

Fort Worth Employees' Retirement Fund

Annual Comprehensive Financial Report

For fiscal years ending September 30, 2020 and 2021



Blazing New Trails

A pension trust fund of the City of Fort Worth, Texas



Annual Comprehensive Financial Report

A Pension Trust Fund of the City of Fort Worth, Texas
For Fiscal Years Ended September 30, 2021 and 2020

Benita Falls Harper
Executive Director

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Prepared by the Staff of the Fort Worth Employees' Retirement Fund

*ON THE COVER: Trinity Park has great trails for
walkers, runners, and cyclists to enjoy ... and explore.*

2021 At-A-Glance

Investment Rate of Return

22.44%

Fund Net Position

\$2.84 Billion

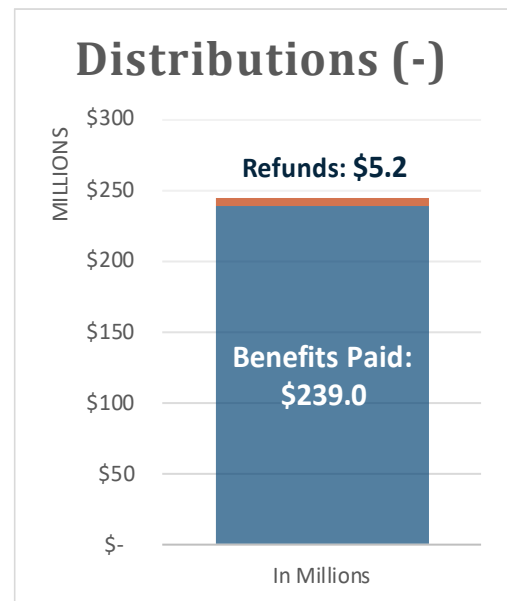
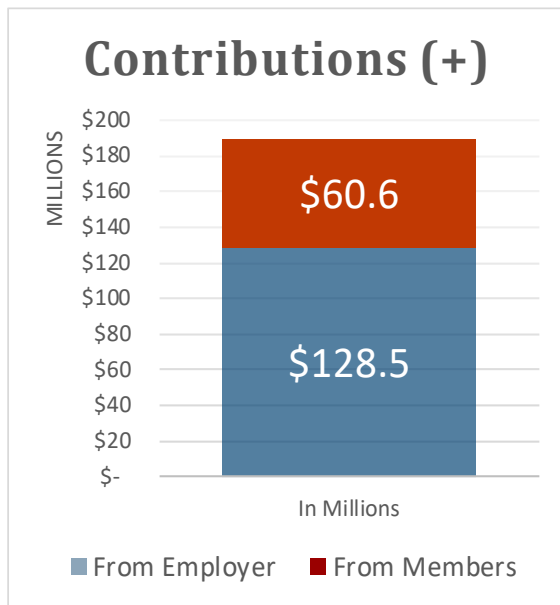


Table of Contents

INTRODUCTORY SECTION

Letter of Transmittal.....	i
Certificate of Achievement.....	v
Award for Administration.....	vi
Board of Trustees	vii
Administrative Organization	viii
Professional Service Providers	viii
City Plan: Summary of Key Provisions.....	ix
Staff Plan: Summary of Key Provisions	xiii

FINANCIAL SECTION

Independent Auditor's Report.....	1
Management's Discussion and Analysis (Unaudited)	4
Combined Statements of Fiduciary Net Position.....	9
Combined Statements of Changes in Fiduciary Net Position	10
Notes to Combined Financial Statements.....	11

REQUIRED SUPPLEMENTARY INFORMATION..... 39

Schedule of Changes in Net Pension Liability – City (Unaudited)	40
Schedule of Changes in Net Pension Liability – Staff (Unaudited).....	42
Schedule of Net Pension Liability (Unaudited)	44
Schedule of Actuarially Determined Employer Contributions (Unaudited)	45
Schedule of Combined Money-Weighted Investment Returns (Unaudited).....	46
Notes to Required Supplementary Information	47

OTHER SUPPLEMENTARY INFORMATION..... 49

Schedule of Administrative Expenses	50
Schedule of Investment Management Fees.....	51
Schedule of Professional Services.....	53

INVESTMENT SECTION

Market Overview of Fiscal Year	55
Investment Summary.....	57
Schedule of Asset Allocations and Returns.....	58
Investment Managers	59
Investment Policies Statement Summary.....	60
Schedule of Top Ten Investments.....	63
Schedule of Investment Management, Performance, and Brokers' Fees by Asset Class.....	64
Schedule of Brokers' Fees	65

ACTUARIAL SECTION

Actuary's Certification Letter	67
Executive Summary.....	72
Actuarial Assumptions and Methods: City Plan.....	73
Actuarial Assumptions and Methods: Staff Plan.....	79
Schedule of Funding Progress	84
Development of Actuarial Value of Assets: City Plan.....	85
Development of Actuarial Value of Assets: Staff Plan.....	86
Actuarial Gain or Loss.....	87
Analysis of Normal Cost by Component.....	88
Retirees, Beneficiaries, and Disabled Participants Added to and Removed from Rolls.....	89
Solvency Test.....	90
Distribution of Active Members by Age and Years of Service – City Plan	91
Historical Active Participant Data	92

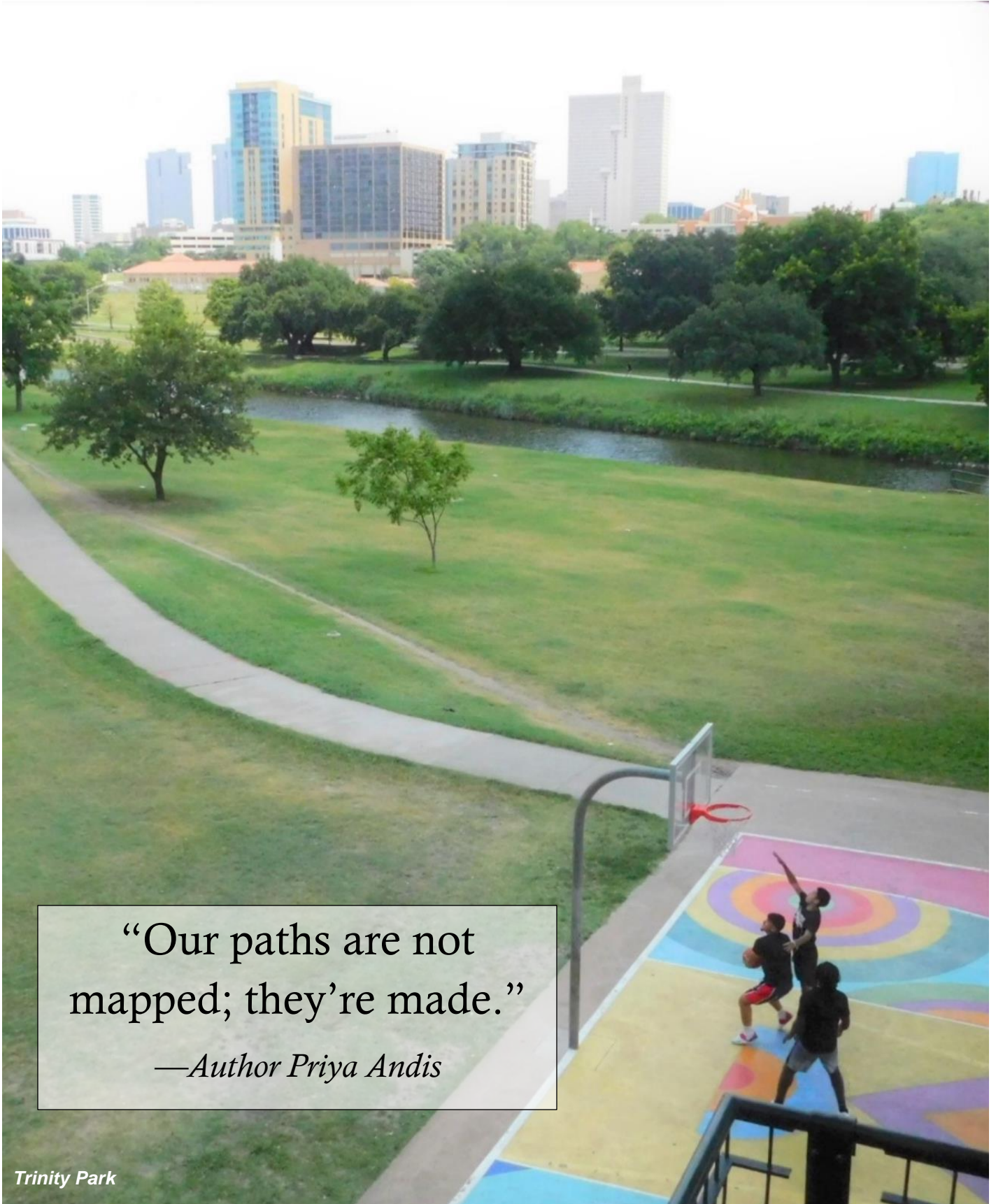
STATISTICAL SECTION

Statistical Information Overview.....	94
Schedule of Changes in Plan Net Position: City Plan.....	95
Schedule of Changes in Plan Net Position: Staff Plan.....	96
Schedule of Revenue by Source	97
Membership Population	98
Distribution of Active Participants by Age.....	99
Distribution of Active Participants by Service.....	99
Distribution of Retired Members by Type of Benefits	100
Schedule of Average Benefit Payments by Years of Service and Final Average Salary: City.....	101
Schedule of Average Benefit Payments by Years of Service and Final Average Salary: Staff.....	103
Schedule of Benefits by Type.....	104
Schedule of Average Benefit Payment Amounts.....	105
Independent Auditor's Report On Internal Control Over Financial Reporting and on Compliance and Other Matters Based on Audit of Financial Statements Performed in Accordance with Governmental Auditing Standards.....	106

INTRODUCTORY SECTION

“Our paths are not mapped; they’re made.”

—*Author Priya Andis*





Letter of Transmittal

March 7, 2022

Board of Trustees
Fort Worth Employees' Retirement Fund
3801 Hulen Street, Suite 101
Fort Worth, Texas 76107

Dear Board Members and Plan Participants:

It is my pleasure to submit to you the Annual Comprehensive Financial Report (Annual Report) of the Fort Worth Employees' Retirement Fund (the Fund) for the fiscal years ended September 30, 2021 and 2020. Our mission is to provide retirement benefits and exceptional services while sustaining our members' trust. Responsibility for both the accuracy of the data and the completeness and fairness of its presentation rests with me and the staff of the Fund. To the best of my knowledge and belief, the enclosed data is accurate in all material respects and is reported in a manner designed to present fairly the financial position and results of operations of the Fund. I trust that you and the members of the Fund will find the Annual Report helpful in understanding your retirement plan.

Accounting and Internal Controls

The financial statements have been prepared in accordance with Generally Accepted Accounting Principles (GAAP) as prescribed by the Governmental Accounting Standards Board (GASB) rules. The accompanying financial statements are prepared using the accrual basis of accounting. Member and employer contributions are recognized when due, pursuant to formal commitments as well as statutory or contractual requirements. Expenses are recorded when the corresponding liabilities are incurred, regardless of when payment is made.

The Fund's independent auditors have audited the financial statements and issued unmodified opinions as of and for the years ended September 30, 2021 and 2020. The purpose of the audit is to give reasonable assurance to users of those financial statements, the Board, and participants of the Fund, that the financial statements present fairly, in all material respects, information regarding the Fund's Fiduciary Net Position in conformity with GAAP.

A significant responsibility of the staff is to ensure that the Fund has in place an adequate system of internal control. A system of internal control is defined as systematic measures instituted by an organization to achieve the following objectives:

1. Conduct its business in an efficient manner;
2. Safeguard its assets and resources;
3. Deter and detect errors, fraud, and theft;
4. Ensure accuracy and completeness of its accounting data;
5. Produce reliable and timely financial and management information; and
6. Promote adherence to management's policies and procedures.

These controls include design of business systems, appropriate segregation of duties and responsibilities, sound practices, and capable personnel. There are limits to internal control, such as the cost to mitigate some risks may outweigh the risk itself, internal controls may be overridden, or collusion may foil control design. I believe the Fund's internal controls are adequate and are working as designed.

Financial Information

An overview of the fiscal operations of the Fund is presented in the Management's Discussion and Analysis (MD&A) preceding the financial statements in the Financial Section. It provides a narrative introduction, overview, and analysis of the basic financial statements. The MD&A compliments this letter of transmittal and should be read in conjunction with it.

Fund Overview

The Fund is a multiple employer agent defined benefit pension plan. The Fund covers employees of the City of Fort Worth (City Plan) and the employees of the Fund (Staff Plan). The City Plan was established by City Ordinance in 1945 and the Staff Plan was established through Administrative Rules in 2007. The Fund provides retirement, disability, and death benefits to its members. All employees of the City of Fort Worth and the Fund are members except elected officers and non-salaried appointed members of administrative boards and commissions, part-time, temporary and contract employees, and employees paid in part by another governmental agency. The two plans are comingled for investment purposes and are both administered by the 13-member Retirement Fund Board of Trustees. Each plan has a separate actuarial valuation completed each year and its own funded status based on current and projected assets and liabilities.

The Retirement Fund Board of Trustees (the Board) is comprised of four active members of the Fund, three retired members of the Fund, and six Trustees appointed by the City Council of Fort Worth, Texas. All Board members serve a two-year term commencing on September 1st; there are no term limits. The Board selects a chairperson and a vice-chairperson annually, in September.

Investments

The Fund's primary investment objective is to establish a stable, diversified investment portfolio that in the long-term, will meet or exceed the Board approved assumed actuarial rate of return in order to maintain or improve the funded status of the Fund and provide sufficient liquidity to timely pay benefits. The Trustees adopted the following key investment objectives.

- The Board's investment objective is to achieve an average long-term total rate of return which satisfies the actuarial assumed rate of return. The target actuarial rate of return is set at 7.00% including an assumed inflation rate of 2.50% and a target actuarial real rate of return of 4.50%.
- The Fund shall prudently manage overall risk through diversification, by establishing and updating a strategic asset allocation using an asset allocation model that balances return expectations and risk exposures related to institutionally investible geographies, asset classes, and investment strategies.
- The Fund shall periodically rebalance the total assets to manage active risk relative to the strategic asset allocation and various benchmarks, as well as liquidity. Rebalancing activities shall consider both the impact on the Fund and transaction cost of the activity.
- The investment activities of the Fund shall be executed in a cost-effective manner.

The Fund ended the fiscal year with a \$2.8 billion fund balance and an annualized net return of 22.44%. Additionally, the Fund outperformed the actuarial assumed rate of 7.0%. For the three-year, five-year, and ten-year periods the Fund has returned 9.77%, 9.58%, 8.65 annualized, respectively.

Actuarial Funding Status

Pursuant to the provisions of the Fund, the Board engages an independent actuarial firm to perform annual actuarial valuations. The Fund's funding objective is to ensure contributions, when combined with present assets and future investment returns, will be sufficient to meet the financial obligations to present and future retirees and beneficiaries.

Annual actuarial valuations measure the progress toward these goals, as well as the adequacy of the contribution rate. The Fund's actuary assumes that the Fund's investments will return 7.0% over the long-term. The differences between the assumed and the actual investment return are phased in (smoothed) over five years yielding an actuarial value of assets.

The Actuarial Value of Assets (AVA), Actuarial Accrued Liability (AAL), and the Funded Ratio of the City and Staff Plans, based on the actuarial valuation, as of December 31, 2020, are as follows:

AVA, AAL and Funded Ratio – December 31, 2020

Plan	Assets (AVA)	Liabilities (AAL)	Funded (Ratio)
City	\$ 2,522,727,631	\$ 4,745,801,026	53.2%
Staff	\$ 6,592,997	\$ 9,327,374	70.7%

A schedule of funding progress is included in the actuarial section. The funded status of the Fund is reviewed annually. Experience studies are conducted every three to five years with the most recent being completed December 31, 2018. The Fund will complete another experience study within the five-year window.

Major Initiatives

2021 was a year of change and significant progress for the Fund. In October, the Fund hired a new Chief Investment Officer (CIO). Following the appointment of the CIO, the Fund issued a Request for Proposals (RFP) from consulting firms. In August, the Fund hired two firms to provide this service, Verus and Aksia.

After the new consultants were successfully onboarded, the Fund followed best practices by conducting an asset liability study. The information from this study will help the staff and Board better understand the unique aspects of the plan as they review our asset allocation. During 2022, the Board will set a new asset allocation, and staff will rebalance existing accounts and make new investments to achieve the new allocation.

Another major initiative for the Fund is the transition to a new Pension Administration System (PAS). The new system, Neospin, will allow Fund staff to handle many of our administrative processes in-house and further enable staff to access key information in a more timely manner. The system also has an enhanced web portal to serve our members better. The new PAS is well into the pilot stage, and implementation is scheduled for December 2022.

Certificate of Achievement

The Government Finance Officers Association (GFOA) of the United States and Canada awarded a Certificate of Achievement for Excellence in Financial Reporting to the Fund for its Annual Report for the fiscal year ended September 30, 2020. This was the eleventh year that the Fund has earned this prestigious award. In order to be awarded a Certificate of Achievement, a government must publish an easily readable and efficiently

organized Annual Report. This report must satisfy both generally accepted accounting principles and applicable legal requirements.

A Certificate of Achievement is valid for a period of one year only. We believe that our current Annual Report continues to meet the Certificate of Achievement Program's requirements, and we are submitting it to the GFOA to determine its eligibility for another certificate.

Public Pension Standards Award

For 2021, the Fund earned the Public Pension Coordinating Council Recognition Award for Funding and Administration. This is the seventh year that the Fund has received this award. This award is in recognition of meeting professional standards for plan administration as set forth by the Council. The standards serve as a benchmark by which to measure public defined benefit plans.

Acknowledgments

The preparation of the Annual Report in a timely manner is made possible by the dedicated teamwork of the Fund's staff, under the leadership, dedication, and support of the Board. I am sincerely grateful to the Board and staff, as well as to all our professional service providers, who perform so diligently to ensure the successful operation and financial soundness of the Fund.

Respectfully submitted,



Benita Falls Harper, Executive Director

Certificate of Achievement



The Government Finance Officers Association (GFOA) of the United States and Canada awarded a Certificate of Achievement for Excellence in Financial Reporting to the Fort Worth Employees' Retirement Fund for its Annual Report for the fiscal year ended September 30, 2020.

Award for Administration



Public Pension Coordinating Council

Public Pension Standards Award For Funding and Administration 2021

Presented to

Fort Worth Employees' Retirement Fund

In recognition of meeting professional standards for
plan funding and administration as
set forth in the Public Pension Standards.

Presented by the Public Pension Coordinating Council, a confederation of

National Association of State Retirement Administrators (NASRA)
National Conference on Public Employee Retirement Systems (NCPERS)
National Council on Teacher Retirement (NCTR)

A handwritten signature in black ink, reading 'Alan H. Winkle'. The signature is written in a cursive, flowing style.

Alan H. Winkle
Program Administrator

Board of Trustees

As of September 30, 2021



Todd Cox,
Board Chair
Active Employee
Fire Department
Elected to Place 2



Kevin Foster,
Board Vice-Chair
Retired Employee
Police Department
Elected to Place 6



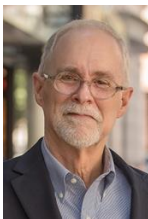
Lloyd Cook
Active Employee
Police Department
Elected to Place 1



Loraine Coleman
Active Employee
General Employees
Group C
Elected to Place 3



Andrea Wright
Active Employee
General Employees
Group D
Elected to Place 4



Tom Lewis
Retired Employee
Fire Department
Elected to Place 5



Marsha Anderson
Retired Employee
General Employees
Elected to Place 7



Jesús Payán
Appointed Trustee
Place 8

VACANT
Appointed Trustee
Place 9



Steve Litke
Appointed Trustee
Place 10



Bryan Barrett
Appointed Trustee
Place 11



Jim Lacamp
Appointed Trustee
Place 12



Reginald Zeno
CFO,
City of Fort Worth
Standing Seat
Place 13

Administrative Organization

Benita Falls Harper Executive Director	Derrick Dagnan Chief Investment Officer	Robert Hulme Director of Operations	Eleza Abdul Acting Benefits Manager
Mary Chang General Counsel	Christina Wu Investment Officer	Karen Epp Accounting Manager	Carla Perez Member Services Specialist
Annette Connor Executive/Legal Assistant	Branden George Investment Analyst	Christian Wetshi Senior Accountant	Mary Braddock Member Services Specialist
		Charles Henry IT Systems Administrator	Brad Duckworth Member Services Specialist
		Vacant Communications Spclst.	Victoria Valles-Miller Member Services Assistant
		Rebecca Earley Operations Assistant	Joanna White Member Services Assistant
		Desiree Trevino Administrative Assistant	Mary Beth Lane Pension Administration System Analyst

Professional Service Providers

Actuary Gabriel, Roeder, Smith & Company	Custodian Northern Trust	Investment Consultants Aksia, LLC Verus Advisory, Inc.
Auditors Eide Bailly, LLP	Legal Counsel DLA Piper, LLP Jackson Walker, LLP Ice Miller, LLP	

A complete list of Investment Management Fees can be found on page 51, Investment Managers on page 59, Investment Management, Performance, and Brokers' Fees by Asset Class on page 64, and the Schedule of Brokers' Fees on page 65.

City Plan: Summary of Key Provisions

Membership	An employee becomes a member upon regular employment with the City and contributes to the Fund.
Definitions	<p><u>Key Terms:</u></p> <ul style="list-style-type: none">• Final Average Compensation (FAC): average annual earnings over the member's highest three or five calendar years of service.• Credited Service: length of time employed by the City of Fort Worth and making contributions to the Fund or purchased service.• Group I – General employees hired prior to July 1, 2011.• Group II – General employees hired on or after July 1, 2011.• Group III – Police Officers hired prior to January 1, 2013.• Group IV – Police Officers hired on or after January 1, 2013.• Group V – Firefighters hired prior to January 10, 2015.• Group VI – Firefighters hired on or after January 10, 2015.
Contributions	<p><u>Employer (City):</u></p> <ul style="list-style-type: none">• Contributes 24.24% for Group I General employees and Group V Firefighters on regular retirement eligible earnings, overtime, vacation sellback, and wellness.• Contributes 24.24% for Group II General employees and Group VI Firefighters on regular retirement eligible earnings only.• Contributes 24.96% for Group III Police Officers on regular retirement eligible earnings, overtime, vacation sellback, and wellness.• Contributes 24.96% for Group IV Police Officers on regular retirement eligible earnings only. <p><u>Member (Regular City Employee):</u></p> <p>On or after July 19, 2019:</p> <ul style="list-style-type: none">• A Group I General employee contributes 9.35% on regular retirement eligible earnings, vacation sellback, overtime, and wellness. In addition, for the length of time the employee has service prior to October 1, 2013, they contribute an additional 0.7% on the same earnings.• A Group II General employee contributes 9.35% on regular retirement eligible earnings and overtime.• A Group III Police Officer contributes 10.53% on regular retirement eligible earnings, vacation sellback, overtime, and wellness.• A Group IV Police Officer contributes 10.53% on regular retirement eligible earnings and overtime.• A Group V Firefighter contributes 10.05% on regular retirement eligible earnings, built-in overtime, regular overtime, vacation sellback, and wellness.• A Group VI Firefighter contributes 10.05% on regular retirement eligible earnings, built-in overtime and regular overtime.

On or after January 1, 2020:

- A Group I General employee contributes 9.35% on regular retirement eligible earnings, vacation sellback, overtime, and wellness. In addition, for the length of time the employee has service prior to October 1, 2013, they contribute an additional 0.7% on the same earnings.
- A Group II General employee contributes 9.35% on regular retirement eligible earnings and overtime.
- A Group III Police Officer contributes 12.53% on regular retirement eligible earnings, vacation sellback, overtime, and wellness.
- A Group IV Police Officer contributes 12.53% on regular retirement eligible earnings and overtime.
- A Group V Firefighter contributes 12.05% on regular retirement eligible earnings, built-in overtime, regular overtime, vacation sellback, and wellness.
- A Group VI Firefighter contributes 12.05% on regular retirement eligible earnings, built-in overtime and regular overtime.

On or after January 1, 2021:

- A Group I General employee contributes 9.35% on regular retirement eligible earnings, vacation sellback, overtime, and wellness. In addition, for the length of time the employee has service prior to October 1, 2013, they contribute an additional 0.7% on the same earnings.
- A Group II General employee contributes 9.35% on regular retirement eligible earnings and overtime.
- A Group III Police Officer contributes 13.13% on regular retirement eligible earnings, vacation sellback, overtime, and wellness.
- A Group IV Police Officer contributes 13.13% on regular retirement eligible earnings and overtime.
- A Group V Firefighter contributes 12.05% on regular retirement eligible earnings, built-in overtime, regular overtime, vacation sellback, and wellness.
- A Group VI Firefighter contributes 12.05% on regular retirement eligible earnings, built-in overtime and regular overtime

Vesting

Vesting occurs following five years of credited service.

Retirement Pension

Eligibility:

- Normal Retirement – A member's age and years of service equal 80 points. For Group II members, the minimum retirement age is 55.
- Attainment of age 65 with five or more years of service.
- Early Retirement – Groups I, III, IV, V, and VI may elect an early retirement and receive a reduced pension at age 50 with five or more years of service. For Group II members, the minimum retirement age is 55 for early retirement.
- Special Retirement – Groups III and IV members may retire after completing 25 years of service regardless of age or points.

Benefit Calculation:

- Groups I and III – Benefits are calculated using a multiplier of 3% of the high three FAC earnings multiplied by total credited years of service prior to October 1, 2013. From October 1, 2013 forward, benefits are calculated using a multiplier of 2.5% of the high five FAC multiplied by total credited years of service on or after October 1, 2013.
- Group V – Benefits are calculated using a multiplier of 3% of the high three FAC earnings multiplied by total credited years of service prior to January 10, 2015. From January 10, 2015 forward, benefits are calculated using a multiplier of 2.5% of the high five FAC multiplied by total credited years of service on or after January 10, 2015.
- Groups II, IV, and VI – Benefits are calculated using a multiplier of 2.5% of the high five FAC multiplied by total credited years of service.
- For members in Groups I, III, and V that were not hired or vested by October 23, 2007, the high three FAC is capped by using their fourth highest year and limiting each higher year to 12% above the preceding amount.

Payment Options:

- Under normal or special retirement, a member may elect to receive between 5% and 25% of the actuarial value of their retirement benefit in a lump sum and receive a reduced monthly pension benefit.

Deferred Retirement

A member who has attained the normal retirement date may elect to remain in active service with the City and defer retirement by participating in the Deferred Retirement Option Program (DROP).

- DROP allows a member to accrue a monthly amount in their DROP account equal to what they would have received if they had retired (Retirement Pension).
- The member will receive the balance of that account at actual separation from active City employment.
- If a member remains in DROP for more than 72 months, there will no longer be accruals made to their DROP account.

Disability Retirement Pension

When a member is injured on or off the job, they have the option to apply for the disability benefit. Disability benefits are subject to Board approval. For Disability, the multiplier used for Groups I and III on credited service prior to October 1, 2013 and Group V on credited service prior to January 10, 2015 is 2.75%, and on or after the respective dates the multiplier on credited service is 2.25%. For Groups II, IV, and VI, the multiplier is 2.25% on credited service. If the disability was in the line of duty, the years of service are projected to normal or special retirement.

Early Retirement Pension

A vested member may elect to retire early after meeting the age requirements (see Eligibility). The multiplier for Groups I and III prior to October 1, 2013 and Group V prior to January 15, 2015 is 2.75%. On or after the respective dates the multiplier is 2.25%. For Groups II, IV, and VI, the multiplier is 2.25%. There is a penalty of 5% per year for electing this option prior to normal retirement eligibility.

**Vested
Termination
Pension**

A member with at least five years of credited service (vested) who separates from service may choose to leave their contributions with the Fund and receive a vested termination pension benefit at a later date. Members who take a vested termination pension are not eligible to take an actuarial equivalent lump sum.

Death Benefits

Death Before Retirement:

- If a member dies in the line of duty, the surviving spouse will receive a monthly pension of 75% of the member's accrued pension benefit projected to normal retirement.
- If the death is not in the line of duty, but occurs after a member is vested, the surviving spouse will receive a monthly pension of 75% of the member's accrued unreduced pension based on actual years of credited service.
- If the death is not in the line of duty and occurs before the member is vested, the surviving spouse or designated beneficiary will receive a refund of the member's contributions plus interest.

Death After Retirement:

- If a Group I, III, or V member dies after retiring, provided that member and the surviving spouse have been married for at least one year prior to member's retirement date, the surviving spouse will receive 75% of the member's current pension.
- A Group II, IV, or VI member does not have any automatic survivor benefits. They may elect to take an actuarially reduced pension at retirement to provide survivor benefits to a designated beneficiary.
- All members may elect to take an actuarially reduced pension to provide survivor benefits to a designated beneficiary, if they are unmarried at the time of retirement.

