
25	12	6
26 & Over	5	6

There is 0% assumption of termination for members eligible for retirement.

Refunds of Contributions: Members are assumed to choose the most valuable termination benefit.

Operational Expenses: The amount of estimated administrative expenses expected in the next year is assumed to be equal to the prior year's expenses and is incorporated in the Normal Cost.

Marital Status: 75% of active male members and 50% of active female employees are assumed to be married.

Vacation Leave Conversions: Members with 20 or more years of service are assumed to convert unused vacation leave to 1.5 months of service. Other members are assumed to convert unused vacation leave to 1 month of service. No vacation leave conversion is assumed for disability retirement.

Spouse Age: The female spouse is assumed to be 3 years younger than the male spouse.

Payroll Growth Rate: Used to estimate projected payroll for the following fiscal year only. Assumed to be equal to the inflation rate of 2.50%. This assumption is not used as part of the open group projection used to calculate the Actuarially Determined Contribution Rate.

Member's Pay: In determining the member's valuation salary, the greater of the prior calendar year's gross pay and the member's rate of compensation is used.

Form of Payment: For Tier A it is assumed that 60% of married active male members and 84% of married active female employees will elect a Joint & 50% Survivor form of payment. Taking into consideration the marriage assumption and the inherent subsidy in the ERF's Joint & 100% Survivor factors, the male employees are valued with Joint and 28.0% Survivor annuities and the female employees are valued with Joint and 19.5% Survivor annuities. It is also assumed that 100% of Tier B employees will elect the normal form of payment under Tier B.

Data Adjustments: Certain records are missing spousal information. For these records we use the marital status assumption and spousal age difference assumption to value these records. No other adjustments are made to the data.

Actuarial Equivalence Assumptions: for form of payment conversion and Tier B early retirement factors are based on the following assumptions:

a. Interest Rate of 8.00%.

b. Mortality: Unisex blend (60% male and 40% female) of the following assumptions for males and females. 109% of the RP-2000 Combined Healthy Table for males with Blue Collar adjustment projected to 2026 using improvement scale BB for males. 103% of the RP-2000 Combined Healthy Table for females with Blue Collar adjustment projected to 2026 using improvement scale BB for females.

c. Cost-of-living-adjustments (COLA): a 3.00% COLA assumption for Tier A members and a 2.50% COLA assumption for Tier B members.

ACTUARIAL METHODS AND ASSUMPTIONS (cont.)

Actuarial Model: This report was prepared using our proprietary valuation model and related software which in our professional judgment has the capability to provide results that are consistent with the purposes of the valuation and has no material limitations or known weaknesses. We performed tests to ensure that the model reasonably represents that which is intended to be modeled.

Changes in Methods and Assumptions Since Prior Valuation: None.

SUMMARY OF BENEFIT PROVISIONS

Employees' Retirement Fund of the City of Dallas
As of December 31, 2023

Membership

An employee becomes a member upon permanent employment and contributes to the Fund.

Tier A

A person who was employed by the City prior to January 1, 2017, or who was re-employed by the City on or after January 1, 2017 and whose pre January 1, 2017 credited service was not cancelled by withdrawal or forfeiture or was reinstated.

Tier B

A person who was employed by the City on or after January 1, 2017, or who was re-employed by the City on or after January 1, 2017 and whose pre January 1, 2017 credited service has been cancelled by withdrawal or forfeiture.

Contributions

Member: 37% of the current adjusted total obligation rate. New rates effective October 1 after the valuation date.

City: 63% of the current adjusted total obligation rate. New rates effective October 1 after the valuation date.

Definitions

Final Average Salary:

Tier A

Average monthly salary over the member's highest three years (or 36 months) of service.

Tier B

Average monthly salary over the member's highest five years (or 60 months) of service.

Credited Service: Length of time as an employee of the City of Dallas and while making contributions to the Fund.

SUMMARY OF BENEFIT PROVISIONS (cont.)

Retirement Pension

Eligibility:

Tier A

a. Attainment of age 60; or

b. Attainment of age 55 (if credited service began before May 9, 1972); or

c. At any age after completion of 30 years of credited service with a reduced benefit before age 50; or

d. Attainment of age 50, if the sum of an active member's age and credited service is at least equal to 78.

Tier B

a. Attainment of age 65 and 5 years of service; or

b. At any age after completion of 40 years of credited service; or

c. At any age if the sum of an active member's age and credited service is at least equal to 80 (under this eligibility the member's pension will be actuarially reduced for each year prior to the age of 65 that the member retires).

d. Restricted Prior Service Credit included for eligibility (if approved).

Retirement Benefits:

Tier A

The retirement benefit equals 2-3/4% multiplied by average monthly earnings multiplied by credited service limited to a maximum of 36.3636 years plus a monthly $125 health supplement (prorated for service less than 5 years).

Tier B

The retirement benefit equals 2-1/2% multiplied by average monthly earnings multiplied by credited service limited to a maximum of 40 years (no monthly health supplement).

Form of Payment:

Tier A

An unreduced pension benefit under a joint and one-half survivor option with 10 years guaranteed or a ten-year certain and life option. An actuarially equivalent joint and full survivor option is also available.

Tier B

An unreduced pension payable for life with 10 years guaranteed. Actuarially equivalent joint and survivor options (50% and 100%) are also available.

SUMMARY OF BENEFIT PROVISIONS (cont.)

Early Retirement Factors:

Tier A

For members retiring prior to age 50 with 30 or more years of service the pension shall be multiplied by the following percentage:

Age	Percentage
49	93.3
48	87.2
47	81.5
46	76.3
45	71.5
44	67.0

Tier B

For members retiring prior to age 65 with less than 40 years of service, the pension shall be multiplied by the following percentage:

Age	Percentage	Age	Percentage
64	89.72	56	40.03
63	80.66	55	36.41
62	72.64	54	33.15
61	65.53	53	30.22
60	59.21	52	27.57
59	53.58	51	25.18
58	48.56	50	23.01
57	44.06	49	21.05

Deferred Retirement

Eligibility: Deferred retirement pension benefit commencing at age 60 for Tier A members or at age 65 for Tier B members, with at least five (5) years of credited service, and accumulated contributions are left on deposit with the Fund.

Monthly Benefit: The deferred retirement benefit is equal to the retirement pension based on earnings and credited service at the time of termination.

Disability Retirement Pension	Non-Service Disability: 1. Eligibility: Five (5) years of service and totally and permanently incapacitated for duty. 2. Monthly Benefit: Computed based on average monthly earnings and credited service at time of disability but not less than 10 times the percentage multiplier multiplied by the average monthly earnings. Service Disability: 1. Eligibility: Totally and permanently incapacitated from the further performance of duty as a result of injury while in the course of employment for the City. 2. Monthly Benefit: Calculated as a non-service disability pension but not less than $1,000 per month.
Death Benefits	Eligibility: active or inactive members who die prior to retirement Benefit: For members with less than 2 years of service or inactive member with less than 5 years of service: refund of the members contributions. Benefit: For members with more than 2 years of service but less than 15 years of service: an unreduced pension to designated beneficiary for 120 months or a one-half survivor option for life with 120 payments guaranteed. Benefit: For members eligible for retirement or members and inactive members with more than 15 years of service: an unreduced pension to designated beneficiary for 120 months or a Full Survivor option for life with 120 payments guaranteed. Form: Benefit paid in accordance with the option on file, or the eligible option, or if no eligible beneficiary, a lump sum equivalent of 10 years of benefit payments to the member's estate. Minimum Benefit for Service Death: For job-related death a minimum of 10 years of service used in calculation of benefit. Benefit will not be less than $1,000 per month.

SUMMARY OF BENEFIT PROVISIONS (cont.)

Return of Accumulated Contributions

A member at the time of termination is entitled to be paid accumulated contributions without interest.

Cost-of-Living Adjustments

An annual cost-of-living adjustment to the base pension benefit shall be made based on the greater of:

Tier A

a. The percentage of change in the price index for October of the current year over October of the previous year, up to 5%, or

b. The percentage of annual average change in the price index for the 12-month period ending with the effective date of the adjustment, up to 5%.

Tier B

c. The percentage of change in the price index for October of the current year over October of the previous year, up to 3%, or

d. The percentage of annual average change in the price index for the 12-month period ending with the effective date of the adjustment, up to 3%.

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June 13, 2024

Mrs. Cheryl Alston
Executive Director
Employees' Retirement Fund of the City of Dallas, Texas
1920 McKinney Avenue
10th Floor
Dallas, Texas 75201

Subject: GASB 67/68 Reporting and Disclosure Information for the Employees' Retirement Fund of the City of Dallas for Plan Fiscal Year Ending December 31, 2023 and the City of Dallas Fiscal Year Ending September 30, 2024

Dear Cheryl:

This report provides information required by the Employees' Retirement Fund of the City of Dallas (ERF) in connection with the Governmental Accounting Standards Board (GASB) Statement No. 67, "Financial Reporting for Pension Plans." Additionally, this report provides information required by the City of Dallas (the City) in connection with the GASB Statement No. 68, "Accounting and Financial Reporting for Pensions." It is our understanding this information will be used by the City in financial reporting for fiscal year ending September 30, 2024. The information provided herein was prepared for the purpose of assisting ERF and the City in the compliance with the financial reporting and disclosure requirements of GASB Nos. 67 and 68.

The calculation of the liability associated with the benefits described in this report was performed for the purpose of satisfying the requirements of GASB Nos. 67 and 68 and may not be applicable for purposes of funding the plan. A calculation of the plan's liability for other purposes may produce significantly different results. This report may be provided to parties other than ERF only in its entirety and only with the permission of ERF.

The total pension liability, net pension liability, and certain sensitivity information shown in this report are based on an actuarial valuation performed as of December 31, 2023. As allowed for under GASB No. 68, it is intended that the City will report ERF's Net Pension Liability (NPL) as of the end of the ERF fiscal year.

Paragraph 57 of GASB No. 68 indicates that contributions to the pension plan subsequent to the measurement date of the Net Pension Liability and prior to the end of the employer's reporting period can be reported by the employer as a deferred outflow of resources related to pensions. The information contained in this report does not incorporate any contributions made by the City subsequent to December 31, 2023.

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There were no significant events or changes in benefit provisions that required an adjustment to the liabilities. It is our opinion that the recommended assumptions are internally consistent, reasonable, and comply with the requirements under GASB Nos. 67 and 68 and with the Actuarial Standards of Practice.

This report is based upon information, furnished to us by ERF, which include benefit provisions, membership information, and financial data. We did not audit this data and information, but we did apply a number of tests and concluded that it was reasonable and consistent. GRS is not responsible for the accuracy or completeness of the information provided to us by ERF.

The final section of the report titled "Calculation of the Single Discount Rate" is not a required disclosure item for your financial statements. However, it is possible that your auditors will request this information which is why it is included in the report. It should be noted that these projections were prepared in accordance with the methods and assumptions outlined by GASB for this purpose. These projections will be different than the projections of ERF's funding status communicated as part of the funding valuation.

Certain tables included in the Required Supplementary Information should include a 10-year history of information. As provided for in GASB Nos. 67 and 68, this historical information is only presented for the years in which the information was measured in conformity with the requirements of GASB Nos. 67 and 68. The historical information in this report will begin with the information presented for the fiscal year ending December 31, 2014.

This report compliments the actuarial valuation report that was provided to ERF and should be considered together as a complete report for the plan year ending December 31, 2023. Please see the actuarial valuation report as of December 31, 2023 for additional discussion of the nature of actuarial calculations and more information related to participant data, economic and demographic assumptions, and benefit provisions.

In the Schedules of Required Supplementary Information there is a Schedule of Contributions exhibit. One of the columns in this exhibit is the Actuarially Determined Employer Contribution (ADEC). As you are aware, the total contribution rate contributed by the employees and the City includes not only the contributions to the Fund but also the contributions towards the debt service payment on the Pension Obligation Bonds (POB). However, from the Fund's (and GASB's) point of view, the contribution on the debt service is a separate transaction and not related to the contribution to the Fund. In addition, the total contribution rate is not always the direct actuarially determined rate due to the smoothing mechanism in City Ordinance 25695.

Because the contribution rate is not fixed by statute, and is at least partially based on the actuarially determined contribution rate, we believe that the most appropriate rate to show as the ADEC is the remaining portion of the Current Total Obligation Rate (CTOR) after subtracting the member contribution rate and the pension obligation bond credit rate (i.e. the 30-year rate less the member contribution rate).

To the best of our knowledge, the information contained within this report is accurate and fairly represents the actuarial position of the Employees' Retirement Fund of the City of Dallas. All calculations have been made in conformity with generally accepted actuarial principles and practices as well as with the Actuarial Standards of Practice issued by the Actuarial Standards Board. Mr. White is a member of the American Academy of Actuaries (MAAA) and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Respectfully submitted,

Lewis Ward

Lewis Ward
Consultant

Daniel J. White

Daniel J. White, FSA, EA, MAAA
Regional Director

Summary of Population Statistics

The total pension liability described in this report is based on the plan membership as of December 31, 2023:

Inactive Plan Members or Beneficiaries Currently Receiving Benefits	7,914
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	2,107
Active Plan Members	7,894
Total Plan Members	17,915

Note: The Inactive Plan Members Entitled to But Not Yet Receiving Benefits includes non-vested terminated members entitled to a refund of their member contributions.

Measurement of the Net Pension Liability

The net pension liability is measured as the total pension liability, less the amount of the pension plan's fiduciary net position. In actuarial terms, this will be the accrued liability less the market value of assets (not the smoothed actuarial value of assets that is often encountered in actuarial valuations performed to determine the employer's contribution requirement).

A single discount rate of 5.54% was used to measure the total pension liability. This single discount rate was based on the expected rate of return on pension plan investments of 7.25% and the municipal bond rate of 3.77%. The projection of cash flows used to determine this single discount rate assumed that plan member contributions and employer contributions will be made at the projected future contribution rates assuming that the ERF annually earns 7.25% on its market value of assets and that the number of active members remains constant in the future. Based on these assumptions and the plan's funding policy, the last year in the Single Discount Rate projection period for which projected benefit payments were fully funded was 2051, the resulting Single Discount Rate is 5.54%.

Below is a table providing the sensitivity of the net pension liability to changes in the discount rate. In particular, the table presents the plan's net pension liability, if it were calculated using a single discount rate that is 1-percentage-point lower or 1-percentage-point higher than the single discount rate:

1% Decrease 4.54%	Current Single Discount Rate Assumption 5.54%	1% Increase 6.54%
$3,875,545	$2,998,155	$2,273,343

Statement of Fiduciary Net Position
as of December 31, 2023
($ in 000s)

		2023
Assets		
Cash and Short-Tterm	$	338,462
Receivables		
Accrued Interest and Other Dividends	$	18,942
Accounts Receivable - Sale of Investments		14,218
Contributions		1,686
Pending Contracts		585,984
Accounts Receivable - Other		-
Total Receivables	$	620,830
Investments		
Index Funds	$	116,640
Fixed Income		1,048,551
Equities		1,684,942
Real Estate		339,922
Private Equity		371,556
Other		-
Total Investments	$	3,561,611
Total Assets	$	4,520,903
Liabilities		
Payables		
Accounts Payable - Other	$	7,270
Accounts Payable - Investment Transactions		864,531
Total Liabilities	$	871,801
Net Position Restricted for Pensions	$	3,649,102

Statement of Changes in Fiduciary Net Position
for Year Ended December 31, 2023
($ in 000s)

		2023
Additions		
Contributions		
Employer	$	73,939
Employee		70,025
Other		-
Total Contributions	$	143,964
Investment Income		
Interest and Dividends	$	124,653
Less Investment Expense		(20,924)
Net Appreciation in Fair Value of Investments		236,150
Net Investment Income	$	339,879
Other	$	-
Total Additions	$	483,843
Deductions		
Benefit payments, including refunds of employee contributions	$	340,996
Pension Plan Administrative Expense		9,184
Other		841
Total Deductions	$	351,021
Net Increase in Net Position	$	132,822
Net Position Restricted for Pensions		
Beginning of Year	$	3,516,280
End of Year	$	3,649,102

Schedules of Required Supplementary Information

Schedule of Changes in the Employers' Net Pension Liability and Related Ratios

($ in 000s)

Fiscal year ending December 31,	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Total Pension Liability										
Service Cost	$ 152,774	$ 94,476	$ 141,653	$ 118,452	$ 124,289	$ 84,843	$ 81,178	$ 133,457	$ 78,020	$ 62,065
Interest on the Total Pension Liability	346,704	360,815	322,901	330,348	325,767	332,011	325,620	305,826	313,847	290,948
Benefit Changes	-	-	-	-	-	-	-	-	-	-
Experience	89,578	56,503	30,791	(82,641)	(7,819)	4,793	(59,066)	(38,327)	(26,829)	(21,967)
Assumption Changes	(103,487)	1,226,214	(1,303,800)	479,292	(43,032)	1,020,969	-	(1,227,079)	1,238,431	292,137
Benefit Payments	(328,296)	(317,528)	(296,586)	(287,465)	(278,007)	(263,981)	(253,534)	(243,775)	(235,106)	(225,614)
Refunds	(12,700)	(12,158)	(10,452)	(6,857)	(10,436)	(8,515)	(8,156)	(5,864)	(4,854)	(4,629)
Net Change in Total Pension Liability	144,573	1,408,322	(1,115,493)	551,129	110,762	1,170,121	86,042	(1,075,762)	1,363,509	392,940
Total Pension Liability - Beginning	6,502,684	5,094,362	6,209,855	5,658,726	5,547,964	4,377,844	4,291,802	5,367,564	4,004,055	3,611,115
Total Pension Liability - Ending (a)	$ 6,647,257	$ 6,502,684	$ 5,094,362	$ 6,209,855	$ 5,658,726	$ 5,547,964	$ 4,377,844	$ 4,291,802	$ 5,367,564	$ 4,004,055
Plan Fiduciary Net Position										
Employer Contributions	$ 73,939	$ 67,288	$ 63,583	$ 61,615	$ 62,177	$ 60,924	$ 58,966	$ 56,130	$ 50,721	$ 45,833
Employee Contributions	70,025	63,427	59,256	58,358	58,314	56,772	55,175	53,436	50,742	46,536
Pension Plan Net Investment Income	339,879	(368,929)	578,010	229,105	550,942	(167,782)	413,510	294,918	(53,344)	207,992
Benefit Payments	(328,296)	(317,528)	(296,586)	(287,465)	(278,007)	(263,981)	(253,534)	(243,775)	(235,106)	(225,614)
Refunds	(12,700)	(12,158)	(10,452)	(6,857)	(10,436)	(8,515)	(8,156)	(5,864)	(4,854)	(4,629)
Pension Plan Administrative Expense	(9,184)	(9,035)	(7,349)	(5,699)	(7,513)	(7,485)	(5,951)	(5,343)	(4,598)	(4,150)
Other	(841)	-	-	(392)	298	121	207	333	162	157
Net Change in Plan Fiduciary Net Position	132,822	(576,935)	386,462	48,665	375,775	(329,946)	260,217	149,835	(196,277)	66,125
Plan Fiduciary Net Position - Beginning	3,516,280	4,093,215	3,706,753	3,658,088	3,282,313	3,612,259	3,352,042	3,202,208	3,398,485	3,332,360
Plan Fiduciary Net Position - Ending (b)	$ 3,649,102	$ 3,516,280	$ 4,093,215	$ 3,706,753	$ 3,658,088	$ 3,282,313	$ 3,612,259	$ 3,352,043	$ 3,202,208	$ 3,398,485
Net Pension Liability - Ending (a) - (b)	2,998,155	2,986,404	1,001,147	2,503,102	2,000,638	2,265,651	765,585	939,759	2,165,356	605,570
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	54.90 %	54.07 %	80.35 %	59.69 %	64.65 %	59.16 %	82.51 %	78.10 %	59.66 %	84.68 %
Covered Employee Payroll	$ 530,702	$ 476,601	$ 442,863	$ 428,824	$ 433,890	$ 423,723	$ 421,269	$ 409,433	$ 393,186	$ 363,109
Net Pension Liability as a Percentage of Covered Employee Payroll	564.94 %	626.60 %	226.06 %	583.71 %	461.09 %	534.70 %	181.73 %	229.53 %	550.72 %	168.95 %

Notes to Schedule:

The covered employee payroll is the sum of the active members' pay for valuation purposes as of the measurement date. An active member's valuation pay is the greater of their actual pay for the just completed calendar year or their current annual rate of pay.

Schedules of Required Supplementary Information
Schedule of the Net Pension Liability (Historical)

FY Ending December 31,	Total Pension Liability	Plan Net Position	Net Pension Liability	Plan Net Position as a % of Total Pension Liability	Covered Payroll	Net Pension Liability as a % of Covered Payroll
2014	$ 4,004,055	$ 3,398,485	$ 605,570	84.68%	$ 363,109	168.95%
2015	5,367,564	3,202,208	2,165,356	59.66%	393,186	550.72%
2016	4,291,802	3,352,043	939,759	78.10%	409,433	229.53%
2017	4,377,844	3,612,259	765,585	82.51%	421,269	181.73%
2018	5,547,964	3,282,313	2,265,651	59.16%	423,723	534.70%
2019	5,658,726	3,658,088	2,000,638	64.65%	433,890	461.09%
2020	6,209,855	3,706,753	2,503,102	59.69%	428,824	583.71%
2021	5,094,362	4,093,215	1,001,147	80.35%	442,863	226.06%
2022	6,502,684	3,516,280	2,986,404	54.07%	476,601	626.60%
2023	6,647,257	3,649,102	2,998,155	54.90%	530,702	564.94%

Notes to Schedule:

The covered employee payroll is the sum of the active members' pay for valuation purposes as of the measurement date. An active member's valuation pay is the greater of their actual pay for the just completed calendar year or their current annual rate of pay.

Schedules of Required Supplementary Information
Schedule of Contributions

Last 10 Fiscal Years

($ in 000s)

ERF FY Ending December 31,	Actuarially Determined Contribution[1]	Actual Contribution[2]	Contribution Deficiency (Excess)	Covered Payroll[3]	Actual Contribution as a % of Covered Payroll
2014	$ 61,747	$ 45,833	$ 15,914	$ 353,650	12.96%
2015	64,648	50,721	13,927	383,669	13.22%
2016	84,316	56,130	28,186	402,077	13.96%
2017	86,785	58,966	27,819	410,913	14.35%
2018	90,328	60,924	29,404	423,083	14.40%
2019	87,455	62,177	25,278	433,591	14.34%
2020	93,226	61,615	31,611	434,214	14.19%
2021	99,279	63,583	35,696	452,709	14.05%
2022	104,309	67,288	37,021	479,089	14.05%
2023	111,858	73,939	37,919	526,444	14.05%

Note:[1] The actuarially determined employer contribution (ADEC) shown is based on employer contribution rates using a 30-year open amortization period and actual payroll.

[2] The actual City contribution rate is set by City Ordinance No. 25695. The actual rate does not change from year to year unless the actuarially determined rate is at least 300 basis points higher or lower than the current contribution rate. If the actuarially determined rate is more than 300 basis points different, then the contribution rate is adjusted to half way between the current rate and the actuarially determined rate, but the rate does not increase or decrease by more than 10% in any year. Since the City's fiscal year is October 1 to September 30 and the Fund's fiscal year is the calendar year, the contribution amounts shown above are a blend of the City's two fiscal year rates that occur during the calendar year.

[3] For this exhibit, the covered payroll is the estimated payroll for the calendar year on which contributions were made.

Notes to Schedule of Contributions

Valuation Date:	December 31, 2022 for most recent ADEC shown on Schedule of Contributions December 31, 2023 for Net Pension Liability

Methods and Assumptions Used to Determine Contribution Rates:

Actuarial Cost Method	Entry Age Normal
Amortization Method	The actuarially determined contribution (ADEC) is initially based on a 30-year open amortization period. As specified in City Ordinance No. 25695, the rate may not change from year to year if the calculated rate is less than 300 basis points different from the current rate.
Remaining Amortization Period	Not determined, see description of amortization method
Asset Valuation Method	5-Year smoothed market
Inflation	2.50%
Salary Increases	3.00% to 8.25%, including inflation
Investment Rate of Return	7.25%
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition. Last updated for the December 31, 2019 valuation pursuant to an experience study of the 5-year period December 31, 2019.
Mortality	**For Healthy Retirees:** The gender-distinct 2019 Texas Municipal Retirees Mortality Tables are used for males and females respectively. The rates are projected from 2019 on a fully generational basis using Scale UMP. **For Disabled Lives:** The gender-distinct 2019 Texas Municipal Retirees Mortality Tables are used for males and females respectively, set forward 4 years for males and 3 years for females. The rates are projected from 2019 on a fully generational basis using Scale UMP. **For Actives:** The PubG-2010 Employee Mortality Table are used for males and females. The rates are projected from 2010 on a fully generational basis using Scale UMP.

Other Information:

Notes	The assumptions described above were for the most recent ADEC shown in the schedule of contributions. The assumptions used in determining the Net Pension Liability as of December 31, 2023 were those used in the actuarial valuation as of December 31, 2023.

Governmental Employer Financial Statements

Pension Expense for Plan Fiscal Year Ending December 31, 2022
To be used for Governmental Employer Reporting
for Fiscal Year Ending September 30, 2023

A. Expense

1. Service Cost	$	152,774
2. Interest on the Total Pension Liability		346,704
3. Current-Period Benefit Changes		0
4. Employee Contributions (made negative for addition here)		(70,025)
5. Projected Earnings on Plan Investments (made negative for addition here)		(247,556)
6. Pension Plan Administrative Expense		9,184
7. Other Changes in Plan Fiduciary Net Position		841
8. Recognition of Outflow (Inflow) of Resources due to Liabilities		100,734
9. Recognition of Outflow (Inflow) of Resources due to Assets		(4,785)
10. Total Pension Expense	**$**	**287,871**

Recognition of Deferred Outflows and Inflows of Resources

According to paragraph 33 of GASB No. 68, *differences between expected and actual experience* and *changes in assumptions* are recognized in pension expense using a systematic and rational method over a closed period equal to the average of the expected remaining service lives of all employees that are provided with pensions through the pension plan (active employees and inactive employees) determined as of the beginning of the measurement period.

