Employees' Retirement Fund of the City of Dallas

Actuarial Valuation Report as of December 31, 2022

P: 469.524.0000 | www.grsconsulting.com

May 24, 2023

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, 2022.

This valuation provides information on the financial health of ERF. It includes a determination of the actuarially calculated contribution rates for the 2023 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, 2023 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 2024.

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, 2022. 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

Daniel J. White

Lewis Ward
Consultant

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

Table of Contents

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, 2022 may be summarized as follows:

		December 31, 2021		December 31, 2022
Members				
- Actives		7,175		7,464
- Benefit recipients		7,655		7,766
- Deferred vested*		974		1,042
- Other terminated*		1,007		1,150
- Total		16,811		17,422
Covered payroll (including overtime)	$	442,863	$	476,601
Normal cost	$	85,892	$	89,856
as % of expected payroll		19.71%		19.17%
Actuarial accrued liability	$	5,094,362	$	5,276,469
Actuarial value of assets	$	3,872,601	$	3,866,412
Market value of assets	$	4,093,215	$	3,516,280
Unfunded actuarial accrued liability (UAAL)	$	1,221,761	$	1,410,057
Estimated yield on assets (market value basis)		16.01%		(9.25)%
Estimated yield on assets (actuarial value basis)		8.68%		5.36%
Contribution Rates				
- Prior Adjusted Total Obligation Rate		36.00%		36.00%
- Current Total Obligation Rate		43.17%		43.62%
- Current Adjusted Total Obligation Rate		36.00%		36.00%
Actuarial gains/(losses)				
- Assets	$	52,230	$	(71,539)
- Actuarial liability experience	$	(29,375)	$	(55,128)
- Assumption and method changes	$	0	$	0
30-year level % of pay funding cost	$	157,107	$	172,945
as % of payroll (Employee + City)		34.61%		35.40%
Funded ratio				
- Based on actuarial value of assets		76.0%		73.3%
- Based on market value of assets		80.3%		66.6%

** 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, 2022.

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 2023 calendar year; and
- To develop the current total obligation rate and the current adjusted total obligation rate for the fiscal year beginning October 1, 2023.

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, 2021	**December 31, 2022**
Contribution Rates (% of Payroll)		
Normal Cost (including administrative expense)	21.19%	20.89%
Total Actuarial Contribution Rate	34.61%	35.40%
Total Projected Actuarial Contribution	$157,107	$172,945
Funded Status (on AVA basis)		
Actuarial Accrued Liability	$5,094,362	$5,276,469
Actuarial Value of Assets	3,872,601	3,866,412
Unfunded Actuarial Accrued Liability	$1,221,761	$1,410,057
Funded Ratio	76.02%	73.28%

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, 2022. 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, 2023. 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 35.40% 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 2024. 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.

As shown in Section N – Table 3 of this report, the debt service payment is determined to be 8.22% of projected payroll. The sum of these rates is 43.62% (the Current Total Obligation Rate), which is 7.62% 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 2024 (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, 8.22% of the City's contribution rate will go towards the debt service on the pension obligation bonds and the remaining 14.46% will be contributed towards the ERF. This means a total contribution rate of 27.78% will be contributed to the ERF for the 2023 fiscal year, which compares to the actuarially calculated rate of 35.40%.

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 -9.25% (calculated on a dollar-weighted basis, net of investment expenses). Given this return, the actual investment income was less than the expected investment income on the market value of assets; therefore, an investment shortfall 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 $71.5 million loss on the actuarial value of assets as of December 31, 2022. The rate of return on the actuarial value of assets for 2022 was 5.36% (calculated on a dollar-weighted basis, net of investment expenses). Since this result was less than the investment return assumption of 7.25% an actuarial loss occurred.

As developed on Section N – Table 8, ERF experienced an overall actuarial experience loss in calendar year 2022 in the amount of $126.7 million. Since there was a $71.5 million loss on the actuarial value of assets, this implies there was a liability actuarial loss of about $55.1 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):

		2018	**2019**	**2020**	**2021**	**2022**
1)	Actuarial (Gain)/Loss on Assets	$88.73	$35.80	$16.03	($52.23)	$71.54
2)	Actuarial (Gain)/Loss on Liabilities	11.35	(6.16)	(69.81)	29.37	55.13
3)	Total Actuarial (Gain) or Loss (1+2)	$100.08	$29.64	($53.78)	($22.86)	$126.67

The unfunded actuarial accrued liability (UAAL) also increased $36.1 million due to the shortfall between the calculated contribution rate and the actual contributions during calendar year 2022.

ASSET INFORMATION

The assets of the Fund (on a market value basis) decreased from $4,093 million as of December 31, 2021 to $3,516 million as of December 31, 2022.

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, 2022.

The actuarial value of assets has decreased from $3,873 million to $3,866 million during 2022. The actuarial assets are less than the expected actuarial assets, $3,938 million, due to unfavorable investment experience in calendar year 2022. This resulted in an actuarial loss on the actuarial assets of $71.5 million.

The rate of return on investments for 2022 on the actuarial value of assets was 5.36%, compared to 8.68% in 2021. 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 decreased from 80.3% as of December 31, 2021 to 66.6% as of December 31, 2022. Based on the actuarial value of assets, the Funded Ratio of ERF decreased from 76.0% as of December 31, 2021 and 73.3% as of December 31, 2022.

The UAAL increased from $1,221.8 million as of December 31, 2021 to $1,410.1 million as of December 31, 2022. Since the UAAL is positive, this implies the actuarial accrued liabilities exceed the actuarial assets of the Fund as of December 31, 2022.

The actual $188.3 million increase in the UAAL was more than the expected increase of $61.6 million ($25.5 million due to negative amortization and $36.1 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 unfavorable investment experience and the cost of living adjustment being greater than assumed.

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 new 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 new standards created a clear distinction between the funding requirements of a pension plan and the accounting requirements. Because of these changes, the GASB disclosure information will no longer be included in the actuarial valuation report, but will instead be provided under separate cover.

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)

	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
Ratio of the market value of assets to total payroll	7.38	9.24	8.64	8.43	7.71	8.55	8.13	8.12	9.34	9.72
Ratio of actuarial accrued liability to payroll	11.07	11.50	11.50	11.21	10.68	10.39	10.48	10.50	11.03	10.55
Ratio of actives to retirees and beneficiaries	0.96	0.94	0.96	1.00	1.05	1.11	1.10	1.11	1.09	1.08
Ratio of net cash flow to market value of assets	-5.9%	-4.7%	-4.9%	-4.8%	-5.1%	-4.3%	-4.4%	-4.5%	-4.2%	-4.4%
Duration of the actuarial present value of benefits*	12.47	12.54	12.69	12.37	NA	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)	23.70%	19.17%	15.81%
UAAL ($ in millions)	$2,024.9	$1,410.1	$896.1
30-year funding rate (employee + City)	43.97%	35.40%	27.62%
Funded Ratio	65.6%	73.3%	81.2%
Funding Period	Infinite	51 years	32 years

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 35.40% of pay. When the debt service payment on the Pension Obligation Bonds is considered, the total contribution rate is 43.62% 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 2024 will be 36.00% of pay.

Following adoption of the proposed changes by the ERF Board, the Dallas City Council, and approval by the City of Dallas voters, the new tier of benefits became effective for employees hired after December 31, 2016 and the outlook for the ERF improved. Based on our projections, reflecting the new tier of benefits 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.

ACTUARIAL TABLES

Summary of Actuarial Values
As of December 31, 2022

($ in 000s)

	APV* of Projected Benefits	Entry Age Actuarial Values: Actuarial Accrued Liability (AAL)	Normal Cost $	Normal Cost % of Pay**
1 Active Members				
a. Retirement	$ 1,949,690	$ 1,487,116	$ 64,918	13.86%
b. Death	19,962	11,697	1,118	0.24%
c. Disability	13,007	4,864	1,116	0.23%
d. Termination	150,165	(6,397)	20,880	4.45%
e. Health Subsidy	39,953	30,243	1,824	0.39%
Total	$ 2,172,777	$ 1,527,523	$ 89,856	19.17%
2 Benefit Recipients	3,603,830	3,603,830		
3 Other Inactive	145,116	145,116		
4 Total Actuarial Values of Benefits	$ 5,921,723	$ 5,276,469	$ 89,856	19.17%
5 Actuarial Value of Assets		$ 3,866,412		
6 Unfunded Actuarial Accrued Liability (4 - 5)		$ 1,410,057		
7 Funding Ratio		73.28%		
8 Market Value Measurements				
UAAL on market value		$ 1,760,189		
Funded Ratio on market value		66.64%		

* *APV – Actuarial Present Value*

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

Demonstration of Actuarially Required Contribution Rate for FY 2024

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)
2022	35.40%	$ 476.6	$ 168.7	$ 5,276.5	$ 3,866.4	$ 1,410.1
2023	35.40%	491.3	173.9	5,396.2	3,953.7	1,442.5
2024	35.40%	507.7	179.7	5,517.5	4,044.3	1,473.1
2025	35.40%	524.1	185.5	5,632.4	4,130.9	1,501.5
2026	35.40%	540.6	191.4	5,741.0	4,213.6	1,527.3
2027	35.40%	557.6	197.4	5,843.4	4,292.9	1,550.6
2028	35.40%	575.1	203.6	5,940.2	4,369.3	1,571.0
2029	35.40%	593.3	210.0	6,032.3	4,444.0	1,588.3
2030	35.40%	611.8	216.6	6,120.0	4,517.6	1,602.4
2031	35.40%	631.2	223.5	6,203.8	4,591.0	1,612.8
2032	35.40%	651.1	230.5	6,284.4	4,665.3	1,619.1
2033	35.40%	671.1	237.6	6,362.2	4,741.3	1,620.8
2034	35.40%	691.4	244.8	6,437.6	4,819.9	1,617.7
2035	35.40%	712.4	252.2	6,510.3	4,901.0	1,609.3
2036	35.40%	734.3	260.0	6,581.0	4,985.9	1,595.1
2037	35.40%	756.9	268.0	6,650.2	5,075.6	1,574.6
2038	35.40%	780.1	276.2	6,718.7	5,171.5	1,547.2
2039	35.40%	804.2	284.7	6,787.5	5,275.1	1,512.4
2040	35.40%	829.2	293.6	6,857.6	5,388.1	1,469.5
2041	35.40%	854.9	302.7	6,929.9	5,512.3	1,417.6
2042	35.40%	881.3	312.0	7,005.2	5,649.1	1,356.2
2043	35.40%	908.7	321.7	7,084.5	5,800.2	1,284.3
2044	35.40%	936.9	331.7	7,169.2	5,968.2	1,201.1
2045	35.40%	965.9	341.9	7,261.1	6,155.5	1,105.6
2046	35.40%	995.7	352.5	7,361.5	6,364.5	997.0
2047	35.40%	1,026.2	363.3	7,471.5	6,597.6	873.9
2048	35.40%	1,057.3	374.3	7,592.1	6,856.8	735.4
2049	35.40%	1,089.2	385.6	7,723.9	7,143.8	580.1
2050	35.40%	1,121.9	397.2	7,867.5	7,460.7	406.8
2051	35.40%	1,155.5	409.1	8,023.3	7,809.4	213.9
2052	35.40%	1,189.9	421.2	8,191.8	8,191.8	0.0