**Cost of Living
Adjustments
(COLA)**

Upon Retirement:

Groups I and III for service prior to October 1, 2013 and Group V for service prior to January 10, 2015, who retire or enter DROP by January 1, 2021, by election have one of the following two options:

- Simple 2% COLA – An annual 2% fixed increase is awarded January 1st of every year. The 2% is calculated on the original base pension and will not change.
- Ad-Hoc COLA – The annual increase is awarded on January 1st and may vary each year from 0% to 4%. The COLA amount is based on the funding status of the plan and is compounded.

Groups I and III for service on or after October 1, 2013 through July 19, 2019 and Group V on or after January 10, 2015 through July 19, 2019 have the Simple 2% COLA, if they retire or enter DROP by January 1, 2021.

Groups I, III and V for all service prior to July 19, 2019, who are not retired or enrolled in DROP on or before January 1, 2021 have a Variable COLA or 13th check subject to actuarial conditions and approval of the Fund Board of Trustees and City Council. There is no COLA for service after July 19, 2019.

Groups II, IV, and VI are not eligible for any COLA.

Staff Plan: Summary of Key Provisions

Membership	An employee becomes a member upon regular employment with the Fort Worth Employees' Retirement Fund (the Fund) and contributes to the Fund.
Definitions	<p>Key Terms:</p> <ul style="list-style-type: none">• Final Average Salary: average annual salary over the member's highest three calendar years of service.• Credited Service: length of time employed by the Fund and making contributions to the Fund or purchased service.
Contributions	<p><u>Employer and Member:</u></p> <ul style="list-style-type: none">• The Fund contributes the actuarially determined amount each year.• Members shall contribute 10.50% of their annual salary each year.
Vesting	Vesting occurs following five years of credited service.
Retirement Pension	<p><u>Eligibility:</u></p> <ul style="list-style-type: none">• Normal Retirement - A member's age and years of service equal 80 points.• Attainment of age 65 with five or more years of service.• Early Retirement - Attainment of age 50 with five or more years of service may elect an early retirement and receive a reduced pension. <p><u>Benefit Calculation:</u></p> <p>Benefits are calculated using a multiplier of 3% of the three-year highest average salary multiplied by total credited years of service.</p> <p><u>Payment Options:</u></p> <p>Under normal retirement, a member may elect to receive between 5% and 25% of the actuarial value of their retirement benefit in a lump sum and receive a reduced monthly pension benefit.</p>
Deferred Retirement	<p>A member who has attained the normal retirement date may elect to remain in active service with the Fund and defer retirement by participating in DROP.</p> <ul style="list-style-type: none">• DROP allows a member to accrue a monthly amount in their DROP account equal to what they would have received if they had retired.• The member will receive the balance of that account at actual separation from service date.• If a member remains in DROP for more than 60 months, there will no longer be accruals made to their DROP account.
Disability Retirement Pension	When a member is injured on or off the job, they have the option to apply for the disability benefit. Disability benefits are subject to Board approval and use a 2.75% multiplier in the benefit calculation.

Early Retirement Pension

A vested member may elect to retire early after meeting the age requirements. Early retirement benefits are subject to Board approval. The multiplier is 2.75% and there is a penalty of 5% per year for electing this option prior to normal retirement eligibility.

Vested Termination Pension

A member with at least five years of credited service (vested) who separates from service may choose to leave their contributions with the Fund and receive a vested termination pension benefit at a later date. Members who take a vested termination pension are not eligible to take an actuarial equivalent lump sum.

Death BenefitsDeath Before Retirement:

- If a member dies in the line of duty, the surviving spouse will receive a monthly pension of 75% of the member's accrued pension benefit projected to normal retirement.
- If the death is not in the line of duty, but occurs after a member is vested, the surviving spouse will receive a monthly pension of 75% of the member's accrued unreduced pension based on actual years of credited service.
- If the death is not in the line of duty and occurs before the member is vested, the surviving spouse or designated beneficiary will receive a refund of the member's contributions plus interest.

Death After Retirement:

- If a member, who retired on or before September 30, 2019, dies after retiring, provided that member and the surviving spouse have been married for at least one year prior to member's retirement date, the surviving spouse will receive 75% of the member's current pension.
- If a member, who retired on or after October 1, 2019, dies after retiring, provided that member and the surviving spouse have been married for at least one year prior to member's retirement date, the surviving spouse will receive 50% of the member's current pension.
- A member who retires after October 1, 2019 may elect to take an actuarially reduced pension at retirement to increase the surviving spouse benefit.

Cost of Living Adjustments (COLA)Upon Retirement:

As of October 1, 2019, all active employees and new hires will receive the 1% COLA beginning at age 60. Members who retired prior to October 1, 2019 receive the 2% COLA unless they were terminated prior to February 24, 2016. Terminated Vested members prior to February 24, 2016 will receive the Ad-Hoc COLA.

- Simple 2% COLA – An annual 2% fixed increase is awarded January 1st of every year. The 2% is calculated on the original base pension and will not change.
- Simple 1% COLA – An annual 1% fixed increase is awarded January 1st of every year after the retired member reaches age 60. The 1% is calculated on the original base pension and will not change.
- Ad-Hoc COLA – The annual increase is awarded on January 1st and may vary each year from 0% to 4%. The COLA amount is based on the funding status of the plan and is compounded.

FINANCIAL SECTION



“Put in your best efforts—persevere
and you will blaze your trail.”

—*Motivational writer Roopleen*

Airfield Falls Park



Independent Auditor's Report

To the Board of Trustees of the
Employees' Retirement Fund of the
City of Fort Worth, Texas

Report on the Financial Statements

We have audited the accompanying combined financial statement of the Employees' Retirement Fund of the City of Fort Worth, Texas (the Fund), which comprise the combined statements of fiduciary net position as of September 30, 2021 and 2020, and the related combined statements of changes in fiduciary net position, for the years then ended, and the related notes to the combined financial statements.

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Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these combined financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in Government Auditing Standards, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the combined financial statements are free of material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also

includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the combined financial statements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Opinions

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective combined fiduciary net position of the Employees' Retirement Fund of the City of Fort Worth, Texas, as of September 30, 2021 and 2020, and the respective combined changes in fiduciary net position for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis, schedule of changes in net pension liability (City and Staff), schedule of net pension liability, schedule of actuarially determined employer contributions, and schedule of combined money-weighted investment returns (collectively the required supplementary information) on pages 3-7 and 39-47 be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information

Our audit was conducted for the purpose of forming a opinions on the combined financial statements that collectively comprise the Fund's basic financial statements as a whole. The introductory, investment, actuarial and statistical sections are presented for purposes of additional analysis and are not a required part of the combined financial statements.

The additional supplementary information accompanying financial information listed as other supplementary information in the table of contents are the responsibility of management and were derived from and relate directly to the underlying accounting and other records used to prepare the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the accompanying financial information listed as supplemental schedules are fairly stated, in all material respects, in relation to the basic financial statements as a whole.

The introductory, investment, actuarial and statistical sections have not been subjected to the auditing procedures applied in the audit of the basic financial statements and, accordingly, we do not express an opinion or provide any assurance on them.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated December 16, 2021, on our consideration of the Fund's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely

to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the Fund's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with Government Auditing Standards in considering Fund's internal control over financial reporting and compliance.

A handwritten signature in cursive script that reads "Eide Bailly LLP".

December 16, 2021
Boise, Idaho

Management's Discussion and Analysis (Unaudited)

The Board of Trustees (the Board) of the Employees' Retirement Fund of the City of Fort Worth, Texas (the Fund) is pleased to provide this overview and analysis of the financial performance and activities of the Fund for the fiscal years ended September 30, 2021 and 2020. We encourage readers to consider the information presented here in conjunction with the financial statements that follow.

Overview of Financial Statements

The Management's Discussion and Analysis is intended to serve as an introduction to the Fund's basic financial statements. The Fund's financial statements are composed of financial statements and notes to the financial statements. This report also contains required supplementary information in addition to the basic financial statements.

Financial Statements

There are two basic financial statements presented within this annual report. The Combined Statements of Fiduciary Net Position as of September 30, 2021 and 2020 give a snapshot of the financial position of the Fund at a particular point in time. The Combined Statements of Changes in Fiduciary Net Position for the fiscal years ended September 30, 2021 and 2020 provide a view of the fiscal years' additions to and deductions from net position.

Notes to Financial Statements

The notes are an integral part of the basic financial statements and provide additional background information that is essential to gain a complete understanding of the data provided within the Fund's financial statements.

Required Supplementary Information

The required supplementary information consists of the Schedule of Changes in Net Pension Liability – City Plan, Schedule of Changes in Net Pension Liability – Staff Plan, the Schedule of Net Pension Liability, the Schedule of Actuarially Determined Employer Contributions and Combined Schedule of Money-Weighted Investment Returns and Notes to Required Supplementary Information.

Other Supplementary Information

The other supplementary information consists of the Schedule of Administrative Expenses, the Schedule of Investment Management Fees, and the Schedule of Professional Services.




Financial Highlights

The Fund's net position increased by \$464,294,918 in fiscal year 2021 compared to an increase of \$55,843,984 in 2020 and a decrease of (\$11,183,519) in 2019. The Fund's increased net position is a result of contributions and investment income exceeding benefit payments and refunds paid out by the Fund. In 2021, investment income and contributions exceeded benefit payments and refunds by \$470,415,743 compared to a 2020 difference of \$61,178,068, and a 2019 difference of (\$5,421,680). During fiscal year 2021, investment income totaled \$525,425,305, compared to \$110,848,700 in 2020 and \$67,899,773 in 2019. The following table shows a summary of the Fund's net position.

Combined Fiduciary Net Position
September 30, 2021, 2020, and 2019

	2021	2020	2019
Assets			
Cash	\$ 107,585	\$ 159,222	\$ 129,406
Receivables from Securities Sold	155,072,129	190,963,266	210,963,804
Other Receivables and Prepaid Expenses	15,800,600	13,118,129	11,882,728
Investments	3,015,428,655	2,506,931,126	2,503,809,531
Capital Assets, Net	4,524,627	2,870,137	2,987,135
Total Assets	3,190,933,596	2,714,041,880	2,729,772,604
Liabilities			
Payables for Securities Purchased	177,845,110	239,986,072	281,455,382
Obligations Under Securities Lending	174,422,862	99,508,929	129,464,532
Other Liabilities	207,011	383,184	532,979
Total Liabilities	352,474,983	339,878,185	411,452,893
Net Position Restricted for Pensions	\$ 2,838,458,613	\$ 2,374,163,695	\$ 2,318,319,711

Combined Changes in Fiduciary Net Position
For Fiscal Years Ended September 30, 2021, 2020, and 2019

	2021	2020	2019
Additions			
Contributions	\$ 189,153,625	\$ 181,473,046	\$ 154,113,159
Investment Income (Loss), Net	525,425,305	110,848,700	67,899,773
Total Additions	714,578,930	292,321,746	222,012,932
Deductions			
Benefit Payments	238,975,451	227,370,496	221,699,004
Refund of Contributions	5,187,736	3,773,182	5,735,608
Administrative Expenses	5,999,639	5,215,391	5,639,269
Depreciation	121,186	118,693	122,570
Total Deductions	250,284,012	236,477,762	233,196,451
Change in Net Position	 464,294,918	 55,843,984	 (11,183,519)
Fiduciary Net Position, Beginning of Year	2,374,163,695	2,318,319,711	2,329,503,230
Net Position Restricted for Pensions	\$ 2,838,458,613	\$ 2,374,163,695	\$ 2,318,319,711

Financial Analysis

During fiscal year 2021, the Fund's investment portfolio returned 22.44% net of fees, compared to 4.86% for 2020 and 3.03% for 2019. The Fund posted an impressive fiscal year 2021 net return of 22.44%. This compares favorably versus the actuarial target return of 7.0%, the 4.86% net return in 2020 and the 3.03% net return in 2021. The impressive one-year return was driven by strong returns in all asset classes except fixed income. Over the long-term, the Fund posted a 3-year and 5-year net return of 9.8% and 9.6%, respectively.

On a relative basis, the fiscal year 2021 total Fund net return exceeded the policy implementation index by 1.7% and outperformed the median large pension fund. For the fiscal year all asset classes except for public

equities outperformed the asset class benchmark. At this time, the Fund has outperformed the policy index modestly across all time periods.

The strong one-year returns were driven by a rebound from the COVID-19 economic disruption and the unprecedented level of global fiscal and monetary stimulus deployed by large Central Banks. Over the last year, the Fund has benefitted from positioning and favorable performance of risky assets. Specifically, the fund benefitted from overweights in small cap equities and inflation sensitive real assets, both of which had posed a challenge in previous years.

With respect to public equities, the largest asset in the asset allocation, the Fund posted a strong net return of 28.3%, which compares favorably versus 6.84% in 2020 and -1.44% in 2019. On a relative basis, the equity portfolio underperformed the MSCI All Country World Index by -1.1% for the fiscal year. The underperformance was primarily driven by an underweight to U.S. stocks.

With respect to investment grade fixed income, the Fund posted a net return of -0.2%, which compares unfavorably versus 7.4% in 2020 and 9.2% in 2019. On a relative basis, the fixed income portfolio outperformed the Bloomberg U.S. Agg Index by 0.7% for the fiscal year. Interest rate positioning was the major driver of the weak absolute return and the strong relative performance was driven by credit exposure and security selection.

With respect to alternative asset classes, the net returns were a significant positive and far outpaced the results of 2020 and 2019. The private equity portfolio posted a net return of 60.8% and outperformed the Russell 2000 +3% benchmark by 25.0%. The diversified opportunities portfolio returned 15.2% and outperformed the benchmark by 5.3%. The real assets portfolio posted a net return of 17.3% and outperformed the benchmark by 3.7%. These asset classes offer a differentiated source of risk and return compared to traditional equities and fixed income.

The Fund's combined employer contributions were \$128,543,995 in 2021 compared to \$125,097,743 in 2020 and \$113,351,227 in 2019. Employee contributions and purchased future service, net of refunded contributions were \$55,421,894 compared to \$52,601,821 in 2020 and \$35,026,324 in 2019. Increased employer contributions were due to a 4.5% increase in the contribution rate starting January 1, 2019. The increased employee contributions for 2021 are due to an increase on January 1, 2021, to 9.35% for general employees, 12.05% for sworn fire fighters, and 13.13 for sworn police. In January 2020, both sworn fire fighters and sworn police had 2% increase in contributions. In 2019, an ordinance change increased general employees by 1.1% and sworn police and firefighters by 1.8%.

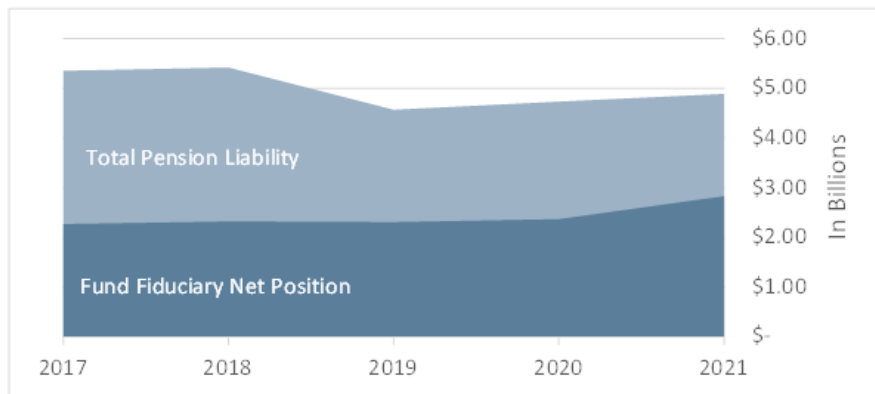
Benefit payments increased by \$11,604,955 in 2021 compared to an increase of \$5,671,493 in 2020 and an increase of \$9,156,188 in 2019. Benefits increased as a result of new retirees adding to the benefit payroll and from some retirees receiving the 2% Cost of Living Adjustment (COLA).

Funding Progress

The actuarial reporting measurements as required by Governmental Accounting Standards Board (GASB) are the total pension liability, net pension liability, and fund fiduciary net position as a percentage of the total pension liability. The census data used is as of December 31, 2020, and all other measurements are calculated as of the fiscal year end of the Fund: September 30, 2021. For the City Plan these measurements are as follows

Funding Progress Fiscal Years Ending September 30 *in billions*

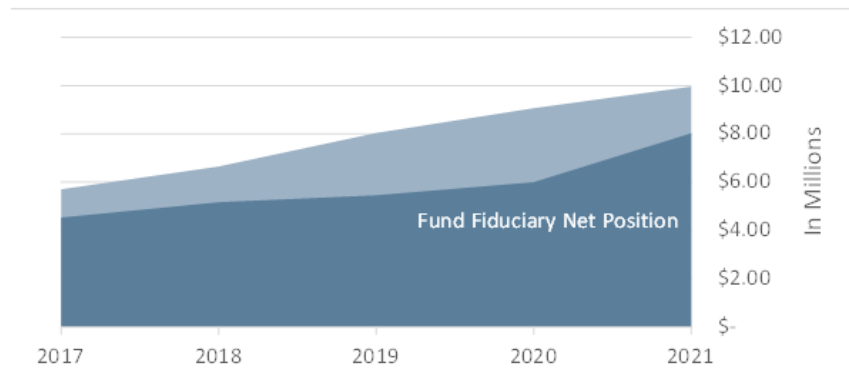
City Plan				
Year	Total Pension Liability	Fund Fiduciary Net Position	Net Pension Liability	Net Position as a Percent of Total Pension Liability
2021	\$ 4.89	\$ 2.83	\$ 2.06	57.85%
2020	4.73	2.37	2.36	50.09%
2019	4.57	2.31	2.26	50.59%
2018	5.42	2.32	3.09	42.86%
2017	5.35	2.27	3.08	42.40%



The Staff Plan will also continue to be measured using an annual valuation performed at calendar year end as well as evaluated with GASB required disclosures at statement of net position date. For the Staff Plan, these measurements are as follows:

Funding Progress
Fiscal Years Ending September 30
in millions

Staff Plan				
Year	Total Pension Liability	Fund Fiduciary Net Position	Net Pension Liability	Net Position as a Percent of Total Pension Liability
2021	\$ 9.96	\$ 8.02	\$ 1.95	80.47%
2020	9.06	6.00	3.06	66.24%
2019	8.04	5.46	2.58	67.88%
2018	6.65	5.17	1.48	77.73%
2017	5.70	4.53	1.17	77.71%



Requests for information: This financial report is designed to provide a general overview of the Fund's finances. Questions concerning any of the information provided should be addressed to the Employees' Retirement Fund of the City of Fort Worth, 3801 Hulen Street, Suite 101, Fort Worth, Texas 76107.

Combined Statements of Fiduciary Net Position

September 30, 2021 and 2020

	City Plan	Staff Plan	Combined Totals	City Plan	Staff Plan	Combined Totals
	2021		2021	2020		2020
Assets						
Investments in Trust, at Fair Value						
Government Obligations	\$ 98,539,648	\$ 280,057	\$ 98,819,705	\$ 138,756,198	\$ 353,046	\$ 139,109,244
U.S. Treasuries	130,787,915	371,710	131,159,625	68,264,902	173,691	68,438,593
Short-term Marketable Securities	106,858,714	303,701	107,162,415	82,758,761	210,569	82,969,330
Corporate Obligations	182,209,369	517,853	182,727,222	215,703,146	548,828	216,251,974
Asset and Mortgage Backed Obligations	40,630,123	115,474	40,745,597	69,126,363	175,883	69,302,246
International Obligations	12,546,462	35,657	12,582,119	14,203,994	36,140	14,240,134
Corporate Stocks	441,576,973	1,254,997	442,831,970	334,788,063	851,823	335,639,886
Commingled Funds	1,198,556,774	3,406,393	1,201,963,167	955,062,686	2,430,029	957,492,715
Alternative Investments	621,248,336	1,765,637	623,013,973	522,648,267	1,329,808	523,978,075
Securities Lending Collateral	173,981,837	441,025	174,422,862	99,257,323	251,606	99,508,929
Total Investments	3,006,936,151	8,492,504	3,015,428,655	2,500,569,703	6,361,423	2,506,931,126
Receivables						
Employee Contributions	6,836,880	-	6,836,880	2,828,818	-	2,828,818
Employer Contributions	3,235,082	-	3,235,082	6,147,111	-	6,147,111
Other	1,133	-	1,133	1,028	-	1,028
Accrued Income	5,685,321	14,412	5,699,733	4,038,857	10,238	4,049,095
Due From Broker Securities Sold	154,680,032	392,097	155,072,129	190,480,419	482,847	190,963,266
Total Receivables	170,438,448	406,509	170,844,957	203,496,233	493,085	203,989,318
Prepaid Expenses	27,702	70	27,772	91,844	233	92,077
Cash	107,313	272	107,585	158,820	402	159,222
Capital Assets						
Building	3,499,775	8,872	3,508,647	3,501,152	8,875	3,510,027
Land	403,976	1,024	405,000	403,976	1,024	405,000
Furniture and Equipment	167,360	424	167,784	185,644	471	186,115
Software	1,734,156	4,395	1,738,551	137,717	349	138,066
Total Capital Assets	5,805,267	14,715	5,819,982	4,228,489	10,719	4,239,208
Accumulated Depreciation	(1,292,080)	(3,275)	(1,295,355)	(1,365,609)	(3,462)	(1,369,071)
Capital Assets, Net	4,513,187	11,440	4,524,627	2,862,880	7,257	2,870,137
Total Assets	3,182,022,801	8,910,795	3,190,933,596	2,707,179,480	6,862,400	2,714,041,880
Liabilities						
Due to Broker Securities Purchased	177,395,432	449,678	177,845,110	239,379,272	606,800	239,986,072
Other	206,488	523	207,011	382,215	969	383,184
Obligations Under Securities Lending	173,981,837	441,025	174,422,862	99,257,323	251,606	99,508,929
Total Liabilities	351,583,757	891,226	352,474,983	339,018,810	859,375	339,878,185
Net Position Restricted for Pensions	\$ 2,830,439,044	\$ 8,019,569	\$ 2,838,458,613	\$ 2,368,160,670	\$ 6,003,025	\$ 2,374,163,695

The Notes to Combined Financial Statements are an integral part of these statements.

Combined Statements of Changes in Fiduciary Net Position

For Fiscal Years Ended September 30, 2021 and 2020

	City Plan	Staff Plan	Combined Totals	City Plan	Staff Plan	Combined Totals
	2021	2021	2021	2020	2020	2020
Investment Income						
Net Appreciation in Fair Value	\$ 488,027,622	\$ 1,302,615	\$ 489,330,237	\$ 78,342,164	\$ 198,536	\$ 78,540,700
Interest and Dividend Income	25,565,989	69,429	25,635,418	26,879,108	66,470	26,945,578
Less: Investment Management Fees	(6,165,860)	(16,673)	(6,182,533)	(6,502,567)	(15,949)	(6,518,516)
Other Income	16,344,742	44,531	16,389,273	11,404,923	27,999	11,432,922
Investment Income Before Securities	523,772,493	1,399,902	525,172,395	110,123,628	277,056	110,400,684
Securities Lending Activities						
Securities Lending Income	315,212	856	316,068	558,538	1,381	559,919
Securities Lending Expenses	(62,987)	(171)	(63,158)	(111,627)	(276)	(111,903)
Net Securities Lending Income	252,225	685	252,910	446,911	1,105	448,016
Total Net Investment Income	524,024,718	1,400,587	525,425,305	110,570,539	278,161	110,848,700
Contributions						
Employee Contributions	60,281,553	328,077	60,609,630	56,250,684	124,619	56,375,303
Employer Contributions	128,046,174	497,821	128,543,995	124,743,976	353,767	125,097,743
Total Contributions	188,327,727	825,898	189,153,625	180,994,660	478,386	181,473,046
Total Additions	712,352,445	2,226,485	714,578,930	291,565,199	756,547	292,321,746
Benefit Payments						
Retirement	188,161,116	181,061	188,342,177	178,887,438	179,160	179,066,598
Disability	5,136,081	-	5,136,081	5,191,272	-	5,191,272
Surviving Spouse	20,499,937	-	20,499,937	19,111,261	-	19,111,261
Children	48,594	-	48,594	39,859	-	39,859
Actuarial Equivalent	575,710	-	575,710	724,957	-	724,957
DROP Payouts	24,372,952	-	24,372,952	23,236,549	-	23,236,549
Total Benefit Payments	238,794,390	181,061	238,975,451	227,191,336	179,160	227,370,496
Other Payments						
Refunds/Terminations	5,187,736	-	5,187,736	3,773,182	-	3,773,182
Depreciation	120,844	342	121,186	118,393	300	118,693
Administrative	5,971,101	28,538	5,999,639	5,184,903	30,488	5,215,391
Total Other Payments	11,279,681	28,880	11,308,561	9,076,478	30,788	9,107,266
Total Deductions	250,074,071	209,941	250,284,012	236,267,814	209,948	236,477,762
Increase in Net Position	462,278,374	2,016,544	464,294,918	55,297,385	546,599	55,843,984
Beginning	2,368,160,670	6,003,025	2,374,163,695	2,312,863,285	5,456,426	2,318,319,711
Net Position Restricted for Pensions, Ending	\$ 2,830,439,044	\$ 8,019,569	\$ 2,838,458,613	\$ 2,368,160,670	\$ 6,003,025	\$ 2,374,163,695

The Notes to Combined Financial Statements are an integral part of these statements.

Notes to Combined Financial Statements

Note 1. Plan Description

The following description of the Employees' Retirement Fund of the City of Fort Worth, Texas (the Fund), is provided for general information purposes only. Participants (or members) should refer to the Plan Documents for more information.

General

The Fund is a multiple employer agent plan that covers employees of the City of Fort Worth (City Plan) and the employees of the Fort Worth Employees' Retirement Fund (Staff Plan). The Fund and City Plan were established by City Ordinance on September 12, 1945. The Staff Plan was established through Administrative Rules in 2007 and both plans are governed by State statute (Vernon's Civil Statutes, Title 109, Article 6243i) effective June 15, 2007. The City Plan is included in the Financial Statements of the City of Fort Worth.

The Fund provides retirement, disability and death benefits to its members and beneficiaries. All employees of the City of Fort Worth and the Retirement Fund Staff are members except elected officers and non-salaried appointed members of administrative boards and commissions, part-time, temporary and contract employees, and employees paid in part by another governmental agency. The two plans are commingled for investment purposes and are both administered by the 13-member Retirement Fund Board of Trustees. Each plan has a separate actuarial valuation completed each year.

The Retirement Fund Board of Trustees (the Board) is comprised of four active members of the Fund, three retired members of the Fund, and six trustees appointed by the Fort Worth City Council. All Board members serve a two-year term commencing on September 1st and annually select a chairperson and a vice-chairperson.

The Staff Plan was designed as a carve-out plan, with benefits identical to those of the General City employees (City of Fort Worth employees who are not civil service, police or fire) in August 2007 and continues with those benefits. Contribution rates were identical until fiscal year 2011, at which time the City Plan employer rates increased by 4%. This rate increase was not applied to the Staff Plan. At the time the Staff Plan was established in August of 2007, there were three Fund employees who were vested in the City Plan. At retirement, those employees will receive part of their retirement from the City Plan and the rest from the Staff Plan. Since the creation of the Staff Plan, other vested members of the City Plan have been hired by the Fund. These employees also will receive part of their retirement from the respective Plan in which they earned credit. The remaining Fund employees will receive any retirement benefits due to them from the Staff Plan only. The first actuarial valuation for the Staff Plan was completed as of January 1, 2008. Changes to the Staff Plan are determined by the Board.

The City has received a favorable letter of determination from the Internal Revenue Service (IRS) that its Plan is qualified under Section 401(a) of the Internal Revenue Code. The authority to define or amend employer and employee contribution rates or benefits is given to the Fort Worth City Council (the City Council). The City Plan is considered part of the City's financial reporting entity and is included in the City's basic financial statements. The City's payroll for employees covered by the City Plan for the years ended September 30, 2021 and 2020 was approximately \$523 and \$510 million, respectively.

Effective June 15, 2007, article 6243i of the Texas Revised Civil Statutes (Article 6243i) redefined the composition and structure of the Board, providing authority to the Board for benefit administration, asset investment and actuarial assumptions and authority to the Fund sponsor for benefit design and contribution

percentage. Article 6243i also permitted the Board to create administrative rules that govern the administration of benefits of the Fund.

The Board may change the administrative operation of the Fund without the City's approval, while any increases to the benefit structure must be approved by the City, following an actuarial assessment. A reduction in benefits must be approved by the City, and the City must notify the Board 90 days in advance of such benefit reduction.