At the beginning of the 2023 fiscal year, the expected remaining service lives of all employees was 73,979 years. Additionally, the plan membership (active employees and inactive employees) was 17,422. As a result, the average of the expected remaining service lives for purposes of recognizing the applicable deferred outflows and inflows of resources established in the 2023 fiscal year is 4.2463 years.

Additionally, *differences between projected and actual earnings on pension plan investments* should be recognized in pension expense using a systematic and rational method over a closed five-year period.

For this purpose, the deferred outflows and inflows of resources are recognized in the pension expense as a level dollar amount over the closed period identified above.

Governmental Employer Financial Statements

Statement of Outflows and Inflows Arising from Current and Prior Reporting Periods for Plan Fiscal Year Ending December 31, 2023 To be used for Governmental Employer Reporting for Fiscal Year Ending September 30, 2024

A. Outflows and Inflows of Resources due to Liabilities and Assets to be recognized in Current Pension Expense

	Outflows of Resources	Inflows of Resources	Net Outflows of Resources
1. due to Liabilities	$ 445,913	$ 345,179	$ 100,734
2. due to Assets	137,569	142,354	(4,785)
3. Total	$ 583,482	$ 487,533	$ 95,949

B. Outflows and Inflows of Resources by Source to be recognized in Current Pension Expense

	Outflows of Resources	Inflows of Resources	Net Outflows of Resources
1. Differences between expected and actual experience	$ 41,637	$ 19,681	$ 21,956
2. Assumption Changes	404,276	325,498	78,778
3. Net Difference between projected and actual earnings on pension plan investments	137,569	142,354	(4,785)
4. Total	$ 583,482	$ 487,533	$ 95,949

C. Deferred Outflows and Deferred Inflows of Resources by Source to be recognized in Future Pension Expenses

	Deferred Outflows of Resources	Deferred Inflows of Resources	Net Deferred Outflows of Resources
1. Differences between expected and actual experience	$ 107,640	$ 5,689	$ 101,951
2. Assumption Changes	673,804	486,855	186,949
3. Net Difference between projected and actual earnings on pension plan investments	400,880	200,294	200,586
4. Total	$ 1,182,324	$ 692,838	$ 489,486

D. Deferred Outflows and Deferred Inflows of Resources by Year to be recognized in Future Pension Expenses

Year Ending December 31	Net Deferred Outflows of Resources
2024	$ 94,468
2025	246,410
2026	167,880
2027	(19,272)
2028	-
Thereafter	-
Total	$ 489,486

Governmental Employer Financial Statements

Statements of Outflows and Inflows Arising from Current and Prior Reporting Period for Fiscal Year Ending September 30, 2024

Year Established	Initial Amount	Initial Recognition Period	Current Year Recognition	Remaining Recognition	Remaining Recognition Period
A. Deferred Outflow (Inflow) due to Differences Between Expected and Actual Experience on Liabilities					
2019	(7,819)	4.2405	(443)	0	0.0000
2020	(82,641)	4.2957	(19,238)	(5,689)	0.2957
2021	30,791	4.3651	7,054	9,629	1.3651
2022	56,503	4.1893	13,487	29,529	2.1893
2023	89,578	4.2463	21,096	68,482	3.2463
Total			21,956	101,951	
B. Deferred Outflow (Inflow) due to Assumption Changes					
2019	(43,032)	4.2405	(2,440)	0	0.0000
2020	479,292	4.2957	111,575	32,992	0.2957
2021	(1,303,800)	4.3651	(298,687)	(407,739)	1.3651
2022	1,226,214	4.1893	292,701	640,812	2.1893
2023	(103,487)	4.2463	(24,371)	(79,116)	3.2463
Total			78,778	186,949	
C. Deferred Outflow (Inflow) due to Differences Between Projected and Actual Earnings on Plan Investments					
2019	(303,350)	5.0000	(60,670)	0	0.0000
2020	29,565	5.0000	5,913	5,913	1.0000
2021	(316,093)	5.0000	(63,219)	(126,436)	2.0000
2022	658,279	5.0000	131,656	394,967	3.0000
2023	(92,323)	5.0000	(18,465)	(73,858)	4.0000
Total			(4,785)	200,586	

Calculation of the Single Discount Rate

GASB Statement No. 67 includes a specific requirement for the discount rate that is used for the purpose of the measurement of the Total Pension Liability. This rate considers the ability of the fund to meet benefit obligations in the future. To make this determination, employer contributions, employee contributions, benefit payments, expenses and investment returns are projected into the future. The Plan Net Position (assets) in future years can then be determined and compared to its obligation to make benefit payments in those years. As long as assets are projected to be on hand in a future year, the assumed valuation discount rate is used. In years where assets are not projected to be sufficient to meet benefit payments, the use of a "municipal bond" rate is required, as described in the following paragraph.

The *single discount rate* (SDR) is equivalent to applying these two rates to the benefits that are projected to be paid during the different time periods. The SDR reflects (1) the long-term expected rate of return on pension plan investments (during the period in which the fiduciary net position is projected to be sufficient to pay benefits) and (2) the tax-exempt municipal bond rate based on an index of 20-year general obligation bonds with an average AA credit rating as of the measurement date (to the extent that the contributions for use with the long-term expected rate of return are not met).

The tax-exempt municipal bond rate is the rate for state and local general obligation bonds with 20 years to maturity and mixed credit quality as reported in the Bond Buyer Index's "20-Bond GO Index." In describing this index, the Bond Buyer notes that the bonds' average credit quality is roughly equivalent to Moody's Investors Service's Aa2 rating and Standard & Poor's Corp.'s AA. The rate noted is for the Thursday closest to, or including, the last day of the month, but not after the last day of the month.

For the purpose of this valuation, the expected rate of return on pension plan investments is 7.25%, the municipal bond rate is 3.77%. Based on the stated assumptions and the projection of cash flows as of each plan year ending December 31, the pension plan's fiduciary net position and future contributions, the last year in the Single Discount Rate projection period for which projected benefit payments were fully funded was 2045, and the resulting single discount rate is 5.54%.

The tables in this section provide background for the development of the single discount rate.

The **Projection of Contributions** table shows the development of expected contributions in future years. Normal Cost contributions for future hires are not included (nor are their liabilities).

The **Projection of Plan Fiduciary Net Position** table shows the development of expected asset levels in future years.

The **Present Values of Projected Benefit Payments** table shows the development of the Single Discount Rate (SDR). It breaks down the benefit payments into present values for funded and unfunded portions and shows the equivalent total at the SDR.

Single Discount Rate Development

Projection of Contributions from December 31 of 2023 to 2122

($ in 000s)

December 31,	Payroll for Current Employees	Payroll for Future Employees	Total Employee Payroll	Contributions from Current Employees	Employer Contributions for Current Employees	Contributions Related to Payroll of Future Employees	Total Contributions
2023	$ 521,304	9,398	530,702	$ 69,438	$ 75,355	$ 1,255	$ 146,048
2024	463,239	80,731	543,970	61,703	66,892	10,769	139,364
2025	432,129	125,440	557,569	57,560	62,410	16,736	136,706
2026	405,872	165,636	571,508	54,062	58,659	22,116	134,837
2027	382,872	202,924	585,796	50,999	55,363	27,110	133,472
2028	362,392	238,049	600,441	48,271	52,402	31,802	132,475
2029	343,526	271,925	615,452	45,758	49,674	36,328	131,760
2030	326,367	304,471	630,838	43,472	47,201	40,683	131,356
2031	309,967	336,642	646,609	41,288	44,860	45,016	131,164
2032	293,552	369,222	662,774	39,101	42,506	49,400	131,007
2033	277,931	401,412	679,344	37,020	40,244	53,707	130,971
2034	262,982	433,345	696,327	35,029	43,471	66,863	145,363
2035	248,825	464,910	713,735	33,143	56,433	100,325	189,901
2036	235,435	496,144	731,579	31,360	53,397	107,065	191,822
2037	222,601	527,267	749,868	29,650	50,486	113,781	193,917
2038	210,526	558,089	768,615	28,042	47,747	120,433	196,222
2039	199,015	588,816	787,830	26,509	45,137	127,063	198,709
2040	187,752	619,774	807,526	25,009	42,582	133,744	201,335
2041	176,981	650,733	827,714	23,574	40,139	140,425	204,138
2042	167,405	681,002	848,407	22,298	37,968	146,956	207,222
2043	159,372	710,245	869,617	21,228	36,146	153,267	210,641
2044	152,261	739,097	891,358	20,281	34,533	159,493	214,307
2045	145,775	767,866	913,642	19,417	33,062	165,701	218,180
2046	139,800	796,682	936,483	18,621	31,707	171,920	222,248
2047	134,138	825,757	959,895	17,867	30,423	178,194	226,484
2048	128,644	855,248	983,892	17,135	29,176	184,558	230,869
2049	123,026	885,463	1,008,489	16,387	27,902	191,078	235,367
2050	117,424	916,277	1,033,702	15,641	26,632	197,728	240,001
2051	111,645	947,900	1,059,544	14,871	25,321	204,552	244,744
2052	105,689	980,344	1,086,033	14,078	23,970	211,553	249,601
2053	99,497	1,013,687	1,113,184	13,253	22,566	218,748	254,567
2054	92,943	1,048,070	1,141,013	12,380	21,079	226,168	259,627
2055	86,258	1,083,281	1,169,538	11,490	19,563	233,766	264,819
2056	78,789	1,119,988	1,198,777	10,495	17,869	241,687	270,051
2057	70,440	1,158,306	1,228,746	9,383	15,976	249,956	275,315
2058	61,493	1,197,972	1,259,465	8,191	13,947	258,516	280,654
2059	52,249	1,238,703	1,290,952	6,960	11,850	267,305	286,115
2060	43,214	1,280,012	1,323,225	5,756	9,801	276,220	291,777
2061	33,794	1,322,512	1,356,306	4,501	7,664	285,391	297,556
2062	23,583	1,366,631	1,390,214	3,141	5,349	294,911	303,401
2063	14,871	1,410,098	1,424,969	1,981	3,373	304,291	309,645
2064	9,171	1,451,422	1,460,593	1,222	2,080	313,209	316,511
2065	5,458	1,491,650	1,497,108	727	1,238	321,890	323,855
2066	3,096	1,531,439	1,534,536	412	702	330,476	331,590
2067	1,661	1,571,238	1,572,899	221	377	339,065	339,663
2068	857	1,611,365	1,612,222	114	194	347,724	348,032
2069	417	1,652,110	1,652,527	56	95	356,516	356,667
2070	182	1,693,659	1,693,840	24	41	365,482	365,547
2071	70	1,736,117	1,736,186	9	16	374,644	374,669
2072	26	1,779,565	1,779,591	3	6	384,020	384,029

Single Discount Rate Development

Projection of Contributions from December 31 of 2023 to 2122 (Continued)

($ in 000s)

December 31,	Payroll for Current Employees	Payroll for Future Employees	Total Employee Payroll	Contributions from Current Employees	Employer Contributions for Current Employees	Contributions Related to Payroll of Future Employees	Total Contributions
2073	8	1,824,073	1,824,081	1	2	393,625	393,628
2074	2	1,869,681	1,869,683	-	-	403,467	403,467
2075	-	1,916,425	1,916,425	-	-	413,554	413,554
2076	-	1,964,335	1,964,335	-	-	423,893	423,893
2077	-	2,013,444	2,013,444	-	-	434,490	434,490
2078	-	2,063,780	2,063,780	-	-	445,352	445,352
2079	-	2,115,374	2,115,374	-	-	456,486	456,486
2080	-	2,168,259	2,168,259	-	-	467,898	467,898
2081	-	2,222,465	2,222,465	-	-	479,596	479,596
2082	-	2,278,027	2,278,027	-	-	491,586	491,586
2083	-	2,334,978	2,334,978	-	-	503,875	503,875
2084	-	2,393,352	2,393,352	-	-	516,472	516,472
2085	-	2,453,186	2,453,186	-	-	529,384	529,384
2086	-	2,514,516	2,514,516	-	-	542,619	542,619
2087	-	2,577,378	2,577,378	-	-	556,184	556,184
2088	-	2,641,813	2,641,813	-	-	570,089	570,089
2089	-	2,707,858	2,707,858	-	-	584,341	584,341
2090	-	2,775,555	2,775,555	-	-	598,950	598,950
2091	-	2,844,944	2,844,944	-	-	613,923	613,923
2092	-	2,916,067	2,916,067	-	-	629,271	629,271
2093	-	2,988,969	2,988,969	-	-	645,003	645,003
2094	-	3,063,693	3,063,693	-	-	661,128	661,128
2095	-	3,140,285	3,140,285	-	-	677,656	677,656
2096	-	3,218,792	3,218,792	-	-	694,598	694,598
2097	-	3,299,262	3,299,262	-	-	711,963	711,963
2098	-	3,381,744	3,381,744	-	-	729,762	729,762
2099	-	3,466,287	3,466,287	-	-	748,006	748,006
2100	-	3,552,945	3,552,945	-	-	766,706	766,706
2101	-	3,641,768	3,641,768	-	-	785,874	785,874
2102	-	3,732,812	3,732,812	-	-	805,521	805,521
2103	-	3,826,133	3,826,133	-	-	825,659	825,659
2104	-	3,921,786	3,921,786	-	-	846,300	846,300
2105	-	4,019,831	4,019,831	-	-	867,458	867,458
2106	-	4,120,326	4,120,326	-	-	889,144	889,144
2107	-	4,223,335	4,223,335	-	-	911,373	911,373
2108	-	4,328,918	4,328,918	-	-	934,157	934,157
2109	-	4,437,141	4,437,141	-	-	957,511	957,511
2110	-	4,548,069	4,548,069	-	-	981,449	981,449
2111	-	4,661,771	4,661,771	-	-	1,005,985	1,005,985
2112	-	4,778,315	4,778,315	-	-	1,031,134	1,031,134
2113	-	4,897,773	4,897,773	-	-	1,056,913	1,056,913
2114	-	5,020,218	5,020,218	-	-	1,083,336	1,083,336
2115	-	5,145,723	5,145,723	-	-	1,110,419	1,110,419
2116	-	5,274,366	5,274,366	-	-	1,138,179	1,138,179
2117	-	5,406,225	5,406,225	-	-	1,166,634	1,166,634
2118	-	5,541,381	5,541,381	-	-	1,195,800	1,195,800
2119	-	5,679,916	5,679,916	-	-	1,225,695	1,225,695
2120	-	5,821,913	5,821,913	-	-	1,256,337	1,256,337
2121	-	5,967,461	5,967,461	-	-	1,287,746	1,287,746
2122	-	6,116,648	6,116,648	-	-	1,319,939	1,319,939

Single Discount Rate Development

Projection of Plan Fiduciary Net Position from December 31 of 2023 to 2122

($ in 000s)

December 31, Year	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.25%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
2023	$ 3,649,102	$ 146,048	$ 367,045	$ 9,845	$ 256,338	$ 3,674,598
2024	3,674,598	139,364	373,492	8,730	257,759	3,689,498
2025	3,689,498	136,706	387,684	8,144	258,260	3,688,635
2026	3,688,635	134,837	400,974	7,650	257,675	3,672,523
2027	3,672,523	133,472	413,608	7,216	256,024	3,641,195
2028	3,641,195	132,475	425,638	6,829	253,302	3,594,504
2029	3,594,504	131,760	437,148	5,943	249,513	3,532,686
2030	3,532,686	131,356	447,691	5,646	244,652	3,455,357
2031	3,455,357	131,164	457,517	5,362	238,699	3,362,341
2032	3,362,341	131,007	467,293	5,078	231,612	3,252,588
2033	3,252,588	130,971	475,939	4,808	223,355	3,126,167
2034	3,126,167	145,363	483,841	4,550	214,430	2,997,569
2035	2,997,569	189,901	491,514	4,305	206,428	2,898,079
2036	2,898,079	191,822	498,377	4,073	199,047	2,786,498
2037	2,786,498	193,917	504,326	3,851	190,829	2,663,067
2038	2,663,067	196,222	509,066	3,642	181,800	2,528,381
2039	2,528,381	198,709	512,610	3,443	172,005	2,383,042
2040	2,383,042	201,335	515,075	3,248	161,481	2,227,534
2041	2,227,534	204,138	516,607	3,062	150,258	2,062,262
2042	2,062,262	207,222	516,961	2,896	138,379	1,888,007
2043	1,888,007	210,641	515,717	2,757	125,917	1,706,091
2044	1,706,091	214,307	512,775	2,634	112,968	1,517,956
2045	1,517,956	218,180	508,521	2,522	99,621	1,324,715
2046	1,324,715	222,248	503,051	2,419	85,955	1,127,448
2047	1,127,448	226,484	496,658	2,321	72,035	926,988
2048	926,988	230,869	489,706	2,226	57,909	723,833
2049	723,833	235,367	482,284	2,128	43,608	518,396
2050	518,396	240,001	474,355	2,031	29,165	311,176
2051	311,176	244,744	466,156	1,931	14,606	102,438
2052	102,438	249,601	457,702	1,828	-	-
2053	-	254,567	449,214	1,721	-	-
2054	-	259,627	440,856	1,608	-	-
2055	-	264,819	432,544	1,492	-	-
2056	-	270,051	424,905	1,363	-	-
2057	-	275,315	418,090	1,219	-	-
2058	-	280,654	411,916	1,064	-	-
2059	-	286,115	406,098	904	-	-
2060	-	291,777	400,201	748	-	-
2061	-	297,556	394,774	585	-	-
2062	-	303,401	390,176	408	-	-
2063	-	309,645	384,125	257	-	-
2064	-	316,511	375,246	159	-	-
2065	-	323,855	364,527	94	-	-
2066	-	331,590	352,467	54	-	-
2067	-	339,663	339,441	29	-	-
2068	-	348,032	325,739	15	-	-
2069	-	356,667	311,635	7	-	-
2070	-	365,547	297,358	3	-	-
2071	-	374,669	282,912	1	-	-
2072	-	384,029	268,296	-	-	-

Single Discount Rate Development

Projection of Plan Fiduciary Net Position from December 31 of 2023 to 2122 (continued)

($ in 000s)

December 31, Year	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.25%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
2073	-	393,628	253,802	-	-	-
2074	-	403,467	239,627	-	-	-
2075	-	413,554	225,733	-	-	-
2076	-	423,893	212,100	-	-	-
2077	-	434,490	198,725	-	-	-
2078	-	445,352	185,607	-	-	-
2079	-	456,486	172,742	-	-	-
2080	-	467,898	160,139	-	-	-
2081	-	479,596	147,823	-	-	-
2082	-	491,586	135,822	-	-	-
2083	-	503,875	124,161	-	-	-
2084	-	516,472	112,873	-	-	-
2085	-	529,384	101,993	-	-	-
2086	-	542,619	91,558	-	-	-
2087	-	556,184	81,605	-	-	-
2088	-	570,089	72,172	-	-	-
2089	-	584,341	63,292	-	-	-
2090	-	598,950	54,999	-	-	-
2091	-	613,923	47,317	-	-	-
2092	-	629,271	40,268	-	-	-
2093	-	645,003	33,867	-	-	-
2094	-	661,128	28,121	-	-	-
2095	-	677,656	23,027	-	-	-
2096	-	694,598	18,566	-	-	-
2097	-	711,963	14,720	-	-	-
2098	-	729,762	11,462	-	-	-
2099	-	748,006	8,756	-	-	-
2100	-	766,706	6,555	-	-	-
2101	-	785,874	4,802	-	-	-
2102	-	805,521	3,440	-	-	-
2103	-	825,659	2,410	-	-	-
2104	-	846,300	1,654	-	-	-
2105	-	867,458	1,113	-	-	-
2106	-	889,144	735	-	-	-
2107	-	911,373	477	-	-	-
2108	-	934,157	305	-	-	-
2109	-	957,511	191	-	-	-
2110	-	981,449	118	-	-	-
2111	-	1,005,985	71	-	-	-
2112	-	1,031,134	42	-	-	-
2113	-	1,056,913	25	-	-	-
2114	-	1,083,336	14	-	-	-
2115	-	1,110,419	8	-	-	-
2116	-	1,138,179	4	-	-	-
2117	-	1,166,634	2	-	-	-
2118	-	1,195,800	1	-	-	-
2119	-	1,225,695	1	-	-	-
2120	-	1,256,337	0	-	-	-
2121	-	1,287,746	0	-	-	-
2122	-	1,319,939	0	-	-	-

Single Discount Rate Development

Present Values of Projected Benefits from December 31 of 2023 to 2122

($ in 000s)

Year	Projected Beginning Plan Net Position	Projected Benefit Payments	Funded Portion of Benefit Payments	Unfunded Portion of Benefit Payments	Present Value of Funded Benefit Payments using Expected Return Rate (v)	Present Value of Unfunded Benefit Payments using Municipal Bond Rate (vf)	Present Value of Benefit Payments using Single Discount Rate (sdr)
(a)	(b)	(c)	(d)	(e)	(f)=(d)*v^((a)-.5)	(g)=(e)*vf ^((a)-.5)	(h)=((c)/(1+sdr)^(a-.5)
2023	$ 3,649,102	$ 367,045	$ 367,045	$ -	$ 354,422	$ -	$ 357,290
2024	3,674,598	373,492	373,492	-	336,268	-	344,497
2025	3,689,498	387,684	387,684	-	325,451	-	338,833
2026	3,688,635	400,974	400,974	-	313,852	-	332,067
2027	3,672,523	413,608	413,608	-	301,857	-	324,565
2028	3,641,195	425,638	425,638	-	289,638	-	316,487
2029	3,594,504	437,148	437,148	-	277,361	-	307,997
2030	3,532,686	447,691	447,691	-	264,849	-	298,882
2031	3,455,357	457,517	457,517	-	252,365	-	289,421
2032	3,362,341	467,293	467,293	-	240,334	-	280,102
2033	3,252,588	475,939	475,939	-	228,234	-	270,321
2034	3,126,167	483,841	483,841	-	216,338	-	260,396
2035	2,997,569	491,514	491,514	-	204,913	-	250,652
2036	2,898,079	498,377	498,377	-	193,729	-	240,822
2037	2,786,498	504,326	504,326	-	182,789	-	230,915
2038	2,663,067	509,066	509,066	-	172,035	-	220,860
2039	2,528,381	512,610	512,610	-	161,522	-	210,733
2040	2,383,042	515,075	515,075	-	151,328	-	200,641
2041	2,227,534	516,607	516,607	-	141,517	-	190,683
2042	2,062,262	516,961	516,961	-	132,041	-	180,805
2043	1,888,007	515,717	515,717	-	122,819	-	170,910
2044	1,706,091	512,775	512,775	-	113,864	-	161,022
2045	1,517,956	508,521	508,521	-	105,286	-	151,311
2046	1,324,715	503,051	503,051	-	97,113	-	141,833
2047	1,127,448	496,658	496,658	-	89,397	-	132,686
2048	926,988	489,706	489,706	-	82,187	-	123,967
2049	723,833	482,284	482,284	-	75,470	-	115,685
2050	518,396	474,355	474,355	-	69,211	-	107,815
2051	311,176	466,156	466,156	-	63,417	-	100,395
2052	102,438	457,702	106,086	351,615	13,457	118,018	93,404
2053	-	449,214	-	449,214	-	145,299	86,864
2054	-	440,856	-	440,856	-	137,415	80,776
2055	-	432,544	-	432,544	-	129,926	75,097
2056	-	424,905	-	424,905	-	122,995	69,901
2057	-	418,090	-	418,090	-	116,625	65,173
2058	-	411,916	-	411,916	-	110,729	60,843
2059	-	406,098	-	406,098	-	105,199	56,837
2060	-	400,201	-	400,201	-	99,905	53,074
2061	-	394,774	-	394,774	-	94,969	49,608
2062	-	390,176	-	390,176	-	90,453	46,459
2063	-	384,125	-	384,125	-	85,815	43,340
2064	-	375,246	-	375,246	-	80,786	40,117
2065	-	364,527	-	364,527	-	75,627	36,927
2066	-	352,467	-	352,467	-	70,468	33,833
2067	-	339,441	-	339,441	-	65,399	30,874
2068	-	325,739	-	325,739	-	60,479	28,073
2069	-	311,635	-	311,635	-	55,758	25,449
2070	-	297,358	-	297,358	-	51,271	23,010
2071	-	282,912	-	282,912	-	47,008	20,744
2072	-	268,296	-	268,296	-	42,959	18,640

Single Discount Rate Development

PVs of Projected Benefits from December 31 of 2022 to 2121 (continued)

($ in 000s)