Information for City Ordinance 25695
For the Fiscal Year Commencing October 1, 2023

1 Prior Adjusted Total Obligation Rate		36.00%
2 Actuarially Required Contribution Rate*		35.40%
3 Debt Service		
a Scheduled Debt Service Payment for FY 2024	$	40,142,080
b Projected Payroll	$	488,516,155
c Pension Obligation Bond Credit Rate (a/b)		8.22%
4 Current Total Obligation Rate (2 + 3c)		43.62%
5 Current Adjusted Total Obligation Rate		36.00%
6 Allocation of Contribution Rates Commencing October 1, 2023		
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

($ in 000s)

	December 31, 2021		December 31, 2022	
1 Assets				
a. Cash & Short-Term	$	473,616	$	458,347
2 Receivables				
a. Accrued Investment Income	$	13,295	$	16,036
b. Securities Sold		1,848		18,065
c. Employer Contribution		2,445		785
d. Employee Contribution		702		740
e. Pending Contracts		287,389		278,970
	$	305,679	$	314,596
3 Investments				
a. Index Funds	$	239,274	$	93,082
b. Fixed Income		991,047		894,597
c. Equities		2,059,147		1,710,927
d. Real Estate		291,794		346,345
e. Private Equity		384,761		381,814
	$	3,966,023	$	3,426,765
4 Total Assets	$	4,745,318	$	4,199,708
5 Liabilities				
a. Accounts Payable	$	9,005	$	10,872
b. Investment Transactions		643,098		672,556
	$	652,103	$	683,428
6 Net Assets Available For Benefits	$	4,093,215	$	3,516,280

Change in Assets Available for Benefits
Fiscal Year Ending December 31, 2022

($ in 000s)

	2021	2022
1 Assets Available at Beginning of Year	$ 3,706,753	$ 4,093,215
Adjustment *	0	0
	$ 3,706,753	$ 4,093,215
2 Revenues		
a. Employer Contributions	$ 63,583	$ 67,288
b. Employee Contributions	59,256	63,427
c. Investment Income	88,100	114,233
d. Investment Expense	(21,075)	(19,621)
e. Realized and Unrealized Gains (Losses)	510,013	(464,890)
f. Other (Security Lending)	972	1,349
Total Revenues	$ 700,849	$ (238,214)
3 Expenses		
a. Benefits	$ 296,586	$ 317,528
b. Refunds	10,452	12,158
c. Administrative Expenses	6,547	8,209
d. Depreciation Expense	802	826
Total Expense	$ 314,387	$ 338,721
4 Assets Available at End of Year (1 + 2 - 3)	$ 4,093,215	$ 3,516,280

* *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

($ in 000s)

			December 31, 2022
1.	Market value of assets at beginning of year	$	4,093,215
2.	External cashflow		
	a. Contributions	$	130,715
	b. Benefits and refunds paid		(329,686)
	c. Administrative and miscellaneous expenses		(9,035)
	d. Subtotal		(208,006)
3.	Assumed investment return rate for fiscal year		7.25%
4.	Assumed investment income for fiscal year	$	289,350
5.	Expected Market Value at end of year (1+ 2 + 4)	$	4,174,559
6.	Market value of assets at end of year	$	3,516,280
7.	Difference (6 - 5)	$	(658,279)

8. Development of amounts to be recognized as of December 31, 2022:

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)
2018	$ 0	$ 0	$ 0	1	$ 0	$ 0
2019	0	0	0	2	0	0
2020	0	0	0	3	0	0
2021	220,614	(220,614)	0	4	0	0
2022	(658,279)	220,614	(437,665)	5	(87,533)	(350,132)
Total	$ (437,665)	$ 0	$ (437,665)		$ (87,533)	$ (350,132)

9.	Final actuarial value of plan net assets, end of year (Item 6 - Item 8, Column 6)	$	3,866,412
10.	Ratio of actuarial value to market value		110.0%

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
2003	27.05%	2.03%
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%

5-year average ending in 2022	4.51%	6.56%
10-year average ending in 2022	6.35%	7.81%
20-year average ending in 2022	7.48%	6.79%

*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, 2022

($ in 000s)

1. UAAL as of December 31, 2021		$ 1,221,761
2. Expected Change in UAAL during 2022		
a. Expected Amortization Payment for CY 2022 based on the Actuarially Determined Contribution Rate	(60,925)	
b. Interest adjustments on 1 & 2a to Year End @ 7.25%	86,408	
c. Expected change in UAAL		25,483
3. Increase/(Decrease) in UAAL Due to Difference Between the Actuarially Determined Contribution Rate and Actual Contribution Rate		36,146
4. Net Actuarial Experience (Gains) & Losses		126,667
5. Assumption and Method Changes		0
6. UAAL as of December 31, 2022		$ 1,410,057

Investment Experience (Gain) or Loss

($ in 000s)

Item	Valuation as of December 31, 2022
1. Actuarial assets, beginning of year	$ 3,872,601
2. Contributions	130,715
3. Benefits and refunds paid with administrative expenses	(338,721)
4. Assumed net investment income at 7.25% on	
a. Beginning of year assets	280,764
b. Contributions	4,656
c. Benefits and refunds paid with administrative expenses	(12,064)
d. Total	$ 273,356
5. Expected actuarial assets, end of year (Sum of Items 1 through 4)	3,937,951
6. Actual actuarial assets, end of year	3,866,412
7. Asset experience (gain)/loss for year	71,539

Analysis of Actuarial (Gains) and/or Losses for 2022

($ in 000s)

	2022
Investment Return	$ 71,539
Salary Increase	21,005
Age and Service Retirement	(4,934)
General Employment Termination	(6,535)
Disability Incidence	(260)
Active Mortality	965
Benefit Recipient Mortality	(18,719)
Actual vs. Expected Cost of Living Adjustment (COLA)*	59,457
Other	4,149
Total Actuarial (Gain)/ Loss	$ 126,667

* Actual COLA of 5.00% 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)
2003	1,843,099	2,489,071	645,972	74.05%	318,492	202.82%
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%

* *Projected to following year.*

Summary of Data Characteristics

As of December 31,	2020	2021	2022
Active Members			
Number	7,244	7,175	7,464
Total Annualized Earnings of Members as of 12/31 (000s)	$ 428,824	$ 442,863	$ 476,601
Average Earnings	59,197	61,723	63,853
Benefit Recipients			
Number	7,552	7,655	7,766
Total Annual Retirement Income (000s)	$ 277,429	$ 294,130	$ 309,799
Total Annual Health Supplement (000s)	10,929	11,077	11,234
Average Total Annual Benefit	38,228	39,870	41,338
Inactive Members*			
Deferred Vested	911	974	1,042
Deferred Nonvested	799	1,007	1,150
Total	1,710	1,981	2,192

* *The number of inactives on 12/31/2022 includes 1042 members who have applied for a deferred pension and 1,150 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	Under 1	1-4	5-9	10-14	15-19	20-24	25-29	30 & Over	Totals
	Years of Service								
Under 20	4								4
	$139,489								$139,489
20-24	136	79	1						216
	$5,484,825	$3,948,501	$85,614						$9,518,940
25-29	242	283	71	1					597
	$10,998,923	$14,722,900	$3,890,718	$52,800					$29,665,341
30-34	216	318	236	30	1				801
	$10,352,190	$17,768,789	$14,232,849	$2,108,895	46,861				$44,509,584
35-39	185	257	234	111	55				842
	$9,293,544	$15,648,007	$15,134,404	$7,888,136	$4,168,749				$52,132,840
40-44	142	221	236	123	126	26			874
	$7,485,589	$14,274,691	$15,299,477	$8,940,498	$8,988,797	$2,091,917			$57,080,969
45-49	117	215	219	131	148	128	43	1	1,002
	$5,967,826	$13,364,461	$15,362,876	$9,598,192	$11,152,771	$9,233,806	$3,373,787	$72,164	$68,125,883
50-54	112	209	215	102	160	136	108	17	1,059
	$5,962,119	$13,318,810	$14,838,798	$7,128,895	$11,937,719	$9,778,593	$8,135,391	$1,318,606	$72,418,931
55-59	92	162	185	128	204	116	60	23	970
	$5,261,197	$10,690,775	$12,060,020	$8,623,096	$15,599,363	$8,457,324	$4,850,403	$1,829,215	$67,371,393
60-64	41	128	157	108	130	75	42	35	716
	$2,053,416	$8,752,450	$9,654,139	$7,450,050	$8,930,758	$5,490,708	$3,390,464	$3,212,168	$48,934,153
65&Over	17	39	76	55	74	49	36	37	383
	$859,949	$2,584,325	$4,602,242	$4,193,955	$5,204,801	$3,528,630	$2,632,808	$3,096,894	$26,703,604
Totals	1,304	1,911	1,630	789	898	530	289	113	7,464
	$63,859,067	$115,073,709	$105,161,137	$55,984,517	$66,029,819	$38,580,978	$22,382,853	$9,529,047	$476,601,127

Distribution of Benefit Recipients
as of December 31, 2022

Age	Number	Annual Benefit*	Annual Average Benefit*
Under 50	35	$ 659,597	$ 18,846
50-54	163	7,672,302	47,069
55-59	541	27,151,720	50,188
60-64	1,335	56,437,296	42,275
65-69	1,628	66,386,470	40,778
70-74	1,754	72,294,347	41,217
75-79	1,138	43,843,660	38,527
80-84	632	20,113,445	31,825
85-89	331	9,906,073	29,928
90 & Over	209	5,334,225	25,523
Total	7,766	$ 309,799,134	$ 39,892

* *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%

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

Solvency Test

Valuation Date	Aggregated Accrued Liabilities for: Active and Inactive Members Contributions	Retirees and Beneficiaries	Active and Inactive Members (Employer Financed Portion)	Reported Assets	Portions of Accrued Liabilities Covered by 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%