As of September 30, 2021 and 2020, the Fund's membership consisted of the following members:

Combined Plan Membership Years ended September 30

	City Plan		Staff Plan	
	2021	2020	2021	2020
Retirees currently receiving benefits	4,036	3,903	4	4
Beneficiaries currently receiving benefits	793	776	0	0
Terminated employees entitled to	401	398	6	6
Terminated employees entitled to a	888	769	1	1
Total Non-Active Members	6,118	5,846	11	11
Active Members				
Vested	4,456	4,272	10	8
Non-vested	2,059	2,437	8	9
Total Active Members	6,515	6,709	18	17
Total Plan Membership	12,633	12,555	29	28

Vesting

Members vest in the Fund after five years of credited service. Vested members are eligible for normal retirement on the last day of the month in which the earlier of the following occurs: the member's age plus years of credited service equals 80 (Rule of 80), or the vested member reaches age 65. Members terminating employment prior to vesting are entitled to receive their contributions plus interest. Members who are vested have the option of receiving their contributions plus interest or leaving their contributions in the fund and receiving retirement benefits as described above.

Pension Benefits

In October of 2012 the City passed an ordinance change amending the benefits for new hire police civil service and split the benefits for existing police civil service and general employees, making changes similar to the November 2010 ordinance. Existing Police and General employees will have a different benefit calculation based on their hire date and dates of service. On September 16, 2014 and October 21, 2014, the City passed ordinance amendments making similar changes for new hire firefighters and existing firefighters, respectively, who previously had been unchanged. On December 11, 2018, the City passed an ordinance amending the benefits for all members. In February 2019 City employees voted in election to increase employee contributions.

The City Plan consists of six groups described generally as follows:

- Group I – A General Employee hired prior to July 1, 2011.
- Group II – A General Employee hired on or after July 1, 2011.
- Group III – A Police Officer hired prior to January 1, 2013.
- Group IV – A Police Officer hired on or after January 1, 2013.
- Group V – A Firefighter hired prior to January 10, 2015.
- Group VI – A Firefighter hired on or after January 10, 2015.

A member's normal retirement date is determined using the Rule of 80 or age 65 with at least 5 years of credited service. The City has adopted a 25-year-and-out program for police officers, which allows for full (unreduced) retirement after 25 years of service, regardless of age. Group II requires a minimum age of 55 at Rule of 80 to be eligible to retire. Each of the benefits are calculated by using an average annual compensation value multiplied by years of service and a multiplier percentage. The table below describes the variables for each group:

Group Number	Multiplier for Service prior to 10/01/2013	Multiplier for Service on or after 10/01/2013	Average Annual Compensation for service prior to 10/01/2013	Average Annual Compensation for service on or after 10/01/2013	Credited years of benefit service
Group I	3%	2.5%	Average of highest 3 (overtime included)	Average of highest 5 (overtime excluded)	Actual years and months of credited service
Group II	2.5%	2.5%	Average of highest 5 (overtime, wellness, vacation and sellback excluded)	Average of highest 5 (overtime, wellness, vacation and sellback excluded)	Actual years and months of credited service
Group III	3%	2.5%	Average of highest 3 (overtime included)	Average of highest 5 (overtime excluded)	Actual years and months of credited service
Group IV	2.5%	NA	Average of highest 5 (overtime, wellness, vacation and sellback excluded)	Average of highest 5 (overtime, wellness, vacation and sellback excluded)	Actual years and months of credited service

Group Number	Multiplier for Service prior to 01/10/2015	Multiplier for Service on or after 01/10/2015	Average Annual Compensation for service prior to 01/10/2015	Average Annual Compensation for service on or after 01/10/2015	Credited years of benefit service
Group V	3%	2.5%	Average of highest 3 (overtime included)	Average of highest 5 (overtime excluded)	Actual years and months of credited service
Group VI	NA	2.5%	Average of highest 5 (overtime, wellness, vacation and sellback excluded)	Average of highest 5 (overtime, wellness, vacation and sellback excluded)	Actual years and months of credited service

Cost of Living Adjustment (COLA)

Members of Groups I, III and V, as defined in the City ordinance, receive COLAs based on their selection of either simple 2% COLA or the ad-hoc COLA for service prior to either October 1, 2013 or January 10, 2015, depending on the group, provided they are retired or enrolled in DROP on or before January 1, 2021. [For members of Groups I, III and V] Service on or after October 1, 2013 or January 10, 2015, through January 19, 2019, depending on the group, receives a simple 2% COLA, if retired or enrolled in DROP on or before January 1, 2021. Ad-hoc COLAs are compound and granted if the amortization period required to pay-off the unfunded liability is 28.0 years or less. If the amortization period falls between 24.1 - 28.0 years to pay off the unfunded liability the member will receive a 2% COLA, if the amortization period falls between 18.1 - 24.0 years the COLA is 3% and an amortization period below 18 years pays a 4% COLA. Members who are eligible to receive a COLA, are granted that COLA on January 1 of that year. The member must be retired by September 30 of the preceding year (or in DROP) in order to be eligible. For members of Groups I, III and V who are not retired or enrolled in DROP on or before January 1, 2021, there is a Variable COLA or 13th check that applies to service prior to July 19, 2019 which is subject to actuarial conditions and approval by the Fund Board of Trustees and City Council. Groups II, IV and VI are not eligible for a COLA. There is no COLA for service after July 19, 2019 for any Group.

Deferred Retirement Option Program

If a member continues to work after the normal retirement date, the member is required to make contributions to the Fund until the date of actual retirement. Members continue to accrue credited service until they retire unless they are enrolled in the Deferred Retirement Option Program (DROP). A member who has attained the normal or special retirement date may elect to remain in active service with the City and defer retirement by participating in the DROP. The DROP allows a member to accrue a monthly amount, into a notional account that does not earn interest, equal to what they would have received if they had retired. Retirement benefits are calculated at the DROP entry date and service and compensation beyond that date do not accrue to the benefit calculation but contributions on wages continue. The DROP account is payable when service ends and the only

changes to the benefit upon the DROP exit are credit for unused applicable leave and eligible COLA increases. DROP is limited to 72 months.

In September 2007, the Board voted to allow members that have entered the DROP to leave a part or all of their DROP balance with the Fund. Members that elect this option are credited the same earnings as the Fund on a monthly basis and are subject to losses if the Plan incurs negative earnings on Fund assets.

DROP balances for all active and inactive City Plan participants totaled \$154.2 million for fiscal year end 2021 and \$130.2 million for fiscal year end 2020.

Cash Balance

General City employees hired after July 1, 2011 will not have overtime in their high five salary calculation. Alternatively, their contributions from overtime are placed in a cash balance account and the City pays 100% matching dollars plus interest at retirement. However, as of October 1, 2013, the cash balance plan is closed and no new contributions will be added to existing account balances.

Death and Disability Benefits

Upon the death of a retired member in Group I, III or V, the surviving spouse shall receive a monthly pension equal to 75% of the amount being paid to the retired member. If a vested member dies before retirement, the surviving spouse shall receive a monthly pension equal to 75% of the member's accrued pension, subject to certain minimum benefits. Active employees who become totally disabled while in the line of duty receive annual disability benefits that are equal to normal retirement benefits that would have accrued had the member worked to their normal retirement date. Members who become totally disabled while not in the line of duty receive disability benefits that are equal to retirement benefits that have accumulated as of the time they become disabled, provided the member was vested. Non-vested members who become totally disabled while not in the line of duty receive a refund of contributions, plus interest.

Groups II, IV, VI and unmarried members of any group have no joint survivorship benefit, they only have the designated beneficiary actuarially neutral option. Any member may elect to have a designated beneficiary survivor benefit at 25%, 50%, 75% or 100% by reducing their current benefit, making the cost to the plan actuarially neutral.

Obligation to Contribute to the Fund

Effective the first payroll of fiscal year 2011, the City contributed to the Fund an amount equal to 19.74% (20.46% for sworn police officers) of the salaries of members. Effective the first payroll of calendar year 2019, the City shall contribute to the Fund an amount equal to 24.24% (24.96% for sworn police officers) of the salaries of members. The City Council, through its budget appropriation, has the right to contribute an additional amount over and above the members' contributions.

Prior to July 19, 2019, employees of the City, as a condition of their employment, commencing on the effective date of their membership in the Fund, contributed 8.25% (8.73% for sworn police officers) of their salary to the Fund. Beginning July 19, 2019, as a condition of employment, commencing on the effective date of their membership in the Fund, employees of the City, shall contribute 9.35% for General Employees, 10.05% for sworn fire fighters and 10.53% for sworn police officers of their salary to the Fund. In addition, General employees with service prior to October 1, 2013 pay an additional 0.7% of their salary to the Fund for the length of that service until the date of their actual retirement or earlier termination of employment. Beginning with the first pay day after January 1, 2020, employees of the City, shall contribute 9.35% for General Employees, 12.05% for sworn fire fighters and 12.53% for sworn police officers of their salary to the Fund. In addition, General employees with service prior to October 1, 2013 pay an additional 0.7% of their salary to the Fund for the length of that service. Beginning with the first pay day after January 1, 2021, employees of the City,

shall contribute 9.35% for General Employees, 12.05% for sworn fire fighters and 13.13% for sworn police officers of their salary to the Fund. In addition, General employees with service prior to October 1, 2013 pay an additional 0.7% of their salary to the Fund for the length of that service. The employer and employee contribution rates are not used when the actuary determines the annual required contributions to the Fund.

Note 2. Summary of Significant Accounting Policies

The following are the significant accounting policies followed by the Fund:

Basis of Accounting

The Fund's financial statements are prepared using the accrual basis of accounting in accordance with the standards of the Governmental Accounting Standards Board for pension trust funds. Employer and employee contributions are recognized when due, pursuant to formal commitments as well as statutory or contractual requirements. Benefits and refunds of the plan are recognized when due and payable in accordance with the terms of the plan. Purchases and sales of investments are recorded on a trade-date basis.

Cash and Cash Equivalents

For cash deposits and cash equivalents, the custodial credit risk is the risk that in the event of a bank failure, the Fund's deposits may not be returned. The Fund's deposits are held by Northern Trust and Frost Bank. As of September 30, 2021, and 2020, the Fund had bank balances of \$107,585 and \$159,222, respectively, that are in demand accounts subject to coverage by Federal Deposit Insurance Corporation (FDIC) but are not collateralized. The Fund does not have a deposit policy for custodial credit risk, however, management believes that the Fund's custodial credit risk exposure is mitigated by the financial strength of the banking institutions in which the deposits are held.

Property and Equipment

Property and equipment is reported on the cost basis. The Fund provides for depreciation on the straight-line method over the estimated useful lives of the assets.

The following estimated useful lives are used in providing for depreciation:

Building 40 years

Furniture and Equipment 5 – 7 years

Investment Policy Statement

The Board of Trustees (The Board) of the Fort Worth Employees' Retirement Fund (The Fund) has adopted an Investment Policy Statement as a framework for the investment of the Fund's assets. The authority to amend that statement rests entirely with the Board. The Investment Policy Statement was amended by the Board on January 27, 2021. A copy of the Investment Policy Statement can be found in its entirety on the Fund's website.

Valuation of Investments

Investments are stated at fair value. When available, quoted market prices are used to value investments. Investments that do not have quoted market prices are priced from information received from the external manager. In these cases, external managers are independent investment managers that manage assets that are not held directly by the Fund. Examples of these kinds of investments are pooled real estate funds, pooled private equity investments and hedge funds. These assets are pooled and managed on behalf of a number of investors.

The underlying partnerships allow for withdrawals at various times during the year as provided for by the respective underlying agreements, which may include an initial lockup period, or be subject to a gate provision or suspension of redemptions.

The Fund utilizes a variety of financial instruments in their trading strategies, which contain varying degrees of off-balance sheet risk. However, due to the nature of the Fund's investments, such risks are limited to the Fund's capital balance in each underlying partnership. Below is a listing and description of the various investments used by the Fund:

- **Broad US Equity:** Equity securities listed on a recognized US securities exchange or quoted on the NASDAQ National Market System are priced at the regular trading session's closing price on the exchange or system in which such securities are principally traded. Securities not traded on the valuation date are priced at the most recent quoted bid price.
- **Broad International Equity:** Global securities' prices are based upon primary local market quotations. Depending upon local convention or regulation, the price may represent the last sale price or the mean between the last bid and ask price at the close of the appropriate exchange or at other designated times as determined by the appropriate governing body.
- **Fixed Income - Bank Loans:** Bank Debt and Syndicated loans that are traded in the secondary market will be priced using a pricing vendor quote, or if unavailable, a broker quote as directed by the client or delegate. Structured loans which are bi-lateral or multi-lateral agreements between the lender and the borrower will be priced at a level to be determined by the investment manager and approved by the Fund. Based on information available to the investment manager, the Fund will rely on the investment manager to indicate the current value of the loan/debt.
- **Fixed Income - Government/Corporate Bonds:** These securities are priced by a pricing vendor on the basis of bid or mid evaluations in accordance to a region's market convention, using factors which include but are not limited to market quotations, yields, maturities, and the bond's terms and conditions. The pricing vendors use proprietary methods to arrive at the evaluated price. These prices represent the price a dealer would pay for a security (typically in an institutional round lot).
- **Real Estate, Absolute Return, Private Equity, Real Return:** The Fund's investments in limited partnerships are valued at estimated fair value based on the Fund's proportionate share of the partnerships' fair value as recorded by the partnership. The Fund uses information provided by the limited partnership, such as audited financial statements, periodic information on the holdings and activities and periodic statements of fair value of the limited partnership and other information accumulated by management pertinent to the investment to estimate fair value. The limited partnerships allocate gains, losses and expenses to the partners based on the ownership percentage as described in the partnership agreements. It is the Fund's policy to use the most recent available valuation, adjusting for cash flows as necessary up until the period is closed. The closing date is consistent each year. Estimates are used by management in determining the fair value of the Fund's investments in limited partnerships. The amount received upon sale of the investments may differ significantly from the recorded amount.

There are certain market risks, credit risks, foreign exchange currency risks, or events that may subject the Fund's investment portfolio to economic changes occurring in certain industries, sectors, or geographies.

Net investment income includes net appreciation in the fair value of investments, interest income, dividend income, and investment expenses. Investment expense includes custodian and management fees, and all other significant investment-related costs.

Rate of Return

The Fund uses two approaches for calculating investment returns for reporting purposes. For the fiscal years ended September 30, 2021 and 2020, the annual money-weighted return on the Fund assets, net of investment expenses, was 22.52% and 4.79%, respectively. The money-weighted return expresses investment performance, net of investment expenses, adjusted for the changing amounts actually invested. In addition, for the fiscal years ended September 30, 2021 and 2020, the time-weighted return on Fund assets net of fees was 22.44% and 4.86%, respectively. The time-weighted rate of return is defined as the compounded growth rate of \$1 over the period being measured and is not sensitive to contributions or withdrawals.

Interest and Dividends Receivable and Due to/from Broker

Interest income is recorded on an accrual basis. Dividends are recorded on the ex-dividend date. Recording activity in such a manner, results in interest and dividends receivable. The balance due to broker securities purchased and due from broker securities sold represents trades pending settlement and amounts due to foreign currency contracts.

Foreign Currency Transactions

The Fund is a party to financial instruments with off balance sheet risk, primarily foreign currency forward contracts. Forward transactions are contracts or agreements for delayed delivery of commodities, securities, or money market instruments in which the seller agrees to make delivery at a specified future date of a specified commodity or instrument, at a specified price or yield. Entering into these investments involves not only the risk of dealing with counterparties and their ability to meet the terms of the contracts, but also the risk associated with market fluctuations.

Gains and losses resulting from foreign exchange contracts (transactions denominated in a currency other than the Fund's functional currency-US dollars) are recorded by the Fund based on changes in fair values and are combined with similar transactions in the accompanying combined statements of changes in fiduciary net position and are included in net investment income. The Fund structures its foreign exchange contracts and enters into certain transactions to substantially mitigate the Fund's exposure to fluctuations in foreign exchange rates.

Investment and broker accounts denominated in foreign currencies outstanding at September 30, 2021 and 2020 were converted to the Fund's functional currency at the foreign exchange rates quoted at September 30, 2021 and 2020. These foreign exchange gains and losses are included in net appreciation in fair value of investments in the accompanying combined statements of changes in fiduciary net position.

Use of Estimates

The preparation of financial statements and required supplementary information in accordance with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of net positions, and changes therein; the net pension liability at the date of the financial statements, and changes therein. Actual results could differ from those estimates.

The Plan invests in various investment securities. Investment securities are exposed to various risks, such as interest rate, market, and credit risks. Due to the level of risk associated with certain investment securities, it is at least reasonably possible that changes in the values of investment securities will occur in the near term and that such change could materially affect the amounts reported in the combined statement of fiduciary net position.

The net pension liability is reported based on certain assumptions pertaining to interest rates, inflation rates, and employee demographics, all of which are subject to change. Due to uncertainties inherent in the estimations

and assumptions process, it is at least reasonably possible that changes in these estimates and assumptions in the near term would be material to the financial statements.

Expenses

The Fund staff is responsible for providing or contracting with vendors to provide all administrative functions necessary for operation of the Fund. The Board approves an annual budget for the administration of the Fund and these expenses are paid from current Fund assets.

Multiple Employer Agent Plan

The financial statements are prepared as a multiple employer agent plan. Assets are commingled for investment purposes. Financial statements are presented with combined information for each employer. Required supplemental information is also presented for each employer.

Note 3. Net Pension Liability

The net pension liability is measured using the total pension liability less the pension plan's fiduciary net position. The total pension liability as of September 30 is based on the results of the actuarial valuation dated December 31 and rolled forward using generally accepted actuarial procedures. The total pension liability for the City Plan is calculated using the long-term expected rate of return.

For the City Plan, the net position was projected to be available to make all projected future benefit payments of current plan members. The long-term expected rate of return on Retirement Fund investments, with adjustment to account for administrative expenses, was applied to the projected benefit payments. The following table reflects the Net Pension Liability for the City Plan:

Schedule of Net Pension Liability
Years Ended September 30

Fiscal Year Ending 09/30	Total Pension Liability	Plan Net Position	Net Pension Liability	Plan Net Position as a Percent of Total Pension Liability	Covered Payroll	Net Pension Liability as a Percent of Covered Payroll
City Plan						
2014	\$ 3,610,674,395	\$ 2,081,575,247	\$ 1,529,099,148	57.65%	\$ 391,216,461	390.86%
2015	4,127,343,024	2,003,269,563	2,124,073,461	48.54%	404,507,497	525.10%
2016	5,318,307,112	2,097,716,741	3,220,590,371	39.44%	424,371,512	758.91%
2017	5,354,699,800	2,270,521,836	3,084,177,964	42.40%	447,488,158	689.22%
2018	5,422,613,892	2,324,335,575	3,098,278,317	42.86%	467,754,197	662.37%
2019	4,571,921,160	2,312,863,285	2,259,057,875	50.59%	484,410,754	466.35%
2020	4,728,026,182	2,368,160,670	2,359,865,512	50.09%	509,575,065	463.10%
2021	4,892,874,650	2,830,439,044	2,062,435,606	57.85%	523,064,436	394.30%

For the Staff Plan, the net position was projected to be available to make all projected future benefit payments of current plan members. The long-term expected rate of return on Retirement Fund investments, with adjustment to account for administrative expenses, was applied to the projected benefit payments. The following table reflects the Net Pension Liability for the Staff Plan:

**Schedule of Net Pension Liability
Years Ended September 30**

Fiscal Year Ending 09/30	Total Pension Liability	Plan Net Position	Net Pension Liability	Plan Net Position as a Percent of Total Pension Liability	Covered Payroll	Net Pension Liability as a Percent of Covered Payroll
Staff Plan						
2014	\$ 4,156,464	\$ 2,772,401	\$ 1,384,063	66.70%	\$ 1,432,884	96.59%
2015	4,130,487	3,088,220	1,042,267	74.77%	1,539,199	67.71%
2016	5,218,030	3,715,866	1,502,164	71.21%	1,587,554	94.62%
2017	5,697,981	4,526,754	1,171,227	79.44%	1,507,141	77.71%
2018	6,648,357	5,167,655	1,480,702	77.73%	1,588,685	93.20%
2019	8,038,352	5,456,426	2,581,926	67.88%	1,533,139	168.41%
2020	9,062,509	6,003,025	3,059,484	66.24%	1,510,527	202.54%
2021	9,966,499	8,019,569	1,946,930	80.47%	2,061,061	94.46%

Actuarial Methods and Assumptions

Actuarial valuations involve projections of benefit payments, contributions, and other amounts decades into the future. These projections are based on actuarial assumptions and methods adopted by the Fund's Board of Trustees. Assumptions such as salary increases, investment rates of return, retirement and disability rates, mortality, and inflation are compared against actual experience by actuarial experience studies conducted every three years. These studies assist the Fund's Board in evaluating the accuracy with which the assumptions predict actual experience. A three-year experience study was completed in the first quarter of 2019 for the period January 1, 2016 through December 31, 2018. The experience study will be updated in the first quarter of 2022 for the period January 1, 2019 through December 31, 2021.















**Schedule of Significant Actuarial Assumptions
As of December 31, 2020**

	City Plan	Staff Plan
Actuarial Cost Method	Entry Age Normal	Entry Age Normal
Amortization Method	Level Percentage of Payroll, 30-year closed beginning in 2018	Leveled Dollar, Layered
Remaining Amortization Period	28 years	30 years for new layers
Asset Valuation Method	Five-year smoothed market	Five-year smoothed market
Inflation	2.50%	2.50%
Salary Increases	3.25% - 28.25%	2.75% - 5.35%
Investment Rate of Return	7.00%	7.00%
Retirement Age	Experience-based table of rates based on job classification and number of years since first retirement eligibility.	Experience-based table of rates based on job classification and number of years since first retirement eligibility.
Mortality	PubG-2010 Mortality Tables for General Employees and PubS-2010 Healthy Retiree Mortality Table for Police Officers and Firefighters. Generational mortality improvements from the year 2010 using the ultimate mortality improvements rates in the 2014-2019 MP tables.	PubG-2010 Mortality Tables. Generational mortality improvements from the year 2010 using the ultimate mortality improvements rates in the 2014-2019 MP tables.
Cost-of-Living Adjustment	A 2% cost-of-living adjustment (COLA) is assumed for all members in the guaranteed COLA program. No COLAs are assumed for members with a variable COLA. Timing of conditional Ad-Hoc COLAs is based on an open group projection.	4.0% COLAs are assumed for members participating in the Ad-Hoc COLA program.

Expected Return Arithmetic Basis

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class included in the pension plan's target asset allocation as of September 30, 2021 and 2020 are summarized in the following tables:

**Target Asset Allocation and Arithmetic Real Rate of Return
As of September 30**

Asset Class	2021		2020	
	Target Allocation	Long-Term Expected Real Rate of Return	Target Allocation	Long-Term Expected Real Rate of Return
Global Equity	 45.00%	6.81%	 40.33%	6.81%
Fixed Income	 19.00%	1.51%	 18.78%	1.51%
Real Return	 2.00%	5.25%	 2.80%	5.25%
Real Estate	 8.00%	4.88%	 11.80%	4.88%
Absolute Return	 10.00%	2.61%	 15.39%	2.61%
Private Equity	 15.00%	8.00%	 9.90%	8.00%
Cash	 1.00%	-0.50%	 1.00%	-0.50%
Total	<u>100.00%</u>		<u>100.00%</u>	

Sensitivity of Net Pension Liability

The following tables present the net pension liability of the City Plan and the Staff Plan using their respective discount rates in 2021 and 2020, plus or minus 1%.

The City Plan and the Staff Plan were calculated using the expected rate return of 7.00%, as well as what the net pension liability would be if it were calculated using a discount rate that is one percentage-point lower 6.00% or one percentage-point higher 8.00% than the current rate.

**Fort Worth Employees' Retirement Fund
Sensitivity of the Net Pension Liability to Changes in Discount Rate
Years Ended September 30**

		City Plan		Staff Plan	
		2021	2020	2021	2020
Net Pension Liability					
1% Decrease	6.00%	\$ 2,662,326,996	\$ 2,945,537,236	\$ 3,431,426	\$ 4,434,976
Discount Rate	7.00%	2,062,435,606	2,359,865,512	1,946,930	3,059,484
1% Increase	8.00%	1,564,823,142	1,874,613,297	732,800	1,935,798

Note 4. Fair Value Measurement (GASB 72)

The Fund categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The three levels of the fair value hierarchy are based on the valuation inputs used to measure the fair value of the asset. Level 1 inputs are quoted prices in active markets for identical assets. Level 2 inputs are quoted prices for similar instruments in active markets; quoted prices for identical or similar instruments in markets that are not active; and model-derived valuations in which all significant inputs are observable. Level 3 valuations are derived from valuation techniques in which significant inputs are unobservable.

Investments that are measured at fair value using the net asset value per share (or its equivalent) as a practical expedient are not classified in the fair value hierarchy.

Investments that use inputs that are of different levels are categorized based on the lowest level of input used to determine the fair value of the investment.

Equity investments that are classified as Level 1 are valued using prices quoted in active markets for those securities. Level 1 debt securities are US Treasuries. Commingled debt funds that are publicly traded are also included in Level 1.

Debt and derivative securities classified as Level 2 are valued using either a bid evaluation or a matrix pricing technique. Bid evaluations may include market quotations, yields, maturities, call features and ratings. Matrix pricing is used to value securities based on the securities relationship to benchmark quoted prices. These debt and derivative securities have non-proprietary information that was readily available to market participants, from independent sources, which are known to be actively involved in the market. Cash and cash equivalents are short-term investments valued based on cost and accrued interest which approximates fair value. Equity securities classified as Level 2 are derived from associated traded security values or convertible securities valued similar to debt securities through a bid evaluation process.

Debt and derivative securities classified in Level 3 are valued similar to Level 2 securities but have limited bids, limited trade information, limited trade activity, pricing from multiple sources but differences in prices above an acceptable level or pricing provided by a single source. Equity securities classified as Level 3 have limited trade information. These securities are priced off last trade price or estimated off recent trades and corporate actions.

Assets listed in the Investments Measured at NAV (Net Asset Value) table are invested with managers in structures that the Fund receives values for shares held in the investment structure with the manager. The liquidity of these structures is listed in the table.

Equity Investments – This consists of two Commingled Global Equity Funds that are passive institutional investment funds that invest in global equities diversified across all sectors focused on large to mid-cap equities. One of the global equity funds is based on a cap weighted MSCI ACWI index and the second fund is based on an MSCI ACWI weighted toward fundamental aspects of companies within the index. There is also one active Commingled Emerging Market Equity Fund that is an institutional investment fund that invests in emerging market equities diversified across all sectors focused on large to mid-cap equities.

Absolute Return Funds – This category consists of several different styles of funds as well as different liquidity structures. When redeeming from these funds, there is typically a notice period ranging from one to three months' notice and funds can hold back a small portion of the assets until an annual audit is conducted. In some cases managers designate particular investments as longer hold periods than the funds liquidity schedule, in

these cases they side pocket the investment, and these assets are not available immediately upon redemption. Directional funds include an investment in one fund that invests in a directional nature based on their views of markets, at times this fund may invest without a directional bias. The directional fund is able to be redeemed on a quarterly basis. Equity Long/Short funds include investments in four funds with two of these funds currently in redemption consisting of less than 1% of assets in this category. Equity long/short funds maintain some level of market exposure by investing in US or global equities both long and short with the level of exposure varying over time. One fund of this type, consisting of 47% of assets in this category allows a full redemption on a quarterly basis. The other significant fund of this type, consisting of 53% of assets in this category, allows quarterly liquidity receiving $\frac{1}{4}$ of assets each subsequent quarter. Event driven funds include investments in seven funds with two of those funds currently in redemption consisting of less than 1% of assets in this category. These funds seek to gain an advantage from pricing inefficiencies that may arise based on corporate actions or events which may change the nature of the underlying investment. The nature of event driven investments often restricts the liquidity of those investments. In this category 16% of the assets may only be redeemed in three-year intervals, while 14% may only be redeemed on an annual basis. The remaining 70% of assets may be redeemed quarterly receiving $\frac{1}{4}$ of assets each subsequent quarter. Multi-Strategy funds invest in multiple strategies in order to diversify risks and reduce volatility. The five Funds in this category have been redeemed with the remaining assets either audit holdback or side pocketed assets waiting for liquidation. Relative Value funds include investments in two funds in this category. Relative Value funds seek returns by identifying mispricing of related securities or financial instruments. Both of the Relative Value funds allows quarterly liquidity receiving $\frac{1}{4}$ of assets each subsequent quarter.