Year	Projected Beginning Plan Net Position	Projected Benefit Payments	Funded Portion of Benefit Payments	Unfunded Portion of Benefit Payments	Present Value of Funded Benefit Payments using Expected Return Rate (v)	Present Value of Unfunded Benefit Payments using Municipal Bond Rate (vf)	Present Value of Benefit Payments using Single Discount Rate (sdr)
(a)	(b)	(c)	(d)	(e)	(f)=(d)*v^((a)-.5)	(g)=(e)*vf ^((a)-.5)	(h)=((c)/(1+sdr)^(a-.5)
2073	$ -	$ 253,802	$ -	$ 253,802	$ -	$ 39,162	$ 16,708
2074	-	239,627	-	239,627	-	35,632	14,948
2075	-	225,733	-	225,733	-	32,346	13,343
2076	-	212,100	-	212,100	-	29,289	11,879
2077	-	198,725	-	198,725	-	26,445	10,546
2078	-	185,607	-	185,607	-	23,802	9,334
2079	-	172,742	-	172,742	-	21,347	8,231
2080	-	160,139	-	160,139	-	19,071	7,230
2081	-	147,823	-	147,823	-	16,965	6,324
2082	-	135,822	-	135,822	-	15,021	5,506
2083	-	124,161	-	124,161	-	13,232	4,769
2084	-	112,873	-	112,873	-	11,592	4,108
2085	-	101,993	-	101,993	-	10,094	3,518
2086	-	91,558	-	91,558	-	8,732	2,992
2087	-	81,605	-	81,605	-	7,500	2,527
2088	-	72,172	-	72,172	-	6,392	2,118
2089	-	63,292	-	63,292	-	5,402	1,760
2090	-	54,999	-	54,999	-	4,524	1,449
2091	-	47,317	-	47,317	-	3,751	1,181
2092	-	40,268	-	40,268	-	3,076	952
2093	-	33,867	-	33,867	-	2,493	759
2094	-	28,121	-	28,121	-	1,995	597
2095	-	23,027	-	23,027	-	1,574	463
2096	-	18,566	-	18,566	-	1,223	354
2097	-	14,720	-	14,720	-	934	266
2098	-	11,462	-	11,462	-	701	196
2099	-	8,756	-	8,756	-	516	142
2100	-	6,555	-	6,555	-	372	101
2101	-	4,802	-	4,802	-	263	70
2102	-	3,440	-	3,440	-	181	47
2103	-	2,410	-	2,410	-	123	32
2104	-	1,654	-	1,654	-	81	20
2105	-	1,113	-	1,113	-	53	13
2106	-	735	-	735	-	33	8
2107	-	477	-	477	-	21	5
2108	-	305	-	305	-	13	3
2109	-	191	-	191	-	8	2
2110	-	118	-	118	-	5	1
2111	-	71	-	71	-	3	1
2112	-	42	-	42	-	2	0
2113	-	25	-	25	-	1	0
2114	-	14	-	14	-	0	0
2115	-	8	-	8	-	0	0
2116	-	4	-	4	-	0	0
2117	-	2	-	2	-	0	0
2118	-	1	-	1	-	0	0
2119	-	1	-	1	-	0	0
2120	-	0	-	0	-	0	0
2121	-	0	-	0	-	0	0
2122	-	0	-	0	-	0	0
				Totals	$ 5,573,066	$ 2,251,073	$ 7,824,139

2023 Audit Presentation and Discussion

Employees' Retirement Fund of the City of Dallas

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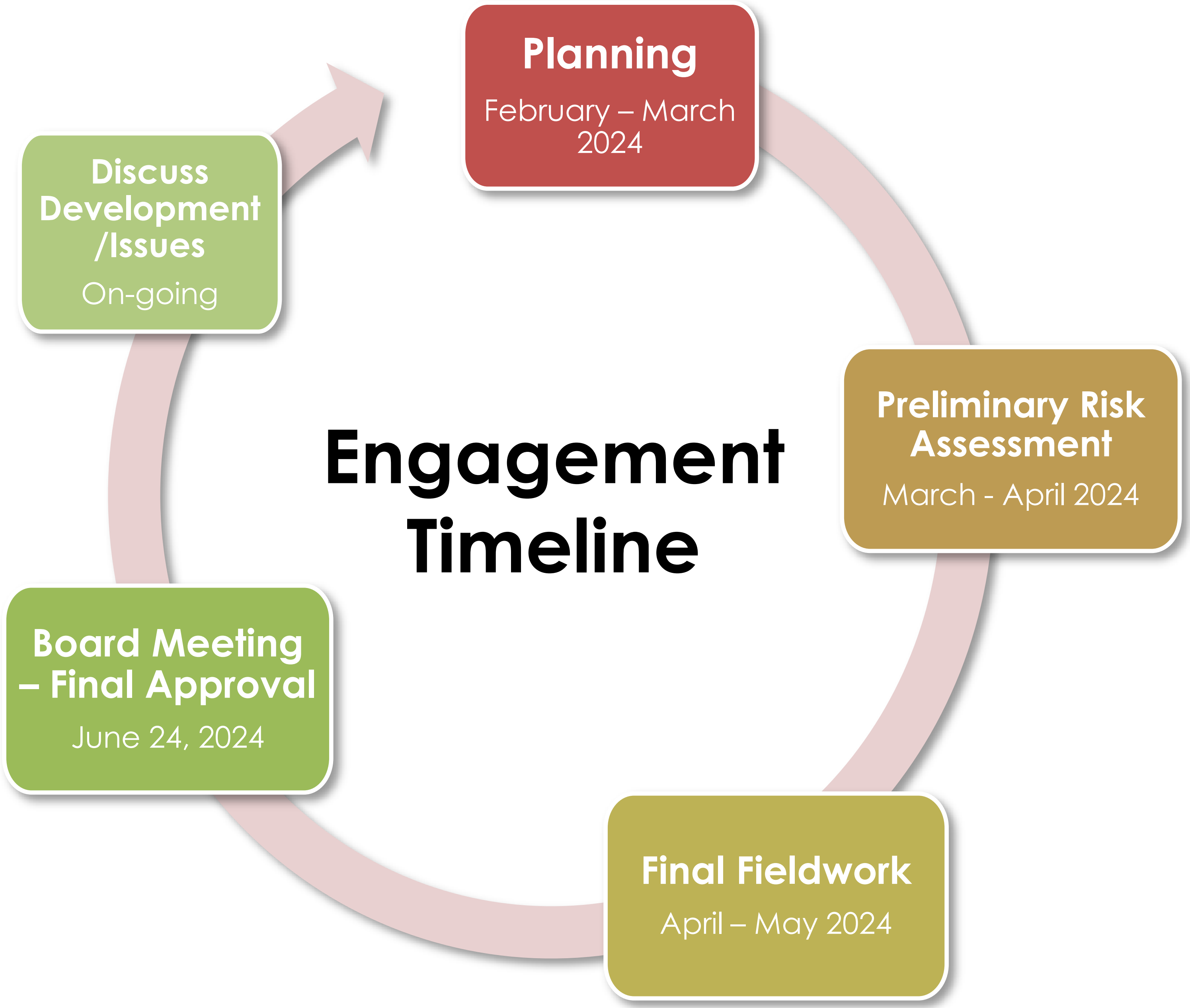
Team in Attendance

Aracely Rios, CPA
Partner,
Employee Benefit Plans

- **20+ years** of public accounting experience
- Practice emphasis in auditing employee benefit plans, including government pensions
- Dallas office

Jeff Wada, CPA
Senior Manager,
Employee Benefit Plans

- **10+ years** of public accounting experience
- Practice emphasis in auditing cities and government pensions
- Dallas office


Planning
February – March 2024
Preliminary Risk Assessment
March - April 2024
Final Fieldwork
April – May 2024
Board Meeting – Final Approval
June 24, 2024
Discuss Development /Issues
On-going
Engagement Timeline

Audit Testing

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Our audit process is a risk-based approach in which we identified potential areas of risk that could lead to material misstatement of the financial statements.

Financial Statement Level Risk	Procedures Performed
Management override of internal controls	- Tested approval of journal entries - Agreed disclosures to support - Tested estimates for reasonableness

Audit Areas of Focus	Procedures Performed
Investments	- Confirmation with Plan's custodian (Northern Trust) and investment managers - Recalculation of net asset value from audited financial statements for private equity, real estate, and collective investment funds - Use of third party database, Interactive Data Services to test fair values of level 1 and 2 investments

Audit Testing (continued)

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Our audit process is a risk-based approach in which we identified potential areas of risk that could lead to material misstatement of the financial statements.

Audit Areas of Focus	Procedures Performed
Participant Benefit Payments	- Examination of benefits on a test basis - Tested eligibility of participants - Recalculated benefits in accordance with plan provisions - Compared recurring payments year over year and inquired of any differences outside of expectations
Participant Data and Census	- Reconciled census from actuary to underlying payroll information - Tested a sample of key participant data to underlying HR records - Recalculated employee and employer contributions
Actuarial Valuation	- Reviewed assumptions and methodology used by actuary - Reviewed related disclosures

Financial Audit Results

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Type of Report:	**UNMODIFIED**
Internal control over financial reporting:	
Any material weakness(es) identified?	**NO**
Any significant deficiencies that are not material weaknesses?	**NO**

Required Communications to Those in Charge of Governance

Communication	Results
Auditor's responsibility under generally accepted auditing standards (GAAS)	The financial statements are the responsibility of the Plan. Our audit was designed in accordance with GAAS in the U.S. and provide for reasonable rather than absolute assurance that the financial statements are free of material misstatement. Our responsibility is to express an opinion about whether the financial statements prepared by management with your oversight are fairly presented, in all material respects, in conformity with U.S. generally accepted accounting principles. Our audit of the financial statements does not relieve you or management of your responsibilities. The audit of the fiscal year 2023 financial statements is complete and we plan to issue an unmodified opinion.

Required Communications to Those in Charge of Governance

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Communication	Results
Unusual transactions and the adoption of new accounting principles	The significant accounting policies used by the Plan are reasonable We noted no transactions entered into by the Plan during the year for which there is a lack of authoritative guidance or consensus.

Required Communications to Those in Charge of Governance

Communication	Results
Fraud and illegal acts	No material errors, irregularities, or illegal acts were noted.
Material weakness in internal control	No material weaknesses noted.
Other information contained in documents containing audited financial statements	No such items.
Management consultations	We are not aware of management consulting with other accountants for a second opinion.

Required Communications to Those in Charge of Governance

Communication	Results
Difficulties encountered	No difficulties or disagreements arose during the course of our audit.
Management representations	We will request certain representations from management that will be included in the management representation letter
Auditor independence	No independence issues noted.
Other information contained in documents containing audited financial statements	We performed limited procedures on the Management's Discussion and Analysis (MD&A) and Required Supplementary Information (RSI). We did not provide any assurance on this information and other supplementary information.
Management judgments and accounting estimates	Management's estimates of investment fair values; investment classifications; and net pension liability actuarial valuation were evaluated and determined to be reasonable in relation to the financial statements as a whole.

Required Communications to Those in Charge of Governance

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Communication	Results
Audit adjustments and Passed adjustments	Professional standards require us to accumulate all known and likely misstatements identified during the audit, other than those that are trivial, and communicate them to the appropriate level of management. There were no passed adjustments during the audit. In addition, there were no uncorrected misstatements identified as a result of our audit procedures.
Other material written communications between Weaver and Tidwell, L.L.P., and the Plan	Nothing to note. No going concern issues identified or subsequent events.

DISCUSSION

Contact Us

Aracely Rios
Partner, Assurance Services
Direct: (972) 448.6925
Email: aracely.rios@weaver.com

MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED)

(Required Supplementary Information)

MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED)

The Management's Discussion and Analysis of the Employees' Retirement Fund of the City of Dallas ("ERF" or "the Plan") financial performance provides an overview of the financial activities and funding conditions for the fiscal years ended December 31, 2023, 2022, and 2021. The intent of this discussion and analysis is to give a narrative overview and analysis of the Plan's financial performance as a whole. For more detailed information regarding performance, readers should also review the Financial Statements, Notes to the Financial Statements, and Required Supplementary Information to enhance their understanding of the Plan's financial performance.

FINANCIAL STATEMENTS

The Plan is a defined benefit plan that provides retirement, disability, and death benefits to permanent full-time and part-time civilian employees of the City of Dallas ("the City"). The Plan has two basic Financial Statements:

- A Statement of Fiduciary Net Position that provides information about the fair value and composition of plan assets, plan liabilities, and fiduciary net position; and
- A Statement of Changes in Fiduciary Net Position that provides information about the year-to-year Changes in Fiduciary Net Position.

There are also notes to the Financial Statements that include a brief Plan description, a summary of significant accounting policies, and information about contributions, legally required reserves, investment concentrations, and the Net Pension Liability. The report also contains the required supplementary information in addition to the basic financial statements. Collectively, this information presents the Net Position Restricted for Pension Benefits and summarizes the Changes in Net Position for those benefits.

FINANCIAL HIGHLIGHTS

Fiscal year 2023 experienced an increase in investments. The Plan's Financial Highlights for fiscal year ended December 31, 2023, are as follows:

- The Plan had a return of 10.09% for the year, a 5-year return of 7.70% and a 10-year return of 6.01%.
- As of December 31, 2023, the Net Position Restricted for Pension Benefits was $3.6 billion, reflecting a $133 million increase from the previous year due to higher investments.
- Total contributions for fiscal year 2023 were $143.96 million, an increase of approximately $13.2 million from last fiscal year. This is primarily attributed to a merit pay increase for civilian employees and additional full-time employees eligible for retirement benefits.
- Pension benefits paid to retirees and beneficiaries increased $10.8 million in 2023 compared to 2022, bringing the total benefit payments to $328 million. Refunds of contributions paid to former members after termination of employment were $13 million for 2023 and $12 million for 2022.
- Net Investment Income (net appreciation/depreciation) in the fair value of investments, plus interest and dividend income, less investment expenses), excluding Other Income, increased $709 million compared to last fiscal year.
- Administrative Expenses of $9.2 million in 2023 were higher than 2022 by $977 thousand due to many factors such as inflation, employees' salary increments, benefits, and legal fees.

CONDENSED FINANCIAL INFORMATION

($ in thousands)

As of and for the FY Ended December 31,	2023	2022	2021
Fiduciary Net Position			
Assets	4,520,902	$4,199,708	$4,745,318
Liabilities	871,800	683,428	652,103
Fiduciary Net Position Restricted for Pension Benefits	$3,649,102	$3,516,280	$4,093,215
Changes in Fiduciary Net Position			
Additions:			
Employer contributions	$73,939	$67,288	$63,584
Employee contributions	70,025	63,427	59,256
Investment & other income/(loss), net	339,878	(368,929)	578,010
Deductions:			
Benefit payments	$328,296	$317,528	$296,587
Refund of contributions	12,700	12,158	10,452
Administrative expenses	9,183	8,206	6,547
Depreciation expense	841	829	802
Change in Fiduciary Net Position Restricted for Pension Benefits	$132,822	($576,935)	$386,462
Net Position Restricted for Pension Benefits:			
Beginning of Year	3,516,280	4,093,215	3,706,753
End of Year	$3,649,102	$3,516,280	$4,093,215

FINANCIAL POSITION AND RESULTS OF OPERATIONS

The Plan's total investment return for fiscal year 2023 was 10.09% as compared to -8.38% in 2022 and 16.4% in 2021. The one-year return was below the policy benchmark of 13.11%. The Plan has performed well over longer time periods. The Plan's 5-year return is 7.70% which is slightly below the policy benchmark of 7.81%. The 10-year return is 6.01%, which is slightly above the policy benchmark of 5.91%.

ERF has a global, diversified investment program. The best performing asset classes in 2023 were Domestic Equity Composite and Global Equity Composite. ERF's Domestic Equity Composite and Global Equity Composite Portfolio earned 23.07% and 17.00% respectively. The Fund's real estate investments consist of real estate investment trust, core and value-add real estate funds. Real Estate earned -0.68% for the fiscal year ended December 31, 2023.

Additions to the Plan's Fiduciary Net Position consist of employer and employee contributions and investment income. The Plan's Fiduciary Net Position increased from $3.516 billion in fiscal year 2022 to $3.649 billion in 2023, an increase of approximately $133 million. This increase is primarily due to investments gains in almost all asset classes. City and employee contributions for fiscal year 2023 were $74 million and $70 million, respectively. Total contributions for 2023 were $143.9 million compared to $130.7 million in 2022 and $122.8 million in 2021.

Net investment income/(loss) is presented net of investment expenses and is comprised of interest, dividend income, gains/(losses) from the sale of investments, net unrealized appreciation/(depreciation) in the fair value of investments, and net income from securities lending activities. For fiscal year 2023, the Plan had a net investment gain of $340 million, (excluding non-investment Other Income of $285 thousand) compared to a net investment loss of $369 million in fiscal year 2022 and a net investment income of $578 million in 2021.

Fiscal year 2023 liabilities of $872 million showed an increase of 28% from fiscal year 2022 liabilities of $683 million. Liabilities for 2022 increased by $31 million or 5% over 2021. The increase in 2023 was primarily due to an increase in the use of currency contracts by the managers to hedge against changes in foreign currency rates, in accordance with the managers' investment strategies and goals.

Year-end balances for securities purchased were $37 million in 2023, $47 million in 2022 and $2 million in 2021. Foreign currency contracts at year-end were $586 million in 2023, $279 million in 2022 and $287 million in 2021. The changes were due to the investment managers' portfolio management.

Deductions from Fiduciary Net Position are largely from benefit payments. During fiscal year 2023, the increase in deductions is attributable to new retirements as well as a Cost-of-Living Adjustment (COLA), as was the increase between 2023 and 2022.

New retirements were 326, 293 and 320, respectively, for fiscal years 2023, 2022 and 2021. COLAs were 5% in 2023 for Tier A members, and 3% for Tier B members. For both Tiers, COLAs were 5.00% in 2022 and 3% in 2021. A COLA is granted effective January 1 of each year if there is an increase in the Consumer Price Index for Urban Wage Earners and Clerical Workers ("CPI-W") based on the greater of either a) the change from October of the prior year to October of the current year; b) the monthly average change; or c) zero.

During fiscal year 2023, refunds of contributions amounted to $13 million (919 refunds), compared to 2022 refunds of $12 million (812 refunds) and 2021 refunds of $10.4 million (641 refunds). The fiscal year 2023 refund amount reflects an increase in the number of members requesting refunds as compared to fiscal year 2022. Administrative expenses of approximately $9 million represent approximately 2.6% of total deductions for the year.

CAPITAL ASSETS

The Plan's investment in capital assets as of December 31, 2023, amounts to approximately $6 million (net of accumulated depreciation). This investment in capital assets includes $63 thousand in Furniture and Fixtures, and $5.6 million in Intangible Assets. The total net decrease in capital assets for the current fiscal year was -10% compared to last year due to depreciation expense.

Additional information on the Plan's Capital Assets can be found in Note 9 of this report.

CURRENT ENVIRONMENT

Plan membership for active members increased during fiscal year 2023 from 7,464 to 7,894 members, an increase of 6%. For 2023, the number of new retirements was 326 compared to 293 in 2022. The trend of benefit payments continues to increase. Similar to most mature plans, benefit payments exceed the level of contribution revenue received, and cash generated from investments is needed in order to meet benefit payments.

An actuarial valuation of the Plan's assets and benefit obligations is performed annually by an independent firm, Gabriel, Roeder, Smith & Company ("GRS"). Based on the actuarial value of assets, the funded ratio of the Plan decreased from 73.28% in 2022 to 70.10% in 2023 primarily due to investment returns. The Unfunded Actuarial Accrued Liability ("UAAL") increased from $1,410 million as of December 31, 2022, to $1,641 million as of December 31, 2023. Based on accounting principles generally accepted in the United States of America ("GAAP"), the Plan Fiduciary Net Position as a percentage of the Total Pension Liability was 54.90% in 2023 as compared to 54.07% in 2022 and 80.35% in 2021. This is due to a blended discount rate of 5.54% in 2022. See Note 10 (c) for more information.

CONTACTING THE PLAN'S FINANCIAL MANAGEMENT

This financial report is designed to provide a general overview of the Plan's finances. Questions and requests for additional information should be addressed to the Employees' Retirement Fund of the City of Dallas, 1920 McKinney Avenue, 10th Floor, Dallas, TX 75201.

EMPLOYEES' RETIREMENT FUND OF THE CITY OF DALLAS
Statements of Fiduciary Net Position
As of December 31, 2023 and 2022
($ in thousands)

	2023	2022
ASSETS:		
Cash and short-term investments	$ 95,324	$ 109,754
Collateral on loaned securities	237,524	342,361
	332,848	452,115
Capital Asset:		
Intangible Assets	5,551	6,155
Furniture and Fixtures, net	63	77
Total capital assets (net)	5,614	6,232
Receivables:		
Currency contracts	585,982	278,970
Accrued dividends	6,150	5,171
Accrued interest	11,504	9,882
Accrued real estate income	1,288	982
Accrued securities lending	107	98
Securities sold	14,111	17,967
Employer contributions	878	785
Employee contributions	808	741
Total receivables	620,828	314,596
Investments, at fair value:		
Commingled index funds	116,640	93,082
Domestic equities	1,372,894	1,327,609
United States and foreign government fixed income securities	316,628	244,514
Domestic corporate fixed-income securities	731,923	650,083
International equities	312,048	383,318
Investments, at estimated fair value:		
Private equities	371,556	381,814
Real estate	339,923	346,345
Total investments	3,561,612	3,426,765
Total assets	4,520,902	4,199,708
LIABILITIES:		
Accounts payable	7,269	10,872
Payable for securities purchased	37,169	46,569
Investment fees payable	3,081	3,566
Currency contracts	585,982	278,970
Currency contract losses	775	1,090
Securities lending collateral	237,524	342,361
Total liabilities	871,800	683,428
NET POSITION:		
Net Investment in capital assets	5,614	6,232
Unrestricted	3,643,488	3,510,048
NET POSITION RESTRICTED FOR PENSIONS :	$ 3,649,102	$ 3,516,280

(A Schedule of Changes in Net Pension Liability is presented in the Required Supplementary Information)
The accompanying notes are an integral part of these financial statements.

EMPLOYEES' RETIREMENT FUND OF
THE CITY OF DALLAS
Statements of Changes in Fiduciary Net Position
December 31,2023 and 2022
($ in thousands)

	2023	2022
ADDITIONS:		
Contributions:		
Employer	$ 73,939	$ 67,288
Employee	70,025	63,427
Total contributions	143,964	130,715
NET INVESTMENT INCOME:		
Dividends	69,189	65,290
Interest	55,464	40,413
Real estate dividend income	8,769	8,461
Net appreciation/(depreciation) in fair value of investments	225,506	(464,890)
Securities lending rebates paid by borrowers	(16,251)	(6,514)
Securities lending income	17,840	7,863
Total investment income/(loss)	360,517	(349,377)
LESS INVESTMENT EXPENSES:		
Investment management fees	(19,899)	(18,724)
Custody fees	(111)	(112)
Consultant fees	(597)	(516)
Securities lending management fees	(317)	(269)
Total investment expenses	(20,924)	(19,621)
Net investment income/(loss)	339,593	(368,998)
OTHER INCOME:	285	69
Total additions	483,842	(238,214)
DEDUCTIONS:		
Benefit payments	328,296	317,528
Refund of contributions	12,700	12,158
Administrative expenses	9,183	8,206
Depreciation expense	841	829
Total deductions	351,020	338,721
Net increase/(decrease) in Net Position Restricted for Pensions	132,822	(576,935)
NET POSITION RESTRICTED FOR PENSIONS :		
Beginning of year	3,516,280	4,093,215
End of year	$ 3,649,102	$ 3,516,280

The accompanying notes are an integral part of these financial statements.

1) Description of the Plan

a) General

The Employees' Retirement Fund of the City of Dallas ("ERF" or the "Plan") is a single employer defined benefit pension plan that provides retirement, disability, and death benefits to its members, and is sponsored by the City of Dallas, Texas (the "City"). All employees of the City are members in the Plan, except police officers, firefighters, elected officers, non-salaried appointee members of administrative boards or commissions, part-time employees working less than one-half time, temporary employees, individuals working under contract, and individuals whose salaries are paid in part by another government agency. Members are entitled to retirement benefits after five years of service and to survivor benefits after two years of service or at the date of eligibility for retirement. The Plan was established and derives its authority to continue in operation from Chapter 40A of the Dallas City Code ("Chapter 40A"). The description of the Plan provisions in this report is for financial disclosure only. It is not intended to create or reduce legal rights. The rights and responsibilities of the Board of Trustees, the Plan, the members and the retirees are governed by the Plan as set forth in Chapter 40A. As of December 31, 2023 and 2022, the Plan's membership consisted of:

	2022	**2022**
Retirees and beneficiaries currently receiving benefits and inactive members entitled to benefits but not yet receiving them	10,021	9,958
Current members:		
Vested	4,138	4,249
Non-vested	3,756	3,215
Total current members	7,894	7,464
Total membership	17,915	17,422

b) Plan Administration

The Plan is governed by seven Board members, consisting of three members appointed by the City Council who may be Council members, three employee members of the Plan (elected by the membership) and the City Auditor (serving ex officio). The Board has general powers and duties to administer the Plan, including appointing an administrator to carry out the business of the Board, investing the assets of the Plan, making expenditures from the Plan, and determining members' eligibility for benefits.

Based on a Plan amendment passed by the voters of the City of Dallas in November 2004, the Board annually increases or decreases contribution rates in a ratio where the City pays 63% and the employee pays 37% of the contribution rate as determined by the actuarial valuation. The Plan requires notice to the City of the contribution rates and provides procedures by which the City may review and challenge those rates; codifying the Board's policies and procedures relating to the Plan's actuarial process and the City's participation in the selection of an actuarial firm to perform a peer review/audit; increasing the Board from five members to seven by adding another employee-elected representative and another council-appointed representative effective March 1, 2005; increasing from three to four the number of Board members required to constitute a quorum; increasing the terms of the employee-elected representatives from two to three years; requiring Council approval before the Board may grant temporary or permanent discretionary adjustments to retirement benefits over and above the regular cost-of-living increases; correcting section references to the term “qualified recipient”; and authorizing either the Council or the Board to propose amendments to Chapter 40A, subject to approval by the Council, and the voters of the City.

Based on a Plan amendment passed by the voters of the City of Dallas in November 2016, a new tier of benefits was added to the Plan (Tier B), effective January 1, 2017. Benefits provided to each tier of membership are outlined below.

The Plan may be terminated only by ordinance adopted by the City Council and approved by a majority of the voters of the City voting in a general or special election. The Plan does not address allocation of the net position in the event of termination.

c) Pension Benefits

Tier A

Members of the Plan hired before January 1, 2017, are entitled to pension benefits equal to 2.75% of the average monthly earnings for each year of credited service. Average monthly earnings are based on the most beneficial to the member and are determined based on the member’s earnings for the highest three calendars years, last 6,240 hours of credited service, or the length of credited service if less than three years. Normal retirement age is 55 if credited service began before May 9, 1972 or age 60.

Tier A members are also eligible to retire at age 50 if the sum of the member’s age and credited service is equal to or greater than 78. Members who have completed 30 years of credited service may alternatively elect retirement before age 50; however, the pension benefits will be actuarially reduced based on the member’s age at retirement.

Tier B

Members of the Plan hired on or after January 1, 2017, are entitled to pension benefits equal to 2.5% of the average monthly earnings of the member for each year of credited service. Average monthly earnings are based on the most beneficial to the member and are determined based on the member’s earnings for the five highest calendar years, last 10,400 hours of credited service, or the length of credited service if less than five years. Normal retirement age is 65 with five years of credited service.