Table 14c

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	Experience for 2022			
	Number	Expected Pay	Actual Pay	Ratio A/E
Under 5	1,724	$ 97,924,191	$ 103,335,886	106%
5-9	1,659	102,983,463	106,347,979	103%
10-14	835	57,707,950	58,963,276	102%
15-19	948	67,508,847	68,684,740	102%
20-24	526	38,048,820	38,838,812	102%
25-29	322	24,618,305	24,728,975	100%
30 & Over	129	11,228,106	10,920,917	97%
Total	6,143	$ 400,019,682	$ 411,820,585	103%
Over 10 Years	2,760	$ 199,112,028	$ 202,136,720	102%

Service Beginning of Year	Experience for 2020-2022			
	Number	Expected Pay	Actual Pay	Ratio A/E
Under 5	5,427	$ 298,158,043	$ 304,692,680	102%
5-9	5,088	306,050,220	309,001,185	101%
10-14	2,682	179,134,773	179,548,027	100%
15-19	2,526	176,150,067	176,934,127	100%
20-24	1,849	128,655,771	128,553,044	100%
25-29	945	71,440,221	71,158,750	100%
30 & Over	396	33,295,180	32,856,178	99%
Total	18,913	$ 1,192,884,275	$ 1,202,743,991	101%
Over 10 Years	8,398	$ 588,676,012	$ 589,050,126	100%

Analysis of Retirement Experience

Each Age

Age	2022 Retirement Actual	2022 Retirement Expected	2022 Retirement Ratio A/E	2020-2022 Retirement Actual	2020-2022 Retirement Expected	2020-2022 Retirement Ratio A/E
46	-	-	N/A	-	-	N/A
47	-	-	N/A	-	-	N/A
48	-	-	N/A	-	-	N/A
49	-	0.10	0%	1	0.70	143%
50	4	6.10	66%	13	16.65	78%
51	5	7.50	67%	14	24.80	56%
52	7	7.60	92%	23	25.80	89%
53	8	9.90	81%	29	35.40	82%
54	11	10.50	105%	28	30.80	91%
55	15	12.65	119%	39	33.75	116%
56	8	10.60	75%	33	36.25	91%
57	18	15.60	115%	49	42.35	116%
58	6	7.80	77%	33	34.60	95%
59	11	11.45	96%	35	39.75	88%
60	24	19.48	123%	79	59.55	133%
61	7	15.93	44%	47	50.75	93%
62	14	14.69	95%	49	49.03	100%
63	9	13.35	67%	37	44.24	84%
64	9	15.25	59%	26	46.01	57%
65	16	15.91	101%	48	51.09	94%
66	14	16.72	84%	42	46.00	91%
67	13	14.18	92%	32	34.66	92%
68	11	7.71	143%	25	23.04	109%
69	3	5.75	52%	15	16.66	90%
70 & Over	19	90.00	21%	58	261.00	22%
Total	232	328.77	71%	755	1,002.88	75%
Total Under 70	213	238.77	89%	697	741.88	94%

Analysis of Retirement Experience

Age Groups

Age Group	2022 Retirements Actual	2022 Retirements Expected	2022 Retirements Ratio A/E	2020-2022 Retirements Actual	2020-2022 Retirements Expected	2020-2022 Retirements Ratio A/E
Under 55	35	41.70	84%	108	134.15	81%
55-59	58	58.10	100%	189	186.70	101%
60-64	63	78.70	80%	238	249.58	95%
65-69	57	60.27	95%	162	171.45	94%
70 & Over	19	90.00	21%	58	261.00	22%
Total	232	328.77	71%	755	1,002.88	75%
Total Under 70	213	238.77	89%	697	741.88	94%

Analysis of Turnover Experience

Years of Service	2022 Quits Actual	2022 Quits Expected	2022 Quits Ratio A/E	2020-2022 Quits Actual	2020-2022 Quits Expected	2020-2022 Quits Ratio A/E
0-4	504	364.07	138%	1,394	1,100.66	127%
5-9	200	126.38	158%	516	381.51	135%
10-14	50	27.26	183%	126	81.85	154%
15-19	23	14.26	161%	57	38.84	147%
20-24	5	4.02	125%	21	15.21	138%
25-29	2	0.49	407%	3	1.43	209%
Total	784	536.47	146%	2,117	1,619.51	131%

Analysis of Active Mortality Experience

Age	2022 Deaths			2020-2022 Deaths		
	Actual	Expected	Ratio A/E	Actual	Expected	Ratio A/E
20-24	1	0.03	3629%	1	0.08	1281%
25-29	0	0.10	0%	2	0.31	645%
30-34	1	0.20	497%	2	0.62	325%
35-39	0	0.29	0%	5	0.90	554%
40-44	0	0.48	0%	2	1.49	134%
45-49	2	0.84	239%	5	2.56	195%
50-54	3	1.36	221%	10	4.29	233%
55-59	3	1.95	154%	8	6.06	132%
60 and Over	6	3.38	177%	21	9.92	212%
Total	16	8.61	186%	56	26.23	213%

Analysis of Disability Experience

Age	2022 Disabilities			2020-2022 Disabilities		
	Actual	Expected	Ratio A/E	Actual	Expected	Ratio A/E
20-24	0	0.00	0%	0	0.01	0%
25-29	0	0.02	0%	0	0.07	0%
30-34	0	0.12	0%	0	0.36	0%
35-39	0	0.27	0%	0	0.83	0%
40-44	0	0.53	0%	0	1.62	0%
45-49	0	0.93	0%	0	2.82	0%
50-54	0	1.28	0%	0	3.94	0%
55-59	0	1.46	0%	0	4.39	0%
60 and Over	0	0.99	0%	0	2.70	0%
Total	0	5.60	0%	0	16.75	0%

Analysis of Retiree Mortality Experience*

	2022 Experience			2020-2022 Experience		
Age	**Actual**	**Expected**	**Ratio A/E**	**Actual**	**Expected**	**Ratio A/E**
Under 60	3	2.24	134%	12	7.18	167%
60-64	7	8.17	86%	34	24.26	140%
65-69	23	17.14	134%	76	52.63	144%
70-74	41	29.67	138%	124	87.10	142%
75-79	27	28.93	93%	98	81.54	120%
80-84	28	27.67	101%	85	77.58	110%
85-89	28	21.54	130%	81	62.23	130%
90 & over	21	23.39	90%	74	72.79	102%
Total	178	158.75	112%	584	465.31	126%

**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 2023 is assumed to be hired at a salary that is 3.00% greater than a new employee hired in 2022). 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	4	$54,089
20-24	216	46,562
25-29	355	50,139
30-34	359	53,095
35-39	280	56,847
40-44	276	60,463
45-49	241	60,231
50-54	230	60,942
55-59	171	58,853
60-64	94	63,496
65-69	8	49,340
Total	**2,234**	**$55,819**

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 2022 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	234	159

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 2022 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	7.3	3.5
70	19.6	10.9
80	54.2	34.7
90	152.9	111.1

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 2022 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	15.3	11.8
90	131.2	102.7

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.

ACTUARIAL METHODS AND ASSUMPTIONS (cont.)

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	300

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.

ACTUARIAL METHODS AND ASSUMPTIONS (cont.)

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, 2022

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.

SUMMARY OF BENEFIT PROVISIONS (cont.)

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%.

2022 Audit Presentation and Discussion

Employees' Retirement Fund of the City of Dallas

weaver

Assurance • Tax • Advisory

Team in Attendance

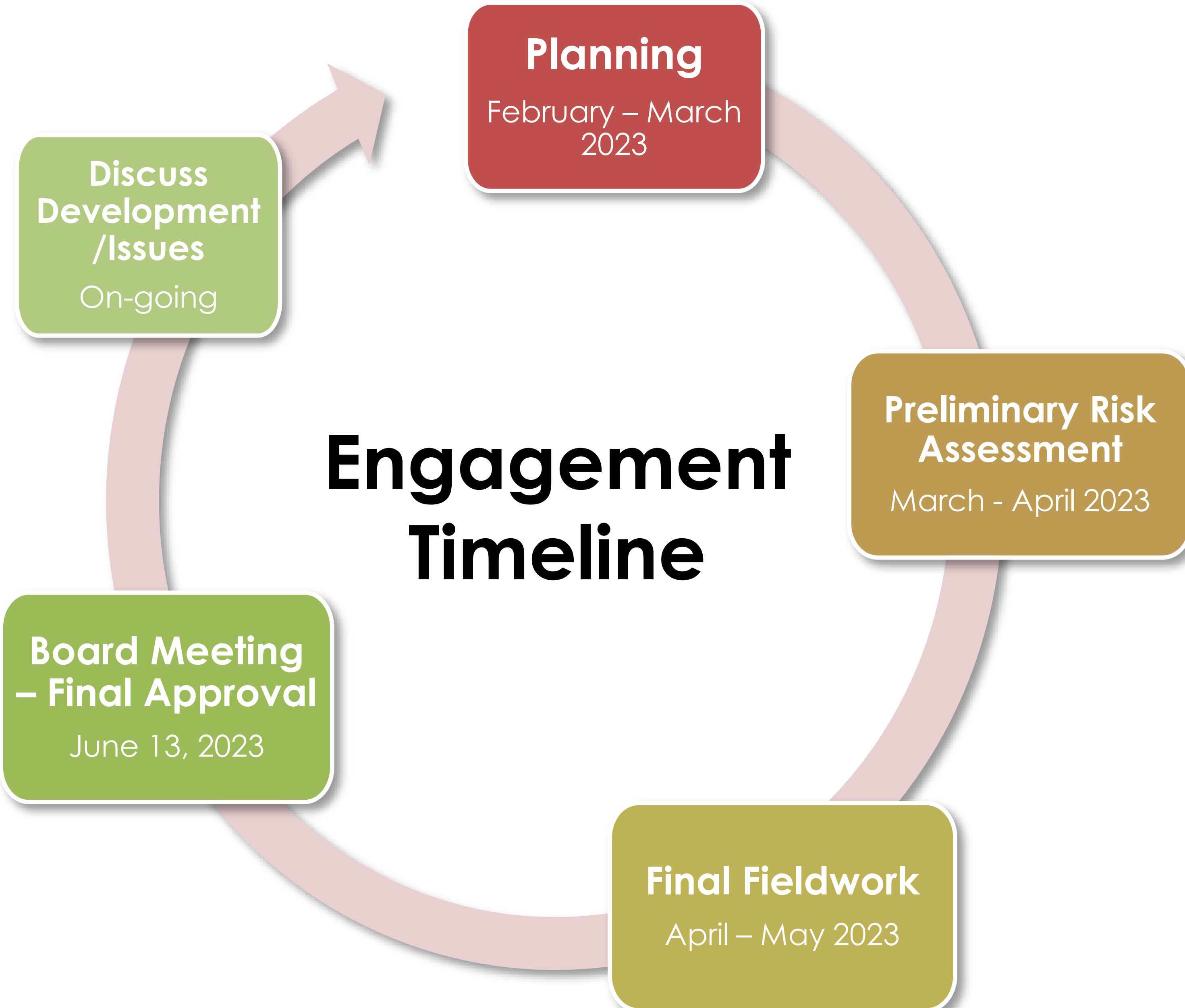
weaver
Assurance • Tax • Advisory

Aracely Rios, CPA
Partner,
Employee Benefit Plans

- **19+ 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 2023
Preliminary Risk Assessment
March - April 2023
Final Fieldwork
April – May 2023
Board Meeting – Final Approval
June 13, 2023
Discuss Development /Issues
On-going
Engagement Timeline

Audit Testing

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
Specific Risk Identified	**Procedures Performed**
Participant Data	- Performed analytics on census data - Reconciled census data to underlying payroll records
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)

weaver
Assurance • Tax • Advisory

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

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 2022 financial statements is complete and we plan to issue an unmodified opinion.