Alternative Assets – This category consists of limited partnership structures that invest in companies or real estate which allow for limited or no liquidity for the investor. Private Equity partnerships consists of funds that invest in buyouts, growth equity, venture capital, special situations, mezzanine and distressed debt. There are 85 partnerships in this category and these partnerships are typically structured with a life from 7-12 years and are considered illiquid. As investments are sold out of the partnerships, assets are returned to the investors. These funds' fair value are determined using net asset values one quarter in arrears and adjusted for cash flows of the most recent quarter. There are three investments in Real Estate - Core partnerships which invest in highly leased lower leverage properties that provide consistent income to the investors. These funds allow quarterly liquidity to the investors. A redemption has been submitted from one of these managers, however a gate has been implemented by the manager restricting the flow of redemption proceeds as the manager pursues liquidation of some of the fund assets to meet the investors that have requested redemptions. Real Estate – Non-Core partnerships invest in properties that require some kind of development or improvements to improve the position of the property. There are 23 partnerships in this category and these partnerships are typically structured with a life from 7-12 years and are considered illiquid. As properties are sold out of the partnership, assets are returned to the investors. These funds fair value are determined using net asset values one quarter in arrears and adjusted for cash flows of the most recent quarter.

Investments and Derivative Instruments Measured at Fair Value

September 30, 2021

Investments by Fair Value Level	Fair Value	Level 1	Level 2	Level 3
Short-Term Securities	\$ 281,585,277	\$ 27,805,264	\$ 253,780,013	
Debt Securities				
Collateralized Debt Obligations	28,932,205		16,734,978	12,197,227
Commercial Mortgage-Backed Securities	11,813,392	8,491,226	3,322,166	
Corporates	182,369,321		181,952,302	417,019
Debt Other	99,813,049	99,455,148	357,901	
Municipals	7,940,994		7,487,072	453,922
Non U.S. Government	12,582,119		12,582,119	
U.S. Government Agencies	90,878,711		84,852,304	6,026,407
U.S. Treasuries	131,159,625	131,159,625		
Total Debt Securities	565,489,416	239,105,999	307,288,842	19,094,575
Equity Securities				
Communication Services	12,902,981	12,337,596	565,385	
Consumer Discretionary	50,911,295	50,911,295		
Consumer Staples	21,347,033	21,347,033		
Energy	36,494,442	36,494,442		
Equity Other	23,953,170	23,953,170		
Financials	55,982,622	55,982,622		
Health Care	26,928,008	26,928,008		
Industrials	58,538,664	58,538,652		12
Information Technology	40,166,531	40,166,531		
Materials	18,736,114	18,736,114		
Real Estate	15,920,902	15,920,902		
Utilities	9,487,507	9,487,507		
Total Equity Securities	371,369,269	370,803,872	565,385	12
Investments Measured at Net Asset Value				
Commingled Global Equity Fund	786,854,386			
Commingled Emerging Market Equity Fund	71,462,701			
Absolute Return	265,551,968			
Private Equity	352,737,038			
Private Credit	4,724,967			
Real Estate - Core	151,272,237			
Real Estate - Non Core	164,381,396			
Total Investments Measured at Net Asset Value	1,796,984,693			
Total Investments by Fair Value Level	\$ 3,015,428,655	\$ 637,715,135	\$ 561,634,240	\$ 19,094,587
Investment Derivative Instruments				
Swaps	\$ 920,984		\$ 920,984	
Rights and Warrants	55,032			55,032
Options	(714)		(714)	
FX Forwards	(43,679)		(43,679)	
Total Investment Derivative Instruments	\$ 931,623	\$ -	\$ 876,591	\$ 55,032

Investments Measured at NAV

September 30, 2021

Investments Measured at Net Asset Value	Fair Value	Unfunded Commitments	Redemption Frequency (if Currently Eligible)	Redemption Notice Period
Equity Investments				
Commingled Global Equity Fund	786,854,386	\$ -	Daily	1 day
Commingled Emerging Market Equity Fund	71,462,701	-	Daily	1 day
Total Equity Investments	858,317,087	-		
Absolute Return				
Directional	25,260,030	-	Quarterly	75 days
Equity Long/Short	55,391,408	-	Quarterly	45 days
Event Driven	150,107,454	-	Quarterly, Annually, 3 years	45-90 days
Multi-Strategy	2,155,802	-	Annually, Biennial	45-90 days
Relative Value	32,637,274	-	Quarterly	60-90 days
Total Absolute Return Investments	265,551,968	-		
Other Assets at Net Asset Value				
Private Equity	352,737,038	126,178,098	Not eligible	N/A
Private Credit	4,724,967	5,000,000	Not eligible	N/A
Real Estate - Core	151,272,237	-	Quarterly	60-90 days
Real Estate - Non Core	164,381,396	77,495,172	Not eligible	N/A
Total Other Assets at Net Asset Value	673,115,638	208,673,270		
Total Investments Measured at Net Asset Value	\$ 1,796,984,693	\$ 208,673,270		

Investments and Derivative Instruments Measured at Fair Value

September 30, 2020

Investments by Fair Value Level	Fair Value	Level 1	Level 2	Level 3
Short-Term Securities	\$ 182,478,259	\$ 10,298,206	\$ 172,180,053	\$ -
Debt Securities				
Collateralized Debt Obligations	47,109,727	-	31,493,300	15,616,427
Commercial Mortgage-Backed Securities	22,192,519	-	20,016,901	2,175,618
Corporates	216,250,874	-	215,953,787	297,087
Debt Other	88,867,319	88,866,219	1,100	-
Municipals	8,559,068	-	8,559,068	-
Non U.S. Government	14,240,134	-	10,729,067	3,511,067
U.S. Government Agencies	130,550,176	-	123,213,188	7,336,988
U.S. Treasuries	68,438,593	68,438,593	-	-
Total Debt Securities	596,208,410	157,304,812	409,966,411	28,937,187
Equity Securities				
Communication Services	11,865,160	11,865,160	-	-
Consumer Discretionary	38,726,593	38,726,593	-	-
Consumer Staples	18,331,998	18,331,998	-	-
Energy	17,179,632	17,179,632	-	-
Equity Other	17,475,791	17,475,791	-	-
Financials	34,667,061	34,667,061	-	-
Health Care	20,122,233	20,122,233	-	-
Industrials	45,490,422	45,490,410	-	12
Information Technology	34,053,086	34,053,086	-	-
Materials	10,134,271	10,134,271	-	-
Real Estate	13,500,437	13,500,437	-	-
Utilities	10,911,155	10,911,155	-	-
Total Equity Securities	272,457,839	272,457,827	-	12
Investments Measured at Net Asset Value				
Commingled Global Equity Fund	631,100,342			
Commingled Emerging Market Equity Fund	63,182,047			
Absolute Return	246,348,961			
Private Equity	277,629,114			
Private Credit	5,208,983			
Real Estate - Core	106,678,269			
Real Estate	125,638,902			
Total Investments Measured at Net Asset Value	1,455,786,618			
Total Investments by Fair Value Level	\$ 2,506,931,126	\$ 440,060,845	\$ 582,146,464	\$ 28,937,199
Investment Derivative Instruments				
Swaps	(599,652)	-	(599,652)	-
Rights and Warrants	32,469	32,469	-	-
Options	(7,434)		(5,976)	(1,458)
FX Forwards	491,333	-	491,333	-
Total Investment Derivative Instruments	\$ (83,284)	\$ 32,469	\$ (114,295)	\$ (1,458)

Investments Measured at NAV

September 30, 2020

Investments Measured at Net Asset Value	Fair Value	Unfunded Commitments	Redemption Frequency (if Currently Eligible)	Redemption Notice Period
Equity Investments				
Commingled Global Equity Fund	\$ 631,100,342	\$ -	Daily	1 day
Commingled Emerging Market Equity Fund	63,182,047	-	Daily	1 day
Total Equity Investments	694,282,389	-		
Absolute Return				
Directional	23,633,179	-	Quarterly	75 days
Equity Long/Short	46,250,961	-	Quarterly	45 days
Event Driven	118,715,441	-	Quarterly, Annually, 3 years	45-90 days
Multi-Strategy	2,098,666	-	Annually, Biennial	45-90 days
Relative Value	55,650,714	-	Quarterly	60-90 days
Total Absolute Return Investments	246,348,961	-		
Alternative Assets				
Private Equity	277,629,114	115,636,022	Not eligible	N/A
Private Credit	5,208,983	20,000,000	Not eligible	N/A
Real Estate - Core	106,678,269	30,000,000	Quarterly	60-90 days
Real Estate	125,638,902	97,044,652	Not eligible	N/A
Total Alternative Investments	515,155,268	262,680,674		
Total Investments Measured at Net Asset	\$ 1,455,786,618	\$ 262,680,674		

Note 5. Investments

Substantially all of the Fund's investments are held by its custodian. The Retirement Fund Board of Trustees authorizes various external managers to manage investments within certain policies as set forth by the Board. These policies mandate a diversified portfolio, which includes investments, either directly or in commingled accounts, in real estate, fixed income securities, and equity securities.

Governmental Accounting Standards Board Statement No. 40 "Deposit and Investment Risk Disclosures – an amendment to GASB Statement No. 3" (GASB 40), addresses common deposit and investment risks including custodial credit risk, credit risk, concentration of credit risk, interest rate risk, and foreign currency risk. Required disclosures related to these risks are presented below:

Custodial Credit Risk

Custodial credit risk is the risk that in the event of failure of the counterparty, the Fund would not be able to recover the value of its investments. The Fund does not have a formal policy for custodial credit risk. As of September 30, 2021 and 2020, all investments are registered in the name of the Employees' Retirement Fund of the City of Fort Worth or in the name of the Fund's custodian, established through a master trust custodial agreement, with the exception of investments in alternative investments and commingled funds.

Credit Risk of Debt Securities

Credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligations. The Fund's investment policy requires that fixed income securities have a weighted average of no less than investment grade, as rated by Moody's or Standard & Poor's (S&P). However, the policy does provide for high yield fixed income managers to invest in securities with S&P ratings between BB+ and CCC. The policy limits 25% of a manager's portfolio to be rated CCC or lower. Unrated securities should be limited to no more than 20% of a manager's portfolio.

GASB 40 does not require disclosure of US government obligations explicitly guaranteed. The table on the following page shows the Fund's investments as of September 30, 2021 and 2020.

Credit Risk Analysis September 30, 2021 and 2020

Investment Type	S&P Rating	2021 Fair Value	2020 Fair Value
Asset and Mortgage Backed Obligations	AAA	\$ 28,681,254	\$ 21,513,992
Asset and Mortgage Backed Obligations	AA	768,313	4,085,494
Asset and Mortgage Backed Obligations	A	2,292,666	25,720,629
Asset and Mortgage Backed Obligations	BBB	1,684,511	3,770,910
Asset and Mortgage Backed Obligations	BB	956,462	1,544,960
Asset and Mortgage Backed Obligations	B	940,812	2,405,692
Asset and Mortgage Backed Obligations	CCC	508,944	2,650,957
Asset and Mortgage Backed Obligations	NR	4,912,635	7,609,612
Total Asset and Mortgage Backed Obligations		40,745,597	69,302,246
Corporate Obligations	AAA	67,767	1,339,950
Corporate Obligations	AA	1,144,326	1,744,122
Corporate Obligations	A	37,729,297	56,655,823
Corporate Obligations	BBB	87,178,848	107,059,950
Corporate Obligations	BB	28,176,823	25,155,842
Corporate Obligations	B	20,011,225	14,960,307
Corporate Obligations	CCC	6,822,619	7,777,768
Corporate Obligations	CC	50,969	114,675
Corporate Obligations	NR	1,545,348	1,443,537
Total Corporate Obligations		182,727,222	216,251,974
Government Agency Obligations	AAA	91,462,877	115,562,754
Government Agency Obligations	AA	5,587,529	16,808,706
Government Agency Obligations	A	1,315,377	3,749,162
Government Agency Obligations	BB	-	212,903
Government Agency Obligations	NR	453,922	2,775,719
Total Government Agency Obligations		98,819,705	139,109,244

Credit Risk Analysis
September 30, 2021 and 2020

Investment Type	S&P Rating	2021 Fair Value	2020 Fair Value
International Obligations	AAA	\$ -	\$ 4,012,884
International Obligations	AA	1,890,963	3,777,807
International Obligations	A	1,525,554	1,472,553
International Obligations	BBB	1,731,686	677,100
International Obligations	BB	449,421	-
International Obligations	NR	6,984,495	4,299,790
Total International Obligations		12,582,119	14,240,134
Securities Lending Collateral	AAA	2,141,018	5,373,524
Securities Lending Collateral	AA	28,518,426	17,279,068
Securities Lending Collateral	A	121,041,486	55,911,796
Securities Lending Collateral	BBB	2,788,546	2,926,266
Securities Lending Collateral	NR	19,933,386	18,018,275
Total Securities Lending Collateral		174,422,862	99,508,929
Total Fixed Income Subject to Credit Risk		509,297,505	538,412,527
U.S. Treasuries (no credit risk)		131,159,625	68,438,593
Short-term Marketable Securities		107,162,415	82,969,330
Corporate Stock		442,831,970	335,639,886
Alternative Investments		623,013,973	523,978,075
Commingled Funds		1,201,963,167	957,492,715
Total Fair Value of Investments		\$ 3,015,428,655	\$ 2,506,931,126

Concentration of Credit Risk

Concentration of credit risk is the risk of loss attributed to the magnitude of the Fund's investment in a single issuer. The Fund's investment policy addresses concentration limits on a manager basis. As of September 30, 2021, the Fund did not have any investments where the underlying assets which were registered in the Fund's name totaled more than 5% of assets of the Fund.

Interest Rate Risk

Interest rate risk is the risk that changes in interest rates of debt investments will adversely affect the fair value of an investment. The Fund does not have a formal investment policy that limits investment maturities as a means of managing its exposure to fair value losses arising from changing interest rates. The maturities of investments subject to interest rate risk are as follows:

Interest Rate Risk September 30, 2021

Investment Type	Less Than 1 Year	1-5 Years	6-10 Years	More Than 10 Years	Total Fair Value
Asset and Mortgage	\$ -	\$ 6,284,211	\$ 6,026,842	\$ 28,434,544	\$ 40,745,597
Corporate Obligations	4,474,069	80,572,538	72,402,173	25,278,442	182,727,222
Government Obligation:	-	7,182,986	10,121	91,626,598	98,819,705
International Obligation	6,984,495	-	2,897,663	2,699,961	12,582,119
Securities Lending Collateral	174,422,862				174,422,862
U.S. Treasuries	-	57,408,740	29,908,046	43,842,839	131,159,625
Total	\$ 185,881,426	\$ 151,448,475	\$ 111,244,845	\$ 191,882,384	\$ 640,457,130

Interest Rate Risk September 30, 2020

Investment Type	Less Than 1 Year	1-5 Years	6-10 Years	More Than 10 Years	Total Fair Value
Asset and Mortgage	\$ -	\$ 11,979,409	\$ 5,891,309	\$ 51,431,528	\$ 69,302,246
Corporate Obligations	6,701,544	78,761,206	95,331,252	35,457,972	216,251,974
Government Obligation:	23,370,710	9,846,675	1,781,340	104,110,519	139,109,244
International Obligation	4,801,607	3,511,067	2,420,229	3,507,231	14,240,134
Securities Lending Collateral	99,508,929	-	-	-	99,508,929
U.S. Treasuries	-	25,081,932	18,486,480	24,870,181	68,438,593
Total	\$ 134,382,790	\$ 129,180,289	\$ 123,910,610	\$ 219,377,431	\$ 606,851,120

Foreign Currency Exposure

Currency	September 30, 2021				September 30, 2020			
	Debt	Equity	Alternatives	Total	Debt	Equity	Alternatives	Total
Argentine Peso	\$ 5,187	\$ -	\$ -	\$ 5,187	\$ 5,858	\$ -	\$ -	\$ 5,858
Australian Dollar	1,992,776	-	-	1,992,776	102,432	-	-	102,432
Brazilian Real	1,005,049	2,386,820	-	3,391,869	22,484	2,387,782	-	2,410,266
British Pound Sterling	682,617	23,638,807	869,901	25,191,325	(66,474)	13,243,004	4,792,751	17,969,281
Canadian Dollar	719	6,811,202	-	6,811,921	(31,329)	8,168,784	-	8,137,455
Chilean Peso	509,287	-	-	509,287	-	-	-	-
Danish Krone	-	2,616,503	-	2,616,503	-	1,381,360	-	1,381,360
Euro Currency Unit	653,456	55,902,728	67,961,273	124,517,457	(10,723)	44,008,522	53,060,901	97,058,700
HK Offshore Chinese Yuan Renminbi	103	-	-	103	98	1,224,323	-	1,224,421
Hong Kong Dollar	141	15,452,344	-	15,452,485	174	15,663,827	-	15,664,001
Indonesian Rupiah	-	738,478	-	738,478	-	474,321	-	474,321
Japanese Yen	5,906	39,071,767	-	39,077,673	1,799,217	32,007,114	-	33,806,331
Mexican New Peso	15,297	-	-	15,297	1,803,338	-	-	1,803,338
New Israeli Shekel	-	702,023	-	702,023	-	686,890	-	686,890
New Taiwan Dollar	35,956	11,540,501	-	11,576,457	-	8,128,733	-	8,128,733
New Zealand Dollar	297	-	-	297	7,020	-	-	7,020
Norwegian Krone	-	3,234,422	-	3,234,422	-	394,503	-	394,503
Peruvian Nuevo Sol	(144,845)	-	-	(144,845)	685,548	-	-	685,548
Philippine Peso	-	879,919	-	879,919	-	-	-	-
Polish Zloty	96	-	-	96	99	-	-	99
Russian Ruble	-	-	-	-	1,662,379	-	-	1,662,379
Singapore Dollar	47	-	-	47	46	-	-	46
South African Rand	632	-	-	632	570	-	-	570
South Korean Won	(158,057)	5,172,449	-	5,014,392	-	3,847,368	-	3,847,368
Swedish Krona	-	7,165,017	-	7,165,017	-	5,938,356	-	5,938,356
Swiss Franc	1,362	13,772,150	-	13,773,512	1,383	12,496,761	-	12,498,144
Thai Baht	(343,612)	3,528,359	-	3,184,747	2,826	1,052,374	-	1,055,200
Total	\$ 4,262,414	\$ 192,613,489	\$ 68,831,174	\$ 265,707,077	\$ 5,984,946	\$ 151,104,022	\$ 57,853,652	\$ 214,942,620

Foreign Currency Exchange Transactions

To manage the foreign currency exchange risks associated with foreign investments, the Fund enters into forward currency contracts. The Fund had net foreign currency contracts with fair value of approximately \$(43,679) and \$491,333 at September 30, 2021 and 2020, respectively, which contractually obligates the Fund to deliver currencies at a specified date. The Fund could be exposed to risk of loss if the counterparty is unable to meet the terms of a contract or if the value of currency changes unfavorably. At September 30, 2021 and 2020, the fair value of these contracts is included in due to/from broker.

Note 6. Derivative Financial Instruments

The Fund's investment managers are permitted to invest in derivatives subject to guidelines established by the Board. Derivatives are financial instruments that derive their value, usefulness, and marketability from an underlying instrument which represents direct ownership of an asset or an obligation of an issuer. The Fund's derivative positions are marked to market daily and managers may only trade with counterparties with a credit rating of A-/A3 as defined by Standard & Poor's (S&P) and Moody's respectively. Substitution and risk control are the only strategies permitted; speculation is strictly prohibited. Derivatives are carried as a receivable when the fair value is positive and as a payable when the fair value is negative on the Combined Statement of Fiduciary Net Position. Fair value is determined based on quoted market prices, if available, or based on differences in cash flows between the fixed and variable rates in each contract as of the measurement date. Gains and losses from derivatives are included in net investment income. The Fund was in possession of the following types of derivatives at September 30, 2021 and 2020:

Futures Contracts

A futures contract is a standardized contract between two parties to buy or sell a specified asset of standardized quantity and quality for a price agreed upon today with delivery and payment occurring at a specified future date, the delivery date. The contracts are negotiated at a futures exchange, which acts as an intermediary between the two parties and to minimize the risk of default by either party.

Forward Contracts

A forward contract represents an agreement to buy or sell an underlying asset at a specified date in the future at a specified price. Payment for the transaction is delayed until the settlement or expiration date. A forward contract is a non-standardized contract that is tailored to each specific transaction. Forward contracts are privately negotiated and are intended to be held until the settlement date. Currency forward contracts are used to control currency exposure and facilitate the settlement of international security purchase and sale transactions.

Options

Options represent or give buyers the right, but not the obligation, to buy (call) or sell (put) an asset at a preset price over a specified period. The option's price is usually a small percentage of the underlying asset's value. As a buyer of financial options, the Fund receives a premium at the outset of the agreement and bears the risk of an unfavorable change in the price of the financial instrument underlying the option. As a purchaser of financial options, the Fund pays a premium at the outset of the agreement and the counterparty bears the risk of an unfavorable change in the price of the financial instrument underlying the option.

Rights and Warrants

A right is a special type of option that has a short market life, usually existing for no more than a few weeks. Essentially, rights originate when corporations raise money by issuing new shares of common stock. From an investor's perspective, a right enables a stockholder to buy shares of the new issue at a specified price, over a specified, fairly short time period. Rights not executed by their expiration date cease to exist and become worthless. A warrant is a long-term option that gives the holder the right to buy a certain number of shares of stock in a certain company for a certain period of time. Like most options, warrants are found in the corporate sector of the market. Occasionally, warrants can be used to purchase preferred stock or even bonds, but common stock is the leading redemption vehicle. Warrants, like rights, cease to exist and become worthless if they are not executed by their expiration date.

Swap Agreements

A swap is an agreement between two or more parties to exchange a sequence of cash flows over a period of time in the future based on an underlying asset. No principal is exchanged at the beginning of the swap. The cash flows the counterparties exchange are tied to a “notional” amount. A swap agreement specifies the time period over which the periodic payments will be exchanged. The fair value represents the gains or losses as of the prior marking-to-market.

The Investment Derivatives schedule that follows reports the fair value and changes in fair value and notional amounts of derivatives outstanding as of September 30, 2021 and 2020.

Investment Derivatives As of September 30, 2021 and 2020

Derivative Type	Notional Value	2021 Fair Value	2020 Fair Value	Changes in Fair Value
Investment derivatives				
Futures Contracts	\$ 45,035,764	\$ -	\$ -	\$ -
Forward Contracts	61,845,316	(43,679)	491,333	(535,012)
Swap Agreements	56,584,637	920,984	(599,652)	1,520,636
Options	1,700,000	(714)	(7,434)	6,720
Rights and Warrants	18,344	55,032	32,469	22,563
Totals	\$ 165,184,061	\$ 931,623	\$ (83,284)	\$ 1,014,907

Investment Derivatives As of September 30, 2020 and 2019

Derivative Type	Notional Value	2020 Fair Value	2019 Fair Value	Changes in Fair Value
Investment derivatives				
Futures Contracts	\$ 47,866,575	\$ -	\$ (8,547)	\$ 8,547
Forward Contracts	59,466,795	491,333	(181,501)	672,834
Swap Agreements	78,274,799	(599,652)	(910,463)	310,811
Options	6,200,000	(7,434)	(6,324)	(1,110)
Rights and Warrants	18,344	32,469	89,152	(56,683)
Totals	\$ 191,826,513	\$ (83,284)	\$ (1,017,683)	\$ 934,399

Credit Risk

The Fund is exposed to credit risk on investment derivatives that are traded over the counter and reported in asset positions. Derivatives exposed to credit risk include currency forward contracts, rights and warrants, and swap agreements. To minimize credit risk exposure, the Fund’s managers monitor the credit ratings of the counterparties. Should there be a counterparty failure, the Fund would be exposed to the loss of the fair value of derivatives that are in the asset positions and any collateral provided to the counterparty, net of the effect of applicable netting arrangements. Netting arrangements provide the Fund with a right of offset in the event of bankruptcy or default by the counterparty. Collateral provided by the counterparty reduces the Fund’s credit risk exposure.

The following Credit Risk Analysis schedule discloses the counterparty credit ratings of the Fund's investment derivatives by type, as of September 30, 2021 and 2020. These amounts represent the maximum loss that would be recognized if all counterparties fail to perform as contracted, without respect to any collateral or other security or netting arrangement. The schedule displays the fair value of the investments by credit rating in increasing magnitude of risk. Investments are classified by S&P rating. If the investment does not have an S&P rating, the Moody's rating that corresponds to the S&P rating is used. As of September 30, 2021 and 2020, the Fund's credit risk to these investments is disclosed on the following table:

**Investment Derivatives
Credit Risk Analysis
September 30, 2021**

Derivative Type	AA	A	BBB	Not Rated	Fair Value
Forwards Contracts	\$ -	\$ -	\$ -	\$ (43,679)	\$ (43,679)
Swap Agreements	-	15,696	-	905,288	920,984
Options	-	(714)	-	-	(714)
Rights and Warrants	-	-	-	55,032	55,032
Total	\$ -	\$ 14,982	\$ -	\$ 916,641	\$ 931,623

**Investment Derivatives
Credit Risk Analysis
September 30, 2020**

Derivative Type	AA	A	BBB	Not Rated	Fair Value
Forwards Contracts	\$ -	\$ -	\$ -	\$ 491,333	\$ 491,333
Swap Agreements	-	(26,613)	-	(573,039)	(599,652)
Options	-	(38)	-	(7,396)	(7,434)
Rights and Warrants	-	-	-	32,469	32,469
Total	\$ -	\$ (26,651)	\$ -	\$ (56,633)	\$ (83,284)

Interest Rate Risk

The interest rate risk is the risk that changes in market interest rates will adversely affect the fair value of an investment. Interest rate swaps are an example of an investment that has a fair value that is highly sensitive to interest rate changes. These investments, as of September 30, 2021 and 2020, are disclosed on the following table:

**Investment Derivatives
Interest Rate Risk Analysis
September 30, 2021 and 2020**

Derivative Type	2021		2020	
	Total Notional Value	Total Fair Value	Total Notional Value	Total Fair Value
Interest Rate Swaps	\$ 56,584,637	\$ 920,984	\$ 78,274,799	\$ (599,652)
Total	\$ 56,584,637	\$ 920,984	\$ 78,274,799	\$ (599,652)

Foreign Currency Risk

For those forward contracts and swap agreements that are securities issued by foreign countries and foreign businesses there is an exposure to foreign currency risk. Currency forward contracts represent foreign exchange contracts that are used to control currency exposure and facilitate the settlement of international security purchase and sale transactions. The net exposure column of the following schedule indicates the Fund's net foreign currency risk related to derivatives as of September 30, 2021 and 2020.

Investment Derivatives Foreign Currency Risk Analysis September 30, 2021 and 2020

Currency	2021			2020		
	Forward Contracts	Swap Agreements	Net Exposure	Forward Contracts	Swap Agreements	Net Exposure
Australian Dollar	\$ (7,808)	\$ -	\$ (7,808)	\$ 2,106	\$ -	\$ 2,106
Brazilian Real	(290,051)	-	(290,051)	218,605	-	218,605
British Pound Sterling	119,891	193,834	313,725	165,700	(121,947)	43,753
Canadian Dollar	-	-	-	38,020	-	38,020
Chilean Peso	(28,541)	-	(28,541)	-	-	-
Euro Currency Unit	116,283	635,824	752,107	69,349	3,202	72,551
Japanese Yen	869	(69,752)	(68,883)	34,717	(258,658)	(223,941)
Mexican Peso	-	-	-	5,633	-	5,633
New Zealand Dollar	-	-	-	19,185	-	19,185
Norwegian Krone	-	-	-	(16,323)	-	(16,323)
Peruvian Solance	45,678	-	45,678	6,010	-	6,010
Russian Ruble	-	-	-	(51,669)	-	(51,669)
Total	\$ (43,679)	\$ 759,906	\$ 716,227	\$ 491,333	\$ (377,403)	\$ 113,930

All values shown in Note 6 are for the positions that the Fund holds directly. The Fund may also have an indirect exposure to derivatives via its commingled funds and its alternative investments. The Fund owns an interest in the commingled and alternative investment funds which in turn holds the actual positions. Indirect exposures via these types of investments are not shown here.

Note 7. Securities Lending

The Fund is authorized to contractually lend securities to borrowers in accordance with the policy established by the Board. The Fund is currently contracted with Northern Trust to establish, manage and administer a securities lending program. Northern Trust facilitates lending the Fund's domestic and international equity and fixed income securities in return for collateral consisting of cash, US government securities and irrevocable letters of credit issued by banks independent of the borrower. As of September 30, all securities lending collateral held is cash. At a loan's inception, the value of collateral is equal to 102% for securities of United States issuers, and 105% in the case of securities of non-United States issuers, of the fair value of any securities to be loaned, plus any accrued interest.

Cash collateral is to be invested in government securities, bank and corporate notes, bank certificates of deposit, time deposits, bankers' acceptances, repurchase agreements, commercial paper and asset-backed securities. The contract with Northern Trust specifies guidelines for allowable investments, maturities, and diversification. The Fund does not have the ability to pledge or sell collateral securities without borrower default. The amount of cash collateral held exceeds the value of the assets on loan at September 30, 2021 and 2020.