Tier B members who have completed 40 years of credited service may elect retirement at any age and are entitled to full pension benefits. Members who elect retirement before age 65 are entitled to an actuarially reduced pension benefit depending upon the age of the member. Active members may also elect to retire with actuarially reduced benefit once a combination of their age and years of credited service equal at least 80.

d) Cost of Living Adjustments

Cost of living adjustments for retirees are made each year on the first of January by adjusting the pension base by the percentage change of the Consumer Price Index (“CPI”), not to exceed 5% for

Tier A and 3% for Tier B members. The cost-of-living adjustment effective January 2023 was 5.00% for Tier A members and 3% for Tier B members.

e) Disability and Death Benefits

Members who become totally and permanently disabled may qualify for a service-connected disability with no minimum service requirement, or a non-service connected disability with five or more years of credited service. Non-service connected benefits are based on actual credited service or a minimum of 10 years. Service-connected benefits are equal to normal retirement benefits or a minimum of $1,000.

Upon the death of an active married member with less than 15 years of service, the joint and one-half survivor option is the automatic death benefit.

If an active married member has at least 15 years of service and is eligible to retire or has reached normal retirement age, the member may elect the joint and full survivor option. Under this option, the member receives a reduced base pension payment which is actuarially computed based on the member's age, average monthly earnings, years of credited service at retirement, and the relative age of the spouse. Upon the death of the member, this option pays the full amount of the member's pension payment to the surviving spouse for life.

Upon the death of a member before retirement, death benefits equal to the normal retirement benefit will be paid to a qualified recipient: surviving spouse, minor child under age 18, a disabled child who became disabled before age 18, a dependent parent, or a parent over age 65. Death benefits vary depending on the beneficiary. The surviving spouse, the disabled child, or the dependent parent will receive a lifetime benefit unless the ten-year option is taken. The minor child under age 18 will receive the normal retirement benefit for ten years or until reaching age 18. If the member has less than two years of credited service, the member's contributions will be refunded.

Upon the death of a retired member, a death benefit is paid in accordance with the option selected by the member at retirement. If there are no qualified recipients at the time of death and benefits have not been paid for ten years, death benefits are paid to the designee (an estate, a person or an entity) named by the member. The designee will receive a lump-sum payment based on ten years of benefit payments when the member's death occurs before retirement. If death occurs after retirement, the designee will receive a commuted lump-sum payment representing the balance of a guaranteed ten-year period starting from the date of retirement.

If a member does not have an eligible beneficiary, death benefits will be paid to the designee or member's estate in one commuted value payment. Benefit payments will vary depending on whether death occurred before or after retirement. Upon the death of a member before retirement, the designee or member's estate will receive a lump-sum payment based on ten years of benefit payments. Upon the death of a retired member, the designee or estate will receive a commuted value lump-sum payment representing the balance of a guaranteed ten-year period starting from the date of retirement.

f) Contributions

If employment ends before attaining five years of service and before attaining eligibility for retirement, the member's contributions will be refunded upon written request to the Plan.

If a member's employment is terminated after five years of service, the member may elect a refund of contributions upon a written request, or the member may elect to receive pension benefits at normal retirement age equal to the amount accrued to the date of termination.

Based on the authorization in the Plan, the annual actuarial valuation will establish any new contribution rates for employees and the City. The new rates, which became effective October 1, 2023, are 13.32% for employees and a combined rate of 22.68% of pay for the City. The City's 22.68% is divided into 14.46% to the Plan and 8.22% for debt service payments on the pension obligation bonds. The former rates, effective October 1, 2022, were 13.32% of pay for employees and a combined rate of 22.68% of pay for the City.

The percent contributed may vary from the legally required rate as the annual required contribution is based upon covered payroll as of the actuarial valuation date, December 31, whereas contributions are calculated and paid based upon actual payrolls throughout the year. Certain factors, such as changes in benefit provisions, the size or composition of the population covered by the Plan or the actuarial assumptions used, may significantly affect the identification of trends in the amounts reported in the Schedule of Net Pension Liability and Schedule of Changes in Net Pension Liability located in the Required Supplementary Information section.

2) Summary of Significant Accounting Policies

a) Basis of Accounting

The accompanying financial statements are prepared on the economic resources measurement focus and accrual basis of accounting. Accordingly, interest earned but not received and dividends declared but not received as of the Plan's fiscal year end are recorded as accrued interest and dividends receivable, respectively. Contributions owed but not received as of the Plan's fiscal year end are recorded as contributions receivable. Benefits and refunds are recorded when paid. In addition, unsettled investment purchases and sales are accrued.

b) Administrative Expenses

Administrative expenses are paid from the Plan's contributions. The contribution rates calculated by the actuary take into consideration the expected administrative expenses.

c) Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities at the date of financial statements and the reported amount of revenues and expenses during the reporting period. Actual results could differ from those estimates.

d) Investments and Investment Income

The Plan's investment policy requires that investments comply at all times with applicable local, state and federal regulations. The Plan's investment policy is based upon an asset allocation study that considers the current and expected condition of the Plan, the expected long-term capital market outlook and the Plan's risk tolerance. Unless specifically permitted in the investment manager guidelines or other governing document, the investment policy prohibits the purchase of non-negotiable securities, short sales, selling on margin, puts, calls, straddles, options, or "letter" (restricted) stock. Also, unless specifically authorized in a manager's individual guidelines, the investment policy prohibits the use of derivatives (See derivatives disclosure in footnote 3).

Marketable Securities are valued at fair value based on quoted market prices, where available. Purchases and sales of securities and any resulting gain or loss are recorded on a trade-date basis. Net appreciation/(depreciation) include the Plan's gains and losses on investments bought and sold as well as held during the year. In May 2023, the Plan modified the asset allocation. The Plan's asset allocation is shown in the following table.

SUMMARY OF ASSET ALLOCATION TARGETS AND RANGES

	Target	Minimum	Maximum
Equity			
Domestic Equity	12.00%	10.00%	14.00%
International Equity	11.50%	9.50%	13.50%
Global Equity	5.00%	3.00%	7.00%
Global Low Volatility Equity	10.00%	8.00%	12.00%
Private Equity	10.00%	5.00%	15.00%
Total Equity	**48.50%**	**46.50%**	**50.50%**
Fixed Income			
Core Fixed Income	17.50%	15.50%	19.50%
High Yield	10.00%	8.00%	12.00%
Credit Opportunities	4.00%	2.00%	6.00%
Private Credit	2.50%	0.00%	5.00%
Total Fixed Income	**34.00%**	**32.00%**	**36.00%**
Real Assets			
Real Estate Investment Trusts	2.50%	0.50%	4.50%
Global Listed Infrastructure	5.00%	3.00%	7.00%
Private Real Estate	7.50%	2.50%	12.50%
Total Real Assets	**15.00%**	**13.00%**	**17.00%**
Diversifying Strategies			
Marketable Alternatives	2.50%	0.50%	4.50%
Total Diversifying Strategies	**2.50%**	**0.50%**	**4.50%**
TOTAL PORTFOLIO	**100.00%**		

e) Private Equity

To enhance the potential for earning higher rates of return relative to its other asset classes and to provide for broader portfolio diversification, the Plan allocates 10.00% of its total Plan portfolio to Private Equity. Recognizing that Private Equity investments have higher risk levels, this target of 10.00% is to be allocated within an acceptable range of 5.0% to 15.0% of private equity-oriented investments. Funding of committed capital in the Private Equity portfolio can occur over an extended time period and may take several years before the total allocation is fully invested. In order to reach the allocation target, a "committed" allocation up to 1.5 times the allocation is authorized. The Plan had three Private Equity managers at December 31, 2023.

Investments in these funds as a limited partner are carried at estimated fair value. Estimated fair values of investments in private limited partnerships are determined by the fund managers or general partner based on the latest investee information available, including audited financial statements and other similar data necessary to the valuation process. The Private Equity value at December 31, 2023 and December 31, 2022 were $372 million and $382 million, respectively.

f) Real Assets

The Plan is authorized to allocate 15% of its portfolio to Real Assets. The Plan has six managers that manage Real Assets for a total value of $340 million at December 31, 2023 and $346 million at December 31, 2022. The Plan invests in Heitman's core real estate fund, Invesco's core fund, Invesco II which manages 1900 McKinney, LLC, AEW Partners, Virtus Real Estate Capital III, L.P and Brasa Capital management. AEW Partners manages AEW Partners Real Estate Fund IX, L.P. and Pix Oakland Park Co-invest L.P. for the Plan.

Estimated fair values of investments are determined by the fund managers based on their best estimates using fair value estimation techniques substantiated, in part, by their audited financial statements and supported by the due diligence of the Plan investment staff.

g) Real Estate Investment Trust (REIT)

The Plan is authorized to allocate 2.5% of its portfolio to REITs. The plan has two managers within this category: Adelante and Center Square. Investments are listed at net asset value.

h) Foreign Currency Transactions

The Plan may enter into forward foreign currency exchange contracts for the purchase or sale of a specific foreign currency at a fixed price on a future date as a hedge against specific transactions or to position the portfolio to protect the Plan against adverse currency movements. Entering into these arrangements involves the risk of dealing with counterparties and their ability to meet the terms of the contracts. These contracts are valued at fair value at the financial statement date, and any realized and unrealized gains and losses are recorded when they are incurred.

Investments denominated in foreign currencies at December 31, 2023 and 2022 were converted to U.S. dollars at the foreign exchange rates quoted at December 31, 2023 and 2022. These foreign exchange gains and losses are included in net appreciation/(depreciation) in fair value of investments in the accompanying Statements of Changes in Fiduciary Net Position.

i) Securities Lending

The Board has authorized the Plan to enter into an agreement with The Northern Trust Company (“Northern Trust”) for the lending of certain of the Plan’s securities (the “Securities Lending Program” or “Program”) including, but not limited to, stocks and bonds to counterparty brokers and banks (“borrowers”) for a predetermined period of time and fee.

In 2009, the Board capped the securities lending exposure at $538.2 million.

j) Rate of Return

For the year ended December 31, 2023, the annual money-weighted rate of return on pension plan investment, net of investment fees, was 10.17%. The money-weighted rate of return expresses investment performance, net of investment expenses, adjusted for the changing amounts actually invested.

Schedule of Money-Weighted Investment Returns

For Year Ended December 31	Annual Investment Returns
2014	6.52%
2015	-1.92%
2016	8.88%
2017	13.08%
2018	-4.99%
2019	17.33%
2020	5.75%
2021	16.25%
2022	-8.23%
2023	10.17%

k) Capital Assets

Capital Assets, which include furniture, fixture, and software, are reported in the Plan’s Financial Statements. Capital Assets are defined by the Plan as assets with an initial, individual cost of more than $5,000 and an estimated useful life in excess of two years. As the Plan constructs or develops additional Capital Assets each period, they are capitalized and reported at historical cost. The reported value excludes normal maintenance and repairs which are essentially amounts spent in relation to capital assets that do not increase the capacity or efficiency of the item or increase its estimated useful life.

Furniture and fixtures are depreciated using the straight-line method over an estimated useful life of 5-20 years. Intangible Assets are depreciated using the straight-line method over an estimated useful life of 5-15 years. Construction in progress is not depreciated.

l) Leases

The Plan does not have any material noncancellable leases. The Plan recognizes a lease liability, reported with long-term debt, and a right-to-use lease asset (lease asset), reported with other capital assets, in the financial statements with an initial, individual value of $50,000 or more.

At the commencement of a lease, the Plan initially measures the lease liability at the present value of payments expected to be made during the lease term. Subsequently, the lease liability is reduced by the principal portion of lease payments made. The lease asset is initially measured as the initial amount of the lease liability, adjusted for lease payments made at or before the lease commencement date, plus certain initial direct costs. Subsequently, the lease asset is amortized on a straight-line basis over the shorter of the lease term or its useful life.

Key estimates and judgments related to leases include how the Plan determines (1) the discount rate it uses to discount the expected lease payments to present value, (2) lease term, and (3) lease payments.

- The Plan uses the interest rate charged by the lessor as the discount rate. When the interest rate charged by the lessor is not provided, the Plan generally uses its estimated incremental borrowing rate as the discount rate for leases.

- The lease term includes the non-cancellable period of the lease.

- Lease payments included in the measurement of the lease liability are composed of fixed payments, variable payments fixed in substance or that depend on an index or a rate, purchase option price that the Plan is reasonably certain to exercise, lease incentives receivable from the lessor, and any other payments that are reasonably certain of being required based on an assessment of all relevant factors.

It is the policy of the plan to monitor changes in circumstances that would require a remeasurement of its leases and will remeasure the lease assets and liability if certain changes occur that are expected to be significant.

m) Subscription-Based Information Technology Arrangements (SBITAs)

The Employees' Retirement Fund does not have any material noncancellable contracts with SBITA vendors for the right to use information technology (IT) software, alone or in combination with tangible capital assets (the underlying IT assets). The ERF recognizes a subscription liability, reported with long-term debt, and a right-to-use subscription asset (an intangible asset), reported with other capital assets, in the government-wide and proprietary fund financial statements. The ERF recognizes subscription liabilities with an initial, individual value of $300,000 or more.

At the commencement of an SBITA, the ERF initially measures the subscription liability at the present value of payments expected to be made during the subscription term. Subsequently, the subscription liability is reduced by the principal portion of SBITA payments made. The subscription asset is initially measured as the initial amount of the subscription liability, adjusted for SBITA payments made at or before the SBITA commencement date, plus certain initial implementation costs. Subsequently, the subscription asset is amortized on a straight-line basis over the shorter of the subscription term or the useful life of the underlying IT assets.

Key estimates and judgments related to SBITAs include how the ERF determines (1) the discount rate it uses to discount the expected subscription payments to present value, (2) subscription term, and (3) subscription payments.

- The ERF uses the interest rate charged by the SBITA vendor as the discount rate. When the interest rate charged by the SBITA vendor is not provided, the ERF generally uses its estimated incremental borrowing rate as the discount rate for SBITAs.
- The subscription term includes the noncancellable period of the SBITA.
- Subscription payments included in the measurement of the subscription liability are composed of fixed payments, variable payments fixed in substance or that depend on an index or a rate, termination penalties if the ERF is reasonably certain to exercise such options, subscription contract incentives receivable from the SBITA vendor, and any other payments that are reasonably certain of being required based on an assessment of all relevant factors.

The ERF monitors changes in circumstances that would require a remeasurement of its SBITAs and will remeasure the subscription asset and liability if certain changes occur that are expected to significantly affect the amount of the subscription liability.

3) Derivatives

Derivatives are generally defined as contracts whose values depend on, or are derived from, the value of an underlying asset, reference rate, or index. The Plan has classified the following as derivatives:

a) Currency Forward Contracts

A Currency Forward is a contractual agreement between two parties to pay or receive specific amounts of foreign currency at a future date in exchange for another currency at an agreed upon exchange rate. Forward commitments are not standardized and carry credit risk due to the possible nonperformance by one of the counterparties. The maximum potential loss is the aggregate face value in U.S. dollars at the time the contract was opened; however, the likelihood of such loss is remote. No such losses occurred during the fiscal years 2023 and 2022. Currency forwards are usually traded over the counter. These transactions are entered into in order to hedge risks from exposure to foreign currency rate fluctuation and to facilitate trade settlement of foreign security transactions. Currency Forwards carry market risk resulting from adverse fluctuations in foreign exchange rates. Recognition of realized gain or loss depends on whether the currency exchange rate has moved favorably or unfavorably to the contract holder upon termination of the contract. Prior to termination of the contract, the Plan records the unrealized currency translation gain or loss based on the applicable exchange rates.

The Plan recognized a net realized loss on Currency Forward Contracts of $2 million as of December 31, 2023, and a net realized gain of $141 thousand as of December 31, 2022. As of December 31, 2023, the Plan had a net unrealized loss on currency forward contracts of $746 thousand and a net unrealized loss of $1.09 million at December 31, 2022. These gains and losses are included in net appreciation/(depreciation) in fair value of investments in the accompanying Statements of Changes in Fiduciary Net Position.

Currency Forward Contracts outstanding at December 31, 2023 and 2022 were approximately $586 million and $279 million, respectively, with a fair value of $598 million and $283 million, respectively ($ in thousands):

Currency	2023 Currency Forward Contracts Outstanding	2022 Currency Forward Contracts Outstanding
Australian Dollar	$30,404	$21,040
Brazilian Real	2,518	3,694
Canadian Dollar	33,470	12,591
Chile Peso	2,452	1,903
Columbian Peso	1,694	1,482
Czech Koruna	2,338	994
Denmark Krone	823	216
Euro	55,529	26,728
Hong Kong Dollar	2,198	2,805
Hungary Forint	3,961	853
Indonesia-Rupiahs	452	947
Indian Rupee	4,768	4,219
Israel Shekel	196	24
Japanese Yen	31,266	5,935
Mexican Peso	10,051	2,161
New Zealand Dollar	11,555	5,804
Norwegian Krone	22,726	9,008
Peruvian Nuevo Sol	21	10
Philippine Peso	-	589
Qatari riyal	179	-
Poland Zloty	5,739	1,740
Saudi Riyal	1,622	1,528
Singapore Dollar	952	1,876
South Africa Rand	1,981	3,696
South Korea Won	155	1,621
Swedish Krona	8,791	5,120
Switzerland Franc	21,896	6,778
Thailand Baht	268	327
Taiwan New Dollar	3,153	380
UK Pound	25,608	7,209
US Dollar	299,216	147,692
Totals	$585,982	$278,970

b) Other Forward Contracts

Forward Contracts other than Currency Forward Contracts include rights and warrants and various other contractual agreements between two parties to buy or sell an asset at a specified price on a certain future date. Forward Contracts carry credit risk due to the possible nonperformance by one of the counterparties. The maximum potential loss is the aggregate face value in U.S. dollars at the time the contract was opened; however, the likelihood of such loss is remote. No such losses occurred during the fiscal years 2023 and 2022. Forward Contracts are usually traded over the counter. These transactions are entered into in order to hedge risks from exposure to fluctuations in prices in securities, commodities, or other financial instruments. Forward Contracts carry market risk resulting from adverse fluctuations in price. Recognition of realized gain or loss depends on whether the price of the asset has moved favorably or unfavorably to the contract holder upon termination of the contract. Prior to termination of the contract, the Plan records the unrealized gain or loss based on the applicable rates.

The Plan recognized a net realized gain on Other Forward Contracts of $160 thousand as of December 31, 2023. As of December 31, 2023, the Plan had a net unrealized gain on Forward Contracts of $326 thousand. The gains and losses are included in net appreciation/(depreciation) in fair value of investments in the accompanying Statements of Changes in Fiduciary Net Position.

c) Swaps

A Swap is an agreement between two or more parties to exchange a sequence of cash flows over a period of time in the future. No principal is exchanged at the beginning of the Swap. The cash flows that the counterparties exchange is tied to a "notional" amount. The agreements provide, at predetermined future dates, the Plan pays interest based upon a notional principal amount and receives a return based upon the underlying instrument. Notional amounts represent the volume of outstanding transactions and do not represent the potential gain or loss associated with market risk or credit risk of such instruments. Risk associated with Swaps includes adverse movements in the underlying instrument.

The Plan recognized a net realized gain on Swaps of $104 thousand. As of December 31, 2023, the Plan recognizes unrealized gain of $43 thousand on Swaps. The gains and losses are included in net appreciation/(depreciation) in fair value of investments in the accompanying Statements of Changes in Fiduciary Net Position.

d) Futures

Financial Futures are agreements to purchase or sell a specific amount of an asset at a specified delivery or maturity date for an agreed upon price. These derivative securities are used to improve yield, adjust the duration of the Fixed Income portfolio, circumvent changes in interest rates, or to replicate an index. Futures Contracts are standardized and traded on organized exchanges, thereby minimizing the Plan's risk. There were no outstanding Futures Contracts at December 31, 2023 and December 31, 2022.

The Plan recognized a net realized gain of $1.5 million on futures. The gain is included in net appreciation/(depreciation) in fair value of investments in the accompanying Statements of Changes in Fiduciary Net Position.

As of December 31, 2023, and 2022 open derivatives contracts values were as follows ($ in thousands):

	12/31/2023		12/31/2022	
Derivative Type	**Total Notional Value**	**Total Fair Value**	**Total Notional Value**	**Total Fair Value**
Forward Contracts	$585,982	($746)	$278,970	($1,088)
Other Forwards	92,794	326	29,629	(170)
Swap Agreements	-	43	-	31
Totals	$678,776	($377)	$308,599	($1,227)

4) Deposit and Investment Risk Disclosures

Deposits and investments of state and local governments are exposed to risks that have the potential to result in losses. The common deposit and investment risks include custodial credit risk, credit risk, concentration of credit risk, foreign currency risk and interest rate risk. The required disclosures related to these risks and the Plan's exposures to these risks are disclosed in the following sections.

a) Custodial Credit Risk

In the event of a failure of the counterparty, custodial credit risk is the risk that the Plan will not be able to recover the value of its investment or collateral securities that are in the possession of an outside party. The Plan's custodial credit risk policy is set forth in Chapter 40A of the Dallas City Code and in the master custody agreement which includes the Securities Lending Program. All investments are registered in the name of Employees' Retirement Fund of the City of Dallas or in the name of the Plan's custodian established through a master trust custodial agreement. The securities are held by the custodian in the name of the Plan.

As of December 31, 2023, the Plan had $2.7 million or 0.1% of its approximate $3.6 billion total investments (excluding short-term investments) exposed to custodial credit risk. The custodial credit risk exposure at December 31, 2022 was $5.7 million or 0.2% of total investments (excluding short-term investments) of approximately $3.4 billion. These exposures were uninsured and uncollateralized deposits held by custodian banks outside of the United States. The Plan has experienced no losses on these deposits during the year.

b) Concentration of Credit Risk

Concentration of credit risk is the risk of loss attributed to the magnitude of an investment in a single issuer. A concentration of investments in any one single issuer of debt securities presents a greater risk for loss in the event that the issuer fails on its obligations.

The Board has contracted with third party investment managers to manage the investment portfolio of the Plan, subject to the policies and guidelines established by the Board. The Plan's Concentration of Credit Risk Policy is communicated to individual managers in their guidelines through limitations or restrictions to securities, sectors, debt ratings, and other factors that may be applicable to a particular manager. As the Plan's custodian bank, Northern Trust has responsibility for the safekeeping of certain investments, handling of transactions based on the instructions of investment managers, and recordkeeping for the investment transactions.

The Plan had no investments that individually represent 5% or more of the net position available for Plan benefits at December 31, 2023.

c) Credit Risk

Credit Risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligations. Credit quality ratings for the Plan's investments in Fixed Income securities as of December 31,2023 and 2022 are included in the following schedule. Securities are rated using Standard and Poor's quality ratings as presented following in the rating scale.

The Plan's strategic Fixed Income Investment Policy allocates 34% of the total assets to Fixed Income. The Plan's Investment Policy provides for investment of up to 17.50% of the Fixed Income allocation in core fixed income, up to 10% of the Fixed Income allocation in High Yield (below Investment Grade) assets, up to 4% for Opportunistic Credit and up to 2.50% in Private Credit.

Long term bond ratings as of December 31, 2023 and 2022 are as follows ($ in thousands):

	2023		2022	
Quality Rating	Fair Value	Percentage of Bond Portfolio	Fair Value	Percentage of Bond Portfolio
AAA	$108,738	10.37%	$97,942	10.95%
AA+	19,402	1.85%	30,146	3.37%
AA	605	0.06%	605	.07%
AA-	47	0.00	104	.01%
A+	417	0.04%	552	.06%
A	828	0.08%	156	.02%
A-	17,137	1.63%	21,068	2.36%
BBB+	23,956	2.28%	21,338	2.39%
BBB	8,931	0.85%	4,456	0.50%
BBB-	15,259	1.49%	10,039	1.12%
BB+	14,160	1.35%	15,898	1.78%
BB	37,950	3.62%	24,667	2.76%
BB-	53,556	5.11%	44,380	4.96%
B+	51,370	4.90%	56,473	6.31%
B	50,844	4.85%	56,394	6.30%
B-	37,874	3.61%	32,068	3.58%
CC	988	0.09%	146	.02%
CCC+	12,170	1.16%	16,943	1.89%
CCC-	2,146	0.20%	-	-
CCC	5,672	0.54%	3,798	0.42%
D	913	0.09%	364	.04%
Not rated (NR)*	453,438	43.24%	369,741	41.33%
U.S. Government fixed income securities (NR)**	132,150	12.59%	87,319	9.76%
Total	$1,048,551	100%	$894,597	100%

* NR-Investments that are not rated.

**NR-U.S. Treasury Bonds and Notes are obligations of the U.S. government or explicitly guaranteed by the US. government and therefore are not considered to have a credit risk.

Foreign Currency Risk

Foreign Currency Risk is the risk that changes in exchange rates will adversely affect the fair value of an investment or deposit. The Plan's Foreign Currency Risk policy is communicated to those managers who are authorized to hedge currencies in their guidelines and sets specific parameters for each manager individually.

The Plan's investment policies limit the aggregate amount that can be invested in each class of investments. The Plan's General Investment Policy sets an allocation of 11.5% of assets to International Equity, 5.00% of assets to Global Equity and 10.00% to Global Low Volatility Equity.

The Plan's positions in International Equity securities, directly and through commingled funds, were 12.02% and 13.90% of invested assets at December 31, 2023 and 2022, respectively. The Plan's position in Global Equity securities was 5.11% and 6.27% of invested assets at December 31, 2023 and 2022, respectively. The Plan's position in Global Low Volatility Equity was 10.39% at December 31, 2023 and 13.52% at 2022. The Plan's positions in Global Fixed Income assets were 29.44% and 26.11% of invested assets at December 31, 2023 and 2022, respectively.