Required Communications to Those in Charge of Governance

weaver
Assurance • Tax • Advisory

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

weaver
Assurance • Tax • Advisory

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.

Use of Other Auditors

Specialists
Weaver uses a third-party pricing service for level 1 and level 2 investments

DISCUSSION

Contact Us

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

DISCUSSION SHEET

Employees' Retirement Fund
Board of Trustees Meeting

June 13, 2023

Issue: Fiscal Year 2023-24 Budget

Attachment: Proposed ERF FY 2023-24 Budget

Discussion: The fiscal year budget is from 10/1/23 to 9/30/24. The proposed FY 2023-24 budget is $24,487,700, which includes recurring expenditures and special projects. This represents an increase of $1,057,700 compared to the FY 2022-23 budget. The recurring expenditures are the operating costs and investment fees of the Fund. The recurring costs for FY 2023-24 are $23,987,700, which is an increase of $1,207,700 over the prior year. This increase is primarily due to merit raises, inflation, and additional legal expenses.

The special projects category includes technology upgrades which are one-time costs. The proposed budget for Special Projects for FY 2023-24 is $500,000.

Highlights include:

- Investment management fees remain unchanged.
- Personnel costs are budgeted to increase in accordance with the City of Dallas estimated merit increase. Although the amount of the merit increase, if any, authorized by the City of Dallas has not been decided, an increase of 1-5% has been included in this proposed budget.
- Non-recurring Special Projects costs are budgeted at $500,000 to provide for additional reports and improvements to processes.
- Certain costs determined by the City of Dallas have not yet been decided. This includes the amount of merit increase, healthcare charges per employee, workers compensation, pension costs related to each department's share of pension obligation bond debt service payments and software support for Workday. A future budget adjustment may be necessary upon passage of the City of Dallas' final budget.

In summary, the net increase to the FY 2023-24 budget is $1,057,700, or 4.5% higher than the FY 2022-23 budget.

Recommendation: Approve the proposed budget for FY 2023-24. Suggested motion for the approval is as follows: Move approval of the proposed FY 2023-24 budget totaling $24,487,700 which is attached to this discussion sheet and authorize the Executive Director to administer the budget as noted below.

The Executive Director is authorized to expend, as required, up to 110% of each line item or $50,000 whichever is less of the funds appropriated herein, but in no instance, is the authorization given to exceed the total budgeted for each category (Administrative, Benefits Management, Investments Management, Capital, or Special Projects) without Board approval.

The Executive Director is authorized to negotiate and sign contracts which are required in the conduct of Fund business and funds have been approved in this budget. This authorization is limited to $50,000 per contract.

The Executive Director is authorized to pay budgeted expenses, and to further pay pensions and member refunds which are authorized by law but are not specifically included in this budget.

EMPLOYEES' RETIREMENT FUND
EXPENDITURE BUDGET
Proposed Fiscal Year 2023-24 Budget

	YTD Expenditures Thru 4/30/23	FY 2022-23 Budget	Proposed FY 2023-24 Budget	Budget Variance	Percent Increase (Decrease)
ADMINISTRATIVE					
Salaries	$ 2,374,382	$ 4,764,500	$ 5,096,400	$ 331,900	7.0%
Merits	40,327	54,000	54,000	-	0.0%
Service Incentive Pay	3,216	2,000	2,000	-	0.0%
Lump Sum Pay	349,696	234,300	380,900	146,600	62.6%
Pensions	331,161	974,500	1,084,900	110,400	11.3%
Flexible Benefits	140,600	298,500	324,000	25,500	8.5%
FICWA/Medicare	38,182	68,000	73,900	5,900	8.7%
Workers' Compensation	-	35,000	35,000	-	0.0%
Temporary Help Services	148,871	180,000	200,000	20,000	11.1%
Supplies	8,519	10,000	11,000	1,000	10.0%
Food Supplies	5,126	10,000	11,000	1,000	10.0%
Meter Postage	11,209	27,300	27,000	(300)	-1.1%
Printing/Communication	3,720	26,300	23,000	(3,300)	-12.5%
Property Insurance	9,731	10,000	11,000	1,000	10.0%
Liability Insurance	387,723	307,000	407,000	100,000	32.6%
Membership Dues	11,327	27,300	29,000	1,700	6.2%
Subscriptions	-	3,200	1,000	(2,200)	-68.8%
Professional Development/Travel	116,626	99,000	200,000	101,000	102.0%
Reimbursement for Vehicle Use	-	400	400	-	0.0%
Data and Telecommunications Services	352,667	630,000	750,000	120,000	19.0%
Rent	328,379	599,500	600,000	500	0.1%
Parking and Public Transportation	9,485	8,000	8,000	-	0.0%
Legal	407,155	241,500	400,000	158,500	65.6%
Accounting	29,617	50,000	50,000	-	0.0%
Audit	-	49,700	50,200	500	1.0%
Actuary	4,510	84,000	85,000	1,000	1.2%
Election	-	50,000	50,000	-	0.0%
Other	24,500	45,000	95,000	50,000	111.1%
Total Administrative	**5,136,727**	**8,889,000**	**10,059,700**	**1,170,700**	**13.2%**
BENEFITS MANAGEMENT					
Disabilities/Continuations/Etc	1,600	28,000	28,000	-	0.0%
Pension Benefit Information	-	10,000	10,000	-	0.0%
Total Benefits Management	**1,600**	**38,000**	**38,000**	**-**	**0.0%**
INVESTMENTS MANAGEMENT					
Manager Fees	6,007,908	13,000,000	13,000,000	-	0.0%
Investment Consultant & Services	284,296	375,000	400,000	25,000	6.7%
Custodial Fees	156,566	316,000	320,000	4,000	1.3%
Total Investments Management	**6,448,770**	**13,691,000**	**13,720,000**	**29,000**	**0.2%**
CAPITAL					
Furniture, Fixtures, Equipment	16,169	50,000	50,000	-	0.0%
Computer Equipment	32,938	112,000	120,000	8,000	7.1%
Total Capital	**49,107**	**162,000**	**170,000**	**8,000**	**4.9%**
TOTAL RECURRING	**$ 11,636,204**	**$ 22,780,000**	**$ 23,987,700**	**$ 1,207,700**	**5.3%**
NON-RECURRING					
Special Projects	148,401	650,000	500,000	(150,000)	-23.1%
				-	
TOTAL BUDGET	**$ 11,784,605**	**$ 23,430,000**	**$ 24,487,700**	**$ 1,057,700**	**4.5%**

DISCUSSION SHEET

Employees' Retirement Fund
Board of Trustees Meeting

June 13, 2023

Issue: Baillie Gifford & Co.

Attachments: None

Discussion: In May 2022 the Board placed Baillie Gifford on watch due to investment performance. The recommendation at that time was to place Baillie Gifford on watch for six months and re-evaluate their performance. During the watch period, ERF staff held monthly calls with Baillie Gifford to closely monitor the organization, and their performance. Also in October 2022, the Board had a detailed discussion about Baillie Gifford with both ERF staff and Wilshire. At the February 2023 Board meeting, staff requested a six-month extension of the watch period to continue to observe performance through May 2023.

Given Baillie Gifford's investment outperformance, we recommend removing them from the watch list. Wilshire concurs with Staff recommendation.

Recommendation: Suggested motion for approval is as follows: Move to approve Baillie Gifford & Co.'s removal from the ERF watch list.

From:	Thomas Toth
To:	erf_investments
Cc:	Ali Kazemi
Subject:	Baillie Gifford - International Equity
Date:	Wednesday, June 7, 2023 3:51:54 PM
Attachments:	image001.png image002.png

External Sender: This message originated outside of ERF email system. Please exercise caution before opening attachments, clicking links, replying, or providing information to the sender.

Hi team,

Wilshire has reviewed the performance of Baillie Gifford since being put on watch. We believe the strong recovery in relative performance exhibited over the last year, in combination with stability of the investment process, supports Staff's recommendation to remove them from watch.

Regards,
Tom

Thomas Toth, CFA | Managing Director
Wilshire | 370 Interlocken Blvd., Ste 620 | Broomfield, CO 80021
T +1 303 626 7448 M +1 310 883 5990 E ttoth@wilshire.com

wilshire.com

Government Finance Officers Association
203 North LaSalle Street, Suite 2700
Chicago, Illinois 60601-1210
312.977.9700 *fax:* 312.977.4806

6/6/2023

Cheryl Alston
Executive Director
Employees' Retirement Fund of the City of Dallas, Texas

Dear Cheryl:

We are pleased to notify you that your annual comprehensive financial report for the fiscal year ended December 31, 2021 qualifies for GFOA's Certificate of Achievement for Excellence in Financial Reporting. The Certificate of Achievement is the highest form of recognition in governmental accounting and financial reporting, and its attainment represents a significant accomplishment by a government and its management.

When a Certificate of Achievement is awarded to a government, an Award of Financial Reporting Achievement (AFRA) is also presented to the individual(s) or department designated by the government as primarily responsible for its having earned the Certificate. This award has been sent to the submitter as designated on the application.

We hope that you will arrange for a formal presentation of the Certificate and Award of Financial Reporting Achievement, and give appropriate publicity to this notable achievement. A sample news release is included to assist with this effort.