The Fund earns income from fees paid by the borrowers and interest earned from investing the cash collateral. The contract requires the custodian bank to purchase any loaned securities with collateral provided, however, if the collateral is insufficient to cover the loss, the Fund is liable for the loss. The cash collateral received on each loan was invested in the collateral pool at Northern Trust. Because the loans are terminable at will, their duration generally did not match the duration of the investments made with cash collateral. In addition, the Plan had no credit risk exposure to borrowers. As of September 30, 2021 and 2020, the value of the cash collateral held was \$174,422,862 and \$99,508,929, respectively, and the value of securities out on loan at September 30, 2021 and 2020, was \$170,113,278 and \$97,087,690, respectively. The Fund earned \$252,910 and \$448,016 net, on its securities lending activity for the fiscal years ended September 30, 2021 and 2020, respectively.

Note 8. Tax Status

The City Plan obtained its latest determination letter on December 8, 2014, in which the Internal Revenue Service (IRS) stated that the Fund, as then designed, was in compliance with the applicable requirements of the Internal Revenue Code (IRC). The Staff plan obtained its latest determination letter on April 7, 2017, in which the Internal Revenue Service (IRS) stated that the Fund, as then designed, was in compliance with the applicable requirements of the Internal Revenue Code (IRC).

No federal, state or local income taxes have been provided on the operations of the Fund since the IRS approved the Fund determination letter to be designed and operated in compliance with the applicable requirements of the IRC. Therefore, no provision for income taxes has been included in the Fund's financial statements.

The Fund evaluates tax positions taken or expected to be taken in the course of preparing the Fund's tax returns to determine whether the tax positions are "more-likely-than-not" of being sustained by the applicable tax authority. Tax positions deemed to meet a more-likely-than-not threshold should be recorded as a tax expense in the current year. The Board has analyzed the Fund's tax positions for all open tax years and has concluded that, as of September 30, 2021 and 2020, no provision for income taxes is required in the financial statements.

As of and during the year ended September 30, 2021 and 2020, the Fund did not have any liabilities for any unrecognized tax positions. The Fund recognizes interest and penalties, if any, related to unrecognized tax positions as tax expense in the statements of changes in fiduciary net position. During the year, the Fund did not incur any tax related interest or penalties.

Note 9. Plan Termination

City Plan

While the City has not expressed any intent to discontinue its contributions, it may terminate the City Plan at any time. In the event the City Plan terminates, the net position shall be allocated among the participants and beneficiaries of the City Plan as follows:

- First, benefits that former employees or their beneficiaries are receiving or that employees eligible for retirement would have been receiving had they retired
- Next, other vested benefits
- Finally, all other accrued benefits

If assets remain after the above allocations, they shall be distributed to the City.

Staff Plan

While the Board has not expressed any intent to discontinue its contributions, it may terminate the Staff Plan at any time. In the event the Staff Plan terminates, the net position shall be allocated among the participants and beneficiaries of the Staff Plan as follows:

- First, benefits that former employees or their beneficiaries are receiving or that employees eligible for retirement would have been receiving had they retired
- Next, other vested benefits
- Finally, all other accrued benefits

If assets remain after the above allocations, they shall be distributed to the Board.

Note 10. Subsequent Events

As of the issuance of this report, there are no subsequent events to report.

REQUIRED SUPPLEMENTARY INFORMATION



Marion Sansom Park

Schedule of Changes in Net Pension Liability – City (Unaudited)

Schedule of Changes in Net Pension Liability Years ended September 30

City Plan	2014	2015	2016	2017
Total Pension Liability				
Service Cost	\$ 92,189,100	\$ 85,592,978	\$ 98,173,277	\$ 123,792,923
Interest	234,701,479	246,292,813	252,240,071	251,645,608
Benefit Changes	110,187,898	(1,828,408)	-	-
Difference Between Actual and Expected Experience	(106,951,077)	(10,817,086)	4,177,731	186,853,574
Assumption Changes	-	364,494,287	1,022,192,887	(327,287,818)
Benefit Payments and Refunds	(161,158,600)	(167,065,955)	(185,819,878)	(198,611,599)
Net Change in Total Pension Liability	168,968,800	516,668,629	1,190,964,088	36,392,688
Total Pension Liability - Beginning	3,441,705,595	3,610,674,395	4,127,343,024	5,318,307,112
Total Pension Liability - Ending	\$ 3,610,674,395	\$ 4,127,343,024	\$ 5,318,307,112	\$ 5,354,699,800
Plan Fiduciary Net Position				
Contributions - Member	\$ 31,929,289	\$ 32,541,773	\$ 33,977,411	\$ 35,963,200
Contributions - Employer	78,165,049	80,820,598	84,746,991	89,408,134
Net Investment Income	159,994,300	(20,635,550)	166,305,791	250,912,773
Benefit Payments and Refunds	(161,158,600)	(167,065,955)	(185,819,878)	(198,611,599)
Administrative Expense	(3,738,927)	(3,823,331)	(4,521,503)	(4,867,413)
Other	(130,935)	(143,220)	(241,634)	-
Net Change in Plan Fiduciary Net Position	\$ 105,060,176	\$ (78,305,685)	\$ 94,447,178	\$ 172,805,095
Plan Fiduciary Net Position - Beginning	\$ 1,976,515,071	\$ 2,081,575,247	\$ 2,003,269,563	\$ 2,097,716,741
Plan Fiduciary Net Position - Ending	2,081,575,247	2,003,269,563	2,097,716,741	2,270,521,836
Net Pension Liability Ending	\$ 1,529,099,148	\$ 2,124,073,461	\$ 3,220,590,371	\$ 3,084,177,964
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	57.65%	48.54%	39.44%	42.40%
Covered Payroll	\$ 391,216,461	\$ 404,507,497	\$ 424,371,512	\$ 447,488,158
Net Pension Liability as a Percentage of Covered Payroll	390.86%	525.10%	758.91%	689.22%

*This schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

See Notes to Required Supplementary Information

Schedule of Changes in Net Pension Liability (continued)
Years ended September 30,

City Plan	2018	2019	2020	2021
Total Pension Liability				
Service Cost	\$ 113,947,000	\$ 111,950,763	\$ 70,650,037	\$ 69,156,958
Interest	274,954,967	290,020,564	316,896,226	327,263,445
Benefit Changes	-	(1,543,331,519)	-	
Difference Between Actual and Expected Experience	62,114,429	(18,487,311)	(476,723)	12,410,191
Assumption Changes	(165,300,608)	536,393,855	-	
Benefit Payments and Refunds	(217,801,696)	(227,239,084)	(230,964,518)	(243,982,126)
Net Change in Total Pension Liability	67,914,092	(850,692,732)	156,105,022	164,848,468
Total Pension Liability - Beginning	5,354,699,800	5,422,613,892	4,571,921,160	4,728,026,182
Total Pension Liability - Ending	\$ 5,422,613,892	\$ 4,571,921,160	\$ 4,728,026,182	\$ 4,892,874,650
Plan Fiduciary Net Position				
Contributions - Member	\$ 37,618,303	\$ 40,634,725	\$ 56,250,684	\$ 60,281,553
Contributions - Employer	93,504,064	113,109,911	124,743,976	128,046,174
Net Investment Income	145,408,403	67,729,548	110,570,539	524,024,718
Benefit Payments and Refunds	(217,801,696)	(227,239,084)	(230,964,518)	(243,982,126)
Administrative Expense	(4,915,335)	(5,707,390)	(5,303,296)	(6,091,945)
Other	-			
Net Change in Plan Fiduciary Net Position	\$ 53,813,739	\$ (11,472,290)	\$ 55,297,385	\$ 462,278,374
Plan Fiduciary Net Position - Beginning	\$ 2,270,521,836	\$ 2,324,335,575	\$ 2,312,863,285	\$ 2,368,160,670
Plan Fiduciary Net Position - Ending	2,324,335,575	2,312,863,285	2,368,160,670	2,830,439,044
Net Pension Liability Ending	\$ 3,098,278,317	\$ 2,259,057,875	\$ 2,359,865,512	\$ 2,062,435,606
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	42.86%	50.59%	50.09%	57.85%
Covered Payroll	\$ 467,754,197	\$ 484,410,754	\$ 509,575,065	\$ 523,064,436
Net Pension Liability as a Percentage of Covered Payroll	662.37%	466.35%	463.10%	394.30%

*This schedule is intended to show information for 10 years. Additional years will be displayed at they become available.

See Notes to Required Supplementary Information

Schedule of Changes in Net Pension Liability – Staff (Unaudited)

Years ended September 30

Staff Plan	2014	2015	2016	2017
Total Pension Liability				
Service Cost	\$ 286,870	\$ 303,626	\$ 284,929	\$ 252,967
Interest	252,813	337,668	335,753	422,610
Benefit Changes	-	-	(786,759)	-
Difference Between Actual and Expected Experience	510,965	(650,524)	300,333	(159,693)
Assumption Changes	-	-	965,041	-
Benefit Payments and Refunds	-	(16,747)	(11,754)	(35,933)
Net Change in Total Pension Liability	1,050,648	(25,977)	1,087,543	479,951
Total Pension Liability - Beginning	3,105,816	4,156,464	4,130,487	5,218,030
Total Pension Liability - Ending	\$ 4,156,464	\$ 4,130,487	\$ 5,218,030	\$ 5,697,981
Plan Fiduciary Net Position				
Contributions - Member	\$ 296,093	\$ 126,984	\$ 130,973	\$ 124,339
Contributions - Employer	225,536	242,270	249,881	237,224
Net Investment Income	209,544	(30,772)	286,116	500,246
Benefit Payments and Refunds	-	(16,747)	(11,754)	(35,933)
Administrative Expense	(4,897)	(5,702)	(7,779)	(14,988)
Other	(172)	(214)	(19,791)	-
Net Change in Plan Fiduciary Net Position	\$ 726,104	\$ 315,819	\$ 627,646	\$ 810,888
Plan Fiduciary Net Position - Beginning	\$ 2,046,297	\$ 2,772,401	\$ 3,088,220	\$ 3,715,866
Plan Fiduciary Net Position - Ending	2,772,401	3,088,220	3,715,866	4,526,754
Net Pension Liability Ending	\$ 1,384,063	\$ 1,042,267	\$ 1,502,164	\$ 1,171,227
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	66.70%	74.77%	71.21%	79.44%
Covered Payroll	\$ 1,432,884	\$ 1,539,199	\$ 1,587,554	\$ 1,507,141
Net Pension Liability as a Percentage of Covered Payroll	96.59%	67.71%	94.62%	77.71%

*This schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

See Notes to Required Supplementary Information

Schedule of Changes in the Net Pension Liability (continued)
Years ended September 30,

Staff Plan	2018	2019	2020	2021
Total Pension Liability				
Service Cost	\$ 274,978	\$ 226,297	\$ 293,767	\$ 362,723
Interest	462,281	525,209	576,978	653,429
Benefit Changes	-	(588,078)	-	-
Difference Between Actual and Expected Experience	229,191	279,208	332,572	68,899
Assumption Changes	-	1,142,887	-	-
Benefit Payments and Refunds	(16,074)	(195,528)	(179,160)	(181,061)
Net Change in Total Pension Liability	950,376	1,389,995	1,024,157	903,990
Total Pension Liability - Beginning	5,697,981	6,648,357	8,038,352	9,062,509
Total Pension Liability - Ending	\$ 6,648,357	\$ 8,038,352	\$ 9,062,509	\$ 9,966,499
Plan Fiduciary Net Position				
Contributions - Member	\$ 131,067	\$ 127,207	\$ 124,619	\$ 328,077
Contributions - Employer	250,059	241,316	353,767	497,821
Net Investment Income	303,812	170,225	278,161	1,400,587
Benefit Payments and Refunds	(16,074)	(195,528)	(179,160)	(181,061)
Administrative Expense	(27,963)	(54,449)	(30,788)	(28,880)
Other	-	-	-	-
Net Change in Plan Fiduciary Net Position	\$ 640,901	\$ 288,771	\$ 546,599	\$ 2,016,544
Plan Fiduciary Net Position - Beginning	\$ 4,526,754	\$ 5,167,655	\$ 5,456,426	\$ 6,003,025
Plan Fiduciary Net Position - Ending	5,167,655	5,456,426	6,003,025	8,019,569
Net Pension Liability Ending	\$ 1,480,702	\$ 2,581,926	\$ 3,059,484	\$ 1,946,930
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	77.73%	67.88%	66.24%	80.47%
Covered Payroll	\$ 1,588,685	\$ 1,533,139	\$ 1,510,527	\$ 2,061,061
Net Pension Liability as a Percentage of Covered Payroll	93.20%	168.41%	202.54%	94.46%

*This schedule is intended to show information for 10 years. Additional years will be displayed at they become available.

See Notes to Required Supplementary Information

Schedule of Net Pension Liability (Unaudited)

Years ended September 30

Fiscal Year Ending 09/30	Total Pension Liability	Plan Net Position	Net Pension Liability	Plan Net Position as a Percent of Total Pension	Covered Payroll	Net Pension Liability as a Percent of Covered Payroll
City Plan						
2014	\$ 3,610,674,395	\$ 2,081,575,247	\$ 1,529,099,148	57.65%	\$ 391,216,461	390.86%
2015	4,127,343,024	2,003,269,563	2,124,073,461	48.54%	404,507,497	525.10%
2016	5,318,307,112	2,097,716,741	3,220,590,371	39.44%	424,371,512	758.91%
2017	5,354,699,800	2,270,521,836	3,084,177,964	42.40%	447,488,158	689.22%
2018	5,422,613,892	2,324,335,575	3,098,278,317	42.86%	467,754,197	662.37%
2019	4,571,921,160	2,312,863,285	2,259,057,875	50.59%	484,410,754	466.35%
2020	4,728,026,182	2,368,160,670	2,359,865,512	50.09%	509,575,065	463.10%
2021	4,892,874,650	2,830,439,044	2,062,435,606	57.85%	523,064,436	394.30%
Staff Plan						
2014	\$ 4,156,464	\$ 2,772,401	\$ 1,384,063	66.70%	\$ 1,432,884	96.59%
2015	4,130,487	3,088,220	1,042,267	74.77%	1,539,199	67.71%
2016	5,218,030	3,715,866	1,502,164	71.21%	1,587,554	94.62%
2017	5,697,981	4,526,754	1,171,227	79.44%	1,507,141	77.71%
2018	6,648,357	5,167,655	1,480,702	77.73%	1,588,685	93.20%
2019	8,038,352	5,456,426	2,581,926	67.88%	1,533,139	168.41%
2020	9,062,509	6,003,025	3,059,484	66.24%	1,510,527	202.54%
2021	9,966,499	8,019,569	1,946,930	80.47%	2,061,061	94.46%

*These schedules are intended to show information for 10 years. Additional years will be displayed at they become available.

See Notes to Required Supplementary Information

Schedule of Actuarially Determined Employer Contributions (Unaudited)

Years ended September 30

Fiscal Year Ended September 30	Actuarially Determined Contributions	Actual Contributions	Contribution Deficiency (Excess)	Covered Payroll	Percentage Contributed
City Plan					
2014	\$ 82,937,890	\$ 78,165,049	\$ 4,772,841	\$ 391,216,461	19.98%
2015	93,562,584	80,820,598	12,741,986	404,507,497	19.98%
2016	101,339,917	84,746,991	16,592,926	424,371,512	19.97%
2017	112,185,281	89,408,134	22,777,147	447,488,158	19.98%
2018	131,766,357	93,504,064	38,262,293	467,754,197	19.99%
2019	136,167,863	113,109,911	23,057,952	484,410,754	23.35%
2020	160,159,443	124,743,976	35,415,467	509,575,065	24.48%
2021	165,706,813	128,046,174	37,660,639	523,064,436	24.48%
Staff Plan					
2014	\$ 114,917	\$ 225,536	\$ (110,619)	\$ 1,432,884	15.74%
2015	95,276	242,270	(146,994)	1,539,199	15.74%
2016	244,007	249,881	(5,874)	1,587,554	15.74%
2017	169,101	237,224	(68,123)	1,507,141	15.74%
2018	244,499	250,059	(5,560)	1,588,685	15.74%
2019	243,462	241,316	2,146	1,533,139	15.74%
2020	353,767	353,767	-	1,510,527	23.42%
2021	497,821	497,821	-	2,061,061	24.15%

*These schedules are intended to show information for 10 years. Additional years will be displayed at they become available.

See Notes to Required Supplementary Information

Schedule of Combined Money-Weighted Investment Returns (Unaudited)

Years Ended September 30

For Years Ended 9/30	Annual Investment Returns*
2021	22.52%
2020	4.79%
2019	2.92%
2018	6.50%
2017	12.15%
2016	8.43%
2015	-1.06%
2014	8.25%
2013	10.70%
2012	12.98%
2011	1.44%

* Annual money-weighted rate of return, net of investment fees and adjusted for the changing amounts actually invested. The City and Staff plans are commingled for investment purposes and both plans experience the same return.

See Notes to Required Supplementary Information

Notes to Required Supplementary Information

Methods and Assumptions Used in Calculations of Actuarially Determined Contributions

The actuarially determined contribution is equal to the total calculated contribution rate in the prior actuarial valuation, minus the portion expected to be covered by employee contributions, multiplied by the covered-employee payroll. City and member contribution rates are established by ordinance. Employer and member contribution rates for the staff plan are established in the administrative rules.

The assumptions and methods summarized below were adopted by the Board of Trustees on May 27, 2019 based on the experience investigation that covered the three-year period from January 1, 2016 through December 31, 2018. These assumptions first applied for actuarial valuation as of December 31, 2018 and the actuarially determined contribution for fiscal year ending September 30, 2019.

	City Plan	Staff Plan
Valuation Date	December 31, 2020	December 31, 2020
Actuarial Cost Method	Entry Age Normal	Entry Age Normal
Amortization Method	Level Percentage of Payroll, 30-year closed beginning in 2018	Level Dollar, Layered
Remaining Amortization Period	28	30 years for new layers
Asset Valuation Method	Five-year smoothed market	Five-year smoothed market
Inflation	2.50%	2.50%
Salary Increases	3.25% - 28.25%	2.75% - 5.35%
Investment Rate of Return	7.00%	7.00%
Discount Rate	7.00%	7.00%
Retirement Age	Experience-based table of rates based on job classification and number of years since first retirement eligibility.	Experience-based table of rates based on either number of years since first retirement eligibility or age.
Mortality	PubG-2010 Mortality Tables for General Employees and PubS-2010 Healthy Retiree Mortality Table for Police Officers and Firefighters. Generational mortality improvements from the year 2010 using the ultimate mortality improvements rates in the 2014-2019 MP tables.	PubG-2010 Mortality Table. Generational mortality improvements from the year 2010 using the ultimate mortality improvement rates in the 2014-2019 MP tables.
Cost-of-Living Adjustment	A 2% cost-of-living adjustment (COLA) is assumed for all members in the Guaranteed COLA program. No COLAs are assumed for members with a Variable COLA. Timing of conditional Ad Hoc COLAs is based on an open group projection.	4.0% COLAs are assumed for members participating in the ad-hoc COLA program.

	City Plan	Staff Plan
Valuation Date	December 31, 2019	December 31, 2019
Actuarial Cost Method	Entry Age Normal	Entry Age Normal
Amortization Method	Level Percentage of Payroll, 30-year closed beginning in 2018	Level Dollar, Layered, Closed
Remaining Amortization Period	29	30 years
Asset Valuation Method	Five-year smoothed market	Five-year smoothed market
Inflation	2.50%	2.50%
Salary Increases	3.25% - 28.25%	2.75% - 5.35%
Investment Rate of Return	7.00%	7.00%
Discount Rate	7.00%	7.00%
Retirement Age	Experience-based table of rates based on job classification and number of years since first retirement eligibility.	Experience-based table of rates based on either number of years since first retirement eligibility or age.
Mortality	PubG-2010 Healthy Retiree Mortality Table for General Employees and PubS-2010 Healthy Retiree Mortality Table for Police Officers and Firefighters. Generational mortality improvements from the 2010 using the ultimate mortality improvement rates in the MP tables.	PubG-2010 Healthy Retiree Mortality Table. Generational mortality improvements from the year 2010 using the ultimate mortality improvement rates in the MP tables.
Cost-of-Living Adjustment	A 2% cost-of-living adjustment (COLA) is assumed for all members in the guaranteed COLA program, zero COLAs are assumed for members with a Variable COLA. Timing of Conditional Ad Hoc COLAs is based on an open group projection.	4.0% COLAs are assumed for members participating in the ad-hoc COLA program.

OTHER SUPPLEMENTARY INFORMATION



Trinity Trails Mural

Schedule of Administrative Expenses

Years Ended September 30, 2021 and 2020

	2021	2020
Administrative Office		
Staff and Benefits	\$ 2,442,855	\$ 1,763,596
Contributions to Retirement Fund	490,449	355,759
Due Diligence	-	2,725
Medical Reviews	16,423	5,065
Insurance	152,394	148,634
Office Expense	108,502	128,925
Building Expenses	243,096	237,770
Conferences and Training	10,534	16,803
Pension Administration Hosting	284,248	173,176
Pension Administration Programming	386,056	367,692
Equipment and Supplies	100,189	56,622
Total Administrative Office	4,234,746	3,256,767
Professional Services		
Actuarial Services	103,934	132,286
Accounting and Auditing	56,900	55,300
Consulting	1,335,271	1,387,731
Legal Services	174,100	178,717
Other Consulting	94,688	204,590
Total Professional Services	1,764,893	1,958,624
Total Administrative Expenses	\$ 5,999,639	\$ 5,215,391

Schedule of Investment Management Fees

As of September 30

	2021	2020
Domestic Fixed Income		
Aberdeen Asset Management	\$ 382,397	\$ 472,698
Garcia Hamilton	176,228	175,621
Pacific Investment Management	781,403	342,982
Total Domestic Fixed Income	1,340,028	991,301
International Fixed Income		
Loomis Sayles	199,000	178,114
Total International Fixed Income	199,000	178,114
Real Estate		
Hammes		121,522
Heitman Core	517,374	304,237
IPI Data Centers	16,407	-
Prologis	195,178	1,140,749
UBS Trumball	257,024	285,142
Total Real Estate	985,983	1,851,650
Domestic Equities		
Frontier Capital	165	507,482
Westwood	739,715	644,401
Total Domestic Equities	739,880	1,151,883
International Equities		
Franklin Templeton	819,176	642,484
Northern Trust	198,462	160,560
Wellington Horizons	626,258	489,986
William Blair	517,896	381,948
Total International Equities	2,161,792	1,674,978

Schedule of Investment Management Fees

As of September 30

(continued)

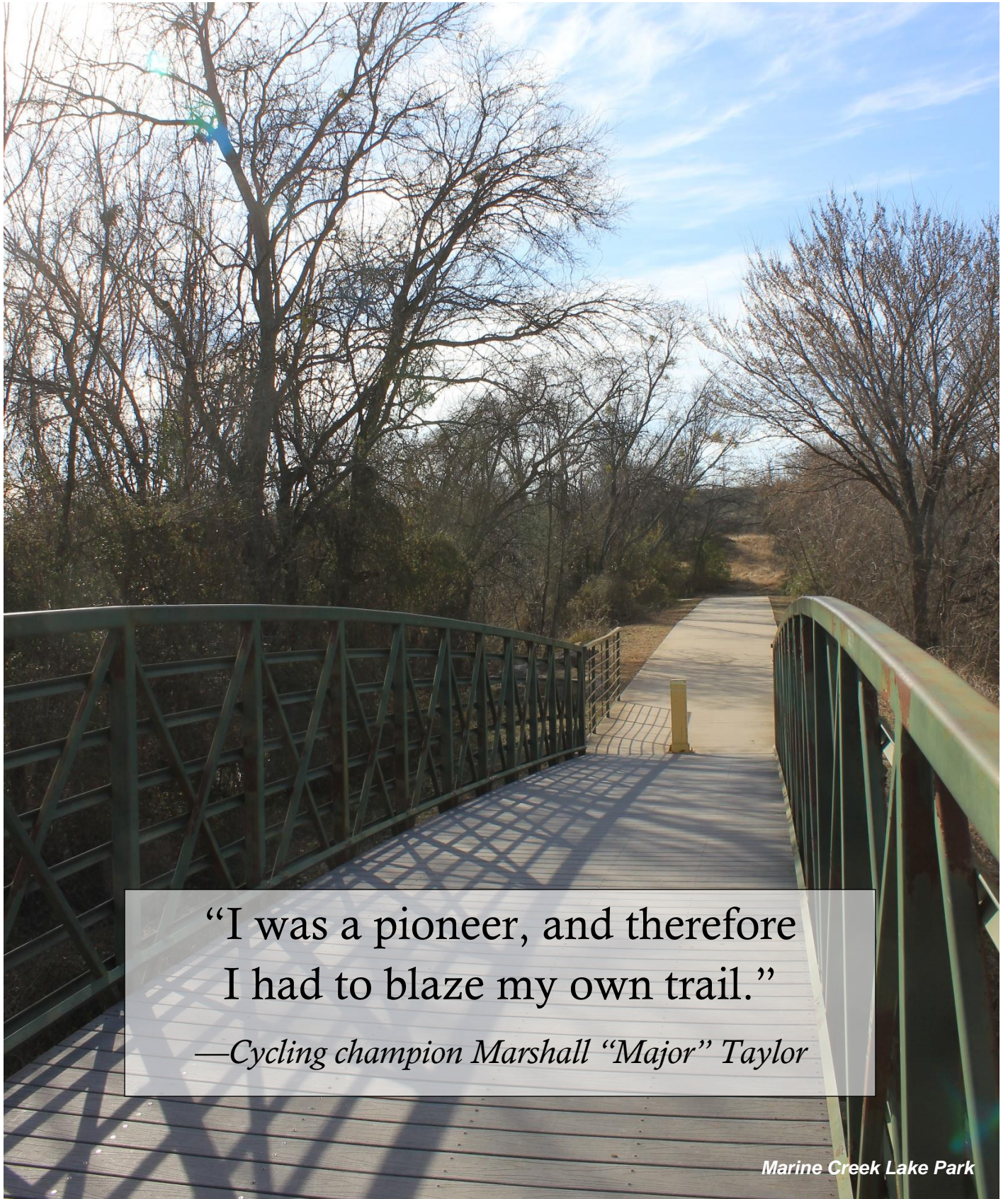
	2021	2020
Real Return		
Harvest	\$ 171,102	\$ 168,002
Total Real Return	171,102	168,002
Alternative		
Albourne America	430	417
ERF Private Equity Program	(49,829)	47,841
Hamilton Lane	97,266	49,952
Total Alternative	47,867	98,210
Custody Fees		
Northern Trust	536,881	404,378
Total Custody Fees	536,881	404,378
Total Investment Expenses	\$ 6,182,533	\$ 6,518,516

Schedule of Professional Services

As of September 30

	2021	2020
Professional Fees		
Albourne America, LLC	\$ 400,000	\$ 400,000
Aksia Chicago, LLC	99,812	105,874
Aon Hewitt Investment Consulting, Inc.		35,488
Brown, Pruitt, Wambsganss, Ferrill & Dean, PC	6,520	4,675
Cascade Investment Compliance & Verification	27,000	
DLA Piper, LLP	27,578	87,539
Eide Bailly, LLP	56,900	55,300
Fox Rothchild, LLP		-
Gabriel, Roeder, Smith & Company	103,934	132,286
Hamilton Lane Advisors, LLC	597,011	650,000
Ice Miller, LLP	86,195	2,930
Jackson Walker, LLP	53,807	83,573
Korn Ferry		102,090
Lynn Law, PLLC		-
McElvaney Public Affairs, LLC	60,220	60,000
RVK, Inc.	238,448	231,857
Whitney Smith Company	7,468	7,012
Total Professional Fees	\$ 1,764,893	\$ 1,958,624

INVESTMENT SECTION



“I was a pioneer, and therefore
I had to blaze my own trail.”

—*Cycling champion Marshall “Major” Taylor*

Marine Creek Lake Park



Market Overview of Fiscal Year

The 2021 Fiscal Year was just as remarkable as the 2020 Fiscal Year. The wide-spread availability of effective vaccines allowed consumer-focused businesses to re-open in varying degrees across the globe. With unprecedented global fiscal and monetary stimulus from the developed economies, consumers were flush with cash and full of anticipation for a return to the pre-COVID-19 normal. The economic activity accelerated as the infection rate slowed and economies generally remained open when new virus variants caused an increase in the infection rate. This jump in demand drove a sharp rebound to full employment, a sustained increase in elevated manufacturing activity, and robust activity in the services area of the economy.