Non-US Dollar denominated investments at December 31, 2023 and 2022 were as follows ($ in thousands):

	2023			2022		
	U. S. Dollars Balance of Investments			U. S. Dollars Balance of Investments		
Currency	Equities	Fixed Income	Currency Forward Contracts	Equities	Fixed Income	Currency Forward Contracts
Australian Dollar	$20,644	-	$30,404	$24,498	$-	$21,040
Brazil Real	11,128	17	2,518	13,482	-	3,694
British Pound Sterling	61,609	466	25,608	65,609	981	7,209
Canadian Dollar	33,870		33,470	37,517	-	12,591
Chile Peso	34	-	2,452	16	-	1,903
Columbia Peso	-	-	1,694	-	-	1,482
Czech Republic-Koruna	-	-	2,338	-	-	994
Denmark Krone	9,243	-	823	7,178	-	216
Euro	139,783	5,958	55,529	122,281	3,027	26,728
Hong Kong Dollars	37,019	-	2,198	48,511	-	2,805
Hungary-Forint	106	-	3,961	279	-	853
Indian Rupee	18,269	958	4,768	14,882	-	4,219
Indonesia-Rupiahs	5,594	1,592	452	4,208	1,582	947
Israel Shekel	1,636	-	196	3,861	-	24
Japanese Yen	90,758	-	31,266	84,298	-	5,935
Malaysia Ringgit	2,078	-		1,514	-	-
Mexican Peso	5,376	6,155	10,051	6,688	4,882	2,161
New Zealand Dollar	1,365	-	11,555	2,339	-	5,804
Norwegian Krone	10,618	-	22,726	12,359	-	9,008
Peruvian Nuevo Sol	-	-	21	-	-	10
Offshore Chinese-Renminbi	6,898	-	-	8,399	-	-
Philippines-Pesos	1,338	-	-	1,238	-	589
Poland-Zloty	2,133	-	5,739	2,756	-	1,740
Qatar-Riyal	1,815	-	179	2,179	-	-
Saudi Riyal		-	1,622	-	-	1,528
Singapore Dollar	5,825	-	952	5,902	-	1,876
South Africa Rand	2,324	-	1,981	2,844	-	3,696
South Korea-Won	16,691	-	155	18,092	-	1,621
Swedish Krona	8,053	-	8,791	7,184	-	5,120
Swiss Franc	35,342	-	21,896	41,382	-	6,778
Taiwan New Dollar	9,819	-	3,153	6,579		380
Thailand Baht	5,725	-	268	7,975	-	327
Turkish Lira	763	-	-	838	-	-
United Arab-Dirham	228	-	-	237	-	-
Uruguay-New Peso	106	-	-	-	-	-
Total	$546,190	$15,146	$286,766	$555,125	$10,472	$131,278

d) Interest Rate Risk

Interest rate risk is the risk that future changes in prevailing market rates of interest will have an adverse effect on the fair value of debt investments. The fair value of securities with long terms to maturity may be highly sensitive to interest rate changes.

As of December 31, 2023, and 2022 the weighted-average maturity of the bonds by bond type are as follows ($ in thousands):

	2023			2022		
Bond Category	**Fair Value 12/31/2023**	**Weighted Average Maturity (years)**	**WAM Factor**	**Fair Value 12/31/2022**	**Weighted Average Maturity (years**	**WAM Factor**
Asset Backed Securities	$42,656	14.79	0.60	$31,624	14.08	0.50
Bank Loans	21,304	4.75	0.10	25,899	4.50	0.13
Commercial Mortgage-Backed	21,483	20.34	0.42	11,251	22.45	0.28
Corp Convertible Bonds	5,007	28.44	0.14	5,684	28.08	0.18
Corporate Bonds	608,396	10.30	5.98	551,965	10.63	6.56
Government Agencies	6,829	9.47	0.06	3,733	14.13	0.06
Government Bonds	161,687	15.29	2.36	124,325	15.67	2.18
Govt Commer Mtg Backed	1,227	28.32	0.03	672	41.15	0.03
Govt Mtg Backed	161,256	24.45	3.76	123,463	24.43	3.37
Index Linked Government Bonds	4,392	12.06	0.05	4,487	8.59	0.04
Municipal/ Provincial Bonds	1,176	9.64	0.01	1,286	8.94	0.01
Non-Government Backed CMOs	12,665	31.60	0.38	10,208	26.21	0.30
Unassigned	473	27.46	0.01	-	-	-
Total	**$1,048,551**			**$894,597**		
Portfolio weighted average maturity			**13.90**			**13.64**

Government Mortgage-Backed Securities are sensitive to changes in interest rates as their prepayments can vary significantly with interest rate changes. This change in prepayments will generally cause the duration, or Interest Rate Risk, of these securities to increase when interest rates rise and decrease when interest rates fall. These securities represent 16% and 14% of the total Fixed Income portfolio for 2023 and 2022 at year end. Their fair values at years ended 2023 and 2022 were $162,483 million and $124,135 million respectively. The Plan's Interest Rate Risk policy is communicated to the Fixed Income managers through the Fixed Income Asset Policy and each manager's guidelines.

Appreciation or (Depreciation) of Investments

In 2023 and 2022, the Plan's investments, including investments bought, sold, and held during the year, appreciated (depreciated) in value as follows ($ in thousands):

	2023	2022
Investments, at fair value:		
Commingled index funds	$18,930	$(95,055)
Domestic equities	166,378	(124,691)
United States and foreign government fixed income securities	(7,126)	(76,762)
Domestic corporate fixed income securities	51,210	(73,157)
International equities	38,150	(98,963)
Short-term investments	36	149
Currency contracts	(1,615)	(339)
	$265,963	$(468,818)
Investments, at estimated fair value:		
Real assets	(20,594)	15,611
Private equity	(19,863)	(11,683)
	$225,506	$(464,890)

5) Fair Value Measurement

The Plan’s investments are measured and categorized according to fair value hierarchy guidelines established by GAAP.

The definition of fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.

These guidelines recognize a three-tiered fair value hierarchy, as follows:

- *Level 1:* Quoted prices for identical investments in active markets.
- *Level 2:* Observable inputs other than quoted market prices in active market; and,
- *Level 3:* Significant unobservable inputs.

At December 31, 2023, the Plan had the following recurring fair value measurements ($ in thousands):

THE CITY OF DALLAS
Investments at Fair Value Measurement
As of December 31, 2023

	Total	Fair Value Measurements Using		
	12/31/2023	Level 1	Level 2	Level 3
Investments by Fair Value Level				
Cash and Short Term Investment:				
Short-Term Investment Fund	71,491	71,491	-	-
Total Cash and Short Term Investment	71,491	71,491	-	-
Fixed Income:				
Domestic Asset and Mortgage Backed Securities	71,789	-	71,789	-
Government and US Agency Obligations	316,367	-	316,367	-
Corporate and Taxable Municipal Bonds	541,785	-	541,785	-
Index Commingled	90,679	17,428	73,251	-
Total Fixed Income	1,020,620	17,428	1,003,192	-
Equity:				
Domestic Common and Preferred Stock	979,942	979,665	121	156
International Common and Preferred Stock	416,834	416,510	324	-
Total Equity	1,396,776	1,396,175	445	156
Total Investments by Fair Value Level	2,488,887	1,485,094	1,003,637	156
Investments Measured at Net Asset Value				
Investments Measured at Net Asset Value				
Commingled Funds:				
Corporate bonds	118,580			
Index Commingled-Corporate Bonds	25,961			
Domestic Equity and Collective Trust	281,190			
International Equity	7,006			
Total Commingled Funds	432,737			
Alternative Investments:				
Private Equity	371,556			
Real Estate	339,923			
Total Alternative Investments	711,479			
Total Investments Measured at Net Asset Value	1,144,216			

At December 31, 2022, the Plan had the following recurring fair value measurements ($ in thousands):

THE CITY OF DALLAS
Investments at Fair Value Measurement
As of December 31, 2022

	Total 12/31/2022	Fair Value Measurements Using Level 1	Level 2	Level 3
Investments by Fair Value Level				
Cash and Short Term Investment:				
Short-Term Investment Fund	$ 109,754	$ 109,754	$ -	$ -
Total Cash and Short Term Investment	$ 109,754	$ 109,754	$ -	$ -
Fixed Income:				
Domestic Asset and Mortgage Backed Securities	$ 77,797	$ -	$ 77,797	$ -
Government and US Agency Obligations	244,514	-	244,514	-
Corporate and Taxable Municipal Bonds	475,103	-	475,103	-
Index Commingled	11,968	11,931	37	-
Total Fixed Income	$ 809,382	$ 11,931	$ 797,451	$ -
Equity:				
Domestic Common and Preferred Stock	$ 1,006,555	$ 1,005,206	$ 1,123	$ 226
International Common and Preferred Stock	374,264	374,159	105	-
Total Equity	$ 1,380,819	$ 1,379,365	$ 1,228	$ 226
Total Investments by Fair Value Level	$ 2,299,955	$ 1,501,050	$ 798,679	$ 226
Investments Measured at Net Asset Value				
Commingled Funds:				
Corporate bonds	$ 97,071			
Mortgage Backed Securities	112			
Index Commingled-Corporate Bonds	81,114			
Domestic Equity and Collective Trust	321,054			
International Equity	9,054			
Total Commingled Funds	$ 508,405			
Alternative Investments:				
Private Equity	$ 381,814			
Real Estate	346,345			
Total Alternative Investments	$ 728,159			
Total Investments Measured at Net Asset Value	$ 1,236,564			

Private Placement Debt

Private Placement Debt was issued close to the financial statement date on December 31, 2022, and was therefore valued at Net Asset Value (NAV) for the financial statements then ended as determined by the principal amount of the debt.

Commingled Funds

Commingled funds are fund-structure investments reported by the fund managers at NAV per share.

Neuberger Berman, Northern Trust Asset Management S&P 500 Index, Northern Trust ACWI Index, Northern Trust Aggregate Bond Index and BlackRock do not have a redemption period notice requirement. They may be redeemed at any time by the Plan. Earnest Partners has a redemption period notice requirement of 5 days.

Real Estate

Real Estate investments are held either in separate accounts, as a limited partner, or in a joint venture. These investments are illiquid and resold at varying rates, with distributions received over the life of the investments. They are typically not redeemed, nor do they have set redemption schedules. Estimated fair values of investments are determined by the fund managers based on their best estimates using fair value estimation techniques substantiated, in part, by their audited financial statements and supported by the due diligence of the Plan.

The Plan invests in:

AEW partners
Brasa Capital Management
Heitman's core real estate fund
Invesco's core fund
Invesco II
Long Wharf Capital
Virtus Real Estate Cap

The redemption schedule for each Real Estate investment is as follows:

AEW Partners redemption is at the sole discretion of AEW's general partner; no limited partner of AEW has the right to cause a redemption.

Heitman's core real estate fund does not have a redemption period notice requirement. Heitman may be redeemed quarterly at any time by the Plan.

Invesco's core fund has a 45-day redemption period.

Invesco II manages 1900 McKinney, LLC. There is no redemption period.

Virtus Real Estate Cap's redemption is at the sole discretion of Virtus' general partner; no limited partner of Virtus has the right to cause a redemption**.**

Unfunded commitments at December 31, 2023 for real estate are as follows:
AEW Partners $17 million
Brasa Capital Management $8 million
Long Wharf Capital $17 million
Virtus Real Estate Cap $6 million

Private Equity

Private equity holdings include fund-structure investments with general partners. By their nature, these investments are illiquid and typically not resold or redeemed.

Private equity managers' expectations that the underlying assets of the funds will be liquidated in the future as follows:

Fairview Lone Star Fund: 12 years from subscription date with 3 one-year extensions.
GCM Grosvenor: 15th anniversary of subscription date with 3 one-year extensions.
Hamilton Lane: 10 -14 years after subscription date with 2 one-year extensions.

Upon initial investment with a general partner or in certain fund-structures, the Plan commits to a certain funding level for the duration of the contract. At will, the partners or fund managers may request that the Plan fund a portion of this amount. Such amounts remaining as of December 31, 2022, and 2021 for investments measured at NAV are disclosed as unfunded commitments.

Unfunded commitments at December 31, 2023 for private equity are as follows:
Fairview Lone Star Fund $46 million
GCM Grosvenor $59 million
Hamilton Lane $105

6) Securities Lending

During the year, Northern Trust lent, on behalf of the Plan, securities held by Northern Trust as Plan custodian and received cash, United States government securities, agency securities, and irrevocable bank letters of credit as collateral. Northern Trust did not have the ability to pledge or sell collateral securities absent a borrower default. Northern Trust's Core USA Collateral Section establishes requirements for participation, collateralization levels, cash and non-cash collateral guidelines, and investment guidelines for the collateral received from borrowers. Borrowers were required to put up collateral for each loan equal to: (i) in the case of loaned securities, the collateral for which is all denominated in the same currency as the loaned securities, 102% of the fair value of the loaned securities plus any accrued but unpaid distributions thereon, and (ii) in the case of loaned securities denominated in a different currency from the loaned securities, 105% of the fair value of the loaned securities plus any accrued but unpaid distributions thereon. Additionally, the guidelines set maturity/liquidity requirements for the collateral received from borrowers. The following table shows for open loans at December 31, 2023 and 2022, the type of collateral held, the fair value of the securities on loan, and the fair value of the collateral held ($ in thousands).

Type	Fair Value	12/31/2023 Collateral Fair Value	Collateral Percentage	Fair Value	12/31/2022 Collateral Fair Value	Collateral Percentage
Cash	$230,957	$237,524	103%	$333,251	$342,361	103%

The following represents the balances relating to the Securities Lending transactions as of December 31, 2023, and 2022 ($ in thousands):

	12/31/2023			12/31/2022		
Securities Lent	Underlying Securities	Securities Collateral Value	Cash Collateral Investment Value	Underlying Securities	Securities Collateral Value	Cash Collateral Investment Value
Lent for cash collateral:						
Domestic equities	$36,960		$38,125	$120,870	$-	$124,047
Domestic Agencies	157		162			
Domestic corporate fixed income	138,738		142,729	138,865	-	142,630
Global corporate fixed income	2,006		2,117	2,138	-	2,265
Global government fixed income	1,468		1,559	3,528	-	3,714
International equities	747		791	7,425	-	7,901
Global Agencies	226		234	360	-	380
US government fixed	50,655		51,807	60,065	-	61,424
Subtotal	$230,957		$237,524	$333,251	$	$342,361

Disclosure of Securities Lending income is shown gross with the associated reductions for investment expenses on the Statements of Changes in Fiduciary Net Position, and the cash collateral and associated securities lending payable is shown on the Statements of Fiduciary Net Position for December 31, 2023, and 2022. The net income from Securities Lending in 2023 was $1.27 million compared to $1.08 million in 2022.

7) Federal Income Tax Status

The Internal Revenue Service issued a determination letter dated August 15, 2016, stating that the Plan was designed in accordance with applicable Internal Revenue Code requirements as of that date. The Plan is currently designed and being operated in compliance with the applicable requirements of the Internal Revenue Code. Therefore, the Plan was qualified, and the related trust was tax-exempt as of the financial statement dates.

8) Capital Assets

Capital Assets activity for the years ended December 31, 2023, and 2022, was as follows ($ in thousands):

	Balance 12/31/2021	Increase	Decrease	Balance 12/31/2022	Increase	Decrease	Balance 12/31/2023
Capital asset not being depreciated/amortized							
Construction in Progress	$ -	-	-	$ -	223	(223)	$ -
Capital assets being depreciated/amortized							
intangible assets	8,158		-	8,158	223	-	8,381
Furniture, Fixture and Equipment	50	49	-	99	5	(5)	99
Less							
Accumulated amortization intangible Assets	(1,187)	(816)	-	(2,003)	(827)	-	(2,830)
Accumulated depreciation FF&E	$ (11)	$ (11)	$ -	$ (22)	$ (14)	$ -	$ (36)
Total capital asset being depreciated/amortized net of accumulated Depreciation/Amortization	$ 7,010	$ (778)	$ -	$ 6,232	$ (390)	$ -	$ 5,614
Total Capital Assets, net of Accumulated depreciation amortization	$ 7,010	$ (778)	$ -	$ 6,232	$ (390)	$ -	$ 5,614

Schedule of Net Pension Liability

a) The components of the Net Pension Liability of the City at December 31, 2023 and 2022 were as follows ($ in thousands).

Description	2023	2022
Total Pension Liability	$6,647,257	$6,502,684
Plan Fiduciary Net Position	3,649,102	3,516,280
Net Pension Liability	2,998,155	2,986,404
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	54.90%	54.07%

b) **Actuarial Methods and Assumptions**:

Valuation date	December 31, 2022, for most recent ADEC shown on Schedule of Contributions. December 31, 2023, for Net Pension Liability
Actuarial cost method	Entry Age Normal
Asset valuation method	5-year smoothed market
Amortization method	The ADEC is initially based on a 30-year open amortization period. As specified in City Ordinance No. 25695, the rate may not change from year-to-year if the calculated rate is 300 basis points higher or lower than the current rate.
Remaining Amortization Period	Not determined, see description of amortization method.
Investment rate of return	7.25%
Salary increases	3.00% to 8.25%, including inflation.
Inflation	2.50% per year
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition. Last updated for the December 31, 2019 valuation pursuant to an experience study of the 5-year period December 31, 2019.
Mortality	For Healthy Retirees: The gender-distinct 2019 Texas Municipal Retirees Mortality Tables are used for males and females respectively. The rates are projected from 2019 on a fully generational basis using Scale UMP. For Disabled Lives: The gender-distinct 2019 Texas Municipal Retirees Mortality Tables are used for males and females respectively, set forward 4 years for males and 3 years for females. The rates are projected from 2019 on a fully generational basis using Scale UMP. For Actives: The PubG-2010 Employee Mortality Table are used for males and females. The rates are projected from 2010 on a fully generational basis using Scale UMP.

Other Information

Notes: The assumptions described above were for the most recent ADEC shown in the Schedule of Contributions. The assumptions used in determining the Net Pension Liability as of December 31, 2023, were those used in the actuarial valuation as of December 31, 2023.

The long-term rate of return on pension plan investments was estimated using a building block methodology in which best-estimate ranges of expected future real rates of return are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real return rates by the target asset allocation percentage and by adding expected inflation.

The following table shows the best estimates of arithmetic real rates of return for each of the Plan's asset classes.

Asset Class	Long-Term Expected Real Rate of Return
Domestic Equity	5.00%
International Equity	6.00%
Global Equity	5.60%
Global Low Volatility Equity	6.21%
Fixed Income	4.75%
Opportunities Credit	7.70%
REITs	5.60%
Private Real Estate-Value Add	7.40%
Private Real Estate-Core	5.35%
Private Equity	8.65%
Global Listed Infrastructure	7.36%
Marketable Alternatives	6.47%
Cash	3.80%

c) A single discount rate of 5.54% was used to measure the total pension liability. This single discount rate was based on the expected rate of return on pension plan investments of 7.25% and the municipal bond rate of 3.77%. The projection of cash flows used to determine this single discount rate assumed that plan member contributions and employer contributions will be made at the projected future contribution rates assuming that the ERF annually earns 7.25% on its market value of assets and that the number of active members remains constant in the future. Based on these assumptions and the Plan's funding policy, the last year in the Single Discount Rate projection period for which projected benefit payments were fully funded was 2045, the resulting Single Discount Rate is 5.54%.

d) Below is a table providing the sensitivity of the net pension liability to changes in the discount rate. In particular, the table presents the Plan's net pension liability, if it were calculated using a single discount rate that is 1-percentage-point lower or 1-percentage-point higher than the single discount rate.

Sensitivity of the Net Pension Liability for FY2023
To the Single Discount Rate Assumption
($000)

1% Decrease	Current Single Discount Rate	1% Increase
4.54%	5.54%	6.54%
$3,875,545	$2,998,155	$2,273,343

Sensitivity of the Net Pension Liability for FY2022
To the Single Discount Rate Assumption
($000)

1% Decrease	Current Single Discount Rate	1% Increase
4.41%	5.41%	6.41%
$3,859,650	$2,986,404	$2,266,091

11. Implementation of New Accounting Standards

GASB Statement No. 92, Omnibus 2020 (GASB 92), enhances comparability in accounting and financial reporting by addressing practice issues that have been identified during implementation and application of certain GASB pronouncements. The requirements for parts of this statement were originally effective for reporting periods beginning after June 15, 2020; however, issuance of GASB Statement No. 95, Postponement of the Effective Dates of Certain Authoritative Guidance (GASB 95), extended the effective date of GASB 92 to reporting periods beginning after June 15, 2021, with earlier application encouraged. GASB 92 was implemented in the Plan's fiscal year 2022 financial statements with no impact to amounts previously reported.

REQUIRED SUPPLEMENTARY INFORMATION
(Unaudited)

Schedule of Changes in Net Pension Liability and Related Ratios

($ in thousands)

FY ended December 31,	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Total Pension Liability										
Service Cost	152,774	$94,476	$141,653	$118,452	$124.289	$84,843	$81,178	$133,457	$78,020	$62,065
Interest on the Total Pension Liability	346,704	360,815	322,901	330,348	325,767	332,011	325,620	305,826	313,847	290,948
Difference between Expected and Actual Experience	89,578	56,503	30,791	(82,641)	(7,819)	4,793	(59,066)	(38,327)	(26,829)	(21,967)
Assumption Changes	(103,487)	1,226,214	(1,303,800)	479,292	(43,032)	1,020,969	-	(1,227,079)	1,238,431	292,137
Benefit Payments	(328,296)	(317,528)	(296,586)	(287,465)	(278,007)	(263,981)	(253,534)	(243,775)	(235,106)	(225,614)
Refunds	(12,700)	(12,158)	(10,452)	(6,857)	(10,436)	(8,515)	(8,156)	(5,864)	(4,854)	(4,629)
Net Change in Total Pension Liability	**144,573**	**1,408,322**	**(1,115,493)**	**551,129**	**110,762**	**1,170,121**	**86,042**	**(1,075,762)**	**1,363,509**	**392,940**
Total Pension Liability - Beginning	6,502,684	5,094,362	6,209,855	5,658,726	5,547,964	4,377,844	4,291,802	5,367,564	4,004,055	3,611,115
Total Pension Liability – Ending (a)	**$6,647,257**	**$6,502,684**	**$5,094,362**	**$6,209,855**	**$5,658,726**	**$5,547,964**	**$4,377,844**	**$4,291,802**	**$5,367,564**	**$4,004,055**
Plan Fiduciary Net Position										
Employer Contributions	$73,939	$67,288	$63,584	$61,615	$62,177	$60,924	$58,966	$56,130	$50,721	$45,833
Employee Contributions	70,025	63,427	59,256	58,358	58,314	56,772	55,175	53,436	50,742	46,536
Pension Plan Net Investment Income	339,879	(368,929)	578,010	229,105	550,942	(167,783)	413,5110	294,918	(53,344)	207,992
Benefit Payments	(328,296)	(317,528)	(296,587)	(287,465)	(278,007)	(263,981)	(253,534)	(243,775)	(235,106)	(225,614)
Refunds	(12,700)	(12,158)	(10,452)	(6,857)	(10,436)	(8,515)	(8,156)	(5,864)	(4,598)	(4,629)
Pension Plan Administrative Expense	(9,184)	(9,035)	(7,349)	(5,699)	(7,513)	(7,485)	(5,951)	(5,343)	(4,598)	(4,150)
Other	(841)	-	-	(392)	298	121	207	333	162	157
Net Change in Plan Fiduciary Position	**132,822**	**(576,935)**	**386,462**	**48,665**	**375,775**	**(329,947)**	**260,217**	**149,835**	**(196,277)**	**66,125**
Plan Fiduciary Net Position - Beginning	**3,516,280**	**4,093,215**	3,706,753	3,658,088	3,282,313	3,612,260	3,352,043	3,202,208	3,398,485	3,332,360
Plan Fiduciary Net Position – Ending (b)	**3,649,102**	**3,516,280**	**4,093,215**	**3,706,753**	**3,658,088**	**3,282,313**	**3,612,260**	**3,352,043**	**3,202,208**	**3,398,485**
Net Pension Liability – Ending (a)-(b)	**2,998,155**	**$2,986,404**	**$1,001,147**	**$2,503,102**	**$2,000,638**	**$2,265,651**	**$765,584**	**$939,759**	**$2,165,356**	**$605,570**
Plan Fiduciary Net Position as Percentage of Total Pension Liability	54.90%	54.07%	80.35%	56.69%	64.65%	59.16%	82.51%	78.10%	59.66%	84.68%
Covered Payroll	530,702	476,601	$442,863	$428,824	$433,890	$423,083	$410,913	$402,077	$383,669	$363,109
Net Pension Liability as a Percentage of Covered Payroll	564.94%	626.60%	226.06%	583.71%	461.09%	535.51%	186.31%	233.73%	564.38%	168.95%

Notes to Schedule:

The covered payroll is the sum of the active members' pay for valuation purposes as of the measurement date. An active member's valuation pay is the greater of their actual pay for the just completed calendar year or their current annual rate of pay.

SCHEDULE OF MONEY-WEIGHTED RATES OF RETURN

	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Rate of Return:	10.17%	-8.23%	16.25%	5.75%	17.33%	-4.99%	13.08%	8.88%	-1.92%	6.52%

Schedule of Contributions
Last 10 Fiscal Years
($ in thousands)

FY Ending December 31,	Actuarially Determined Contribution[1]	Actual Contributions[2]	Contribution Deficiency (Excess)	Covered Payroll	Actual Contribution as a % of Covered Payroll
2014	61,747	45,833	15,914	353,650	12.96%
2015	64,648	50,721	13,927	383,669	13.22%
2016	84,316	56,130	28,186	402,077	13.96%
2017	86,785	58,966	27,819	410,913	14.35%
2018	90,328	60,924	29,404	423,083	14.40%
2019	87,455	62,177	25,278	433,591	14.34%
2020	93,226	61,615	31,611	434,214	14.19%
2021	99,279	63,584	35,695	452,709	14.05%
2022	104,309	67,288	37,021	479,089	14.05%
2023	111,858	73,939	37,919	526,444	14.05%

Notes to Schedule:

1. The actuarially determined employer contribution (ADEC) shown is based on employer contribution rates using a 30-year open amortization period and actual payroll.
2. The actual City contribution rate is set by City Ordinance No. 25695. The actual rate does not change from year to year unless the actuarially determined rate is at least 300 basis points higher or lower than the current contribution rate. If the actuarially determined rate is more than 300 basis points different, then the contribution rate is adjusted to halfway between the current rate and the actuarially determined rate, but the rate does not increase or decrease by more than 10% in any year. Since the City's fiscal year is October 1 to September 30 and the Fund's fiscal year is the calendar year, the contribution amounts shown above are a blend of the City's two fiscal year rates that occur during the calendar year.
3. For this exhibit, the covered payroll is the estimated payroll for the calendar year on which contributions were made.