We hope that your example will encourage other government officials in their efforts to achieve and maintain an appropriate standard of excellence in financial reporting.

Sincerely,

Michele Mark Levine

Michele Mark Levine
Director, Technical Services

GOVERNMENT FINANCE OFFICERS ASSOCIATION

NEWS RELEASE

FOR IMMEDIATE RELEASE

6/6/2023

For more information contact:
Michele Mark Levine, Director/TSC
Phone: (312) 977-9700
Fax: (312) 977-4806
Email: mlevine@gfoa.org

(Chicago, Illinois)—Government Finance Officers Association of the United States and Canada (GFOA) has awarded the Certificate of Achievement for Excellence in Financial Reporting to **Employees' Retirement Fund of the City of Dallas** for its annual comprehensive financial report for the fiscal year ended December 31, 2021. The report has been judged by an impartial panel to meet the high standards of the program, which includes demonstrating a constructive "spirit of full disclosure" to clearly communicate its financial story and motivate potential users and user groups to read the report.

The Certificate of Achievement is the highest form of recognition in the area of governmental accounting and financial reporting, and its attainment represents a significant accomplishment by a government and its management.

Government Finance Officers Association (GFOA) advances excellence in government finance by providing best practices, professional development, resources, and practical research for more than 21,000 members and the communities they serve.

with. Intelligence | Home | Agenda | 2023 Speakers | 2023 Sponsors | Attendees | Find Out More | More

with. Intelligence

Pension Bridge Private Equity Exclusive 2023

Loews Chicago Hotel

Chicago, Illinois

July 24-26

Attracting the elite within the private equity industry

Now in its 17th year, the Private Equity Exclusive is returning this summer to the Loews Chicago Hotel. The event will see thought leaders from North America's largest LPs and GPs come together for in-depth knowledge sharing, peer-to-peer collaboration, and unique networking opportunities.

Hot topics, sparking vibrant conversations

There has never been a better time for the industry to come together to discuss its opportunities and challenges. Seen as the darling of the investment community, private equity now faces significant headwinds globally. The outbreak of war in the Ukraine, rising inflationary pressure, and the threat of recession have provoked a massive reapproaching of spend. However, PE now has an opportunity to purchase distressed assets and tuck in and merge additional technology assets to make returns. This year we will explore these issues in depth, discussing the challenges the private equity industry has faced over the past 12 months, whilst offering an outlook on the trends that lie ahead.

2023 Advisory Board

Ksenija Jovanovic
Director, Alternatives
Aflac

Tara Mason
Senior Manager, Enterprise Investments
Health Care Service Corporation

Chris Eckerman
Senior Portfolio Manager
State of Wisconsin Investment Board

Scott Ramsower
Head of Private Equity Funds
Teacher Retirement System of Texas

Kathryn Liao
Managing Principal
Allstate Investments

Joyce Pan
Sr. Portfolio Manager
Exelon Corporation

Where business gets done

Over nearly two decades, Pension Bridge has built an enviable reputation for hosting some of the most important and valuable conferences for the institutional asset management community.

We regularly attract super-star LPs, with more than $6trn of asset in the room.

LPs come to meet new and existing managers and ultimately to make new private equity allocations; consultants aim to improve their understanding of the sector and to develop their networks; and GPs come to build relationships with investors and consultants, and of course to win business.

A conference like no other

Attendance at Pension Bridge is sought after. This is the event where GPs can make game-changing deals by connecting with prospective and current clients.

To allow for this, we have, and always will, maintain a strict attendance structure. Unique to the industry, we aim to deliver a 1:1 ratio of investors and consultants to manager attendees. This ensures there is an optimal environment to foster connections – investors don't feel overwhelmed, and you have the greatest visibility to forge relationships.

Become a Sponsor

Forum Offers Education, Training and Networking to Pension Stakeholders

TEXPERS' conferences and forums bring Texas' key pension stakeholders together for education, training, and networking. The next time they will gather is Aug. 13-15, 2023, for the Association's Summer Educational Forum in The Woodlands.

The forum starts with a pre-conference golf tournament at 7 a.m. at The Woodlands Country Club, located at 100 Grand Fairway Drive.

Advanced Trustee training to fulfill state-mandated continuing education requirements of the Texas Pension Review Board will be held from 9 a.m. to 1:45 p.m. at the event venue, The Woodlands Resort Curio Collection by Hilton, located at 2301 N. Millbend Dr., The Woodlands, Texas, 77380. The registration fee is $150 for TEXPERS member retirement systems and employee group members and is $325 for non-member retirement systems.

Advanced Trustee Training is different every time it is held, covers various PRB-approved topics, and costs $150 for TEXPERS members and $300 for non-members.

The Summer Educational Forum officially starts Monday, Aug. 14. with an opening ceremony and a keynote speaker followed by a full day of general sessions and ending with a TEXPERS' members event at the Forest Deck/Emerald Ballroom at the resort.

Education and networking opportunities continue the next day, Aug. 15.

TEXPERS 2023 Summer Forum
The Woodlands Resort Curio Collection by Hilton
Schedule at a Glance
(Updated on 01/11/23)

Sunday, August 13th

7:00 am to 1:00 pm Golf Tournament – The Woodlands Country Club (100 Grand Fairway Drive, 77381)

9:00 am to 1:45 pm Advanced Trustee Training (Registration & Breakfast at 8:30)

3:00 pm to 5:30 pm Conference Registration (All TEXPERS Members)
3:30 pm to 4:00 pm Conference & Education Committee Meeting
4:00 pm to 4:30 pm TEXPERS Board Meeting

4:30 pm to 6:30 pm Welcome Reception (TBD)

Monday, August 14th

7:00 am to 4:30 pm Conference Registration
7:00 am to 7:45 am Networking Breakfast
8:00 am to 8:15 am Opening Ceremony
8:15 am to 4:30 pm General Sessions, Breakout Sessions
5:00 pm to 7:00 pm All TEXPERS Member's Event – Forest Deck/Emerald Ballroom (The Woodlands Resort)

Tuesday, August 15th

7:30 am to 9:45 am Conference Registration
7:30 am to 8:15 pm Networking Breakfast
8:30 am to 2:30 pm General Sessions, Luncheon

ASSET ALLOCATION COMPARISON

May 31, 2023

	Market Value	% of Total Fund	Allocation Policy	% Difference from Allocation	Prior Period Market Value	Prior Period % of Total Fund
EQUITY						
CHANNING CAPITAL	25,441,366.79	**0.72**			25,581,531.73	**0.71**
REDWOOD- SL	26,324,577.33	**0.75**			27,392,446.11	**0.76**
SYSTEMATIC	60,908,756.40	**1.73**			61,388,226.82	**1.71**
Total Small Cap	**112,674,700.52**	***3.21***			**114,362,204.66**	***3.19***
SMITH GRAHAM	67,113,695.23	**1.91**			68,971,663.09	**1.92**
T. ROWE PRICE	149,911,295.02	**4.26**			148,271,111.36	**4.14**
Total Domestic/Enhanced equity	**217,024,990.25**	***6.17***			**217,242,774.45**	***6.06***
NTGI S&P 500 EQUITY INDEX	63,592,615.19	**1.81**			63,316,746.12	**1.77**
Total Index	**63,592,615.19**	***1.81***			**63,316,746.12**	***1.77***
Total Domestic	**393,292,305.96**	***11.19***	***12.50***	***-1.31***	**394,921,725.23**	***11.02***
ADELANTE CAPITAL	42,089,547.32	**1.20**		`	43,363,097.68	**1.21**
CENTERSQUARE-SL	42,288,662.08	**1.20**			43,805,379.17	**1.22**
Total REITS	**84,378,209.40**	***2.40***	***2.50***	***-0.10***	**87,168,476.85**	***2.43***
AEW PARTNERS	43,355,771.00	**1.23**			43,375,614.00	**1.21**
BRASA CAPITAL MGMT	11,108,597.00	**0.32**			9,353,431.00	**0.26**
HEITMAN	101,330,850.80	**2.88**			101,330,850.80	**2.83**
INVESCO	79,522,019.29	**2.26**			79,522,019.29	**2.22**
INVESCO - SL	80,228,247.00	**2.28**			80,228,247.00	**2.24**
LONG WHARF CAPITAL	495,286.36	**0.01**			1,868,078.00	**0.05**
VIRTUS REAL ESTATE CAP	29,640,363.00	**0.84**			29,349,404.00	**0.82**
Total Real Estate	**345,681,134.45**	***9.83***	***7.50***	***2.33***	**345,027,644.09**	***9.63***
FAIRVIEW CAPITAL	93,136,587.00	**2.65**			93,184,237.00	**2.60**
GROSVENOR GCM - CFIG	171,681,994.00	**4.88**			175,521,230.00	**4.90**
HAMILTON LANE	109,990,266.00	**3.13**			109,594,678.00	**3.06**
Total Private Equity	**374,808,847.00**	***10.66***	***7.50***	***3.16***	**378,300,145.00**	***10.55***
ACADIAN	102,608,895.97	**2.92**			106,550,186.48	**2.97**
AQR CAPITAL	115,284,902.30	**3.28**			121,072,294.23	**3.38**
ATIVO	29,996,639.52	**0.85**			31,331,213.38	**0.87**
BAILLIE GIFFORD	69,785,130.45	**1.99**			71,068,985.98	**1.98**
EARNEST PARTNERS	79,819,204.68	**2.27**			82,237,751.62	**2.29**
Total International	**397,494,772.92**	***11.31***	***12.50***	***-1.19***	**412,260,431.69**	***11.50***
ARIEL	99,455,999.33	**2.83**			*101,804,994.74*	**2.84**
WELLINGTON MGMT	126,450,485.25	**3.60**			*127,404,222.30*	**3.55**
Total Global Equity	**225,906,484.58**	***6.43***	***7.50***	***-1.07***	**229,209,217.04**	***6.39***
ACADIAN-LVG	236,469,983.45	**6.73**			242,342,364.43	**6.76**
BLACKROCK	232,885,490.32	**6.62**			*240,573,861.09*	**6.71**
Total Global Low Volatility Equity	**469,355,473.77**	***13.35***	***12.50***	***0.85***	**482,916,225.52**	***13.47***
ATLANTIC TRUST	43,375,082.96	**1.23**			45,445,446.83	**1.27**
HARVEST FUND	47,367,209.77	**1.35**			49,040,692.94	**1.37**
COHEN & STEERS	56,170,096.42	**1.60**			59,374,983.90	**1.66**
Total Global Listed Infratructure	**146,912,389.15**	***4.18***	***5.00***	***-0.82***	**153,861,123.67**	***4.29***
DAVIDSON KEMPNER INST PTRS	46,405,319.00	**1.32**			46,153,558.00	**1.29**
HUDSON BAY CAPITAL	46,520,431.00	**1.32**			46,348,300.00	**1.29**
Total Marketable Alternatives	**92,925,750.00**	**2.64**	***2.50***	***0.14***	***92,501,858.00***	***2.58***
TOTAL EQUITY	**2,530,755,367.23**	**71.99**	**70.00**	**1.99**	**2,576,166,847.09**	**71.87**
FIXED INCOME						
GARCIA HAMILTON	150,103,890.46	**4.27**			151,866,895.42	**4.24**
WESTERN ASSET MANAGEMENT	154,569,515.88	**4.40**			156,109,631.68	**4.35**
WELLINGTON-CORE BOND	153,498,620.74	**4.37**			154,824,524.37	**4.32**
Total Investment Grade	**458,172,027.08**	***13.03***	***15.00***	***-1.97***	**462,801,051.47**	***12.91***
NEUBERGER BERMAN	168,690,903.06	**4.80**			169,623,212.08	**4.73**
Total Opportunistic Credit	**168,690,903.06**	***4.80***	**5.00**	***-0.20***	**169,623,212.08**	***4.73***
BLACKROCK-HY	175,860,270.99	**5.00**			178,107,570.72	**4.97**
OAKTREE	166,668,776.90	**4.74**			168,731,387.31	**4.71**
Total High Yield	**342,529,047.89**	***9.74***	***10.00***	***-0.26***	**346,838,958.03**	***9.68***
CASH ACCOUNT	15,140,757.80	**0.43**			29,206,121.71	**0.81**
Total Short Term	**15,140,757.80**	***0.43***	***0.00***	***0.43***	**29,206,121.71**	***0.81***
TOTAL FIXED INCOME	**984,532,735.83**	**28.01**	**30.00**	**-1.99**	**1,008,469,343.29**	**28.13**