Despite disruptions in activity from COVID-19 variants, the U.S. economy posted impressive year over year growth in Real GDP of -2.30% in 4Q20, 0.50% in 1Q21, 12.20% in 2Q21, and 4.90% in 3Q21. Unfortunately, the stop and start economic activity of calendar 2020 combined with the increase in the M2 Money Supply from stimulus proved to create a global supply chain issue, as global demand accelerated. This has led to the highest inflation that the U.S. has seen in over 30 years and inflation will remain a major driver of asset class returns and volatility going forward. As we look forward to fiscal year 2022, the Federal Reserve has signaled a shift in priorities away from employment and toward fighting high inflation, which should prove to be unfavorable to investment grade fixed income securities as interest rates rise.

With respect to the investment program, the Fund made several significant changes in Fiscal Year 2021. We revised the Investment Policy Statement (IPS), including 1) the theme-based approach to the asset allocation, 2) the strategic asset allocation targets, ranges, and benchmarks, and 3) the roles and responsibilities of the Board, Staff, and Investment Consultants. We developed investment due diligence and monitoring processes by installing Investment Implementation procedures. We engaged a third-party investment compliance vendor (Cascade) and designed and implemented a compliance program to match the changes in the IPS. Staff reviewed most of the vendor and investment management relationships, resulting in additions to the Fund's watchlist and decisions to redeem from several managers. Near the end of the fiscal year, we hired Verus Investments to serve as General Consultant and Aksia to serve as Alternatives Consultant. This change resulted in the termination of the discretionary relationship with Hamilton Lane, which shifted significant investment and operational responsibilities for the Private Equity portfolio to the investment staff.

With respect to returns, the Fort Worth Employees' Retirement Fund ended Fiscal Year 2021 with a balance of \$2.8 billion and posted a net one-year return of 22.44%. The one-year return exceeded the target actuarial return of 7.0%, exceeded the return of the strategic asset allocation policy index by 1.64%, and ranked in the 32nd percentile of public pensions with assets \$1 billion or greater, according to Verus. For the year, the Fund benefitted from a 28.29% return in public equities and a 60.79% return in private equities. The diversified opportunities portfolio returned 15.2% and the real assets portfolio returned 17.34%, both of which were impressive, but detracted from the overall return. The core fixed income portfolio was the most significant detractor of performance and returned -0.15%. On a relative basis, the public equity portfolio underperformed the ACWI global stock benchmark by -1.1% on international stock returns. All other asset class portfolios produced significant outperformance relative to benchmarks for the fiscal year.

Over longer time periods, the Fund posted a 3-year net return of 9.77%, a 5-year net return of 9.58%, a 10-year net return of 8.65%, and a since inception net return of 8.70%. At this point, the net returns have exceeded the policy index return over all time periods. The Fund's investment returns have benefitted significantly from high returns in public and private equities and diversified sources of return and income from real assets and diversified opportunities.

At the end of the Fiscal 2021, the asset allocation remained close to the strategic asset allocation and within ranges approved by the Board. The asset allocation reflected an underweight to investment grade fixed income, smaller underweights to public and private equity, and an overweight to real assets, diversified opportunities, and cash. These tactical shifts away from the strategic asset allocation were relatively consistent over the year. The underweight in fixed income and overweight to real assets was related to perceived inflation pressures in the economy. The relatively high cash balance was largely driven by transitory changes in the investment manager line-up and an increase in retirement activity, which was related to member incentives and plan changes designed in the 2018 pension reform action. The remaining small underweights to public and private equities and the overweight to diversified opportunities were a result of transitory investment activities and the changes in the IPS strategic asset allocation.

The Fund's investment policies, procedures, goals, objectives, performance of the assets, and transaction costs are regularly monitored in whole or in part by the Staff, Cascade, Verus, Aksia, Northern Trust, the Investment Committee, and the Board. This includes quantitative and qualitative evaluations of vendors and investment managers that serve the Fund. The investment performance listed above is calculated using a time-weighted rate of return methodology net of fees and based on market values and cash flows. Staff utilizes a monitoring process to compare the performance of individual managers to relevant benchmarks, the performance reports of the custodian, and the performance reports of the investment consultants. To the best of our knowledge, these performance statements are accurate and reliable.

Prepared by Derrick Dagnan, Chief Investment Officer

Investment Summary

As of September 30, 2021

Asset Class	9/30/2021 Fair Value	Fair Value %
Equities	\$ 1,210,793,304	40.89%
Global Equities	676,396,159	
Domestic Small Cap	105,267,697	
Domestic Large Cap	110,458,983	
International Developed	109,016,618	
International Small Cap	115,909,969	
Emerging Markets	93,743,878	
Fixed Income	540,575,694	22.59%
Core	91,814,236	
Core Plus	351,237,488	
High Yield	51,787,649	
Emerging Markets	45,736,321	
Alternative Investments	940,778,466	32.33%
Real Estate	316,770,428	
Opportunistic Credit	4,724,967	
Private Equity	353,731,103	
Absolute Return	265,551,968	
Real Return	82,880,794	2.66%
MLPs	28,948,654	
Real Assets	53,932,140	
Cash Equivalents	48,904,287	1.53%
Total Asset Allocation	\$ 2,823,932,545	100.00%

Reconciling Items to Statement of Net Position

Accrued Income	\$ (5,699,733)
Broker Receivables	(155,072,129)
Broker Payables	177,845,110
Securities Lending Collateral	174,422,862
Total Investments Statement of Net Position	\$ 3,015,428,655

Schedule of Asset Allocations and Returns

September 30, 2021

Asset Class	Long-Term Allocation Target	Actual Allocation	Investment Performance (%)*		
			1 Yr	3 Yr	5 Yr
Global Equity	45.00%	42.88%	28.29	10.55	11.70
MSCI ACWI Index			27.44	12.58	13.20
Fixed Income	19.00%	19.14%	2.55	6.33	4.05
Barclays US Aggregate Index			(0.90)	5.36	2.94
Barclays Global Aggregate Index			(0.91)	4.24	1.99
Absolute Return	10.00%	9.40%	17.93	6.22	6.67
HFRI Fund of Funds Composite			14.29	6.49	5.80
Real Return	2.00%	2.93%	31.69	1.79	2.52
NFI-ODCE Index			13.64	6.13	6.56
Real Estate	8.00%	11.22%	13.52	8.07	7.89
NCREIF Property Index			12.15	6.72	6.84
Private Equity	15.00%	12.69%	60.02	22.08	20.91
Wilshire 5000 Index + 3%			35.94	19.55	20.41
Cash	1.00%	1.74%	0.07	1.16	1.25
90 Day T-Bill			0.06	1.05	1.12
Total Portfolio	100.00%	100.00%	22.44	9.77	9.58
Target Allocation Index			20.80	9.40	9.22

*The basis for investment return calculations: a time weighted rate of return based on the market rate of return.

Investment Managers

GLOBAL EQUITIES:

Franklin Templeton
Northern Trust
Wellington Management
Westwood Holdings
William Blair

REAL RETURN:

Harvest Fund Advisors
Nuveen

GLOBAL FIXED INCOME:

American Century
Garcia Hamilton
Loomis Sayles & Company
PIMCO
Stone Harbor Investment
Partners

REAL ESTATE:

AEW Capital Management
American Landmark
Ascentris
Campus Clarion
Contrarian Capital Management
Focus Healthcare Partners
Hammes Partners
Heitman
IPI
Liquid Realty Partners
M&G Investments
McAlister
New Boston Real Estate
Prologis
Rockspring Capital
SC Capital Partners
Stratford Land
UBS Realty Advisors
WestRiver Capital

ABSOLUTE RETURN:

Cevian Capital
Contrarian Capital Management
Harbinger Capital Partners*
HBK Capital Management
Indus Capital Partners
King Street Capital
Luxor Capital Partners*
Pentwater Capital Management
Perry Partners*
Sculptor Capital Management*
Shepard Investments*
Southpoint Capital Advisors
The D.E. Shaw Group
Wellington Management

* In Redemption from Manager

PRIVATE EQUITY:

3i Investments
Advent International
Altaris Health Partners
American Securities
Apollo
Ascribe Capital
Avenue Capital Group
Bay City Capital
BC Partners
Blackstone Group
Brazos Private Equity Partners
Cerberus Capital Management
Cinven Limited
Clearlake Capital
Coral Group
CVC Capital Partners
Energy Capital Partners
Enhanced Capital Partners
Essex Woodlands
Falcon Investment Advisors
GF Capital Partners

PRIVATE EQUITY (CONTINUED):

GI Partners
Gores Technology Group
Greenspring Associates
Leonard Green & Company
Gridiron Capital
Hellman & Friedman
HIG Capital
High Road Capital Partners
Ignition Partners
JMI Management
Kelso & Company
KPS
KRG Capital Partners
Landmark Partners
Littlejohn & Co.
Levine Leichtman Capital
Partners
Madison Dearborn Partners
Marlin Equity Partners
New Enterprise Associates
Newport Global Advisors
Newstone Capital
Oak Hill Advisors
Platinum Equity Capital
Partners
Providence Equity Partners
The Riverside Company
Scale Venture Partners
Technology Crossover Ventures
TPG Capital
TSG Capital Group
Vector Capital
Veritas Capital
Vitruvian Partners
Waterland Private Equity
Welsh Carson Anderson &
Stowe
Wynnchurch Capital

Investment Policies Statement Summary

The Board of Trustees (Board) of the Fort Worth Employees' Retirement Fund (the Fund) has adopted an Investment Policy Statement as a framework for the investment of the Fund's assets. The purpose of the Investment Policy Statement is to assist the Board in effectively guiding, supervising, and monitoring the ongoing operations and performance of the Fund. The authority to amend that statement rests solely with the Board. The following provides a brief outline of that statement. A copy of the Investment Policy Statement in its entirety can be found on the Fund's website.

Investment Objectives

The Fund's primary investment objective is to establish a stable, diversified investment portfolio that in the long-term, will meet or exceed the Board approved assumed actuarial rate of return in order to maintain or improve the funded status of the Fund and provide sufficient liquidity to timely pay benefits. The Trustees adopted the following key investment objectives:

- The Boards' investment objective is to achieve an average long-term total rate of return which satisfies the actuarial assumed rate of return. The target actuarial rate of return is set at 7.00% including an assumed inflation rate of 2.50% and a target actuarial real rate of return of 4.50%.
- The Fund shall prudently manage overall risk through diversification, by establishing and updating a strategic asset allocation using an asset allocation model that balances return expectations and risk exposures related to institutionally investible geographies, asset classes, and investment strategies.
- The Fund shall periodically rebalance the total assets to manage active risk relative to the strategic asset allocation and various benchmarks, as well as liquidity. Rebalancing activities shall consider both the impact on the Fund and transaction cost of the activity.
- The investment activities of the Fund shall be executed in a cost-effective manner.

Board of Trustees

The Board is primarily responsible for establishing the long-term vision of the Fund, oversight, and adopting an Investment Policy Statement (IPS). The IPS is intended to establish prudent investment criteria, set clear objectives, and guide selection of the asset classes and the strategic asset allocation. Management of the Fund assets must be done solely in the financial interest of the beneficiaries of the Fund. It also must be done in a manner consistent with Section 802.2203 of the Texas Government Code, the Fund's Ethics Policy, the ethical guidelines of the CFA Institute, and all applicable domestic and international securities laws, rules, and regulations. The Board, to the extent permitted by Texas law, delegates the operational, program management, and administration of the Fund's investment program to the Executive Director (ED) and Chief Information Officer (CIO). The Board delegates the review and approval of the Investment Implementation Procedures (IIP) employed by the Fund staff to the Investment Committee. At least annually, the Board reviews the actions of the ED and CIO in order to monitor performance and compliance with the terms of delegation, the IPS, and other policies and procedures.

Investment Committee

The Investment Committee is established by the Board and is delegated the responsibility to oversee and provide commentary and recommendations to the Board regarding investment activities, portfolio implementation, and sustainable management of the Fund's investment processes. The Investment Committee assists in development and provides recommendations for both the IPS and IIP. The Investment Committee reviews and provides feedback on significant preliminary actions related to service providers. The committee also evaluates the investment performance, including selected asset classes and external managers, in detail, using reports supplied by the ED, CIO, investment staff, and service providers. At least annually, the Investment Committee reviews the

appropriateness of the investment activities delegated to the CIO, including performance of service providers, operating expenses and budgets, asset allocation changes and the rationale for tactical asset allocation positioning.

Executive Director (ED)

The ED assumes executive responsibility and authority, as delegated, for all administrative, operational, and other aspects of managing the Fund. The ED monitors compliance of the investment program with the IPS, the Ethics Policy, and any laws, rules, or regulations that may apply. Additionally, the ED reviews and authorizes the use of service providers and employment of Investment Staff. The ED further evaluates the investment performance, processes and procedures through reports provided by the CIO, investment staff, and service providers. Finally, the ED takes emergency, investment-related actions that are deemed essential to protect assets of the FWERF, with such actions being promptly reported to the Executive Committee of the Board.

Chief Investment Officer (CIO)

The CIO assumes executive responsibility and authority, as delegated for the investment operations, ongoing evaluation, and management of the assets of the Fund. The CIO ensures compliance with the IPS, IIP, and any laws, rules, or regulations that may apply while operating ethically as a fiduciary with a duty of loyalty, investing and managing Fund assets solely in the financial interest of members and beneficiaries. The CIO collaborates with the ED, Investment Committee, and Board on development and implementation of investment strategies, procedures, the IPS and IIP. The CIO establishes sourcing approaches for the efficient review, selection or termination, and negotiation of contracts with investment related Service Providers, including but not limited to, External Investment Managers, Discretionary External Investment Advisors, External Investment Advisors, General Consultant, and other Service Providers related to the investment program. The CIO periodically reports to the Board, Investment Committee, and Executive Director on administrative, organizational, investment activities, and the outcome of fully executed decisions related to investment actions or service providers.

Compliance

The Fund's General Counsel, in consultation with the ED and CIO, shall maintain a compliance effort, which can be performed by internal resources and/or an external service provider. The compliance function shall maintain a degree of separation from the key investment decision-makers to effectively operate as an unbiased third-party observer with the authority to initiate reports and recommend actions to the ED, Investment Committee and Board, when deemed appropriate. The compliance function will maintain regulatory knowledge and assess investment program adherence and risk related to laws, rules, and regulations. These individuals also will perform an assessment of the Fund's compliance with relevant laws, rules, and regulations, and prepare quarterly and annual reports documenting adherence to policies and procedures.

Asset Allocation

The Fund's asset allocation policy is intended to reflect and be consistent with the return objective and risk tolerance expressed by the Fund. It is designed to provide the highest probability of meeting or exceeding the Fund's long-term objectives at a level of risk acceptable to the Board. The Board and Investment Committee have reviewed the risk, return, liquidity, and cost characteristics of a wide range of asset allocation approaches (conservative to aggressive). Based on input from the CIO, investment staff, and General Consultant, the Board establishes a strategic asset allocation target and acceptable asset class ranges for investment of the Total Assets. The Board recognizes that market events or other circumstances may dictate that investing above or below the target allocation is desired.

Rebalancing

Because the asset classes do not move in concert, allocation deviations will occur through normal market activity. The CIO and investment staff should evaluate the asset classes, risk exposures, and return opportunities at least quarterly, and rebalance the portfolio to the strategic asset allocation target or an alternative tactical asset allocation within defined ranges. The CIO should evaluate the impact of rebalancing, along with the transaction cost of rebalancing and any specific market or timing factors that may influence the outcome of trading activity. This evaluation may suggest the planned rebalancing activity is undesired.

Portfolios that drift from the strategic asset allocation target and tactical asset allocation adjustments represent an active risk compared to the strategic asset allocation target; therefore, they should be based on a specific investment thesis or rationale that is communicated to the Investment Committee. Tactical asset allocation shifts should remain within allowable asset class ranges. Asset class exposures that drift outside of the asset class ranges should be rebalanced within the stated range prior to the end of a quarter.

Schedule of Top Ten Investments

As of September 30, 2021*

Name of Investment	Fair Value	Percent of Portfolio
Northern Trust Collective All Country World Investable	\$ 351,835,936	13.54%
Northern Trust COLTV ACWI Diversified Multi Factor Inde:	324,559,467	12.49%
MFB Northern Trust Collective Russell 1000 Growth Index	\$ 110,458,983	4.25%
William Blair Emerging Leaders Growth CIT Fund	71,462,702	2.75%
Nuveen Real Asset Income Fund R6	\$ 53,929,599	2.08%
Stone Harbor Invt FDS EM Debt	45,736,321	1.76%
Heitman America Real Estate Trust LP FD	\$ 45,660,236	1.76%
Prologis European Properties Fund II	43,797,510	1.69%
Iguazu Investors (Cayman) LP	\$ 43,264,235	1.67%
Realterm Logistics Income Fund	34,754,963	1.34%

* A complete list of the Fund's holdings is available at the Fund's office by appointment.

Schedule of Investment Management, Performance, and Brokers' Fees by Asset Class

For the Fiscal Year Ended September 30, 2021

Asset Class	Fees Paid from the Pension Trust Fund			Fees Netted Against Returns		
	Fair Value Assets Under Management	Management Fees	Performance Fees	Brokers Fees	Management Fees	Performance Fees/Carried Interest
Fixed Income	\$ 540,575,694	\$ 1,539,028	\$ 207,031	\$ 260	\$ 327,700	\$ -
Public Equity	1,210,793,304	2,901,672	-	201,069	253,661	-
Real Assets	82,880,794	1,157,085	-	13,495	2,831,648	6,403,077
Alternative Assets*	940,778,466	47,867	-	319	6,998,395	17,737,257
Cash Equivalents	48,904,287	-	-	-	-	-
Totals	<u>\$ 2,823,932,545</u>	<u>\$ 5,645,652</u>	<u>\$ 207,031</u>	<u>\$ 215,143</u>	<u>\$ 10,411,404</u>	<u>\$ 24,140,334</u>

Reconciling Items to Statement of Net Position

Accrued Income	\$ (5,699,733)
Broker Receivables	(155,072,129)
Broker Payables	177,845,110
Securities Lending Collate	174,422,862

Total Investments

Statement of Net Position **\$ 3,015,428,655**

Total Investment Expenses

Total Direct and Indirect Fees 40,619,564

Investment Services

Custodial	536,881
Research	-
Investment Consulting	1,335,271
Legal	77,305

Total Investment Expenses **42,569,021**

* Alternative Assets include private equity, venture capital and hedge funds.

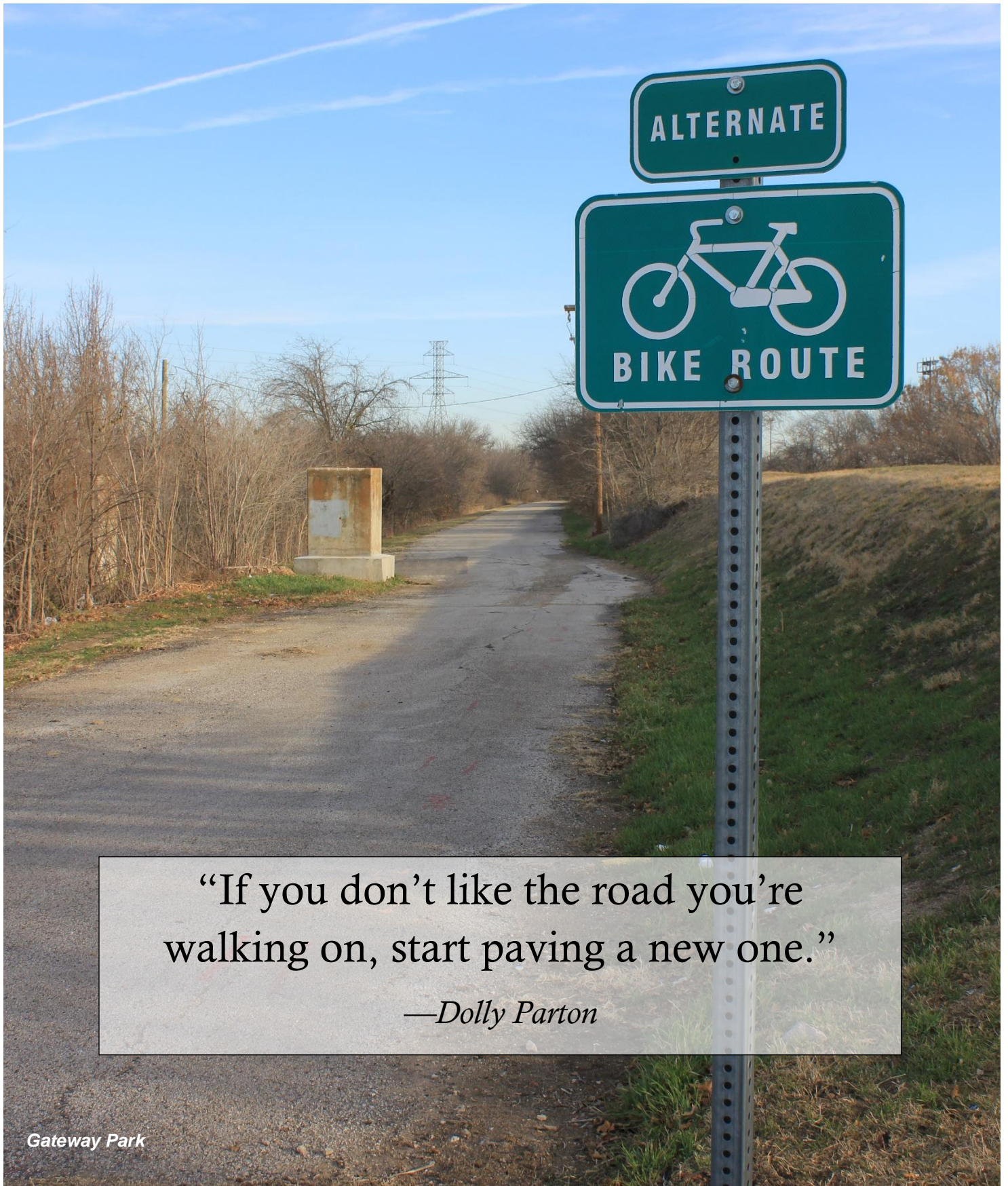
Schedule of Brokers' Fees

As of September 30, 2021

Broker Name	Number of Shares	Commission Paid	Commission per Share
The Northern Trust Company	3,894,289	\$ 114,527	\$ 0.03
B. Riley And Co., LLC	311,105	9,333	0.03
Goldman, Sachs And Co.	195,607,248	5,897	0.00
Morgan Stanley And Co., LLC	2,947,912,497	5,194	0.00
Merrill Lynch International Limited	12,745,968,977	3,958	0.00
UBS AG London Branch	695,238	3,433	0.00
Credit Suisse Securities(Europe)Ltd	170,995	3,074	0.02
Investment Technology Group Ltd.	576,849	3,015	0.01
Rbc Capital Markets, LLC	12,609,951	2,961	0.00
Jefferies International Ltd	3,244,604	2,797	0.00
Instinet Europe Limited	156,783	2,627	0.02
Bank Of America Corporation	11,805,386	2,549	0.00
Jefferies LLC.	5,609,819	2,436	0.00
J. P morgan Securities (Asia Pacific)	1,026,101	2,219	0.00
J.P. Morgan Securities PLC	13,627,451,302	2,124	0.00
Macquarie Securities Australia Ltd	635,100	2,101	0.00
Pershing Securities Limited	445,459	1,981	0.00
Stifel Nicolaus & Co, Incorporated	972,340	1,764	0.00
Citigroup Global Markets Limited	271,233	1,751	0.01
HSBC (GIBI Mrkts Equities Operation	768,300	1,670	0.00
BMO Nesbitt Burns Inc	65,490	1,618	0.02
Citigroup Global Markets Inc.	208,765,888	1,567	0.00
Credit Lyonnais Secs(Asia) Taiwan	286,300	1,234	0.00
BNY Convergen Execution Solutions	530,127	1,208	0.00
UBS Warburg Securities Ltd Taiwan	104,000	1,206	0.01
Credit Suisse Secu (Europe) Ltd	9,044	1,202	0.13
Toronto-Dominion Bank	9,809,300	1,153	0.00
D. Carnegie AB, Finland Branch	21,090	1,130	0.05
Barclays Capital	5,305,029	1,111	0.00

Broker Name	Number of Shares	Commission Paid	Commission per Share
Kepler Capital Markets	21,355	\$ 1,106	0.05
DAIWA Capital Markets America Inc.	52,400	1,083	0.02
Sanford C. Bernstein Ltd	91,648	1,042	0.01
Parel	13,950	938	0.07
Scotia Capital Inc.	31,207	914	0.03
Exane S.A.	82,701	909	0.01
UBS Securities Asia Limited	1,300,726	844	0.00
Credit Suisse (Hong Kong) Limited	824,738	827	0.00
Barclays Capital Inc	48,644	823	0.02
Joh. Berenberg, Gossler Und Co.KG	18,302	812	0.04
Citigroup Global Markets Europe AG	71,445	802	0.01
UBS AG Stamford Branch	1,184,376	755	0.00
Peel Hunt LLP	128,707	705	0.01
Goldman Sachs International	1,639,456	684	0.00
J.P. Morgan Securities LLC	505,552,638	672	0.00
Sanford C. Bernstein And Co., LLC	1,573,855	672	0.00
Mizuho Securities USA Inc.	12,462,000	631	0.00
Wells Fargo Bank Minnesota NA	7,529,214	631	0.00
ABG Securities Limited	22,068	554	0.03
CLSA Limited	255,100	545	0.00
Jefferies LLC	103,840	520	0.01
Pershing LLC	28,298,245	502	0.00
Various Brokers	52,898,491,036	11,332	0.00
	83,244,827,495	\$ 215,143	\$ 0.00

ACTUARIAL SECTION



“If you don’t like the road you’re walking on, start paving a new one.”

—Dolly Parton



December 10, 2021

Board of Trustees
Employees' Retirement Fund of the City of Fort Worth
3801 Hulen Street, Suite 101
Fort Worth, TX 76107

Subject: Actuarial Valuations as of December 31, 2020

Members of the Board,

At the request of the Employees' Retirement Fund of the City of Fort Worth (FWERF), Gabriel Roeder Smith & Company (GRS) has performed the actuarial valuations of the Employees' Retirement Fund of the City of Fort Worth (City Plan) and the City of Fort Worth Employees' Retirement Fund Staff Retirement Plan (Staff Plan). The information in the Actuarial Section is based on our annual actuarial valuation reports for the two plans, with the most recent valuations conducted as of December 31, 2020, and is intended to be used in conjunction with the full reports. FWERF is an agent multiple-employer defined benefit pension plan covering employees of the City of Fort Worth and employees of the Employees' Retirement Fund of the City of Fort Worth.

This letter and the schedules listed below represent GRS' certification of the funded status as required for the financial report for the fiscal year ended September 30, 2021 for the City Plan and the Staff Plan.

In the Financial Section, GRS prepared the following:

- Sensitivity of the Net Pension Liability to Changes in Discount Rate,
- Schedule of Changes in the Net Pension Liability, and
- Schedule of Actuarially Determined Employer Contributions.

In the Actuarial Section, GRS prepared the following:

- Executive Summary,
- Schedule of Funding Progress,
- Development of Actuarial Value of Assets,
- Actuarial Gain or Loss,
- Analysis of Normal Cost by Component,
- Retirees, Beneficiaries, and Disabled Participants Added to and Removed from Rolls,
- Solvency Test, and
- Distribution of Active Members by Age and Years of Service.

Data

The valuation was based upon information as of December 31, 2020, furnished by FWERF staff, concerning system benefits, financial transactions, plan provisions and active members, terminated members, retirees and beneficiaries. We checked for internal and year-to-year consistency, but did not audit the data. We are not responsible for the accuracy or completeness of the information provided by FWERF staff.

Actuarial Assumptions and Methods

The assumptions and methods applied in this actuarial valuation were adopted by the Board of Trustees on March 27, 2019 based on the experience investigation that covered the three-year period from January 1, 2016 through December 31, 2018. In accordance with the Administrative Rules of FWERF, all actuarial assumptions and methodologies must be adopted by the Board upon the advice of the actuary. We believe the assumptions for the funding valuation are internally consistent and are reasonable, based on the actual experience of FWERF, and meet the parameters of the Actuarial Standards of Practice issued by the Actuarial Standards Board. The actuarial assumptions and methods used to develop the Schedules of Changes in the Net Pension Liability and the Schedule of Actuarially Determined Employer Contributions, noted above, also meet the parameters set forth in the disclosures presented in the Financial Section by Governmental Accounting Standards Board Statement No. 67.

The actuarial accrued liability and corresponding normal cost rate for the City Plan are based on the Entry Age Normal actuarial cost method where the benefits are based on the benefits payable to each individual active member. This method was selected for funding purposes in order to provide a more stable normal cost, and resulting actuarially determined contribution, each year. The same actuarial cost method was selected for financial reporting purposes.

The results of the actuarial valuation are dependent upon the actuarial assumptions used. Actual results can and almost certainly will differ, as actual experience deviates from the assumptions. Even seemingly minor changes in the assumptions can materially change the liabilities, calculated contribution rates and funding periods. A review of the impact of a different set of assumptions on the funded status of the City Plan and the Staff Plan are outside the scope of this actuarial valuation.