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MARKETS GROUP

INSTITUTIONAL RETREAT

JULY 15-17, 2024 | THE ST REGIS DEER VALLEY | PARK CITY

Dear Colleague,

The inaugural Institutional Retreat is the culmination of fifteen years of regionalized events across the US. The forum is designed to bring together 75 + of the top minds in institutional investment nationwide comprised of senior leadership such as chief investment officers and senior investment staff. This national event will take place over the course of two days, featuring engaging content, networking events, award ceremonies, high-level management discussions, and opportunities to engage with top allocators.

The forum's agenda content is developed through extensive local travel and feedback from eighteen regional events representing institutional asset owners across public and corporate pension plans, endowments, foundations, insurance companies, healthcare plans, and investment consultants. The Institutional Retreat is an educationally-focused, in-person event for investors, allocators and select asset managers.

We'd like to thank the program sponsors and contributing speakers for their support of this investor-centric educational initiative.

We are looking forward to hosting you at this special retreat!

Best,

William Coba
Head of Institutional Relations | North America
Markets Group

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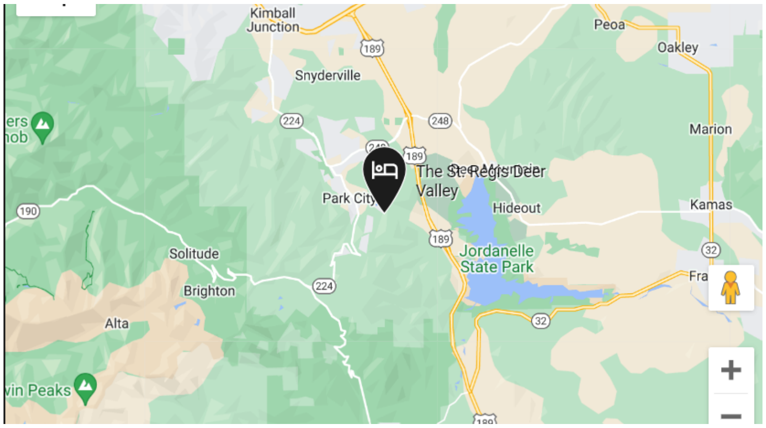


CONTACT INFORMATION

Allocator Attendance
+1 212-706-9762
ir@marketsgroup.org

Sponsorship Opportunities
+1-212-804-6220
sales@marketsgroup.org

Media Partnerships
+1 212-600-8631
marketing@marketsgroup.org

TITLE SPONSORS

SLC Management is a global institutional asset manager that offers institutional investors traditional, alternative and yield-oriented investment solutions across public and private fixed income markets, as well as global real estate equity and debt and infrastructure equity. We offer these fixed income and real assets solutions through five specialty managers: SLC Fixed Income, BGO, Crescent Capital Group, InfraRed Capital Partners and Advisors Asset Management. As of December 31, 2023, SLC Management has assets under management of US$283 billion and Advisors Asset Management represents an additional approximately US$36 billion in assets under administration.

CQS has been managing research-driven credit strategies for over 20 years, across multiple market cycles. Today, as a company of Manulife Investment Management, Manulife | CQS Investment Management offers investors a multi-sector alternative credit platform, focused on what our teams know best: global credit. The firm's core capabilities span corporate credit (loans and bonds), asset backed securities (ABS), regulatory capital, collateralized loan obligations (CLOs), and convertible bonds. Our ambition is to continue to help investors achieve their goals across market cycles by selecting good quality credits and generating income. The focus for Private Credit Canada will be our Regulatory Capital strategy where we have been managing capital since 2014.

PLATINUM SPONSORS

Founded in 1991, **Capital Fund Management** ("CFM") is one of the early pioneers of quantitative investing. At CFM, research and technology underpin our investment process. We manage approximately $14bn in multi-asset investment strategies that trade equities, fixed income, currencies and commodities across global developed and emerging markets. Our suite of alpha and liquid alternative funds aim to provide absolute returns that are uncorrelated with traditional asset classes.

Federated Hermes, Inc. is a global leader in world-class investment management with $758.0 billion in assets under management, as of December 31, 2023. Our products span equity, fixed-income, alternative/private markets, multi-asset and liquidity management strategies and a range of separately managed accounts, distributed through institutions and intermediaries worldwide.

Keystone is an SEC-registered investment advisory firm focusing on investments in private credit and real estate. Our team has invested over $4.3 billion of capital in 550+ transactions since formation in 2006. We manage multiple funds, separate accounts, and co-investment vehicles on behalf of investors, which include pension plans, family offices, wealth management firms, and private individuals.

Longview Partners is a specialist asset management boutique with one concentrated, capacity constrained global equity strategy. The firm was founded in 2001 and manages $18bn on behalf of Institutional clients in North America, the UK, Europe, Australia and Asia. The London based generalist investment team consistently implements the bottom up, disciplined, rigorous and objective investment process and has done since inception. Longview invests in Quality companies within a disciplined valuation framework.

Investors turn to **MetLife Investment Management** for our deep and long-established expertise in Public Fixed Income, Private Capital and Real Estate. Seeking to deliver strong, risk-adjusted returns, we create tailored portfolio solutions by listening first, strategizing second, and collaborating constantly.

Ninety One is an independent, active global asset manager dedicated to delivering compelling outcomes for its clients, managing more than USD$150 billion in assets (as of 30/09/2023). The firm was established in South Africa in 1991, as Investec Asset Management, and thirty years of organic growth later, demerged from Investec Group and became Ninety One. The firm aims to make a positive difference to people and the planet, offering a full range of investment strategies and solutions spanning from equity, fixed income, multi-asset, sustainable to alternatives led by specialist teams that invest across global, emerging and frontier markets.

PLATINUM SPONSORS

Founded in 1937, Baltimore-based **T. Rowe Price Group, Inc.** (troweprice.com) is a global investment management organization with US$1.35 trillion in assets under management as of September 30, 2023*. The organization provides a broad array of mutual funds, sub advisory services, and separate account management for individual and institutional investors, retirement plans, and financial intermediaries. The company also offers sophisticated investment planning and guidance tools. T. Rowe Price's disciplined, risk-aware investment approach focuses on diversification, style consistency, and fundamental research.

Wasatch Global Investors is a 100% employee-owned investment manager founded in 1975 and headquartered in Salt Lake City, Utah. Named after the nearby Wasatch Mountain Range, the firm brings unparalleled experience to U.S. and international micro-, small- and mid-cap investing with a culture that emphasizes collaboration, excellence and intellectual curiosity. Wasatch had $39.5 billion in assets under management as of December 31, 2021.

Vista Equity Partners is a U.S.-based investment firm with offices in Austin, Chicago, New York City, Oakland, and San Francisco with more than $50 billion in cumulative capital commitments. Vista exclusively invests in software, data, and technology-enabled organizations led by world-class management teams. As a value-added investor with a long-term perspective, Vista contributes professional expertise and multi-level support towards companies to realize their full potential. Vista's investment approach is anchored by a sizable long-term capital base, experience in structuring technology-oriented transactions, and proven management techniques that yield flexibility and opportunity.

Invesco is a leading, innovative ETF provider with 215+ US-listed, index-based, and actively managed strategies across equities, fixed income, and alternatives. Our US ETF platform has over $450 billion in assets as of Dec. 31, 2023, and we have a 25+ year ETF heritage dating back to the launch of Invesco QQQ in 1999. We partner closely with institutions to explore new possibilities with our ETFs, including accessing hard-to-reach markets, reducing operational burdens, and more.

Builders VC is Series A VC modernizing antiquated industries - agriculture, real assets, industrials, and health - overlooked by traditional VCs. These sectors are enjoying massive tailwinds driven by deglobalization, energy transition, labor dislocation, and AI. With deep domain expertise and networks across the physical economy, Builders is uniquely positioned to capitalize on a generational investment opportunity. Notable investments include Climate Corp (first agtech unicorn), Carbon Health, and 280 Earth (data center infrastructure).

GOLD SPONSORS

Adrian Lee & Partners is recognized as one of the world's leading providers of currency solutions for institutional investors. The firm manages in excess of $19 billion of assets on behalf of clients in North America, EMEA and APAC. It has local presence in London, Dublin, San Francisco and Sydney. The firm also offers a Global Macro Alpha Fund.

Anchorage combines fundamental research and active trading to invest across credit markets and throughout companies' capital structures in performing bank loans and bonds, credit derivatives, distressed debt, and special situations. Anchorage pursues what it believes are the best risk-adjusted opportunities, seeking to take advantage of perceived valuation inefficiencies by applying fundamental credit and default analysis to a variety of markets. Anchorage has a unified and integrated investment approach across research, trading, restructuring, and infrastructure functions.

We are a majority employee-owned investment management organization that specializes in equity and fixed income portfolio management for institutional and advisory clients worldwide. Our mission is to help our clients reach their long-term financial goals with active portfolio management using our research-driven investment framework.

GOLD SPONSORS

Founded in 1995, **Insight Partners** is a leading global venture capital and private equity firm, specializing in growth-driven investments in software companies. Renowned for its deep industry expertise, the firm empowers visionary entrepreneurs by providing capital, strategic guidance, and operational support to foster innovation and market expansion. With ~$80 billion in AUM and a consistent track record of successful exits, Insight provides access to next-generation technology without the volatility that comes from traditional venture capital.

Jane Street is a global quantitative trading firm and liquidity provider trading a wide range of financial products, including ETFs, equities, futures, commodities, options, bonds, and currencies. We have offices in New York, London, Hong Kong, and Amsterdam which allow us to make markets continually on more than 200 trading venues in over 40 countries around the world. We excel at providing liquidity in complex markets, especially during periods of dislocation and volatility. While our committed capital and firmwide risk book provides us with the capacity, our technology and flat structure fosters a culture of collaboration that facilitates these complex trades.

LSV Asset Management specializes in value equity management for institutional investors around the world. LSV currently manages approximately $112 billion in value equity portfolios for approximately 350 clients as of June 30th, 2021. Formed in 1994, LSV Asset Management (LSV) is a quantitative value equity manager providing active management for institutional and retail investors through the application of proprietary investment model.

In a world shaped by increasingly interconnected risks, **Moody's** data, insights, and innovative technologies help customers develop a holistic view of their world and uncover opportunities. With a rich history of experience in global markets and a diverse workforce in more than 40 countries, Moody's gives customers the comprehensive perspective needed to act with confidence and thrive.

Established in the U.S. in 1981, **ORIX USA** has grown organically and through acquisition into the investment and asset management firm we are today. With a specialization in private credit, real estate, and private equity solutions for middle-market focused borrowers and investors, we combine our robust balance sheet with funds from third-party investors, providing a strong alignment of interest. ORIX USA and its subsidiaries have approximately 1300 employees and $85 billion in assets.

With public and private market capabilities across all asset classes, **Principal Asset Management** SM and its specialist investment teams apply local insights with global perspectives to deliver compelling investment opportunities aligned with client objectives. Principal Asset Management is the global investment management business for Principal Financial Group® (Nasdaq: PFG), managing $506.9 billion in assets.

First Sentier Investors is a global asset management firm that provides clients with high-quality, long-term investment capabilities. We manage approximately USD 162.1 billion* in assets for our clients, which include institutional investors, pension funds, banks, asset managers, platforms, financial advisors and their clients. We offer extensive investment capabilities across a wide range of highly sought-after asset classes. Our experienced, independent teams operate across global and regional equities, cash and fixed income, infrastructure and property, and alternative credit. We are the home of investment teams AlbaCore Capital Group, FSSA Investment Managers, Igneo Infrastructure Partners, RQI Investors and Stewart Investors. All our investment teams – whether in-house or individually branded – operate with discrete investment autonomy, according to their investment philosophies. *Assets under management (AUM) includes all assets managed by FSI's investment teams and affiliates as at 31 Dec 2023.

GOLD SPONSORS

Insight Investment is a leading global investment manager, specializing in fixed income and custom solutions, with over $825bn in assets under management1. Our differentiated approach focuses on the key tenets of precision and outcome orientation, seeking to meet each client's unique investment objectives. As an independently run investment specialist firm that is part of BNY Mellon, we offer broad capabilities across pension and insurance solutions as well as fundamental, systematic and specialty fixed income.

For four decades, **State Street Global Advisors** has served the world's governments, institutions and financial advisors. With a rigorous, risk-aware approach built on research, analysis and market-tested experience, we build from a breadth of index and active strategies to create cost-effective solutions. And, as pioneers in index, ETF, and ESG investing, we are always inventing new ways to invest. As a result, we have become the world's fourth-largest asset manager* with US $3.48 trillion† under our care. *Pensions & Investments Research Center, as of 12/31/21. †This figure is presented as of December 31, 2022 and includes approximately $58.60 billion USD of assets with respect to SPDR products for which State Street Global Advisors Funds Distributors, LLC (SSGA FD) acts solely as the marketing agent. SSGA FD and State Street Global Advisors are affiliated. Please note all AUM is unaudited.

CONFIRMED SPEAKERS

James Stavridis, Retired Four-Star U.S. Naval Officer & 16th Supreme Allied Commander, **NATO**; Partner & Vice Chair, Global Affairs, **The Carlyle Group**

Chris Ailman, Chief Investment Officer, **CalSTRS**

Sam Masoudi, Chief Investment Officer, **Wyoming Retirement System**

Amy McGarrity, Chief Investment Officer, Chief Operating Officer**, Colorado Public Employees Retirement Association**

Jill Schurtz, Executive Director and Chief Investment Officer**, Minnesota State Board of Investment**

Cheryl Alston, Executive Director, Chief Investment Officer, **Dallas Employees' Retirement Fund**

Jeb Burns, Chief Investment Officer**, Michigan Employees Retirement System**

John Skjervem, Chief Investment Officer, **Utah Retirement Systems**

Alison Romano, Chief Executive Officer, Chief Investment Officer, **San Francisco Retirement System**

Matt Clark, Chief Investment Officer**, South Dakota Retirement System**

Tim Barrett, Chief Investment Officer**, Texas Tech University**

Peter Madsen, Chief Investment Officer, **Utah School and Institutional Trust Funds Office**

Robert "Vince" Smith, Chief Investment Officer**, New Mexico State Investment Council**

Farouki Majeed, Chief Investment Officer, **Ohio School Employees Retirement System**

Bryan Lewis, Chief Investment Officer, **United States Steel Corporation**

Casey Wolf, Chief Investment Officer**, Texas County & District Retirement System**

Bob Jacksha, Chief Investment Officer**, New Mexico Educational Retirement Board**

Ellen Hung, State Investment Officer, **Nebraska Investment Council**

Derek Bills, Chief Investment Officer, **International Monetary Fund**

Steve Neel, Deputy Chief Investment Officer**, New Mexico Educational Retirement Board**

DeAnne Mannion, Deputy Chief Investment Officer, **Ohio Public Employees Retirement System**

Tom Tull, Former Chief Investment Officer**, Employees Retirement System of Texas**

Ashbel Williams, Former Executive Director, Chief Investment Officer**, Florida State Board of Administration**

Bob Maynard, Former Chief Investment Officer**, Public Employee Retirement System of Idaho**

Elmer Huh, Chief Investment Officer, **M.J. Murdock Charitable Trust**

Anne-Marie Fink, Chief Investment Officer, Private Markets and Funds Alpha, **State of Wisconsin Investment Board**

Stephen McCourt, Managing Principal, Co-Chief Executive Officer**, Meketa Investment Group**

James Callahan, President, **Callan**

Sue Crotty, Chief Investment Officer, Senior Vice President, **Segal Marco Advisors**

Rachel Volynsky, Chief Investment Officer, **Mercer Canada**

Janet Becker-Wold, Senior Vice President & Manager**, Callan**

John L. Bowman, President**, CAIA Association**

Ralph Goldsticker, Chief Investment Officer, **Alan D. Biller & Associates**

Laura Wirick, Managing Principal, **Meketa Investment Group**

Ben Bronson, Senior Portfolio Advisor, **Aksia**

William Beck, Senior Vice President**, Wilshire**

Richard Pugmire, Partner, Alternatives, **Mercer**

Petya Nikolova, Deputy Chief Investment Officer**, New York City Employees Retirement System**

Bryan Moore, Deputy Chief Investment Officer**, South Carolina Retirement Systems**

Zhuoying "Joy" Xu, Vice President of Strategic Asset Allocation & Fixed Income, **Verizon Investment Management Corp.**

Kevin Moose, Head of Public Fixed Income, **The Police & Firemen's Retirement System of New Jersey**

Jenn Plett, Investment Officer, Portfolio Risk & Research*,* **Oregon State Treasury**

Cynthia Muller, Senior Director, Mission Driven Investments, **W.K. Kellogg Foundation**

Kyle Geordan, Investment Officer, Risk & Asset Allocation, **Fire & Police Pension Association of Colorado**

Kirk Sims, Managing Director, Head of Emerging Manager Program, **Teacher Retirement System of Texas**

Daniel Hudgin, Director, Pension Investments, **Emera**

Nathan Sax, Portfolio Manager, **Education Retirement Board of New Mexico**

Jessica Chumak, Investment Officer, Private Markets**, Los Angeles City Employees' Retirement System**

Robert G. Eccles, Saïd Business School, **University of Oxford**

AGENDA

PRE-EVENT DAY - Monday, July 15th, 2024

2:00 - 4:00 - St. Regis Deer Valley presents: TopGolf Suite Experience—*hosted by* **Nomura Capital Management**

4:30 Welcome Remarks
Organizer: **Christine Giordano,** Head of News and Institutional Content, **Markets Group**

4:35 - 5:05 - Welcome Fireside Chat: Have Politics Made ESG a Waste of Time?
The energy transition is an economic and environmental imperative, but are current divestment measures, net zero initiatives, and the emphasis on standards for reporting on carbon emissions political fig leaves? As ESG and related investment activities have become perhaps the most polarizing topic for institutional investors in the United States, this conversation seeks to illuminate the political charade as well as discuss constructive paths institutional investors can pursue in support of durable decarbonization efforts.
Keynote Speakers:
John Skjervem, Chief Investment Officer, **Utah Retirement Systems**
Robert G. Eccles, Saïd Business School, **University of Oxford**

5:05 -7:00 Registration & Welcome Cocktail Reception - *hosted by* **First Sentier Investors**

7:00 Pre-Event Dinner - Invitation Only

DAY 1 - Tuesday, July 16th, 2024

7:45 Registration Welcome Coffee:

Book Signing of 2034: A Novel of the Next World War & 2054: A Novel by Admiral James Stavridis

8:30 Breakfast Presentation: **Deciphering Macro Markets in the Age of AI**
How has big data been harnessed to generate insights in macro markets at the intersection of human judgement and machine intelligence? What are the current macroeconomic themes and risks and how can they be leveraged to develop investment strategies? Join CFM as they help us to understand the evolution of systematic market trading and how technology and data plays an important role in systematic macro investing.
Presenter:
Christian Dery, Head of Macro Strategy, **Capital Fund Management**

9:00 Host's Welcome Remarks
Organizer: **William Coba**, Head of Institutional Relations – North America, **Markets Group**
Chairperson: **Tim Boomer**, Senior Managing Director, Head of Client Solutions and U.S. Business Development, **SLC Management**

9:05 The Global Stage: A Geopolitical Update by Admiral James Stavridis, USN (Ret)
A rare opportunity to hear from one of the foremost experts on geopolitics and looming global events, Admiral James Stavridis is known for his actionable perspectives. He will share his tactical and strategic views from the front, having authored 13 books with deep geopolitical research, as head of NATO, and a vital leader during global operations. His most recent book, "2054," is about artificial intelligence and geopolitics. He is a retired 4-star officer in the U.S. Navy who led the NATO Alliance in global operations from 2009 to 2013, and a Supreme Allied Commander with responsibility for Afghanistan, Libya, the Balkans, Syria, counter piracy, and cyber security. He also served as Commander of U.S. Southern Command, with responsibility for all military operations in Latin America from 2006-2009. Earlier in his military career he commanded the top ship in the Atlantic Fleet, winning the Battenberg Cup, as well as a squadron of destroyers and a carrier strike group – all in combat. Admiral Stavridis earned a PhD in international relations and His recent novel "2034: A Novel of the Next World War," was a New York Times bestseller. Admiral Stavridis is currently partner and Vice Chair, Global Affairs of The Carlyle Group and Chair of the Board of Trustees of the Rockefeller Foundation. Admiral Stavridis has earned more than 50 medals, including 28 from foreign nations during his 37-year military career.
Presenter:
James Stavridis, Retired Four-Star U.S. Naval Officer & 16th Supreme Allied Commander, **NATO**; Partner & Vice Chair, Global Affairs, **The Carlyle Group**

AGENDA

9:45 Panel Discussion: Opening Bell: The Next 12 Months at a Glance
Top thinkers and chief investment officers share their investment views about current US asset allocation strategies and their projected macroeconomic outlook for the next 12 months. This panel will aim to answer the following questions including but not limited to:
• How do our panelists account for these and other factors that could affect their global investment and business decisions related to operating an institutional organization?
• With inflation rates approaching record highs, how will the markets react, and what sort of fiscal policy will be on the horizon?
• Is there a place for thematic investing and how are behavioral and social finance considered?
Moderator:
Peter Madsen, Director, Chief Investment Officer**, Utah School and Institutional Trust Funds Office**
Panelists:
Bob Jacksha, Chief Investment Officer, **New Mexico Educational Retirement Board**
Kirk Sims, Managing Director, Head of Emerging Manager Program, **Teacher Retirement System of Texas**
Paisley Nardini, CFA, CAIA, Client Portfolio Manager, **Invesco QQQ**

10:20 Keynote Interview: Fixed Income: Reassessing the Asset Class in Uncertain Times
Inflationary pressures are causing investors to consider how they are allocating to fixed income. Are investors looking at riskier areas of the asset class? Where is that risk being compensated? What are the dominant forces driving yield in the sub asset classes? This panel will examine new and sometimes unexpected ways of viewing the traditional asset class.
Interviewer:
Farouki Majeed, Chief Investment Officer, **Ohio School Employees Retirement System**
Interviewee:
Richard Familetti, Chief Investment Officer, U.S. Total Return Fixed Income, **SLC Management**

10:50 Panel Discussion: Alternatives – Time to Shine
In 2023, interest rates stayed high as central banks around the work continued to fight inflation. Which alternatives offer the most meaningful diversification and how can the best managers be sourced?
This panel will aim to answer several key questions including:
• How are institutional investors eyeing expected returns across the alternative's spectrum?
• Which alternatives will generate meaningful risk-adjusted returns?
• How are investors instilling crisis management and downside risk?
Moderator:
Steve Neel, Deputy Chief Investment Officer**, New Mexico Educational Retirement Board**
Panelists:
Anne-Marie Fink, Chief Investment Officer, Private Markets and Funds Alpha, **State of Wisconsin Investment Board**
Petya Nikolova, Deputy Chief Investment Officer, **New York City Employees Retirement System**
John Earl, Managing Partner, Co-Founder, **Keystone National Group**

11:25 Morning Networking Break – hosted by **LSV Asset Management**

11:55 The Equity Equation: Evaluating Impact on Portfolios
The equities market have bounced back from the pandemic's crash. This panel will endeavor to answer how institutional allocators can build an all-weather equity portfolio and answer the following questions:
• Will macro conditions continue to drive Value vs Growth?
• Active vs. passive management?
• Will large cap hold up better than small cap? Does it depend more on economic conditions or starting valuation?
• Does US exceptionalism still apply or are international stocks (and currencies) too cheap to ignore?
Moderator:
Sue Crotty, Chief Investment Officer, Senior Vice President, **Segal Marco Advisors**
Panelists:
Cheryl Alston, Executive Director, Chief Investment Officer**, Dallas Employees' Retirement Fund**
Cynthia Muller, Senior Director, Mission Driven Investments, **W.K. Kellogg Foundation**
Elias Erickson, Portfolio Manager**, Ninety One**

AGENDA

12:30 Panel Discussion: Institutional Views on Private Credit's Growing Portfolio Utility & Importance
An allocation to credit can offer higher risk adjusted returns, boost diversification, and provide new income streams, which is why it's so important for investors to understand this rich opportunity set. Having outperformed public markets in recent years, how will credit markets fare in a low-yield environment where uncertainty and inflationary pressures cloud the economic outlook? How are investors valuing opportunities across the credit spectrum? Where are they looking for and finding alpha?
Moderator:
Tim Barrett, Chief Investment Officer, **Texas Tech University**
Panelists:
Zhuoying "Joy" Xu, Vice President of Strategic Asset Allocation & Fixed Income, **Verizon Investment Management Corp.**
Casey Wolf, Chief Investment Officer, **Texas County & District Retirement System**
Gregory Galligan, Senior Managing Director**, Vista Equity Partners**

1:05 Day 1: Networking Luncheon & Roundtable Discussions – *hosted by* **ORIX**
This session is aimed at providing all event attendees with the ability to join in genuine knowledge exchange and discussion in a small group and informal setting. Each roundtable will have a host and will cover one of the following key areas:
Table 1: **Fixed Income: Reassessing the Asset Class in Uncertain Times** – *hosted by* **SLC Management**
Table 3: **Deciphering Macro Markets in the Age of AI** – *hosted by* **Capital Fund Management**
Table 4: **Opening Bell: The Next 12 Months at a Glance**—*hosted by* **Invesco QQQ**
Table 5: **Alternatives – Time to Shine**—*hosted by* **Keystone National Group**
Table 6: **Deep Sector Expertise Within Private Credit: The Institutional View** – *hosted by* **Vista Equity Partners**
Table 7: **The Equity Equation: Evaluating Impact on Portfolios** – *hosted by* **Ninety One**
Table 8: **Fixed Income: Trends Shaping Today's Landscape** - *hosted by* **T.Rowe Price**
Table 9: **Emerging Markets: An Overview of Equities**– *hosted by* **Wasatch Global Investors**
Table 10: **Emerging Markets: An Overview of Debt** – *hosted by* **Metlife Investment Management**
Table 11: **The Accelerating Pace of Change and Evolving Characteristics that Define Quality** – *hosted by* **Longview Partners**
Table 12: **Portfolio Construction - Opportunities Within the Current Markets** – *hosted by* **Federated Hermes**

2:05 Panel Discussion: Portfolio Construction - Opportunities Within the Current Markets
In this unique economic environment, the status quo is continually being tested and challenged. Markets, the denominator effect, geopolitics, DEI, ESG and revised globalization have all created unique investment opportunities for investors who go beyond the traditional 60/40 portfolio construct. What will a "diversified" portfolio look like in 2024 going into 2025? And what will it look like over the next 5-10 years? How are investors approaching portfolio construction and allocation decisions in the current landscape? Where are they seeing opportunities across asset classes and sectors, and how is this impacting what are they looking at when working with new and existing managers?
Moderator:
Janet Becker-Wold, Senior Vice President & Manager, **Callan**
Panelists:
Bryan Moore, Deputy Chief Investment Officer, **South Carolina Retirement Systems**
Derek Bills, Chief Investment Officer**, International Monetary Fund**
Ellen Hung, State Investment Officer, **Nebraska Investment Council**
Scott Conlon, Vice President, Institutional Client Portfolio Manager, **Federated Hermes**

2:40 Panel Discussion: Fixed Income: Trends Shaping Today's Landscape
Inflation is at its highest rate in four decades. The Federal Reserve may continue to raise rates. Given this precarious moment in time, investors are left wondering if the 60/40 portfolio is still viable, considering correlations between stocks and bonds. This panel will aim to answer such key questions as:
- How much higher will the Fed raise rates and how quickly and could they cut rates in 2024?
- How quickly will the Fed reduce its balance sheet and for how long?
- How is liquidity in the bond market and what is the impact on fixed income portfolios?