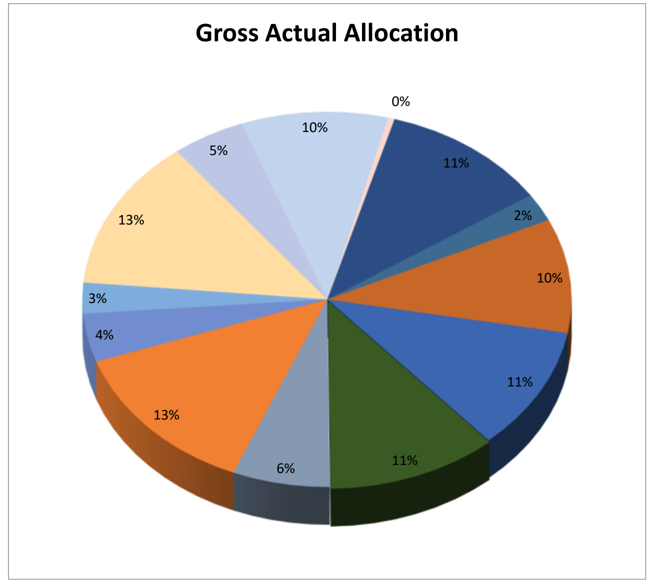
TOTAL FUND	**$ 3,515,288,103.06**		**$ 3,584,636,190.38**
Market Value YE 2022	**$ 3,506,826,739.93**		**Market Value Variance**
		Change from YE 2022:	**$ 8,461,363.13**
		Change from prior month:	**$ (69,348,087.32)**

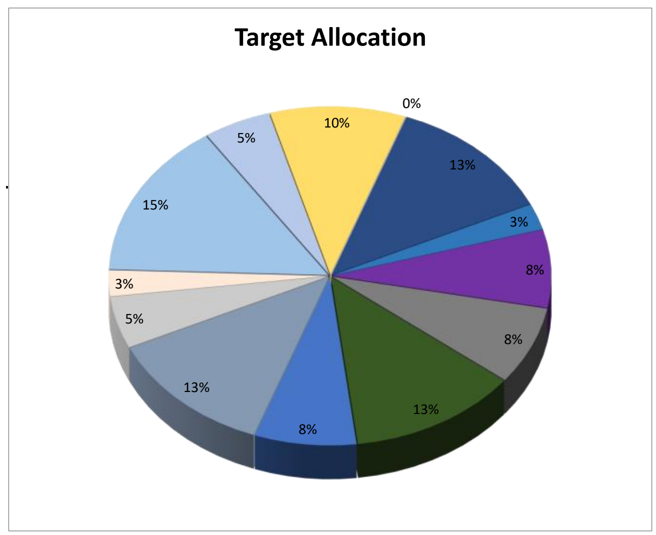
Asset Allocation: Actual vs. Target

May 31, 2023

	Market Value	Gross Actual Allocation	Target Allocation	% Difference from Allocation
EQUITY				
CHANNING CAPITAL	25,441,366.79	0.72		
REDWOOD- SL	26,324,577.33	0.75		
SYSTEMATIC	60,908,756.40	1.73		
Total Small Cap	112,674,700.52	3.21		
SMITH GRAHAM	67,113,695.23	1.91		
T. ROWE PRICE	149,911,295.02	4.26		
Total Domestic/Enhanced equity	217,024,990.25	6.17		
NTGI S&P 500 EQUITY INDEX	63,592,615.19	1.81		
Total Index	63,592,615.19	1.81		
Total Domestic	**393,292,305.96**	***11.19***	***12.50***	***-1.31***
ADELANTE CAPITAL	42,089,547.32	1.20		
CENTERSQUARE-SL	42,288,662.08	1.20		
Total REITS	**84,378,209.40**	2.40	***2.50***	***-0.10***
AEW PARTNERS	43,355,771.00	1.23		
BRASA CAPITAL MGMT	11,108,597.00	0.32		
HEITMAN	101,330,850.80	2.88		
INVESCO	80,228,247.00	2.26		
INVESCO - SL	79,522,019.29	2.28		
LONG WHARF CAPITAL	495,286.36	0.01		
VIRTUS REAL ESTATE CAP	29,640,363.00	0.84		
Total Real Estate	**345,681,134.45**	9.83	***7.50***	***2.33***
FAIRVIEW CAPITAL	93,136,587.00	2.65		
GROSVENOR GCM - CFIG	171,681,994.00	4.88		
HAMILTON LANE	109,990,266.00	3.13		
Total Private Equity	**374,808,847.00**	10.66	***7.50***	***3.16***
ACADIAN	102,608,895.97	2.92		
AQR CAPITAL	115,284,902.30	3.28		
ATIVO	29,996,639.52	0.85		
BAILLIE GIFFORD	69,785,130.45	1.99		
EARNEST PARTNERS	79,819,204.68	2.27		
Total International	**397,494,772.92**	11.31	***12.50***	***-1.19***
ARIEL	99,455,999.33	2.83		
WELLINGTON MGMT	126,450,485.25	3.60		
Total Global Equity	**225,906,484.58**	6.43	***7.50***	***-1.07***
ACADIAN-LVG	236,469,983.45	6.73		
BLACKROCK	232,885,490.32	6.62		
Total Global Low Volatility Equity	**469,355,473.77**	13.35	***12.50***	***0.85***
ATLANTIC TRUST	43,375,082.96	1.23		
HARVEST FUND	47,367,209.77	1.35		
COHEN & STEERS	56,170,096.42	1.60		
Total Global Listed Infratructure	**146,912,389.15**	4.18	***5.00***	***-0.82***
DAVIDSON KEMPNER INST PTRS	46,405,319.00	1.32		
HUDSON BAY CAPITAL	46,520,431.00	1.32		
Total Marketable Alternatives	**92,925,750.00**	2.64	***2.50***	***0.14***
TOTAL EQUITY	**2,530,755,367.23**	**71.99**	**70.00**	**1.99**
FIXED INCOME				
GARCIA HAMILTON	150,103,890.46	4.27		
WESTERN ASSET MANAGEMENT	154,569,515.88	4.40		
WELLINGTON-CORE BOND	153,498,620.74	4.37		
Total Investment Grade	**458,172,027.08**	13.03	***15.00***	***-1.97***
NEUBERGER BERMAN	168,690,903.06	4.80		
Total Opportunistic Credit	**168,690,903.06**	4.80	***5.00***	***-0.20***
BLACKROCK-HY	175,860,270.99	5.00		
OAKTREE	166,668,776.90	4.74		
Total High Yield	**342,529,047.89**	9.74	***10.00***	***-0.26***
CASH ACCOUNT	15,140,757.80	0.43		
Total Short Term	**15,140,757.80**	0.43	***0.00***	***0.43***
TOTAL FIXED INCOME	**984,532,735.83**	**28.01**	**30.00**	**-1.99**

TOTAL FUND **$ 3,515,288,103.06**





DISCUSSION SHEET

Employees' Retirement Fund
Board of Trustees Meeting

June 13, 2023

Issue: Third Quarter Cash Rebalance

Attachment: None, informational purposes

Discussion: During the month of June, ERF staff rebalanced fund managers taking $60 million in cash to pay benefits for the Third Quarter of 2023.

Redemptions for Third Quarter cash needs were as follows: $20 million from Acadian Asset Management Global Low Volatility, $20 million from BlackRock Investment Management Global Low Volatility, and $20 million from Wellington Management Company LLP Global Equity.