The current actuarial assumptions are outlined in the section of the ACFR titled “Actuarial Assumptions and Methods.”

Benefits

There were no changes to the plan provisions of the City Plan and the Staff Plan during the past year. The current benefit provisions are outlined in the section of the ACFR titled “Summary of Key Provisions.”

Funding Policy and Objectives – City Plan

As outlined in the City Code and the Funding Policy adopted by the Board, the funding objective of the City Plan is to fund the sum of the normal cost, the assumed administrative expenses, and an amount necessary to eliminate the UAAL over a closed 30-year period beginning on December 31, 2018 with the goal of eliminating the UAAL by December 31, 2048. Contribution rates should be established which, over time, will remain level as a percent of payroll. As a result, the Actuarially Determined Employer Contribution (ADEC) is based on a closed 30-year amortization of the UAAL as of December 31, 2018 (28 years remaining as of December 31, 2020) and is being amortized as a level percentage of payroll. This ADEC will be equal to the City's portion of the total contributions that are necessary to meet this funding objective and this ADEC is appropriate for use by the Board to monitor progress towards these funding goals.

The City Plan receives member contributions in accordance with the following schedule based on Member Contributory Payroll. Effective July, 2019, Member Contributory Payroll changed to include earnings from unscheduled overtime.

	Previous Contribution Rate	Statutory Contribution Rates Effective July 2019	Statutory Contribution Rates Effective January 2020	Statutory Contribution Rates Effective January 2021
General Employees	8.25%	9.35%	9.35%	9.35%
Police Officers	8.73%	10.53%	12.53%	13.13%
Firefighters	8.25%	10.05%	12.05%	12.05%

Based on the current composition of the active plan population, the average member rate will be approximately 11.14% of the Member Contributory Payroll once all of the contribution rates are completely phased in.

Based on the current composition of the active plan population, the average City rate is approximately 24.48% of the City Contributory Payroll. The ADEC for 2021 is 32.29% of City Contributory Payroll, or \$165.3 million, which exceeds the expected City contribution by 7.81% of City Contributory Payroll. As a result, the stated funding objective is not being met.

City Contributory Payroll includes unscheduled overtime for Tier 1 members and does not include unscheduled overtime for Tier 2 members.

Based on the current statutory contribution rates, the funding period on the valuation date, excluding projected Risk-Sharing Contributions and Ad Hoc COLAs, is 74 years. Incorporating projected Risk-Sharing Contributions and Ad Hoc COLAs, the funding period is 42 years. The funding period incorporating the projected Risk-Sharing Contributions and Ad Hoc COLAs is the most reasonable estimate for the time until the UAAL is eliminated.

The City Code specifically defines an actuarially determined contribution (ADC) as a contribution “based on a closed 30-year funding of unfunded liabilities.” In this context, the ADC is the sum of the anticipated member contributions and the City contributions. Since the City and the members contribute on a different payroll basis, it would not be accurate to add the City and member contribution rates together. As a result, the actuarial valuation will focus on the Actuarially Determined Employer Contribution (ADEC) for purposes of reporting required contribution rates so it is clear which payroll basis is being considered. However, the ADEC will simply be determined as the projected ADC less the anticipated member contributions.

The unfunded actuarial accrued liability (UAAL) of the City Plan increased from \$2.19 billion as of December 31, 2019 to \$2.22 billion as of December 31, 2020. The UAAL was expected to increase to \$2.24 billion as of December 31, 2020 but the plan incurred a net experience gain of \$18 million which decreased the UAAL to \$2.22 billion. The primary sources of the experience changes were a \$13 million gain on the actuarial valuation of assets and a \$5 million gain on liabilities.

Additionally, the funded ratio of the City Plan—actuarial value of assets divided by the actuarial accrued liability—increased from 52.3% to 53.2% as of December 31, 2020. 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.

Funding Policy and Objectives – Staff Plan

On August 28, 2019, the FWERF Board of Trustees adopted the current funding policy for the Staff Plan. Under the current funding policy, the Total Funding Policy Contribution is determined as the sum of the normal cost, the assumed administrative expenses, and a structured payment towards eliminating the unfunded actuarial accrued liability (UAAL).

The payments to the UAAL will be based on layered amortization where each layer is based on a 30-year level-dollar amortization schedule. The Actuarially Determined Employer Contribution (ADEC) is the Total Funding Policy Contribution minus the expected member contributions. The current funding policy directs the employer to contribute the ADEC to the Staff Plan each year.

The Staff Plan receives member contributions of 10.50% of payroll and employer contributions equal to the ADEC, as set by the current funding policy for the Staff Plan. The ADEC for 2021 is \$435,845. On an actuarial value of assets basis, the current funding policy should be sufficient to first amortize the UAAL in 29 years.

The unfunded actuarial accrued liability (UAAL) of the Staff Plan decreased from \$2,773,532 as of December 31, 2019 to \$2,734,377 as of December 31, 2020. The funded ratio of the Staff Plan—actuarial value of assets divided by the actuarial accrued liability—increased from 67.4% to 70.7% as of December 31, 2020. 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.

Certification

All of our work conforms with generally accepted actuarial principles and practices, and to the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, our calculations also comply with the requirements of, where applicable, the Governmental Accounting Standards Board, the Internal Revenue Code and ERISA.

The signing actuaries are independent of the plan sponsor. They are each Enrolled Actuaries, Fellows of the Society of Actuaries, and Members of the American Academy of Actuaries, and meet the Qualification Standards of the American Academy of Actuaries. Finally, each of the undersigned are experienced in performing valuations for large public retirement systems.

Respectfully submitted,
Gabriel, Roeder, Smith & Company



R. Ryan Falls, FSA, EA, MAAA
Senior Consultant & Actuary



Bill Detweiler, ASA, FCA, MAAA
Consultant

Executive Summary

For years ended December 31

	City Plan		Staff Plan	
	2020	2019	2020	2019
Membership				
• Number of				
- Active members	6,515	6,709	18	17
- Retirees and beneficiaries	4,829	4,679	4	4
- Inactive, vested	401	398	6	6
- Inactive, nonvested	888	769	1	1
- Total	12,633	12,555	29	28
• Member Contributory Payroll	\$ 523,485,600	\$ 514,764,656	\$ 1,862,109	\$ 1,525,870
• Employer Contributory Payroll	\$ 511,922,873	\$ 504,398,247	\$ 1,862,109	\$ 1,525,870
Effective Contribution Rates				
• Members (after phase-in)	11.14%	11.09%	10.50%	8.25%
• Employer	24.48%	24.48%	23.41%	18.54%
Actuarially Determined Employer Contribution	\$ 165,299,896	\$ 159,793,365	\$ 435,845	\$ 408,762
• % of Employer Contributory Payroll	32.29%	31.68%	23.41%	26.79%
• Amortization Period	28 Years	29 Years	29 years	30 years
Assets				
• Fair value (FVA)	\$ 2,576,119,427	\$ 2,396,727,586	\$ 6,834,662	\$ 5,853,631
• Actuarial value (AVA)	\$ 2,522,727,631	\$ 2,400,393,264	\$ 6,592,997	\$ 5,746,116
• Return on fair value	10.0%	15.2%	10.3%	15.1%
• Return on actuarial value	7.6%	6.4%	8.3%	7.1%
Actuarial Information on AVA (smoothed)				
• Normal cost % (exclude admin)	15.95%	15.92%	20.62%	20.38%
• Total normal cost	\$ 83,495,953	\$ 81,950,533	\$ 383,967	\$ 310,972
• Actuarial accrued liability	\$ 4,745,801,026	\$ 4,586,884,563	\$ 9,327,374	\$ 8,519,648
• Unfunded actuarial accrued liability (UAAL)	\$ 2,223,073,395	\$ 2,186,491,299	\$ 2,734,377	\$ 2,773,532
• Funded ratio	53.2%	52.3%	70.7%	67.4%
Actuarial Information on FVA				
• Unfunded actuarial accrued liability (UAAL)	\$ 2,169,681,599	\$ 2,190,156,977	\$ 2,492,712	\$ 2,666,017
• Funded ratio	54.3%	52.3%	73.3%	68.7%

Actuarial Assumptions and Methods: City Plan

The assumptions and methods applied in this actuarial valuation were adopted by the Board of Trustees (Board) on March 27, 2019 based on the experience investigation that covered the three-year period from January 1, 2016 through December 31, 2018. In accordance with the Administrative Rules of the Fort Worth Employees' Retirement Fund (the Fund), all actuarial assumptions and methodologies must be adopted by the Board upon the advice of the Actuary.

I. Valuation Date

The valuation date is December 31 of each plan year. This is the date as of which the actuarial present value of future benefits and the actuarial value of assets are determined.

II. Actuarial Cost Method

The actuarial valuation is used to determine the adequacy of the current City contribution rate, describe the current financial condition of the Fund, analyze changes in the condition of the Fund, and provide various summaries of the data.

The actuarial valuation uses the Entry Age Normal (EAN) actuarial cost method. Under this method, the first step is to determine the contribution rate (level as a percentage of pay) required to provide the benefits to each member, or the normal cost rate. The normal cost rate consists of two pieces: the member's contribution rate and the remaining portion of the normal cost rate which is the employer's normal cost rate. Further, the total normal cost was determined using the "replacement life" application of EAN where the normal cost is based on each member's current benefit structure as though it has always been in place.

The Unfunded Actuarial Accrued Liability (UAAL) is the liability for future benefits which is in excess of the actuarial value of assets and the present value of future normal costs. The employer contribution provided in excess of the employer normal cost is applied to amortize the UAAL.

The projected funded status and the Actuarially Determined Employer Contribution (ADEC) are calculated based on the assumption that: (a) future market earnings, net of investment-related expenses, will equal 7.0% per year; there will be no liability gains/losses or changes in assumptions; active members who leave employment will be replaced by new entrants each year such that the Member Contributory Payroll grows at the same rate as the payroll growth assumption; and contributions will remain the same percentage of payroll.

The Entry Age actuarial cost method is an "immediate gain" method (i.e., experience gains and losses are separately identified as part of the UAAL). However, they are amortized over the same period applied to all other components of the UAAL.

III. Actuarial Value of Assets

The actuarial value of assets is based on the fair value of assets with a five-year phase-in of actual investment returns in excess of (less than) expected investment income. Offsetting unrecognized gains and losses are immediately recognized, with the shortest remaining bases recognized first and the net remaining bases continuing to be recognized on their original timeframe. Expected investment income is determined using the assumed investment return rate and the fair value of assets (adjusted for receipts and disbursements during the year). In no event will this amount exceed 120% of fair value or be less than 80% of fair value.

IV. Actuarial Assumptions

Investment Return: 7.0% per year, net of investment-related expenses (composed of an assumed 2.5% inflation rate and a 4.5% real rate of return).

Mortality Decrements:

Pre-retirement

PubG-2010 Employee Mortality Table for General Employees and PubS-2010 Employee Mortality Table for Police Officers and Firefighters. Generational mortality improvements projected from the year 2010 using the ultimate mortality improvement rates from the MP-2014 through MP-2019 tables.

Healthy Annuitants

PubG-2010 Healthy Retiree Mortality Table for General Employees and PubS-2010 Healthy Retiree Mortality Table for Police Officers and Firefighters. Generational mortality improvements projected from the year 2010 using the ultimate mortality improvement rates from the MP-2014 through MP-2019 tables. The mortality for all surviving beneficiaries will be based on the PubG-2010 Healthy Retiree Mortality Table.

Disabled Annuitants

PubG-2010 Disability Mortality Table for General Employees and PubS-2010 Disability Mortality Table for Police Officers and Firefighters. Generational mortality improvements projected from the year 2010 using the ultimate mortality improvement rates from the MP-2014 through MP-2019 tables..

In Line of Duty Death

The percentage of pre-retirement deaths assumed to be in the line of duty are:

General Employees:	0%
Police Officers:	10%
Firefighters:	10%

Service Retirement Decrements:

Members Who Reach 80 Points Before Age 65

The following rates reflect the members expected departure from active service and are applied based on years since first becoming eligible for Normal Retirement:

Year of Eligibility	General Employees	Police Officers	Firefighters
1 st	30%	15%	5%
2 nd	15	10	5
3 rd	20	10	10
4 th	25	20	10
5 th	25	30	25
6 th	35	50	50
7 th	35	50	50
8 th	35	50	50
9 th	35	50	50
10 th	100	100	100

Tier 2 General Employees who reach 80 points (age plus years of eligibility service) prior to age 55 will have their retirement rate increased by 20% in their first year of eligibility.

All members eligible for Normal Retirement prior to January 1, 2021 are assumed to enter DROP and retain their COLA election.

Members Who Do Not Reach 80 Points Before Age 65

The following rates reflect the member's expected departure from active service and are applied based on the member's age:

Age	General Employees	Police Officers	Firefighters
65-69	27.5%	100%	100%
70+	100	100	100

Early (Reduced) Retirement

Police Officers and Firefighters have zero assumed probability of retiring prior to eligibility for Normal (Unreduced) Retirement. The following age-based rates apply for General Employees:

Age	General Employees
50-56	1.5%
57-58	2.5
59-61	3.5
62	8.0
63-64	2.5

Deferred Retirement Option Program (DROP)

Every member who reaches Normal (Unreduced) Retirement eligibility prior to age 65 is assumed to enter DROP, leave active service in accordance with the assumed retirement rates, and have participated in DROP for the maximum possible period upon departure from active service.

Inactive Vested Participants

Members that terminate with a vested benefit are assumed to choose the most valuable option available to them at the time of termination: withdrawal of contributions or deferred annuity. Dependents of vested members that die prior to reaching Normal Retirement are assumed to elect a withdrawal of contributions.

Disability Retirement Decrements:Disability Rates

Rates for males and females at selected ages are shown below:

Age	Rate
20	0.005%
25	0.006
30	0.009
35	0.013
40	0.018
45	0.027
50	0.044
55	0.076
60	0.100

In Line of Duty Disability

The percentage of disability retirements assumed to be in the line of duty are:

General Employees:	0%
Police Officers:	40%
Firefighters:	15%

Termination Decrements for Reasons Other Than Death or Retirement:Withdrawal Rates

The following service-based rates apply:

Years of Service	General Employees	Police Officers	Firefighters
0	22.0%	7.0%	3.0%
1	15.0	2.0	0.5
2	14.0	1.8	0.5
3	11.0	1.6	0.5
4	9.0	1.5	0.5
5		1.4	0.5
6	See age-based	1.3	0.5
7	termination rates	1.2	0.5
8	after five years of	1.1	0.5
9-11	employment	1.0	0.5
12-16		1.0	0.4
17+		0.6	0.4

After the first five years of employment, age-based rates apply as shown below for General Employees:

Age	Rate
25-29	11.5%
30-34	7.5
35-39	6.0
40-44	5.0
45-49	4.5
50-54	3.2
55-59	2.3
60-64	2.0

All rates of termination are zero for members eligible for Normal Retirement.

Salary Increases: Increases are assumed to occur at the beginning of the valuation year and vary by employee group. Salary increases include an underlying inflation component of 2.50% and a productivity component of 0.75%.

Years of Service	General Employees	Police Officers	Firefighters
0	5.85%	28.25%	18.25%
1	5.65	18.25	15.25
2	5.45	8.25	8.25
3	5.25	8.25	9.75
4	5.05	8.25	9.75
5	4.85	5.75	5.75
6	4.65	4.50	3.25
7	4.45	4.50	3.25
8	4.25	4.50	4.75
9	4.05	4.50	4.75
10	3.85	4.50	3.25
11	3.65	4.50	3.25
12	3.45	4.50	3.25
13	3.25	4.50	4.75
14	3.25	5.75	4.75
15	3.25	5.75	3.25
16	3.25	5.75	3.25
17	3.25	5.75	3.25
18	3.25	4.50	3.25
19+	3.25	3.25	3.25

Valuation Payroll is the expected Regular Earnings for the calendar year following the valuation date. It is generally based on the actual pay for the prior year and increased with one year of expected salary increase.

Overtime Pay: Pay for Blue Service benefits for the upcoming year is based on the Valuation Payroll and increased by the following loads to account for unscheduled overtime pay:

General Employees:	3.50%
Police Officers:	7.00%
Firefighters:	18.00%

Average Earnings Overtime Load: Blue Service benefits are loaded by the following percentages to account for higher than usual overtime worked during the final average earnings period:

General Employees:	0.00%
Police Officers:	2.00%
Firefighters:	6.00%

Sick Leave Service Conversions: Retirement and terminated vested benefits are loaded by the following percentages to account for additional service accrued for unused sick and major medical leave:

General Employees:	3.75%
Police Officers:	2.00%
Firefighters:	2.50%

Due to the elimination of future accruals of excess sick leave used toward service and FAC at retirement, these load percentages are phased out for each individual member over a 20-year period based on their service as of December 31, 2018.

Cost-of-Living Adjustments (COLA): Members who have the Guaranteed 2% COLA are assumed to receive a 2% increase of their base pension amount. The open group projection associated with this valuation incorporates the provisions of the Conditional Ad-Hoc COLA and the liability associated with future expected Conditional Ad-Hoc COLAs.

Administrative Expenses: \$6,600,000 for 2021. This amount is reviewed annually based on input from Fund staff.

Payroll Growth: Member Contributory Payroll is assumed to grow at 3.0% per year. Future City Contributory Payroll incorporates the expected transition of the City contributing on Earnings with Overtime for Tier 1 members to the City contributing on Regular Earnings for Tier II members. As a result, the City Contributory Payroll is expected to increase by approximately 2.8% over the next 30 years.

Marital Assumptions: 80% of male members and 60% of female members are assumed to be married. Male member is assumed to be four years older than female beneficiary; and female member is assumed to be the same age as male beneficiary.

Decrement Timing: All decrements – mortality, service retirement, disability retirement, and termination of employment for reasons other than death or retirement – are assumed to occur at the middle of the valuation year.

Census Data and Assets:

- The valuation was based on members of the Fund as of December 31, 2019, and does not take into account future members.
- All census data was supplied by the Fund and was subject to reasonable consistency checks.
- There were data elements that were modified for some members as part of the valuation in order to make the data complete. However, the number of missing data items was immaterial.
- Asset data was supplied by the Fund.

Actuarial Assumptions and Methods: Staff Plan

The assumptions and methods applied in this actuarial valuation were adopted by the Board of Trustees on March 27, 2019, based on the experience investigation that covered the three-year period from January 1, 2016, through December 31, 2018.

I. Valuation Date

The valuation date is December 31 of each plan year. This is the date as of which the actuarial present value of future benefits and the actuarial value of assets are determined.

II. Actuarial Cost Method

The actuarial valuation is used to determine the employer contribution, describe the current financial condition of the Staff Plan, analyze changes in the condition of the Staff Plan, and provide various summaries of the data.

The actuarial valuation uses the Entry Age Normal actuarial cost method. Under this method, the first step is to determine the contribution rate (level as a percentage of pay) required to provide the benefits to each member, or the normal cost rate. The normal cost rate consists of two pieces: the member's contribution rate and the remaining portion of the normal cost rate which is the employer's normal cost rate. The total normal cost rate is based on the plan provisions that apply to each individual member.

The Unfunded Actuarial Accrued Liability (UAAL) is the liability for future benefits which is in excess of the actuarial value of assets and the present value of future normal costs. The employer contribution provided in excess of the employer normal cost is applied to amortize the UAAL.

The funding period is the earliest date that the UAAL is expected to be less than or equal to zero based on the UAAL amortization schedule.

The Entry Age actuarial cost method is an "immediate gain" method (i.e., experience gains and losses are separately identified as part of the UAAL). However, they are amortized over the same period applied to all other components of the UAAL.

III. Actuarial Value of Assets

The actuarial value of assets is based on the fair value of assets with a five-year phase-in of actual investment returns in excess of (less than) expected investment income. Offsetting unrecognized gains and losses are immediately recognized, with the shortest remaining bases recognized first and the net remaining bases continuing to be recognized on their original timeframe. Expected investment income is determined using the assumed investment return rate and the fair value of assets (adjusted for receipts

and disbursements during the year). In no event will this amount exceed 120% of fair value or be less than 80% of fair value.

IV. Actuarial Assumptions

Investment Return: 7.0% per year, net of investment-related expenses (composed of an assumed 2.5% inflation rate and a 4.5% real rate of return)

Mortality Decrements:

Pre-retirement

PubG-2010 Employee Mortality Table. Generational mortality improvements projected from the year 2010 using the ultimate mortality improvement rates from the MP-2014 through MP-2019 tables.

Healthy Annuitants

PubG-2010 Healthy Retiree Mortality Table. Generational mortality improvements projected from the year 2010 using the ultimate mortality improvement rates from the MP-2014 through MP-2019 tables.

Disabled Annuitants

PubG-2010 Disability Mortality Table. Generational mortality improvements projected from the year 2010 using the ultimate mortality improvement rates from the MP-2014 through MP-2019 tables.

In Line of Duty Death

0% of pre-retirement deaths are assumed to be in the line of duty.

Service Retirement Decrements:

Members Who Reach 80 Points by Age 65

The following rates reflect the members expected departure from active service and are applied based on years since first becoming eligible for Normal Retirement:

Year of Eligibility	Rate
1 st	30%
2 nd	15
3 rd	20
4 th	25
5 th	25
6 th	35
7 th	35
8 th	35
9 th	35
10 th	100

Upon reaching age 70, all eligible members are assumed to retire even if they are less than ten years past first eligibility for Normal Retirement.

Employees hired on or after September 30, 2019 who reach 80 points (age plus years of eligibility service) prior to age 55 will have their retirement rate increased by 20% in their first year of eligibility.

Members Who Do Not Reach 80 Points by Age 65

The following rates reflect the member's expected departure from active service and are applied based on the member's age:

Age	Rate
65-69	27.5%
70+	100

Early (Reduced) Retirement

Members have zero assumed probability of retiring prior to eligibility for Normal (Unreduced) Retirement.

Deferred Retirement Option Program (DROP)

Every member who reaches Normal (Unreduced) Retirement eligibility prior to age 65 is assumed to enter DROP, leave active service in accordance with the assumed retirement rates, and have participated in DROP for the maximum possible period upon departure from active service.

Inactive Vested Participants

Members that terminate with a vested benefit are assumed to choose the most valuable option available to them at the time of termination: withdrawal of contributions or deferred annuity. Dependents of vested members that die prior to reaching Normal Retirement are assumed to elect a withdrawal of contributions.

Disability Retirement Decrements:

Members have zero assumed probability of retirement due to disability.

Termination Decrements for Reasons Other Than Death or Retirement:

Withdrawal Rates

The following service-based rates apply:

Years of Service	Rate
0	22.0%
1	15.0
2	14.0
3	11.0
4	9.0

After the first five years of employment, age-based rates apply as shown below:

Age	Rate
25-29	11.5%
30-34	7.5
35-39	6.0
40-44	5.0
45-49	4.5
50-54	3.2
55-59	2.3
60-64	2.0

All rates of termination are zero for members eligible for Normal Retirement.

Salary Increases: Increases are assumed to occur at the beginning of the valuation year. Salary increases include an underlying inflation component of 2.50% and a productivity component of 0.25%.

Years of Service	Rate
0	5.35%
1	5.15
2	4.95
3	4.75
4	4.35
5	4.35
6	4.15
7	3.95
8	3.75
9	3.55
10	3.35
11	3.15
12	2.95
13	2.75
14	2.75
15	2.75
16	2.75
17	2.75
18	2.75
19+	2.75

Contributory Payroll is the expected Regular Earnings for the calendar year following the valuation date and limited by IRC Section 401(a)(17). It is generally based on the anticipated salary for the upcoming year as reported by ERF Staff.

Overtime Pay: Members are not assumed to receive compensation to account for unscheduled overtime pay.

Cost-of-Living Adjustments (COLA): Members who have the Conditional Ad-Hoc COLA are assumed to receive 4% annual increases.

Administrative Expenses: \$30,000 for 2021. This amount is reviewed annually.

Payroll Growth: Total payroll is assumed to grow at 2.5% per year.

Marital Assumptions: 100% of members are assumed to be married. Male member is assumed to be four years older than female beneficiary; and female member is assumed to be the same age as male beneficiary.

Decrement Timing: All decrements – mortality, service retirement, disability retirement, and termination of employment for reasons other than death or retirement – are assumed to occur at the middle of the valuation year.

Census Data and Assets

- The valuation was based on members of the Staff Plan as of the valuation date and does not take into account future members.
- All census data was supplied by Fund staff and was subject to reasonable consistency checks.
- There were data elements that were modified for some members as part of the valuation in order to make the data complete. However, the number of missing data items was immaterial.
- Asset data was supplied by Fund staff.

Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (AVA)	Actuarial Accrued Liability (AAL)	Unfunded Actuarial Accrued Liability (UAAL)	% Funded Ratio	Annual Covered Payroll	UAAL as a Percentage of Covered Payroll
City Plan						
January 1, 2012	\$ 1,869,656,263	\$ 2,617,862,133	\$ 748,205,870	71.42%	\$ 383,801,802	194.95%
January 1, 2013	1,854,871,487	2,909,019,272	1,054,147,785	63.76	375,687,978	280.59
January 1, 2014	1,995,112,935	3,124,079,563	1,128,966,628	63.86	373,848,113	301.99
December 31, 2014*	2,094,381,418	3,365,534,522	1,271,153,104	62.23	389,527,874	326.33
December 31, 2015*	2,154,874,311	3,553,200,981	1,398,326,670	60.65	404,303,585	345.86
December 31, 2016*	2,209,893,867	3,780,554,300	1,570,660,433	58.45	433,956,825	361.94
December 31, 2017*	2,288,265,169	3,956,724,359	1,668,459,190	57.83	460,564,650	362.26
December 31, 2018*	2,324,698,216	4,438,326,161	2,113,627,945	52.38	485,336,445	435.50
December 31, 2019*	2,400,393,264	4,586,884,563	2,186,491,299	52.33	504,398,247	433.49
December 31, 2020*	2,522,727,631	4,745,801,026	2,223,073,395	53.16	511,922,873	434.26
Staff Plan						
January 1, 2012	\$ 1,180,511	\$ 1,930,294	\$ 749,783	61.16%	\$ 1,547,810	48.44%
January 1, 2013	1,596,824	1,924,028	327,204	82.99	1,467,047	22.30
January 1, 2014	2,286,404	2,327,578	41,174	98.23	1,293,628	3.18
December 31, 2014*	2,850,030	3,843,480	993,450	74.15	1,541,518	64.45
December 31, 2015*	3,363,797	4,563,466	1,199,669	73.71	1,639,398	73.18
December 31, 2016*	3,878,837	5,072,901	1,194,064	76.46	1,476,583	80.87
December 31, 2017*	4,533,706	5,874,460	1,340,754	77.18	1,582,239	84.74
December 31, 2018*	5,189,502	7,531,496	2,341,994	68.90	1,494,667	156.69
December 31, 2019*	5,746,116	8,519,648	2,773,532	67.45	1,525,870	181.77
December 31, 2020*	6,592,997	9,327,374	2,734,377	70.68	1,862,109	146.84

* For the regular actuarial valuation the City of Fort Worth requested the date be changed from 1/1 to 12/31 effective 1/1/2015 valuation.