Moderator:
James Callahan, President, **Callan**
Panelists:
Kevin Moose, Head of Public Fixed Income*,* **The Police & Firemen's Retirement System of New Jersey**
Zhuoying "Joy" Xu, Vice President of Strategic Asset Allocation & Fixed Income, **Verizon Investment Management Corp.**
Saurabh Sud, Portfolio Manager, **T.Rowe Price**

AGENDA

3:15 Panel Discussion: Emerging Markets: An Overview of Equity and Debt
Few would argue with the attractiveness of emerging markets investments from economic growth, demographic and socio-economic standpoints. However, the volatility of emerging market stocks over the past two decades may have sparked questions regarding the perceived risks of this important asset class. The opportunity set and challenges seem to be ever-changing. What factors should institutional investors consider when debating whether to allocate to or diversify within the asset class?
Moderator:
Laura Wirick, Managing Principal**, Meketa Investment Group**
Panelists:
DeAnne Mannion, Deputy Chief Investment Officer**, Ohio Public Employees Retirement System**
Daniel Hudgin, Director, Pension Investments, **Emera**
Ajay Krishnan, CFA, Head of Emerging Markets**, Wasatch Global Investors**
Scott Moses, Head of Emerging Market Debt**, MetLife Investment Management**

3:50 Afternoon Networking Break – *hosted by* **LSV Asset Management**

4:10 Interview: The Accelerating Pace of Change and Evolving Characteristics that Define Quality
A discussion around the varying definitions of quality within active management, indexes, and factors. We will discuss whether quality is persistent and whether it matters how much you are willing to pay for quality.
Interviewer:
Ben Bronson, Senior Portfolio Advisor, **Aksia**
Interviewee:
Alexander Philipps, Chief Investment Officer, Partner, **Longview Partners**

4:40 Leadership Roundtable: Decision-Making in Disruptive Times
In the midst of all this operational, cultural, and technological change, businesses must make strategic decisions on how to run and steer their firms in the face of these challenges. Leading institutional investors shed light on the most pressing investment and management issues facing their organizations for example, how have global developments shifted priorities and what are reasonable expectations for investment returns this year? This panel will present an opportunity to hear best practices from private leadership peers and how they develop strategies for opportunities and challenges to come.
Moderator:
Stephen McCourt, Managing Principal, Co-Chief Executive Officer**, Meketa Investment Group**
Panelists:
Robert "Vince" Smith, Chief Investment Officer**, New Mexico State Investment Council**
Jill Schurtz, Executive Director and Chief Investment Officer*,* **Minnesota State Board of Investment**
Matt Clark, Chief Investment Officer*,* **South Dakota Retirement System**
Jim Kim, Managing Partner**, Builders VC**

5:15 Fireside Chat and Chief Investment Officer Hall of Fame Induction Ceremony
A special recognition celebration for chief investment officers of merit, gravitas, and past and present influence within our allocator community.
HOF Interviewer:
Christine Giordano, Head of Institutional Content and Editorial**, Markets Group**
HOF Recipient:
Chris Ailman, Chief Investment Officer, **CalSTRS**
HOF Presenters:
Amy McGarrity, Chief Investment Officer, Chief Operating Officer**, Colorado Public Employees Retirement Association**
John Skjervem, Chief Investment Officer**, Utah Retirement Systems**
Jeb Burns, Chief Investment Officer**, Michigan Employees Retirement System**
Matt Clark, Chief Investment Officer**, South Dakota Retirement System**

5:50 Host's Closing Remarks
Organizer: **William Coba**, Head of Institutional Relations – North America, **Markets Group**
Chairperson: **Tim Boomer,** Senior Managing Director, Head of Client Solutions and U.S. Business Development**, SLC Management**
5:55 Closing Cocktail Reception – hosted by **Jane Street**
6:55 Dinner – Invitation Only

AGENDA

DAY 2 - Wednesday, July 17th, 2024

8:00 Registration & Welcome Coffee

8:30 Breakfast Presentation: Artificial Intelligence: Navigating Opportunities and Challenges
This presentation will explore Artificial Intelligence as a next frontier of innovation and provide insights into how AI is poised to reshape the value chain across industries. We will also delve into how Insight as a growth software investor is navigating the Artificial Intelligence landscape from an investment perspective – taking a thoughtful and deliberate approach to sort through market hype and overexuberance to identify real opportunities for value creation.
Presenter:
Cian Cotter, Managing Director, **Insight Partners**

9:00 Welcome Remarks
Organizer: **William Coba**, Head of Institutional Relations – North America, **Markets Group**
Chairperson: **Lucy Alexander,** Head of US Institutional Distribution, **Manulife |CQS Investment Management**

9:05 Keynote Presentation: Does anyone out there have a crystal ball. What are the best opportunities in credit markets to protect investor capital from volatility and downside risk whilst offering attractive total return potential?
In recent years both policy makers and investors have found markets notoriously difficult to predict. This landscape may evolve but won't change as the baton is passed to new uncertainties, including rising corporate default risk, depletion of consumer balance sheet buffers, geopolitical risk and looming national elections. However, there are investment opportunities that investors can include in their asset allocation which offer opportunities to dampen volatility, provide downside protection and offer attractive total returns. Currently, parts of the structured credit markets offer attractive relative value, high stable income and low beta opportunities that have downside protection, but upside return convexity. Today we will discuss some of these opportunities and the ways in which they can be additive to your portfolio.
Presenter:
Jason Walker, Co-Chief Investment Officer, **Manulife |CQS Investment Management**

9:35 Panel Description: Evaluating Real Assets from Opportunistic to Niche Strategies
The broad spectrum of opportunities across real assets and its sub-asset classes offers a huge variety of risks and yield and return opportunities for institutional investors. Given the current economic backdrop, as well as the demographic, sociocultural, environmental, and technological shifts and developments that influence these asset classes in unique ways, this panel will explore potential challenges and opportunities across different strategies. Hear how investors are incorporating real assets, real estate, natural resources, and commodities such as gold into portfolios and making decisions on whether to access them via equity or debt.
Moderator:
John L. Bowman, President, **CAIA Association**
Panelist:
Elmer Huh, Chief Investment Officer, **M.J. Murdock Charitable Trust**
Jessica Chumak, Investment Officer, Private Markets**, Los Angeles City Employees' Retirement System**
Alex Mottershead, Portfolio Manager, Listed Infrastructure**, Principal Asset Management**

10:05 Panel Discussion: Differentiated High Yield
In the current interest rate environment, the leveraged credit markets present both risks and opportunities for investors seeking to build durable income solutions into their portfolios. The potential for greater single name credit dispersion in the high yield and leveraged loan markets can offer opportunities for skilled managers to generate excess return through actively managed portfolios in tradable credit.
Moderator:
William Beck, Senior Vice President**, Wilshire**
Panelists:
Nathan Sax, Portfolio Manager**, Education Retirement Board of New Mexico**
Yale Baron, Co-Chief Investment Officer, **Anchorage Capital Advisors**

AGENDA

10:35 Constellation Award Celebration
Markets Group's Constellation Award is reserved for the top talent and leadership on an investment team – the type of talent that can transform a crucial time in the fund's history to a positive experience for all involved. The top-notch talent at San Francisco Retirement System is deserving of recognition with a team "Constellation Award". Alison Romano, Chief Investment Officer of SFRS will discuss what has worked best in this current market, and how the team is approaching the future.
Host:
Christine Giordano, Head of News and Institutional Content, **Markets Group**
Award Presenter:
Alison Romano, Chief Executive Officer, Chief Investment Officer, **San Francisco Retirement System**

10:55 Morning Networking Break—*hosted by* **Moody's Analytics**

11:15 Panel Discussion: Institutional Uses of ETFs
Institutional investors use Exchange Traded Funds in a variety of different investment strategies. In fact, ETFs are among the fastest growing vehicles in institutional portfolios. This session will look at the most commonly used ETF strategies for institutional investors and how these valuable tools can support portfolio construction and asset allocation. ETFs will play an important role in portfolio strategies and solutions in the years to come. Gain perspective on common institutional ETF strategies, the growth of the global ETF landscape, and innovative ETF solutions.
Moderator:
Richard Pugmire, Partner, Alternatives, **Mercer**
Panelists:
Bryan Lewis, Chief Investment Officer**, United States Steel Corporation**
Bradley Kotler, Product Specialist**, State Street Global Advisors**

11:45 Panel Discussion: Managing Currency Risk in a Global Portfolio
International exposure in investment portfolios has significantly increased since 2000 and currency risk cannot be ignored as part of the investment decision process. This session will cover the different approaches to currency management that create improved risk and return outcomes for a global portfolio. It discusses the right balance between reducing risk on international investments and looking to add alpha with active currency management. It will outline the benefits of using a specialist currency manager compared to alternative options.
Moderator:
Ralph Goldsticker, Chief Investment Officer, **Alan D. Biller & Associates**
Panelists:
Kyle Geordan, Investment Officer, Risk & Asset Allocation**, Fire & Police Pension Association of Colorado**
Jenn Plett, Investment Officer, Portfolio Risk & Research, **Oregon State Treasury**
Philip Lawson, Head of Portfolio Management, **Adrian Lee & Partners**

12:15 Leadership Roundtable: Life after CIO – Master Class with Legends
This is a rare chance to hear from legends of the industry on what not to forget when creating effective teams, working with boards, creating intelligent succession plans, managing risks, choosing managers, diversifying portfolios, becoming board members, and enjoying the next chapter of their lives. This intimate discussion is meant to be fun while, perhaps, mentoring and answering crucial career questions about how they excelled and challenged the status quo in their former CIO roles and the new roles they will be playing in the future.
Moderator:
Christine Giordano, Head of News and Institutional Content**, Markets Group**
Panelists:
Bob Maynard, Former Chief Investment Officer**, Public Retirement System of Idaho**
Tom Tull, Former Chief Investment Officer**, Employees Retirement System of Texas**
Ashbel Williams, Former Executive Director, Chief Investment Officer**, Florida State Board of Administration**

AGENDA

12:55 Fireside Chat & Strategy Award Presentation w/ Sam Masoudi, Chief Investment Officer, Wyoming Retirement System
As investors attempt to navigate this new era, strategy becomes paramount. An effective strategy can become the foundation for negotiating towards a successful future. It can create a master plan for investment teams to follow.
Nominated and recognized by his CIO peers as one of the more thoughtful minds in the industry, Markets Group will recognize Sam Masoudi with a Strategy Award.
Interviewer:
Christine Giordano, Head of News and Institutional Content, **Markets Group**
Award Presenter:
Amy McGarrity, Chief Investment Officer, Chief Operating Officer, **Colorado Public Employees Retirement Association**
Award Recipient:
Sam Masoudi, Chief Investment Officer*,* **Wyoming Retirement System**

1:20 Day 2: Networking Luncheon & Roundtable Discussions—*hosted by* **Insight Investment**
This session is aimed at providing all event attendees with the ability to join in genuine knowledge exchange and discussion in a small group and informal setting. Each roundtable will have a host and will cover one of the following key areas:
Table 1: **Credit Trends** – *hosted by* **CQS**
Table 2: **Evaluating Real Assets from Opportunistic to Niche Strategies** – *hosted by* **Principal Asset Management**
Table 3: **Differentiated High Yield** – *hosted by* **Anchorage Capital Advisors**
Table 4: **Institutional Uses of ETFs** – *hosted by* **State Street Global Advisors SPDR**
Table 5: **Managing Currency Risk in a Global Portfolio** – *hosted by* ***Adrian*** **Lee & Partners**
Table 6:
Table 7:
Table 8:
Table 9:
Table 10:

2:20 Host's Closing Remarks
Organizer: **William Coba**, Head of Institutional Relations – North America, **Markets Group**
Chairperson: **Lucy Alexander,** Head of US Institutional Distribution, **Manulife |CQS Investment Management**

4:00—6:00 - Chief Investment Officer Cocktail Reception: Champagne Toast — (Invitation Only)

SEM CONSORTIUM

Small, Emerging, and Diverse Managers Conference

GCM GROSVENOR

Save the Date - October 22-24, 2024!

Registration Opens Soon

Save the date for **SEM Consortium**, GCM Grosvenor's premier conference dedicated to the small, emerging, and diverse manager community. Join us as we continue our mission of fostering collaboration and facilitating meaningful connections between institutional investors, consultants, and small, emerging, and diverse managers.

LEARN MORE

2024 PRICING

Mark your calendars!

LP/Institutional Investor Registration will open the week of May 20.
Followed by General Registration opening the week of June 24.

Let's come together to network, share knowledge, and advance our shared goals of inclusion and growth. Read more about the first combined event of 2023 here.

Questions? Contact the GCM Grosvenor Events Team
events@gcmlp.com.

GCM GROSVENOR'S COMMITMENT TO SMALL, EMERGING, AND DIVERSE MANAGERS

GCM Grosvenor promotes equal access to capital in alternatives by driving increased investment with small, emerging, and diverse managers. We have over $25 billion invested and committed to these managers across private equity, infrastructure, real estate, and absolute return strategies. To further accelerate growth, we host industry-leading annual conferences to train, educate, and promote small, emerging, and diverse managers while connecting them with institutional investors. Learn more >>

GCM GROSVENOR

This message was sent by GCM Grosvenor
900 North Michigan Avenue Suite 1100 | Chicago, IL 60611
gcmgrosvenor.com | events@gcmlp.com | (312) 506-6757

ASSET ALLOCATION COMPARISON

May 31, 2024

	Market Value	% of Total Fund	Allocation Policy	% Difference from Allocation	Prior Period Market Value	Prior Period % of Total Fund
Equity						
CHANNING CAPITAL	31,675,571.62	**0.86**			30,666,198.56	**0.85**
SYSTEMATIC	54,904,500.08	**1.49**			52,817,570.33	**1.46**
Total Small Cap	**86,580,071.70**	***2.34***			**83,483,768.89**	***2.30***
SMITH GRAHAM		**-**				**-**
T. ROWE PRICE	161,666,215.84	**4.38**			153,798,025.56	**4.24**
Total Domestic/Enhanced equity	**161,666,215.84**	***4.38***			**153,798,025.56**	***4.24***
NTGI S&P 500 EQUITY INDEX	147,856,132.46	**4.00**			140,874,238.21	**3.89**
Total Index	**147,856,132.46**	***4.00***			**140,874,238.21**	***3.89***
Total Domestic	**396,102,420.00**	***10.73***	***12.00***	***-1.27***	**378,156,032.66**	***10.43***
ACADIAN	112,189,583.33	**3.04**			106,327,111.81	**2.93**
AQR CAPITAL	137,406,176.88	**3.72**			132,238,446.85	**3.65**
ATIVO	27,463,481.30	**0.74**			26,525,379.37	**0.73**
BAILLIE GIFFORD	78,511,302.09	**2.13**			75,914,635.17	**2.09**
EARNEST PARTNERS	95,119,106.24	**2.58**			92,051,858.96	**2.54**
Total International	**450,689,649.84**	***12.21***	***11.50***	***0.71***	**433,057,432.16**	***11.95***
ARIEL	91,080,513.52	**2.47**			89,143,897.99	**2.46**
WELLINGTON MGMT	104,963,806.43	**2.84**			101,188,731.10	**2.79**
Total Global Equity	**196,044,319.95**	***5.31***	***5.00***	***0.31***	**190,332,629.09**	***5.25***
ACADIAN-LVG	190,473,670.56	**5.16**			184,706,982.96	**5.10**
BLACKROCK	188,078,325.53	**5.09**			184,516,988.57	**5.09**
SANCTIONED ASSET PORTFOL	26,211.90	**0.00**			26,211.90	**0.00**
Total Global Low Volatility Equity	**378,578,207.99**	***10.25***	***10.00***	***0.25***	**369,250,183.43**	***10.19***
FAIRVIEW CAPITAL	105,752,882.00	**2.86**			105,752,882.00	**2.92**
GROSVENOR GCM - CFIG	165,217,917.00	**4.47**			167,618,688.00	**4.62**
HAMILTON LANE	99,092,716.00	**2.68**			99,297,827.95	**2.74**
Total Private Equity	**370,063,515.00**	***10.02***	***10.00***	***0.02***	**372,669,397.95**	***10.28***
Total Equity	**1,791,478,112.78**	**48.51**	**48.50**	***0.01***	**1,743,465,675.29**	**48.09**
Fixed Income						
GARCIA HAMILTON	183,786,670.01	**4.98**			180,146,440.80	**4.97**
WESTERN ASSET MANAGEMENT	191,864,139.78	**5.20**			188,452,778.82	**5.20**
WELLINGTON-CORE BOND	193,695,679.83	**5.25**			190,145,221.65	**5.25**
Total Core Fixed Income	**569,346,489.62**	***15.42***	***17.50***	***-2.08***	**558,744,441.27**	***15.41***
BLACKROCK-HY	187,434,328.36	**5.08**			185,701,003.76	**5.12**
OAKTREE	182,046,216.14	**4.93**			179,960,946.54	**4.96**
Total High Yield	**369,480,544.50**	***10.01***	10.00	***0.01***	**365,661,950.30**	***10.09***
NEUBERGER BERMAN	191,290,044.21	**5.18**			188,640,419.49	**5.20**
Total Credit Opportunities	**191,290,044.21**	***5.18***	**4.00**	***1.18***	**188,640,419.49**	***5.20***
SILVER POINT - DOIP II	**1,001,383.00**	**0.03**			**-**	**-**
Total Private Credit	**1,001,383.00**	***0.03***	***2.50***	***-2.47***	**-**	**-**
Total Fixed Income	**1,131,118,461.33**	**30.63**	**34.00**	***-3.37***	**1,113,046,811.06**	**30.70**
Real Assets	-					
ADELANTE CAPITAL	41,526,718.24	**1.12**		`	39,618,012.16	**1.09**
CENTERSQUARE-SL	41,843,924.43	**1.13**			39,894,582.69	**1.10**
Total REITS	**83,370,642.67**	***2.26***	***2.50***	***-0.24***	**79,512,594.85**	***2.19***
ATLANTIC TRUST	58,932,755.56	**1.60**			57,448,032.50	**1.58**
HARVEST FUND	64,178,954.94	**1.74**			63,011,505.34	**1.74**
COHEN & STEERS	63,012,671.75	**1.71**			60,051,099.50	**1.66**
Total Global Listed Infratructure	**186,124,382.25**	***5.04***	***5.00***	***0.04***	**180,510,637.34**	***4.98***
AEW PARTNERS	47,611,564.00	**1.29**			45,513,597.00	**1.26**
BRASA CAPITAL MGMT	14,021,325.00	**0.38**			13,938,207.00	**0.38**
HEITMAN	86,835,272.96	**2.35**			86,835,272.96	**2.40**
INVESCO	65,052,092.68	**1.76**			65,052,092.68	**1.79**
INVESCO - SL	76,293,901.00	**2.07**			76,724,830.00	**2.12**
LONG WHARF CAPITAL	3,323,468.00	**0.09**			3,390,065.00	**0.09**
VIRTUS REAL ESTATE CAP	47,427,205.00	**1.28**			46,570,176.00	**1.28**
Total Real Estate	**340,564,828.64**	***9.22***	***7.50***	***1.72***	**338,024,240.64**	***9.32***
Total Real Assets	**610,059,853.56**	**16.52**	**15.00**	***1.52***	**598,047,472.83**	**16.50**
Diversifying Strategies						
DAVIDSON KEMPNER INST PTRS	49,897,215.00	**1.35**			49,925,617.00	**1.38**
HUDSON BAY CAPITAL	49,381,386.00	**1.34**			49,232,022.00	**1.36**
Total Marketable Alternatives	**99,278,601.00**	**2.69**	***2.50***	***0.19***	**99,157,639.00**	**2.74**
Total Diversifying Strategies	**99,278,601.00**	**2.69**	**2.50**	***0.19***	**99,157,639.00**	**2.74**
Cash	60,701,087.71	**1.64**			71,342,227.76	**1.97**
Total Cash Account	**60,701,087.71**	***1.64***	***0.00***	***1.64***	**71,342,227.76**	***1.97***
TOTAL FUND	**$ 3,692,636,116.38**	**100.00**	**100.00**		**$ 3,625,059,825.94**	**100.00**

Market Value YE 2023 **$ 3,655,166,195.63**

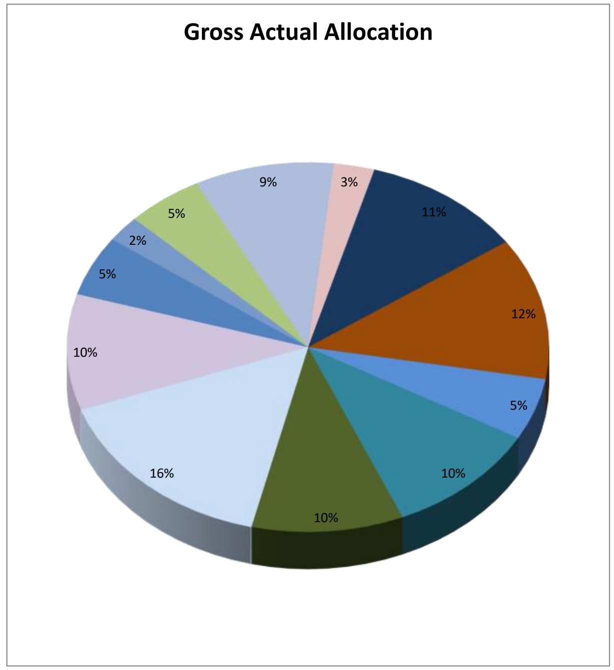
Market Value Variance

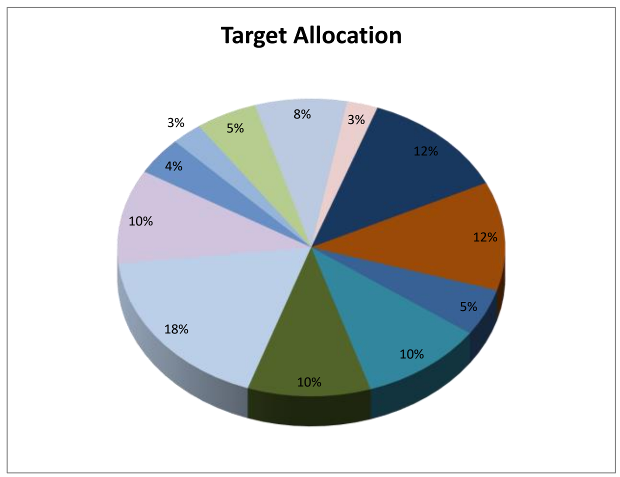
Change from YE 2023:	**$**	**37,469,920.75**
Change from prior month:	**$**	**67,576,290.44**