Wilshire

Dallas Employees' Retirement Fund

Monthly Investment Summary

May-2023

Monthly Index Performance

Periods Ended May 31, 2023

	Performance (%)					
	1 Month	QTD	YTD	1 Year	3 Years	5 Years
U.S. Equity						
FT Wilshire 5000 Index	0.43	1.47	8.87	2.10	12.61	10.34
S&P 500 Index	0.43	2.00	9.65	2.92	12.92	11.01
Wilshire 4500 Completion Index	0.38	-1.62	4.05	-3.33	10.27	6.01
MSCI USA Minimum Volatility Index	-3.24	-1.79	-0.52	-0.91	6.95	8.46
U.S. Equity by Size/Style						
Wilshire U.S. Large-Cap Index	0.58	1.87	9.66	2.78	12.80	10.98
Wilshire U.S. Large-Cap Growth Index	5.27	6.71	23.44	10.22	14.13	13.29
Wilshire U.S. Large-Cap Value Index	-4.70	-3.56	-3.50	-5.12	11.00	8.18
Wilshire U.S. Small-Cap Index	-1.40	-3.21	0.23	-5.27	10.90	3.88
Wilshire U.S. Small-Cap Growth Index	-0.70	-2.46	3.73	-0.50	7.99	3.84
Wilshire U.S. Small-Cap Value Index	-2.07	-3.92	-2.93	-9.43	13.93	3.33
Wilshire U.S. Micro-Cap Index	0.38	-2.84	0.43	-5.55	6.76	-1.07
Non-U.S. Equity (USD)						
MSCI AC World ex USA (Net)	-3.64	-1.96	4.77	-1.41	7.23	2.22
MSCI ACWI ex USA Minimum Volatility Index (Net)	-2.86	0.66	4.43	-0.92	4.40	2.15
MSCI EAFE (Net)	-4.23	-1.53	6.81	3.06	8.53	3.21
MSCI Emerging Markets (Net)	-1.68	-2.79	1.05	-8.49	3.47	-0.67
MSCI AC World ex USA Small Cap (Net)	-2.77	-1.34	3.29	-4.59	8.09	1.37
U.S. Fixed Income						
Blmbg. U.S. Aggregate Index	-1.09	-0.49	2.46	-2.14	-3.65	0.81
Blmbg. U.S. Treasury: Long	-2.79	-2.29	3.74	-8.18	-12.04	-0.84
Blmbg. U.S. Long Corporate Index	-2.78	-2.05	3.29	-4.85	-5.85	1.02
Blmbg. U.S. TIPS Index	-1.20	-1.09	2.21	-4.20	0.36	2.64
Blmbg. U.S. Credit Index	-1.39	-0.62	2.81	-1.56	-2.90	1.50
Blmbg. U.S. Corp: High Yield Index	-0.92	0.07	3.64	0.05	2.90	3.10
Morningstar LSTA US Leveraged Loan	-0.18	0.87	4.12	5.91	5.92	3.69

Asset Allocation & Performance

Dallas Total Fund

Periods Ended May 31, 2023

	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	-1.44	2.69	5.70	1.73	8.77	5.99	8.21	9/1/2012	225,906,485	6.43
Global Low Volatility Composite	-2.81	3.82	2.59	0.61	6.51	5.13	6.53	7/1/2015	469,355,474	13.35
Domestic Equity Composite	-0.41	-0.73	4.81	-1.02	13.69	8.49	9.99	1/1/1990	393,292,306	11.19
International Equity Composite	-3.58	-1.62	4.08	-4.18	8.05	2.25	5.28	1/1/1990	397,494,773	11.31
Fixed Income Composite	-1.10	2.19	3.08	-1.47	-2.33	1.22	4.30	10/1/1995	458,171,979	13.03
High Yield Composite	-1.23	0.63	3.29	-0.16	2.91	2.94	5.83	1/1/1997	342,529,048	9.74
Credit Opportunities Composite	-0.63	-0.07	2.30	-0.46	1.77	1.69	3.78	2/1/2016	168,690,903	4.80
Total Real Estate Composite	-0.71	-1.98	-0.83	-3.23	9.90	7.65	6.68	1/1/1990	430,059,344	12.23
Global Listed Infrastructure Composite	-4.52	-1.79	0.11	0.79	16.47	2.15	4.62	1/1/2012	146,912,389	4.18
Private Equity Composite	0.21	0.24	0.04	0.05	16.56	14.85	13.96	6/1/2009	374,808,847	10.66
Marketable Alternatives Composite	0.46	0.97	2.10				3.25	10/1/2022	92,925,750	2.64
Managed Short Term Composite	0.39	1.48	2.13	3.49	1.24	1.56	2.76	1/1/1990	15,140,758	0.43
Dallas Total Fund	-1.46	0.45	2.48	-1.38	7.53	5.02	8.64	1/1/1985	3,515,288,055	100.00
Policy Index	-1.40	1.45	3.87	-1.17	6.60	4.97	9.14			

Asset Allocation & Performance

Domestic Equity

Periods Ended May 31, 2023

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value $	%
Systematic Financial	-0.78	-7.11	-1.55	-2.33	15.59	4.25	9.96	8/1/2003	60,908,756	15.49
Russell 2000 Index	-0.92	-7.35	-0.04	-4.68	9.23	2.74	8.21			
Redwood Investments *	-3.90	-7.95	-2.87	-12.65	1.28	1.59	4.24	10/1/2016	26,324,577	6.69
Russell 2000 Growth Index	0.02	-3.58	4.86	2.68	4.62	2.74	7.06			
Channing Capital *	-0.55	-7.70	1.03	-10.68	12.78	3.09	5.44	12/1/2013	25,441,367	6.47
Russell 2000 Value Index	-1.97	-11.27	-5.04	-11.50	13.60	2.09	5.23			
Domestic Equity Small Cap Composite	-1.48	-7.55	-1.35	-6.85	11.42	3.54	8.62	6/1/2003	112,674,701	28.65
Smith Graham *	-2.69	-9.53	-2.45	-5.65	20.31	6.37	6.63	1/1/2018	67,113,695	17.06
Russell Midcap Index	-2.79	-4.79	0.61	-4.51	10.19	6.88	6.66			
T. Rowe Price	1.11	7.28	11.81	5.49	13.92	11.70	9.84	4/1/2006	149,911,295	38.12
S&P 500 Index	0.43	5.75	9.65	2.92	12.92	11.01	9.24			
Northern Trust S&P 500 (Lending)	0.44	5.75	9.65	2.93	12.89	11.01	10.18	1/1/1995	63,592,615	16.17
S&P 500 Index	0.43	5.75	9.65	2.92	12.92	11.01	10.14			
Domestic Equity Composite	-0.41	-0.73	4.81	-1.02	13.69	8.49	9.99	1/1/1990	393,292,306	100.00
FT Wilshire 5000	0.43	4.28	8.87	2.10	12.61	10.34	10.17			

* Domestic Equity Composite Since Inception benchmark includes S&P 500 until March, 1999.

Asset Allocation & Performance

International Equity

Periods Ended May 31, 2023

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value $	%
Acadian International	-3.70	-2.90	1.13	-8.45	10.23	1.93	7.95	4/1/1989	102,608,896	25.81
Custom Benchmark	-2.77	-1.12	3.29	-4.59	8.09	1.37	5.58			
Ativo International *	-4.26	-0.28	4.75	-3.09	5.96	1.17	1.21	1/1/2018	29,996,640	7.55
MSCI EAFE (Net)	-4.23	0.91	6.81	3.06	8.53	3.21	2.66			
AQR Capital Management	-4.78	-3.53	2.78	-5.42	6.04	-0.10	2.79	4/1/2006	115,284,902	29.00
Custom Benchmark	-3.64	0.43	4.77	-1.41	7.23	2.22	2.86			
Baillie Gifford	-1.81	3.38	11.03	3.40	2.54		3.85	4/1/2019	69,785,130	17.56
MSCI AC World ex USA (Net)	-3.64	0.43	4.77	-1.41	7.23		3.55			
Earnest Partners *	-2.95	-1.70	4.15	-2.62	13.30		6.02	4/1/2019	79,819,205	20.08
MSCI AC World ex USA (Net)	-3.64	0.43	4.77	-1.41	7.23		3.55			
International Equity Composite	-3.58	-1.62	4.08	-4.18	8.05	2.25	5.28	1/1/1990	397,494,773	100.00
Custom Benchmark	-3.52	0.22	4.56	-1.86	7.34	2.09	4.35			

Asset Allocation & Performance

Global Equity

Periods Ended May 31, 2023

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value $	%
Ariel Global *	-2.31	1.93	3.57	-1.13	8.38	5.79	5.50	1/1/2018	99,455,999	44.03
MSCI AC World Index (Net)	-1.07	3.44	7.68	0.85	10.07	6.77	6.26			
Wellington	-0.75	3.30	7.60	4.32	8.49	5.85	9.90	9/1/2012	126,450,485	55.97
MSCI AC World Index (Net)	-1.07	3.44	7.68	0.85	10.07	6.77	8.74			
Global Equity Composite	-1.44	2.69	5.70	1.73	8.77	5.99	8.21	9/1/2012	225,906,485	100.00
MSCI AC World Index (Net)	-1.07	3.44	7.68	0.85	10.07	6.77	8.74			

Asset Allocation & Performance

Global Low Volatility

Periods Ended May 31, 2023

	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.	-2.42	4.27	3.90	2.14	7.93	5.21	6.56	7/1/2015	236,469,983	50.38
MSCI AC World Index (Net)	-1.07	3.44	7.68	0.85	10.07	6.77	7.45			
MSCI AC World Minimum Volatility Index (Net)	-3.19	3.23	1.06	-1.25	4.75	4.92	6.20			
BlackRock Global Low Vol.	-3.21	3.37	1.26	-0.93	5.09	5.05	6.48	7/1/2015	232,885,490	49.62
MSCI AC World Minimum Volatility Index (Net)	-3.19	3.23	1.06	-1.25	4.75	4.92	6.20			
Global Low Volatility Composite	-2.81	3.82	2.59	0.61	6.51	5.13	6.53	7/1/2015	469,355,474	100.00
MSCI AC World Minimum Volatility Index (Net)	-3.19	3.23	1.06	-1.25	4.75	4.92	6.20			

Private Equity Summary

Periods Ended as of May 31, 2023

	Month-End Market Value	Commitment Value	Drawn Down Capital	Cash Distributions	Inception Date	IRR Since Inception	Multiple [3]
Hamilton Lane Secondary Fund II	194,746	25,000,000	22,058,532	31,222,789	Jul-09	13.5%	1.4
Hamilton Lane Secondary Fund III	3,040,270	30,000,000	23,372,292	28,260,555	Nov-12	9.9%	1.3
Hamilton Lane Secondary Fund IV	16,670,568	30,000,000	25,907,343	25,006,438	Mar-17	18.0%	1.6
Hamilton Lane Secondary Fund V	55,521,018	65,000,000	43,128,993	8,244,733	Mar-20	24.3%	1.5
Hamilton Lane Secondary Fund VI-A	2,155,871	30,000,000	1,500,000	-	Feb-23	43.7%	1.4
Hamilton Lane Fund VII Composite	15,269,417	50,000,000	45,600,834	55,162,854	Jan-10	6.3%	1.5
Hamilton Lane Fund VIII (Global)	17,138,376	30,000,000	22,270,594	16,947,720	Nov-12	7.4%	1.5
GCM Grosvenor - Partnership, L.P.	25,157,911	75,000,000	93,988,722	134,784,762	Jun-11	14.3%	1.7
GCM Grosvenor - Partnership II, L.P. (2014)	48,455,486	60,000,000	71,665,890	68,718,307	Jul-14	16.5%	1.6
GCM Grosvenor - Partnership II, L.P. (2015)	59,605,348	30,000,000	41,980,082	11,065,785	Dec-15	13.7%	1.7
GCM Grosvenor - Partnership II, L.P. (2017)	30,828,414	30,000,000	29,053,710	8,557,122	Jan-18	15.9%	1.4
GCM Grosvenor - Advance Fund, L.P.	5,422,358	10,000,000	4,746,483	53,279	Jun-21	-	1.2
GCM Grosvenor - Partnership II, L.P. (2022)	2,212,477	20,000,000	2,229,719	5,461	May-22	-15.1%	1.0
Fairview Capital - Lone Star Fund I	51,574,534	40,000,000	33,903,847	14,458,863	Aug-15	14.9%	1.9
Fairview Capital - Lone Star Fund II	28,195,947	30,000,000	20,583,585	496,453	Dec-18	11.0%	1.4
Fairview Capital - Lone Star Fund III - A	12,003,004	25,000,000	12,131,480	-	Apr-21	-3.4%	1.0
Fairview Capital - Lone Star Fund III - B	270,936	20,000,000	294,907	-	Dec-22	-	0.9
Fairview Capital - Private Markets Fund VI	1,092,166	10,000,000	1,484,127	210,556	Apr-22	-11.3%	0.9
Total Private Equity Composite	**374,808,847**	**610,000,000**	**495,901,140**	**403,195,677**	**Jul-09**	**13.7%**	**1.6**
Public Market Equivalent (PME) [2]	**461,393,175**					**15.7%**	