Asset Allocation: Actual vs. Target

May 31, 2024

	Market Value	Gross Actual Allocation	Target Allocation	% Difference from Allocation
EQUITY				
CHANNING CAPITAL	31,675,571.62	0.86		
SYSTEMATIC	54,904,500.08	1.49		
Total Small Cap	**86,580,071.70**	2.34		
SMITH GRAHAM	-	0.00		
T. ROWE PRICE	161,666,215.84	4.38		
Total Domestic/Enhanced equity	**161,666,215.84**	4.38		
NTGI S&P 500 EQUITY INDEX	147,856,132.46	4.00		
Total Index	**147,856,132.46**	4.00		
Total Domestic	**396,102,420.00**	*10.73*	*12.00*	*-1.27*
ACADIAN	112,189,583.33	3.04		
AQR CAPITAL	137,406,176.88	3.72		
ATIVO	27,463,481.30	0.74		
BAILLIE GIFFORD	78,511,302.09	2.13		
EARNEST PARTNERS	95,119,106.24	2.58		
Total International	**450,689,649.84**	12.21	*11.50*	*0.71*
ARIEL	91,080,513.52	2.47		
WELLINGTON MGMT	104,963,806.43	2.84		
Total Global Equity	**196,044,319.95**	5.31	*5.00*	*0.31*
ACADIAN-LVG	190,473,670.56	5.16		
BLACKROCK	188,078,325.53	5.09		
SANCTIONED ASSET PORTFOL	26,211.90	0.00		
Total Global Low Volatility Equity	**378,578,207.99**	10.25	*10.00*	*0.25*
FAIRVIEW CAPITAL	105,752,882.00	2.86		
GROSVENOR GCM - CFIG	165,217,917.00	4.47		
HAMILTON LANE	99,092,716.00	2.68		
Total Private Equity	**370,063,515.00**	10.02	*10.00*	*0.02*
TOTAL EQUITY	**1,791,478,112.78**	**48.51**	**48.50**	**0.01**
FIXED INCOME				
GARCIA HAMILTON	183,786,670.01	4.98		
WESTERN ASSET MANAGEMENT	191,864,139.78	5.20		
WELLINGTON-CORE BOND	193,695,679.83	5.25		
Total Core Fixed Income	**569,346,489.62**	15.42	*17.50*	*-2.08*
BLACKROCK-HY	187,434,328.36	5.08		
OAKTREE	182,046,216.14	4.93		
Total High Yield	**369,480,544.50**	10.01	*10.00*	*0.01*
NEUBERGER BERMAN	191,290,044.21	5.18		
Total Credit Opportunistic	**191,290,044.21**	5.18	*4.00*	*1.18*
SILVER POINT - DOIP II	1,001,383.00	0.03		-
Total Private Credit	**1,001,383.00**	0.03	*2.50*	*-2.47*
Total Fixed Income	**1,130,117,078.33**	**30.63**	**34.00**	**-3.37**
REAL ESTATE				
CENTERSQUARE-SL	41,843,924.43	1.13		
Total REITS	**83,370,642.67**	2.26	*2.50*	*-0.24*
ATLANTIC TRUST	58,932,755.56	1.60		
HARVEST FUND	64,178,954.94	1.74		
COHEN & STEERS	63,012,671.75	1.71		
Total Global Listed Infratructure	**186,124,382.25**	5.04	*5.00*	*0.04*
AEW PARTNERS	47,611,564.00	1.29		
BRASA CAPITAL MGMT	14,021,325.00	0.38		
HEITMAN	86,835,272.96	2.35		
INVESCO	65,052,092.68	1.76		
INVESCO - SL	76,293,901.00	2.07		
LONG WHARF CAPITAL	3,323,468.00	0.09		
VIRTUS REAL ESTATE CAP	47,427,205.00	1.28		
Total Real Estate	**340,564,828.64**	9.22		
Total Real Assets	**610,059,853.56**	16.52	15.00	1.52
DAVIDSON KEMPNER INST PTRS	49,897,215.00	1.35		
HUDSON BAY CAPITAL	49,381,386.00	1.34		
Total Diversifying Strategies	**99,278,601.00**	2.69	*2.50*	*0.19*
CASH ACCOUNT	60,701,087.71	1.64		
TOTAL FUND	**$ 3,691,634,733.38**	**$ 100.00**	**$ 100.00**	**$ (0.00)**





Wilshire

ERF of the City of Dallas

Monthly Investment Summary

May-2024

Monthly Index Performance

Periods Ended May 31, 2024

	Performance (%)				
	1 Month	1 Quarter	1 Year	3 Years	5 Years
U.S. Equity					
FT Wilshire 5000 Index	4.72	3.39	27.59	8.14	15.24
S&P 500 Index	4.96	3.91	28.19	9.57	15.80
FT Wilshire 4500 Index	4.19	1.44	23.34	1.16	10.35
MSCI USA Minimum Volatility Index	2.80	2.13	17.67	6.22	8.96
U.S. Equity by Size/Style					
FT Wilshire U.S. Large Cap Index	4.80	3.67	28.21	9.24	15.95
FT Wilshire US Large Cap Growth Index	6.49	3.71	34.97	10.81	19.33
FT Wilshire US Large Cap Value Index	3.14	3.72	21.56	7.26	12.15
FT Wilshire U.S. Small Cap Index	4.16	1.73	24.41	2.11	10.65
FT Wilshire US Small Cap Growth Index	3.76	-0.07	21.00	-0.25	9.49
FT Wilshire US Small Cap Value Index	4.54	3.55	27.89	4.30	11.48
FT Wilshire U.S. Micro Cap Index	4.47	-1.00	14.96	-5.80	7.80
Non-U.S. Equity (USD)					
MSCI AC World ex USA (Net)	2.90	4.21	16.74	0.27	6.81
MSCI ACWI ex USA Minimum Volatility Index (Net)	1.51	1.29	9.02	0.99	3.64
MSCI EAFE (Net)	3.87	4.54	18.53	3.06	8.05
MSCI Emerging Markets (Net)	0.56	3.52	12.39	-6.23	3.55
MSCI AC World ex USA Small Cap (Net)	3.24	4.65	16.32	-1.30	7.28
U.S. Fixed Income					
Blmbg. U.S. Aggregate Index	1.70	0.04	1.31	-3.10	-0.17
Blmbg. U.S. Treasury: Long	2.86	-2.22	-7.16	-9.93	-4.32
Blmbg. U.S. Long Corporate Index	2.82	-0.34	3.21	-5.90	-0.09
Blmbg. U.S. TIPS Index	1.72	0.83	1.56	-1.39	2.09
Blmbg. U.S. Credit Index	1.82	0.51	4.05	-2.67	0.85
Blmbg. U.S. Corp: High Yield Index	1.10	1.33	11.24	1.78	4.19
Morningstar LSTA U.S. Leveraged Loan	0.94	2.41	13.23	6.15	5.50

Asset Allocation & Performance

Dallas Total Fund

Periods Ended May 31, 2024

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value $	%
Global Equity Composite	3.00	3.86	8.44	20.03	4.94	10.61	9.17	9/1/2012	196,044,320	5.31
Global Low Volatility Composite	2.52	2.02	4.88	12.24	4.06	6.26	7.15	7/1/2015	378,551,996	10.25
Domestic Equity Composite	4.75	3.92	9.97	29.14	7.17	14.84	10.51	1/1/1990	396,102,420	10.73
International Equity Composite	4.07	5.84	8.18	20.89	0.36	8.42	5.71	1/1/1990	450,689,650	12.21
Fixed Income Composite	1.88	-0.17	-2.08	0.88	-2.98	0.22	4.18	10/1/1995	569,346,490	15.42
High Yield Composite	1.04	1.63	2.01	12.02	2.38	4.43	6.05	1/1/1997	369,480,545	10.01
Credit Opportunities Composite	1.53	2.55	3.85	13.40	1.51	3.33	4.89	2/1/2016	191,288,272	5.18
Private Credit Composite								6/1/2024	1,001,383	0.03
Total Real Estate Composite	1.47	-0.56	-1.52	-1.38	4.73	5.27	6.44	1/1/1990	423,935,471	11.48
Global Listed Infrastructure Composite	3.11	8.35	12.33	26.69	16.70	7.50	6.25	1/1/2012	186,124,382	5.04
Private Equity Composite	0.68	0.90	-0.43	1.43	13.97	12.32	13.08	6/1/2009	370,063,515	10.02
Marketable Alternatives Composite	0.12	2.09	2.90	6.84			6.06	10/1/2022	99,278,601	2.69
Managed Short Term Composite	0.48	1.36	2.27	5.51	2.91	2.13	2.83	1/1/1990	60,701,088	1.64
Dallas Total Fund	2.27	2.25	3.41	11.09	3.72	6.78	8.70	1/1/1985	3,692,608,132	100.00
Policy Index	2.62	2.52	4.47	13.76	3.38	7.02	9.25			

Asset Allocation & Performance

Domestic Equity

Periods Ended May 31, 2024

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value $	%
Systematic Financial	3.95	4.33	6.19	24.55	4.53	11.90	10.64	8/1/2003	54,904,500	13.86
Russell 2000 Index	5.02	1.12	2.68	20.12	-1.65	8.61	8.75			
Channing Capital	3.29	1.64	5.66	24.51	0.97	10.49	7.12	12/1/2013	31,675,572	8.00
Russell 2000 Value Index	4.68	2.30	0.85	21.76	-0.17	8.77	6.70			
Domestic Equity Small Cap Composite	3.71	3.33	5.85	24.12	1.11	10.51	9.32	6/1/2003	86,580,072	21.86
T. Rowe Price	5.12	4.24	12.75	31.00	10.87	16.89	10.91	4/1/2006	161,666,216	40.81
S&P 500 Index	4.96	3.91	11.30	28.19	9.57	15.80	10.20			
Northern Trust S&P 500 (Lending)	4.96	3.91	11.25	28.15	9.59	15.78	10.75	1/1/1995	147,856,132	37.33
S&P 500 Index	4.96	3.91	11.30	28.19	9.57	15.80	10.71			
Domestic Equity Composite	4.75	3.92	9.97	29.14	7.17	14.84	10.51	1/1/1990	396,102,420	100.00
Custom Benchmark[1]	4.72	3.39	10.13	27.59	8.15	15.25	10.64			

[1] Domestic Equity Composite Custom Benchmark: FT Wilshire 5000 (2Q99-Present); S&P 500 (1Q90-1Q99)

Asset Allocation & Performance

International Equity

Periods Ended May 31, 2024

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value $	%
Acadian International	5.51	6.72	8.46	19.43	0.37	8.78	8.26	4/1/1989	112,189,583	24.89
Custom Benchmark[1]	3.24	4.65	3.88	16.32	-1.30	7.28	5.87			
Ativo International	3.54	4.65	5.09	19.71	1.35	6.09	3.89	1/1/2018	27,463,481	6.09
MSCI EAFE (Net)	3.87	4.54	7.07	18.53	3.06	8.05	4.99			
AQR Capital Management	3.91	8.52	12.59	28.85	2.07	7.90	4.08	4/1/2006	137,406,177	30.49
Custom Benchmark[2]	2.90	4.21	5.79	16.74	0.27	6.81	3.58			
Baillie Gifford	3.42	2.32	4.95	12.51	-5.66	5.86	5.47	4/1/2019	78,511,302	17.42
MSCI AC World ex USA (Net)	2.90	4.21	5.79	16.74	0.27	6.81	5.98			
Earnest Partners	3.33	4.40	5.37	19.17	2.48	9.47	8.44	4/1/2019	95,119,106	21.11
MSCI AC World ex USA (Net)	2.90	4.21	5.79	16.74	0.27	6.81	5.98			
International Equity Composite	4.07	5.84	8.18	20.89	0.36	8.42	5.71	1/1/1990	450,689,650	100.00
Custom Benchmark[3]	2.95	4.27	5.53	16.69	0.05	6.87	4.69			

[1] Acadian Custom Benchmark: MSCI ACWI x-US Small Cap (3Q09-Present); MSCI EAFE Small Cap (4Q99-2Q09); S&P/Citigroup Eur/Pac EMI Index (2Q96-3Q99); MSCI EAFE (2Q89-1Q96)

[2] AQR Custom Benchmark: MSCI ACWI x-US (2Q10-Present); MSCI EAFE (1Q06-1Q10)

[3] International Equity Composite Custom Benchmark: MSCI ACWI x-US IMI (2Q10-Present); MSCI ACWI x-US (1Q99-1Q10); Wilshire Non-US/Non-SA (2Q96-4Q98; MSCI EAFE (4Q89-1Q96)

Asset Allocation & Performance

Global Equity

Periods Ended May 31, 2024

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value $	%
Ariel Global	**2.17**	**2.56**	**4.69**	**13.88**	**5.37**	**8.97**	**6.77**	**1/1/2018**	**91,080,514**	**46.46**
MSCI AC World Index (Net)	4.06	3.79	8.88	23.56	5.12	11.68	8.78			
Wellington	**3.73**	**5.01**	**11.80**	**25.69**	**4.61**	**11.76**	**11.16**	**9/1/2012**	**104,963,806**	**53.54**
MSCI AC World Index (Net)	4.06	3.79	8.88	23.56	5.12	11.68	9.93			
Global Equity Composite	**3.00**	**3.86**	**8.44**	**20.03**	**4.94**	**10.61**	**9.17**	**9/1/2012**	**196,044,320**	**100.00**
MSCI AC World Index (Net)	4.06	3.79	8.88	23.56	5.12	11.68	9.93			

Asset Allocation & Performance

Global Low Volatility

Periods Ended May 31, 2024

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value $	%
Acadian Global Low Vol.	3.12	2.84	5.77	13.10	5.29	7.04	7.27	7/1/2015	190,473,671	50.32
MSCI AC World Index (Net)	4.06	3.79	8.88	23.56	5.12	11.68	9.15			
MSCI AC World Minimum Volatility Index (Net)	1.85	1.04	3.85	10.71	2.42	5.31	6.69			
BlackRock Global Low Vol.	1.92	1.19	4.00	11.39	2.83	5.49	7.02	7/1/2015	188,078,326	49.68
MSCI AC World Minimum Volatility Index (Net)	1.85	1.04	3.85	10.71	2.42	5.31	6.69			
Global Low Volatility Composite	2.52	2.02	4.88	12.24	4.06	6.26	7.15	7/1/2015	378,551,996	100.00
MSCI AC World Minimum Volatility Index (Net)	1.85	1.04	3.85	10.71	2.42	5.31	6.69			

Asset Allocation & Performance

Real Estate

Periods Ended May 31, 2024

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value $	%
Adelante Capital Management	**4.82**	**-2.11**	**-3.05**	**10.31**	**0.54**	**4.52**	**8.78**	**10/1/2001**	**41,526,718**	**49.81**
Wilshire U.S. Real Estate Securities Index	5.02	-1.70	-3.10	11.17	0.42	3.73	8.88			
CenterSquare	**4.89**	**-0.21**	**-2.52**	**10.76**	**0.72**	**4.71**	**6.33**	**6/1/2018**	**41,843,924**	**50.19**
Wilshire U.S. Real Estate Securities Index	5.02	-1.70	-3.10	11.17	0.42	3.73	5.34			
REIT Composite	**4.85**	**-1.17**	**-2.78**	**10.54**	**0.63**	**4.61**	**8.89**	**10/1/2001**	**83,370,643**	**100.00**
Wilshire U.S. Real Estate Securities Index	5.02	-1.70	-3.10	11.17	0.42	3.73	8.88			

Private Equity Summary

Periods Ended as of May 31, 2024

	Month-End Market Value	Commitment Value	Drawn Down Capital	Cash Distributions	Inception Date	IRR Since Inception	TVPI Multiple [1]
Hamilton Lane Secondary Fund II	106,651	25,000,000	22,058,532	31,222,789	Jul-09	13.4%	1.4
Hamilton Lane Secondary Fund III	742,401	30,000,000	23,372,292	29,297,066	Nov-12	8.8%	1.3
Hamilton Lane Secondary Fund IV	12,581,558	30,000,000	25,907,343	29,410,917	Mar-17	16.6%	1.6
Hamilton Lane Secondary Fund V	51,186,405	65,000,000	43,128,993	15,614,650	Mar-20	18.0%	1.5
Hamilton Lane Secondary Fund VI-A	6,410,445	30,000,000	4,471,334	64,115	Feb-23	61.0%	1.4
Hamilton Lane Fund VII Composite	13,201,163	50,000,000	45,600,834	56,618,108	Jan-10	5.9%	1.5
Hamilton Lane Fund VIII (Global)	14,864,093	30,000,000	22,270,594	19,031,416	Nov-12	6.8%	1.5
GCM Grosvenor - Partnership, L.P.	21,446,029	75,000,000	95,250,722	140,126,072	Jun-11	14.1%	1.7
GCM Grosvenor - Partnership II, L.P. (2014)	43,701,815	60,000,000	72,758,185	73,400,726	Jul-14	14.7%	1.6
GCM Grosvenor - Partnership II, L.P. (2015)	56,883,258	30,000,000	45,118,226	11,913,802	Dec-15	13.3%	1.5
GCM Grosvenor - Partnership II, L.P. (2017)	30,869,402	30,000,000	31,427,286	13,345,388	Jan-18	13.7%	1.4
GCM Grosvenor - Advance Fund, L.P.	7,440,479	10,000,000	6,681,653	345,493	Jun-21	11.8%	1.2
GCM Grosvenor - Partnership II, L.P. (2022)	4,876,934	20,000,000	4,934,719	5,461	May-22	-6.3%	1.0
Fairview Capital - Lone Star Fund I	52,590,843	40,000,000	33,903,847	16,021,490	Aug-15	13.5%	2.0
Fairview Capital - Lone Star Fund II	35,360,436	30,000,000	23,306,717	509,173	Dec-18	12.0%	1.5
Fairview Capital - Lone Star Fund III - A	14,711,663	25,000,000	14,953,620	-	Apr-21	-2.6%	1.0
Fairview Capital - Lone Star Fund III - B	519,291	20,000,000	689,462	-	Dec-22	-55.6%	0.8
Fairview Capital - Private Markets Fund VI	2,570,649	10,000,000	3,070,484	210,556	Apr-22	-8.5%	0.9
Total Private Equity Composite	**370,063,515**	**610,000,000**	**518,904,844**	**437,137,221**	**Jul-09**	**12.7%**	**1.6**
Public Market Equivalent (PME) [2]	**593,516,952**					**16.9%**	

[1] Total Value to Paid-in Capital ("TVPI") multiple calculation = *(market value + distributions) / capital called*

[2] The Public Market Equivalent (PME) approach creates a hypothetical investment vehicle that mimics the private equity composite cash flows. The performance difference between the PME vehicle and the private equity portfolio is determined by their net asset value (NAV) at the end of the benchmarking period. The performance of the "public market" is simulated using the monthly S&P 500 index returns, plus a 300 BPs annual hurdle rate.

Private Real Estate Summary

Periods Ended as of May 31, 2024

	Month-End Market Value	Commitment Value	Drawn Down Capital	Cash Distributions	Inception Date	IRR Since Inception	TVPI Multiple [1]
Invesco II	76,293,901	65,188,333	65,188,333	17,544,189	Jan-14	5.2%	1.4
Total Direct Private Real Estate	**76,293,901**	**65,188,333**	**65,188,333**	**17,544,189**	**Jan-14**	**5.2%**	**1.4**

	Month-End Market Value	Commitment Value	Drawn Down Capital	Cash Distributions	Inception Date	IRR Since Inception	TVPI Multiple
Heitman America Real Estate Trust	86,835,273	75,000,000	88,210,161	97,418,467	Dec-10	6.5%	2.1
Invesco Core Real Estate USA	65,052,093	75,000,000	75,000,000	99,391,420	Oct-10	10.2%	2.2
Total Core Private Real Estate	**151,887,366**	**150,000,000**	**163,210,161**	**196,809,887**	**Oct-10**	**8.7%**	**2.1**

	Month-End Market Value	Commitment Value	Drawn Down Capital	Cash Distributions	Inception Date	IRR Since Inception	TVPI Multiple
AEW Partners Real Estate Fund IX	38,159,185	45,000,000	34,814,815	1,507,895	Mar-21	6.8%	1.1
AEW PIX MM Co-Invest	4,146,471	10,000,000	4,773,585	654,987	Nov-21	0.3%	1.0
AEW PIX Oakland Park Co-Invest	5,305,908	5,000,000	5,000,000	542,858	Feb-22	7.6%	1.2
Virtus Real Estate Capital III	47,427,205	43,281,585	43,040,863	3,714,853	Jan-21	8.4%	1.2
Brasa Real Estate Fund II	14,021,325	20,000,000	14,921,996	889,136	Jul-22	-0.1%	1.0
Long Wharf Real Estate Partners VII	3,323,468	20,000,000	3,701,305	-	Mar-23	-18.0%	0.9
Total Value-Add Private Real Estate	**112,383,562**	**143,281,585**	**106,252,563**	**7,309,729**	**Jan-21**	**6.3%**	**1.1**

Asset Allocation & Performance

Global Listed Infrastructure

Periods Ended May 31, 2024

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value $	%
CIBC	2.58	9.09	15.41	35.87	23.07	13.36	8.67	1/1/2012	58,932,756	31.66
CIBC Policy[1]	3.91	7.29	16.90	40.44	24.53	12.60	5.25			
Harvest Fund Advisors MLP	1.85	8.95	15.99	35.50	24.31	14.73	8.70	1/1/2012	64,178,955	34.48
Harvest Policy[2]	3.91	7.29	16.90	40.44	24.53	12.60	5.25			
C&S Global Listed Infrastructure	4.93	7.08	6.26	12.18	3.83		6.93	10/1/2020	63,012,672	33.86
FTSE Global Core Infrastructure 50/50 (Net)	4.92	7.03	5.11	10.24	2.74		6.82			
Global Listed Infrastructure Composite	3.11	8.35	12.33	26.69	16.70	7.50	6.25	1/1/2012	186,124,382	100.00
Global Listed Infrastructure Benchmark[3]	4.16	7.23	13.90	32.47	19.09	7.47	3.29			

[1] CIBC Policy: Alerian Midstream Energy Index (5/24-Present); Alerian MLP Index (1Q12-4/24)

[2] Harvest Policy: Alerian Midstream Energy Index (5/24-Present); Alerian MLP Index (1Q12-4/24)

[3] Global Listed Infrastructure Benchmark: 75% Alerian Midstream Energy Index / 25% FTSE Global Core Infrastructure 50/50 (5/24-Present)
75% Alerian MLP / 25% FTSE Global Core Infrastructure 50/50 (4Q20-4/24); Alerian MLP (1Q12-3Q20)

Asset Allocation & Performance

Fixed Income

Periods Ended May 31, 2024

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value $	%
Garcia Hamilton	2.02	-0.50	-2.90	-1.11	-3.18	-0.35	1.62	11/1/2013	183,786,670	32.28
Blmbg. U.S. Aggregate Index	1.70	0.04	-1.64	1.31	-3.10	-0.17	1.46			
Western Asset Management	1.81	-0.36	-2.43	1.02			0.47	7/1/2022	191,864,140	33.70
Blmbg. U.S. Aggregate Index	1.70	0.04	-1.64	1.31			0.37			
Wellington Core Bond	1.82	0.32	-0.94	2.71			1.20	7/1/2022	193,695,680	34.02
Blmbg. U.S. Aggregate Index	1.70	0.04	-1.64	1.31			0.37			
Fixed Income Composite	1.88	-0.17	-2.08	0.88	-2.98	0.22	4.18	10/1/1995	569,346,490	100.00
Blmbg. U.S. Aggregate Index	1.70	0.04	-1.64	1.31	-3.10	-0.17	4.21			

Asset Allocation & Performance

Opportunistic Credit

Periods Ended May 31, 2024

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value $	%
Neuberger Berman	1.53	2.55	3.85	13.40	1.51	3.33	4.89	2/1/2016	191,288,272	
Custom Benchmark[1]	1.29	1.84	2.47	11.86	1.82	3.40	5.05			

[1] Custom Benchmark: 33% Morningstar LSTA U.S. Leveraged Loan Index / 33% ICE BofA U.S. High Yield Constrained Index / 33% JPM EMBI Global Diversified

Asset Allocation & Performance

High Yield

Periods Ended May 31, 2024

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value $	%
Oaktree Capital Management	1.16	1.46	1.68	12.26	2.23	4.26	6.19	2/1/1997	182,046,216	49.27
FTSE High Yield Cash Pay	1.08	1.31	1.65	11.18	1.97	4.11	6.31			
BlackRock	0.93	1.79	2.32	11.80	2.54	4.59	5.80	10/1/2006	187,434,328	50.73
FTSE High Yield Cash Pay	1.08	1.31	1.65	11.18	1.97	4.11	6.08			
High Yield Composite	1.04	1.63	2.01	12.02	2.38	4.43	6.05	1/1/1997	369,480,545	100.00
FTSE High Yield Cash Pay	1.08	1.31	1.65	11.18	1.97	4.11	6.32			

Asset Allocation & Performance

Marketable Alternatives

Periods Ended May 31, 2024

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value $	%
Davidson Kempner	**-0.06**	**2.16**	**3.16**	**7.52**			**6.39**	**10/1/2022**	**49,897,215**	**50.26**
HFRI Event-Driven Total Index	-1.13	1.24	5.40	10.19			8.88			
Hudson Bay Capital	**0.30**	**2.02**	**2.63**	**6.15**			**5.73**	**10/1/2022**	**49,381,386**	**49.74**
HFRI Relative Value Total Index	0.12	2.00	3.99	7.97			6.70			
Marketable Alternatives Composite	**0.12**	**2.09**	**2.90**	**6.84**			**6.06**	**10/1/2022**	**99,278,601**	**100.00**
Marketable Alternatives Policy[1]	-0.51	1.62	4.70	9.10			7.81			

[1] Marketable Alternatives Policy: 50% HFRI Event-Driven Total Index / 50% HFRI Relative Value Total Index

Asset Allocation & Performance

Cash

Periods Ended May 31, 2024

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value $	%
Cash Account	0.48	1.36	2.27	5.51	2.91	2.13	3.15	1/1/1988	60,701,088	100.00
Managed Short Term Composite	0.48	1.36	2.27	5.51	2.91	2.13	2.83	1/1/1990	60,701,088	100.00

At A Glance

For period ended May 31, 2024

	2023		2024	
Retirements	**This Month**	**YTD**	**This Month**	**YTD**
Age	23	101	20	83
Service	0	10	1	8
Rule of 78	9	39	12	46
QDRO	1	5	0	0
Total	33	155	33	137
Disability Retirements				
Service	0	0	0	0
Non-service	2	2	0	0
Total	2	2	0	0
Benefits Paid	$ 27,364,900.29	$ 163,430,584.84	$ 29,580,651.34	$ 145,022,254.74
Refunds	$ 1,057,225.54	$ 4,960,593.47	$ 1,203,760.82	$ 5,210,072.86
Number of refunds	103	388	92	410
***Contributions**	$ 16,231,283.18	$ 59,913,149.18	$ 11,762,758.39	$ 64,610,398.19

Members on record at month end

	Retirees & beneficiaries	Disabilities	Actives	Tier A Actives	Tier B Actives
Jan	*7,903*	*122*	*8,015*	*3,453*	*4,562*
Feb	*7,922*	*121*	*7,986*	*3,408*	*4,578*
Mar	*7,937*	*121*	*8,067*	*3,386*	*4,681*
April	*7,947*	*121*	*8,022*	*3,349*	*4,673*
May	*7,962*	*121*	*8,034*	*3,316*	*4,718*
June					
July					
Aug					
Sep					
Oct					
Nov					
Dec					

Employees' Retirement Fund of the City of DALLAS ®