Private Real Estate Summary

Periods Ended as of May 31, 2023

	Month-End Market Value	Commitment Value	Drawn Down Capital	Cash Distributions	Inception Date	IRR Since Inception	TVPI Multiple
Invesco II	80,228,247	65,188,333	65,188,333	14,477,694	Jan-14	5.8%	1.5
Total Direct Private Real Estate	**80,228,247**	**65,188,333**	**65,188,333**	**14,477,694**	**Jan-14**	**5.8%**	**1.5**

	Month-End Market Value	Commitment Value	Drawn Down Capital	Cash Distributions	Inception Date	IRR Since Inception	TVPI Multiple
Heitman America Real Estate Trust	101,330,851	75,000,000	88,210,161	92,984,057	Dec-10	7.4%	2.2
Invesco Core Real Estate USA	79,522,019	75,000,000	75,000,000	94,519,141	Oct-10	11.0%	2.3
Total Core Private Real Estate	**180,852,870**	**150,000,000**	**163,210,161**	**187,503,198**	**Oct-10**	**9.7%**	**2.3**

	Month-End Market Value	Commitment Value	Drawn Down Capital	Cash Distributions	Inception Date	IRR Since Inception	TVPI Multiple
AEW Partners Real Estate Fund IX	33,513,852	45,000,000	31,481,481	16,806	Mar-21	5.6%	1.1
AEW PIX MM Co-Invest	4,589,457	10,000,000	4,584,906	321,769	Nov-21	7.0%	1.1
AEW PIX Oakland Park Co-Invest	5,252,462	5,000,000	5,000,000	345,235	Feb-22	9.6%	1.1
Virtus Real Estate Capital III	29,640,363	43,281,585	27,369,556	3,714,853	Jan-21	10.2%	1.2
Brasa Real Estate Fund II	11,108,597	20,000,000	11,655,143	546,545	Jul-22	-	1.0
Long Wharf Real Estate Partners VII	495,286	20,000,000	1,290,062	-	Mar-23	-40.3%	0.4
Total Value-Add Private Real Estate	**84,600,017**	**143,281,585**	**81,381,148**	**4,945,208**	**Jan-21**	**7.0%**	**1.1**

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

Asset Allocation & Performance

Real Estate

Periods Ended May 31, 2023

	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 *	**-2.94**	**-3.40**	**2.35**	**-12.74**	**8.18**	**5.38**	**8.71**	**10/1/2001**	**42,089,547**	**49.88**
Wilshire U.S. Real Estate Securities Index	-2.86	-4.53	1.27	-12.79	7.54	4.21	8.78			
CenterSquare	**-3.46**	**-4.49**	**0.52**	**-12.14**	**8.52**	**5.47**	**5.47**	**6/1/2018**	**42,288,662**	**50.12**
Wilshire U.S. Real Estate Securities Index	-2.86	-4.53	1.27	-12.79	7.54	4.21	4.21			
REIT Composite	**-3.20**	**-3.95**	**1.43**	**-12.44**	**8.35**	**5.42**	**8.82**	**10/1/2001**	**84,378,209**	**100.00**
Wilshire U.S. Real Estate Securities Index	-2.86	-4.53	1.27	-12.79	7.54	4.21	8.78			

Asset Allocation & Performance

Global Listed Infrastructure

Periods Ended May 31, 2023

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value $	%
Atlantic Trust CIBC	-4.56	-2.24	1.71	5.68	24.45	6.25	6.56	1/1/2012	43,375,083	29.52
Alerian MLP Index	-0.52	0.00	5.34	7.84	25.47	4.97	2.62			
Harvest Fund Advisors MLP	-3.41	-1.96	1.69	5.36	26.83	7.55	6.62	1/1/2012	47,367,210	32.24
Alerian MLP Index	-0.52	0.00	5.34	7.84	25.47	4.97	2.62			
C&S Global Listed Infrastructure	-5.40	-1.30	-2.36	-7.94			5.02	10/1/2020	56,170,096	38.23
FTSE Global Core Infrastructure 50/50 (Net)	-5.11	-0.22	-2.55	-9.30			5.56			
Global Listed Infrastructure Composite	-4.52	-1.79	0.11	0.79	16.47	2.15	4.62	1/1/2012	146,912,389	100.00
Global Listed Infrastructure Benchmark	-1.66	-0.02	3.37	3.65	18.36	1.36	1.06			

Asset Allocation & Performance

Fixed Income

Periods Ended May 31, 2023

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value $	%
Garcia Hamilton *	-1.16	2.36	2.92	-1.46	-2.66	0.84	1.91	11/1/2013	150,103,890	32.76
Blmbg. U.S. Aggregate Index	-1.09	2.04	2.46	-2.14	-3.65	0.81	1.48			
Western Asset Management	-1.07	2.28	3.51				-0.14	7/1/2022	154,569,468	33.74
Blmbg. U.S. Aggregate Index	-1.09	2.04	2.46				-0.58			
Wellington Core Bond	-1.07	1.94	2.81				-0.38	7/1/2022	153,498,621	33.50
Blmbg. U.S. Aggregate Index	-1.09	2.04	2.46				-0.58			
Fixed Income Composite	-1.10	2.19	3.08	-1.47	-2.33	1.22	4.30	10/1/1995	458,171,979	100.00
Blmbg. U.S. Aggregate Index	-1.09	2.04	2.46	-2.14	-3.65	0.81	4.31			

Asset Allocation & Performance

Opportunistic Credit

Periods Ended May 31, 2023

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value $	%
Neuberger Berman	-0.63	-0.07	2.30	-0.46	1.77	1.69	3.78	2/1/2016	168,690,903	
Custom Benchmark	-0.57	0.96	3.23	1.49	2.09	2.21	4.15			

Asset Allocation & Performance

High Yield

Periods Ended May 31, 2023

	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	**-1.19**	**-0.21**	**2.98**	**-1.12**	**2.97**	**2.60**	**5.97**	**2/1/1997**	**166,668,777**	**48.66**
FTSE High Yield Cash Pay	-0.90	1.24	3.78	0.10	3.12	2.95	6.13			
BlackRock	**-1.26**	**1.50**	**3.61**	**0.85**	**2.85**	**3.28**	**5.45**	**10/1/2006**	**175,860,271**	**51.34**
FTSE High Yield Cash Pay	-0.90	1.24	3.78	0.10	3.12	2.95	5.78			
High Yield Composite	**-1.23**	**0.63**	**3.29**	**-0.16**	**2.91**	**2.94**	**5.83**	**1/1/1997**	**342,529,048**	**100.00**
FTSE High Yield Cash Pay	-0.90	1.24	3.78	0.10	3.12	2.95	6.14			

Asset Allocation & Performance

Marketable Alternatives

Periods Ended May 31, 2023

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value $	%
Davidson Kempner	0.55	0.10	1.63				3.12	10/1/2022	46,405,319	49.94
Davidson Kempner Policy	0.01	-1.68	1.06				4.57			
Hudson Bay Capital	0.37	1.86	2.58				3.38	10/1/2022	46,520,431	50.06
Hudson Bay Policy	0.35	-0.13	1.86				3.19			
Marketable Alternatives Composite	0.46	0.97	2.10				3.25	10/1/2022	92,925,750	100.00
Marketable Alternatives Policy	0.18	-0.91	1.46				3.89			

Asset Allocation & Performance

Cash

Periods Ended May 31, 2023

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value $	%
Cash Account	0.39	1.48	2.13	3.49	1.24	1.56	3.09	1/1/1988	15,140,758	100.00
Managed Short Term Composite	0.39	1.48	2.13	3.49	1.24	1.56	2.76	1/1/1990	15,140,758	100.00

At A Glance

For period ended May 31, 2023

	2022		2023	
Retirements	**This Month**	**YTD**	**This Month**	**YTD**
Age	18	90	23	101
Service	1	6	0	10
Rule of 78	4	41	9	39
QDRO	0	1	1	5
Total	23	138	33	155
Disability Retirements				
Service	0	0	0	0
Non-service	0	0	2	2
Total	0	0	2	2
Benefits Paid	$ 26,267,335.18	$ 131,825,773.82	$ 27,427,859.72	$ 136,065,684.55
Refunds	$ 1,180,358.02	$ 4,750,543.11	$ 1,057,225.54	$ 4,960,593.47
Number of refunds	91	299	103	388
***Contributions**	$ 14,682,328.15	$ 53,052,790.40	$ 16,231,283.18	$ 59,913,149.18

Members on record at month end					
	Retirees & beneficiaries	**Disabilities**	**Actives**	**Tier A actives**	**Tier B Actives**
Jan	*7,757*	*130*	*7,643*	*3,850*	*3,793*
Feb	*7,768*	*129*	*7,625*	*3,800*	*3,825*
Mar	*7,802*	*128*	*7,653*	*3,752*	*3,901*
April	*7,812*	*130*	*7,676*	*3,715*	*3,961*
May	*7,831*	*128*	*7,710*	*3,668*	*4,042*
June					
July					
Aug					
Sep					
Oct					
Nov					
Dec					

Employees' Retirement Fund of the City of DALLAS ®