Development of Actuarial Value of Assets: City Plan

As of December 31, 2020

1 Fair Value of Assets at the beginning of the year	\$ 2,396,727,586
2 Net New Investments	
A. Contributions	182,576,652
B. Disbursements	(239,373,283)
C. Subtotal	<u>\$ (56,796,631)</u>
3 Fair Value of Assets at the end of year	<u>\$ 2,576,119,427</u>
4 Net Earnings (3-1-2c)	236,188,472
5 Assumed Rate of Return	7.00%
6 Expected Return	165,783,049
7 Excess Return	70,405,423
8 Development of amounts to be recognized as of December 31, 2019	

Period End	Remaining Deferrals of Excess(Shortfall) Investment	Offsetting of Gains/(Losses)	Net Deferrals Remaining	Years Remainin g	Recognized for this Valuation	Net Deferrals Remaining
December 31, 2016	\$ -	\$ -	\$ -	1	\$ -	\$ -
December 31, 2017	-	-	-	2	-	-
December 31, 2018	(3,665,678)	3,665,678	-	3	-	-
December 31, 2019	-	-	-	4	-	-
December 31, 2020	70,405,423	(3,665,678)	66,739,745	5	13,347,949	53,391,796
Total	<u>\$ 66,739,745</u>	<u>\$ -</u>	<u>\$ 66,739,745</u>		<u>\$ 13,347,949</u>	<u>\$ 53,391,796</u>

9 Preliminary Actuarial Value of Assets (3-8)	\$ 2,522,727,631
10 80 Percent of Fair Value	2,060,895,542
11 120 Percent of Fair Value	3,091,343,312
12 Actuarial Value of Assets (9 not less than 10 or greater than 11)	\$ 2,522,727,631
13 Actuarial Value as a percentage of Fair Value	97.9%
14 Estimated Actuarial Value Yield	7.6%

Development of Actuarial Value of Assets: Staff Plan

As of December 31, 2020

1 Fair Value of Assets at the beginning of the year	\$ 5,853,631
2 Net New Investments	
A. Contributions	563,520
B. Disbursements	(206,040)
C. Subtotal	<u>\$ 357,480</u>
3 Fair Value of Assets at the end of year	<u>\$ 6,834,662</u>
4 Net Earnings (3-1-2c)	623,551
5 Assumed Rate of Return	7.00%
6 Expected Return	422,266
7 Excess Return	201,285
8 Excess Return on Assets for last four years	

Period End	Deferrals of		Net Deferrals Remaining	Years Remaining	Recognized for this Valuation	Net Deferrals Remaining
	Excess(Shortfall) Investment Income	Offsetting of Gains/(Losses)				
December 31, 2016	\$ -	\$ -	\$ -	1	\$ -	\$ -
December 31, 2017	-	-	-	2	-	-
December 31, 2018	-	-	-	3	-	-
December 31, 2019	107,515	-	107,515	4	26,878	80,637
December 31, 2020	201,285	-	201,285	5	40,257	161,028
	<u>\$ 308,800</u>	<u>\$ -</u>	<u>\$ 308,800</u>		<u>\$ 67,135</u>	<u>\$ 241,665</u>

9 Preliminary Actuarial Value of Assets (3-8)	\$ 6,592,997
10 80 Percent of Fair Value	5,467,730
11 120 Percent of Fair Value	8,201,594
12 Actuarial Value of Assets (9 not less than 10 or greater than 11)	\$ 6,592,997
13 Actuarial Value as a percentage of Fair Value	96.5%
14 Estimated Actuarial Value Yield	8.3%

Actuarial Gain or Loss

For Year Ended December 31, 2020

A Calculation of Total Actuarial Gain or Loss		City Plan	Staff Plan
1	Unfunded Actuarial Accrued Liability (UAAL) for prior year	\$ 2,186,491,299	\$ 2,773,532
2	Normal cost for the year (excluding administrative expenses)	81,950,533	310,972
3	Actual administrative expenses	5,490,722	40,000
4	Actual contributions during the year	\$ (182,576,652)	\$ (568,978)
5	Interest at 7.00%		
a	On UAAL	\$ 153,054,391	\$ 194,147
b	On normal cost	3,060,444	12,076
c	On contributions	(6,390,183)	(19,577)
d	Total	\$ 149,724,652	\$ 186,646
6	Assumption Change (Gains)/Losses	-	-
7	Plan Changes	-	-
8	Expected UAAL	2,241,080,554	2,742,172
9	Actual UAAL	2,223,073,395	2,734,377
10	Total (Gain)/Loss for the year	\$ (18,007,159)	\$ (7,795)
B SOURCE OF GAINS AND LOSSES		% of AAL	% of AAL
11	Asset (Gain)/Loss for the year	-0.28% \$ (13,091,352)	-0.80% \$ (74,661)
12	Pay Increases (Less)/Greater than expected	0.23% 10,772,122	0.00% (1,303)
13	Non-Retired Demographic (Gains)/Losses	0.02% 836,332	0.70% 67,442
14	Post-Retirement Mortality (Gains)/Losses	-0.33% (15,723,621)	0.10% 10,686
15	Other (Gains)/Losses	-0.02% (800,640)	-0.10% (9,959)
16	Total (Sum of Items 11 through 15)	-0.38% \$ (18,007,159)	-0.10% \$ (7,795)

Analysis of Normal Cost by Component

As of December 31, 2020 and 2019

	City Plan		Staff Plan	
	2020	2019	2020	2019
Gross Normal Cost				
Retirement Benefits	12.97%	12.93%	14.68%	14.34%
Termination Benefits	2.71%	2.72%	5.73%	5.86%
Death Benefits	0.19%	0.19%	0.21%	0.18%
Disability Benefits	0.08%	0.08%	0.00%	0.00%
Totals	15.95%	15.92%	20.62%	20.38%

Retirees, Beneficiaries, and Disabled Participants Added to and Removed from Rolls

Retirees, Beneficiaries, and Disabled Participants Added to and Removed from Rolls

Valuation Date	ADDED TO ROLLS			REMOVED FROM		ROLLS-END OF YEAR		% Increase in Annual Allowances	Average Annual Allowances				
	Number	Annual Allowances		Number	Annual Allowances		Number			Annual Allowances			
City Plan													
January 1, 2012	224	\$	8,762,512	105	\$	2,317,797	3,636	\$	117,798,072	6.7%	\$	32,398	
January 1, 2013	218		8,738,413	148		3,282,570	3,706		125,983,212	6.9%		33,994	
January 1, 2014	274		11,046,752	160		3,648,176	3,820		134,496,892	6.8%		35,209	
December 31, 2014*	246		10,347,634	160		3,619,256	3,906		143,316,261	6.6%		36,691	
December 31, 2015*	259		10,091,083	123		3,230,266	4,042		152,284,728	6.3%		37,676	
December 31, 2016*	325		15,697,903	115		2,430,574	4,252		167,629,136	9.9%		39,353	
December 31, 2017*	238		11,397,587	99		2,334,641	4,391		178,611,771	6.7%		40,677	
December 31, 2018*	283		13,192,872	91		2,299,308	4,583		191,775,783	7.4%		41,845	
December 31, 2019*	207		8,348,201	111		2,773,120	4,679		199,693,044	4.1%		42,679	
December 31, 2020*	278		12,468,018	128		3,427,537	4,829		211,070,412	5.7%		43,709	
Staff Plan													
December 31, 2018**	1	\$	4,270	-	\$	-	1	\$	4,270			\$	4,270
December 31, 2019**	3		173,378	-		-	4		177,733	4062.4%			44,433
December 31, 2020*							4		179,635	1.1%			44,909

* For the regular actuarial valuation the City of Fort Worth requested the date be changed from 1/1 to 12/31 effective with 1/1/2015 valuation.

**The Fort Worth Employees' Retirement Fund Staff Plan had its first retiree in calendar year 2018.

Solvency Test

						Portions of Accrued Liabilities Covered by Reported Assets		
Aggregated Accrued Liabilities								
Valuation Date	Active and Inactive Members' Contributions (2)	Retirees and Beneficiaries (3)	Active/Inactive Members (Employer's Financed Portion) (4)	Reported Assets (5)	(5)/(2)	{{(5)-(2)}}/(3)	{{(5)-(2)-(3)}}/(4)	
CITY PLAN								
January 1, 2012	\$ 461,684,282	\$ 1,157,940,326	\$ 998,237,525	\$ 1,869,656,263	100%	100%	25%	
January 1, 2013	499,028,022	1,288,418,634	1,121,572,616	1,854,871,487	100%	100%	6%	
January 1, 2014	529,079,160	1,469,007,750	1,125,992,653	1,995,112,935	100%	100%	0%	
December 31, 2014*	554,657,382	1,579,267,555	1,231,609,585	2,094,381,418	100%	97%	0%	
December 31, 2015*	589,185,131	1,713,648,693	1,250,367,157	2,154,874,311	100%	91%	0%	
December 31, 2016*	505,886,072	1,912,833,490	1,361,834,738	2,209,893,867	100%	89%	0%	
December 31, 2017*	522,640,298	2,056,348,215	1,377,735,846	2,288,265,169	100%	86%	0%	
December 31, 2018*	522,128,181	2,492,013,634	1,424,184,346	2,324,698,216	100%	72%	0%	
December 31, 2019*	538,305,419	2,577,229,846	1,471,349,298	2,400,393,264	100%	72%	0%	
December 31, 2020*	549,298,756	2,729,704,927	1,466,797,343	2,522,727,631	100%	72%	0%	
STAFF PLAN								
January 1, 2012	\$ 729,086	\$ -	\$ 1,201,208	\$ 1,180,511	100%	100%	38%	
January 1, 2013	863,597	-	1,060,431	1,596,824	100%	100%	69%	
January 1, 2014**	1,206,532	-	1,121,046	2,286,404	100%	100%	96%	
December 31, 2014*	1,378,942	-	2,464,538	2,850,030	100%	100%	60%	
December 31, 2015*	1,551,657	-	3,011,809	3,363,797	100%	100%	60%	
December 31, 2016*	1,711,324	-	3,361,577	3,878,837	100%	100%	64%	
December 31, 2017*	2,000,288	-	3,874,172	4,533,706	100%	100%	65%	
December 31, 2018*	2,184,114	56,334	5,291,048	5,189,502	100%	100%	56%	
December 31, 2019*	1,703,296	2,826,643	3,989,709	5,746,116	100%	100%	30%	
December 31, 2020*	1,900,836	2,792,708	4,633,830	6,592,997	100%	100%	41%	

* For the regular actuarial valuation, the City of Fort Worth requested the date be changed from 1/1 to 12/31 effective with 1/1/2015 valuation.

**Member contributions are greater than Employer contributions due to employee service purchase.

Distribution of Active Members by Age and Years of Service – City Plan

As of December 31, 2020

	Years of Service									
Age	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total
Under 25	125	1	-	-	-	-	-	-	-	126
	45,009	56,068	-	-	-	-	-	-	-	45,098
25-29	410	116	1	-	-	-	-	-	-	527
	60,632	75,800	54,986	-	-	-	-	-	-	63,961
30-34	407	259	105	4	-	-	-	-	-	775
	62,910	83,463	85,890	77,255	-	-	-	-	-	72,966
35-39	321	263	269	96	2	-	-	-	-	951
	66,050	81,972	93,748	101,024	84,955	-	-	-	-	81,858
40-44	213	193	194	218	99	-	-	-	-	917
	62,192	73,209	89,843	101,747	98,310	-	-	-	-	83,662
45-49	183	109	146	184	230	58	2	-	-	912
	65,187	75,773	84,056	97,561	108,463	116,357	69,633	-	-	90,182
50-54	167	126	122	133	218	179	31	2	-	978
	60,992	69,091	71,976	88,485	103,448	118,145	107,632	125,510	-	88,679
55-59	135	102	105	87	149	131	50	16	-	775
	64,477	61,940	65,403	80,449	89,826	106,001	114,625	103,095	-	81,987
60-64	70	60	70	67	46	37	12	8	1	371
	60,925	73,942	63,763	74,410	78,884	93,999	99,491	151,179	160,562	74,988
Over 64	28	39	37	43	19	7	5	4	1	183
	51,427	58,151	68,327	69,595	91,428	96,276	88,771	104,495	145,466	69,109
Total Number	2,059	1,268	1,049	832	763	412	100	30	2	6,515
Average Comp	\$ 61,711	\$ 75,821	\$ 82,587	\$ 92,410	\$ 99,804	\$ 111,492	\$ 108,449	\$ 117,598	\$ 153,014	\$ 80,351

Historical Active Participant Data

City Plan						
Valuation Date	Active	Average Age	Average Service	Covered Payroll *	Average Salary	Percent Change
1/1/2012	6,281	43.9	10.9	383.802	61,105	2.1%
1/1/2013	6,278	44.3	11.2	375.688	61,204	0.2%
1/1/2014	6,199	44.5	11.4	373.848	60,308	-1.5%
12/31/2014**	6,198	44.6	11.4	389.528	62,847	4.2%
12/31/2015**	6,280	44.6	11.3	404.304	64,380	2.4%
12/31/2016**	6,414	44.3	11.1	415.728	64,816	0.7%
12/31/2017**	6,579	44.1	10.8	442.445	67,251	3.8%
12/31/2018**	6,589	44.2	10.7	494.152	74,997	11.5%
12/31/2019**	6,709	44.2	10.7	514.765	76,727	14.1%
12/31/2020**	6,515	44.3	11.0	523.486	76,727	2.3%

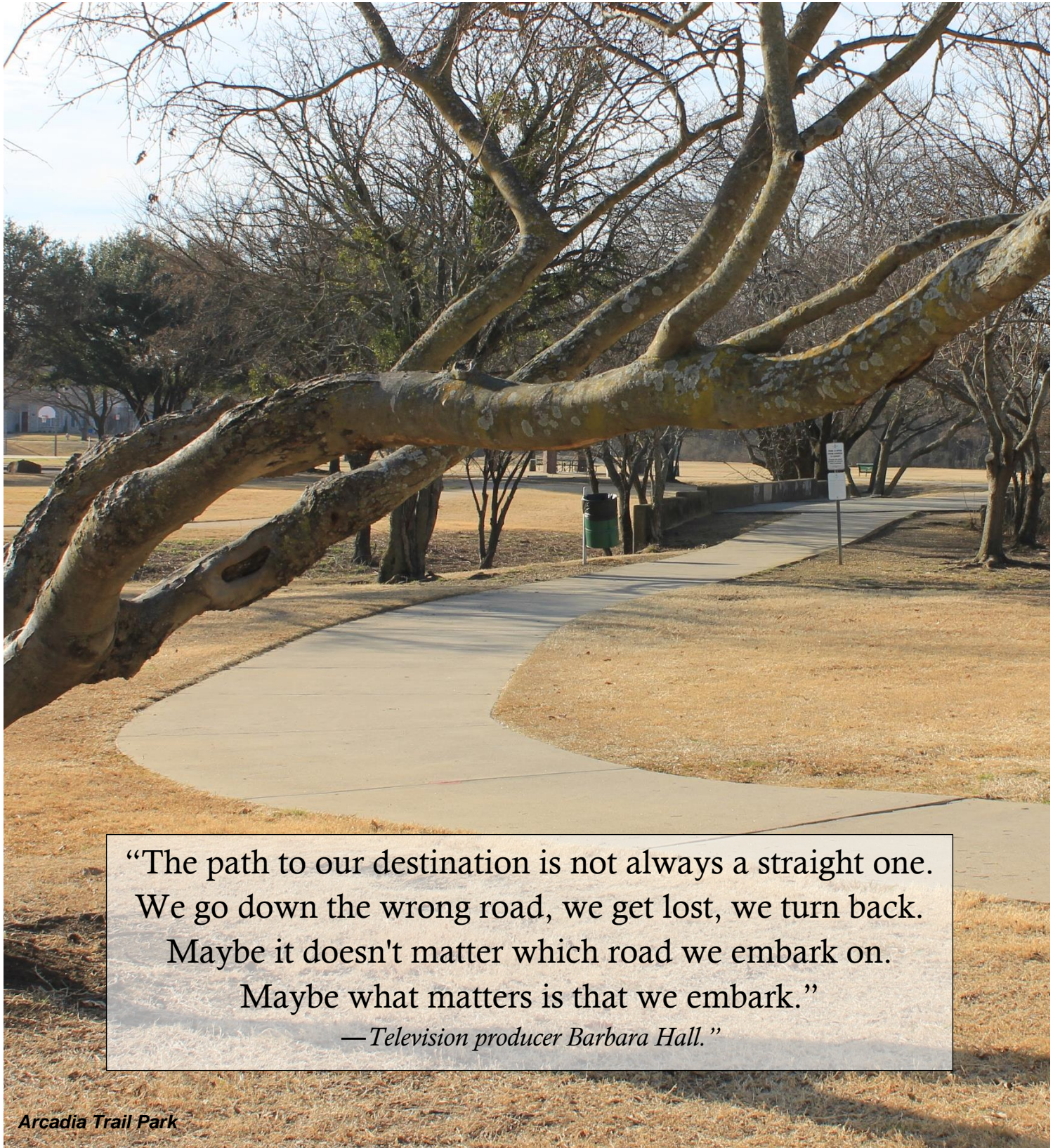
*Covered payroll in millions.

**The City of Fort Worth requested a change in the date of the evaluation from 1/1/2015 to 12/31/2014.

Staff Plan						
Valuation Date	Active	Average Age	Average Service	Covered Payroll	Average Salary	Percent Change
1/1/2012	19	44.7	6.0	1,547,810	81,464	3.4%
1/1/2013	19	47.4	6.8	1,467,047	77,213	-5.2%
1/1/2014	18	47.8	7.9	1,293,628	71,868	-6.9%
12/31/2014*	19	49.3	8.5	1,541,518	81,133	12.9%
12/31/2015*	19	47.2	8.7	1,639,398	86,284	6.3%
12/31/2016*	18	49.2	9.4	1,476,583	82,032	-4.9%
12/31/2017*	18	51.3	9.8	1,582,239	87,902	7.2%
12/31/2018*	16	46.8	10.2	1,494,667	93,417	6.3%
12/31/2019*	17	46.6	8.8	1,525,870	89,757	-3.9%
12/31/2020*	18	47.5	9.2	1,862,109	103,451	15.3%

*The City of Fort Worth requested a change in the date of the evaluation from 1/1/2015 to 12/31/2014.

STATISTICAL SECTION



“The path to our destination is not always a straight one.
We go down the wrong road, we get lost, we turn back.
Maybe it doesn't matter which road we embark on.
Maybe what matters is that we embark.”

—*Television producer Barbara Hall.*”

Statistical Information Overview

The objective of the Statistical Section is to provide financial statement users with additional historic perspective, context, and detail to assist in using the information in the Basic Financial Statements, Notes to the Basic Financial Statement, Required Supplementary Information, and Other Supplementary Information to understand and assess the Fund's economic condition. The information contained in the statistical section is divided into two distinct sections, financial trends and participant information. All information was derived from Audited Annual Financial Statements and/or our Benefit Administration System.

Financial Trends

The Financial trends section is intended to assist readers in understanding how the Fund's financial position has changed over time. The Changes in Plan Net Position for the last ten fiscal years presents additions by source, deductions by type, and total change in plan net position for each year. Additions to net position include member and city contributions. In addition to contributions, additions also include earnings for the Fund's investment activities. Deductions from Net Position are primarily benefit payments and refunds paid to participants.

Participant Data

Participant data can be found following the financial data in this section. The schedules include data on member population, age, years of service, and various levels of benefit payment analysis.

Schedule of Changes in Plan Net Position: City Plan

City Plan	2021	2020	2019	2018	2017
Additions					
Employee Contributions	\$ 60,281,553	\$ 56,250,684	\$ 40,634,725	\$ 37,618,303	\$ 35,963,200
Employer Contributions	128,046,174	124,743,976	113,109,911	93,504,064	89,408,134
Investment Income	524,024,718	110,570,539	67,729,548	145,408,403	250,912,773
Total Additions to Plan Net Position	712,352,445	291,565,199	221,474,184	276,530,770	376,284,107
Deductions					
Retirement	188,161,116	178,887,438	171,687,119	160,170,170	149,317,259
Disability	5,136,081	5,191,272	5,261,167	5,285,218	5,324,746
Survivors	20,548,531	19,151,120	17,899,384	17,231,458	16,706,717
DROP Payouts	24,372,952	23,236,549	25,734,915	28,978,582	21,871,121
Actuarial Equivalent	575,710	724,957	920,891	875,608	1,548,691
Refund of Contributions					
Separation	5,044,077	3,590,965	5,517,169	4,439,624	3,793,510
Death	143,659	182,217	218,439	821,036	49,555
Depreciation	120,844	118,393	122,282	107,178	114,971
Administrative Expenses	5,971,101	5,184,903	5,585,108	4,808,157	4,752,442
Total Deductions from Plan Net Position	250,074,071	236,267,814	232,946,474	222,717,031	203,479,012
Total Change in Plan Net Position	462,278,374	55,297,385	(11,472,290)	53,813,739	172,805,095
Net Position September 30	\$ 2,830,439,044	\$ 2,368,160,670	\$ 2,312,863,285	\$ 2,324,335,575	\$ 2,270,521,836

City Plan	2016	2015	2014	2013	2012
Additions					
Employee Contributions	\$ 33,977,411	\$ 32,541,773	\$ 31,929,289	\$ 33,633,645	\$ 32,715,940
Employer Contributions	84,746,991	80,820,598	78,165,049	77,992,863	77,264,739
Investment Income	166,305,791	(20,635,550)	159,994,300	192,363,635	208,022,063
Total Additions to Plan Net Position	285,030,193	92,726,821	270,088,638	303,990,143	318,002,742
Deductions					
Retirement	136,814,999	127,146,361	118,458,335	110,170,397	102,819,849
Disability	5,349,863	5,400,724	5,320,505	5,477,370	5,648,866
Survivors	16,447,307	15,746,605	15,282,876	14,649,530	14,190,329
DROP Payouts	21,903,824	13,397,352	13,745,000	12,476,037	14,108,183
Actuarial Equivalent	1,524,938	1,369,546	3,260,271	947,258	1,022,189
Refund of Contributions					
Separation	3,618,760	3,952,620	4,953,166	3,936,920	3,763,795
Death	160,187	52,747	138,447	58,463	262,294
Depreciation	113,526	143,219	130,935	143,945	139,428
Administrative Expenses	4,649,611	3,823,331	3,738,927	3,570,422	3,408,430
Total Deductions from Plan Net Position	190,583,015	171,032,505	165,028,462	151,430,342	145,363,363
Total Change in Plan Net Position	94,447,178	(78,305,684)	105,060,176	152,559,801	172,639,379
Net Position September 30	\$ 2,097,716,741	\$ 2,003,269,563	\$ 2,081,575,247	\$ 1,976,515,071	\$ 1,823,955,270

Schedule of Changes in Plan Net Position: Staff Plan

Staff Plan	2021	2020	2019	2018	2017
Additions					
Employee Contributions	\$ 328,077	\$ 124,619	\$ 127,207	\$ 131,067	\$ 124,339
Employer Contributions	497,821	353,767	241,316	250,059	237,224
Investment Income	1,400,587	278,161	170,225	303,812	500,246
Total Additions to Net Position	2,226,485	756,547	538,748	684,938	861,809
Deductions					
Retirement	181,061	179,160	55,314	1,780	-
Disability	-	-	-	-	-
Survivors	-	-	-	-	-
DROP Payouts	-	-	140,214	-	-
Actuarial Equivalent	-	-	-	-	-
Refund of Contributions	-	-	-	-	-
Death	-	-	-	-	-
Separation	-	-	-	14,294	35,933
Depreciation	342	300	288	238	228
Administrative Expenses	28,538	30,488	54,161	27,725	14,760
Total Deductions from Plan Net Position	209,941	209,948	249,977	44,037	50,921
Total Change in Plan Net Position	2,016,544	546,599	288,771	640,901	810,888
Net Position September 30	\$ 8,019,569	\$ 6,003,025	\$ 5,456,426	\$ 5,167,655	\$ 4,526,754

Staff Plan	2016	2015	2014	2013	2012
Additions					
Employee Contributions	\$ 130,973	\$ 126,984	\$ 296,093	\$ 122,316	\$ 115,338
Employer Contributions	249,881	242,270	225,536	233,365	220,052
Investment Income	286,116	(30,772)	209,544	196,564	154,278
Total Additions to Net Position	666,970	338,482	731,173	552,245	489,668
Deductions					
Retirement	-	-	-	-	-
Disability	-	-	-	-	-
Survivors	-	-	-	-	-
DROP Payouts	-	-	-	-	-
Actuarial Equivalent	-	-	-	-	-
Refund of Contributions	-	-	-	-	-
Death	-	-	-	-	8,270
Separation	11,754	16,747	-	-	16,791
Depreciation	196	214	172	147	114
Administrative Expenses	27,374	5,702	4,897	3,648	2,829
Total Deductions from Plan Net Position	39,324	22,663	5,069	3,795	28,004
Total Change in Plan Net Position	627,646	315,819	726,104	548,450	461,664
Net Position September 30	\$ 3,715,866	\$ 3,088,220	\$ 2,772,401	\$ 2,046,297	\$ 1,497,847

Schedule of Revenue by Source

For the Ten Years Ended September 30

Fiscal Year Ended	Member Contributions	Employer Contributions	Investment Income	Total Revenue
City Plan				
September 30, 2012	32,715,940	77,264,739	208,022,063	318,002,742
September 30, 2013	33,633,645	77,992,863	192,363,635	303,990,143
September 30, 2014	31,929,289	78,165,049	159,994,300	270,088,638
September 30, 2015	32,541,773	80,820,598	(20,635,550)	92,726,821
September 30, 2016	33,977,411	84,746,991	166,305,791	285,030,193
September 30, 2017	35,963,200	89,408,134	250,912,773	376,284,107
September 30, 2018	37,618,303	93,504,064	145,408,403	276,530,770
September 30, 2019	40,634,725	113,109,911	67,729,548	221,474,184
September 30, 2020	56,250,684	124,743,976	110,570,539	291,565,199
September 30, 2021	60,281,553	128,046,174	524,024,718	712,352,445
Staff Plan				
September 30, 2012	115,338	220,052	154,278	489,668
September 30, 2013	122,316	233,365	196,564	552,245
September 30, 2014*	296,093	225,536	209,544	731,173
September 30, 2015	126,984	242,270	(30,772)	338,482
September 30, 2016	130,973	249,881	286,116	666,970
September 30, 2017	124,339	237,224	500,246	861,809
September 30, 2018	131,067	250,059	303,812	684,938
September 30, 2019	127,207	241,316	170,225	538,748
September 30, 2020	124,619	353,767	278,161	756,547
September 30, 2021*	328,077	497,821	1,400,587	2,226,485

*Member contributions are greatly increased due to employee service purchases.

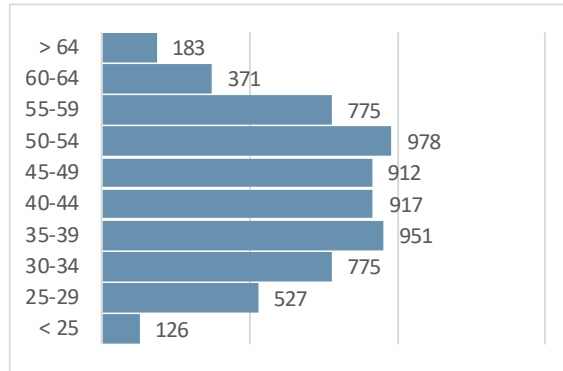
Membership Population

As of September 30

Year Ended	Active Members	Vested Terminated Members	Retired Members and Beneficiaries	Ratio of Non-Actives to Actives
City Plan				
September 30, 2012	6,281	279	3,636	0.62
September 30, 2013	6,278	277	3,706	0.63
September 30, 2014	6,199	296	3,820	0.66
September 30, 2015	6,198	317	3,906	0.68
September 30, 2016	6,280	355	4,042	0.70
September 30, 2017	6,414	363	4,252	0.72
September 30, 2018	6,579	375	4,391	0.72
September 30, 2019	6,589	375	4,583	0.75
September 30, 2020	6,709	398	4,679	0.76
September 30, 2021	6,515	401	4,829	0.80
Staff Plan				
September 30, 2012	19	-	-	-
September 30, 2013	18	1	-	0.06
September 30, 2014	19	1	-	0.05
September 30, 2015	19	2	-	0.11
September 30, 2016	18	3	-	0.17
September 30, 2017	18	5	-	0.28
September 30, 2018	18	7	1	0.39
September 30, 2019	16	7	4	0.69
September 30, 2020	17	6	4	0.59
September 30, 2021	18	6	4	0.56

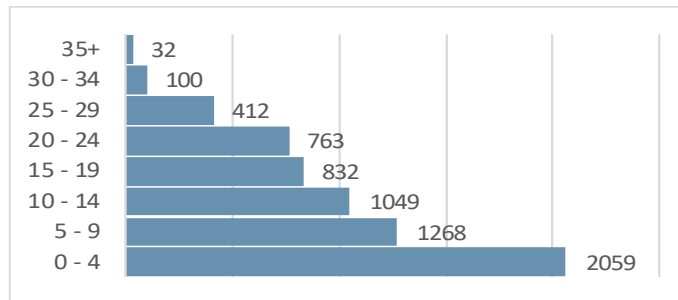
Distribution of Active Participants by Age

City Plan
as of December 31, 2020



Distribution of Active Participants by Service

City Plan
as of December 31, 2020



Distribution of Retired Members by Type of Benefits

City Plan

As of September 30, 2021

Amount of Monthly Benefit	Number of Retirees	Type of Retirement				
		1	2	3	4	5
\$ 1 - 500	219	64	23	96	8	28
\$ 501 - 1,000	458	103	2	311	10	32
\$ 1,001 - 1,500	415	104		259	22	30
\$ 1,501 - 2,000	410	107	-	259	34	10
\$ 2,001 - 2,500	419	106	-	266	37	10
\$ 2,501 - 3,000	374	74	-	280	14	6
\$ 3,001 - 3,500	374	64	-	281	24	5
\$ 3,501 - 4,000	311	54	-	240	15	2
\$ 4,001 - 4,500	259	34	-	219	6	-
\$ 4,501 - 5,000	235	20	-	210	5	-
\$ 5,001 - 5,500	210	17	-	191	2	-
\$ 5,501 - 6,000	220	8	-	212	-	-
\$ 6,001 - 6,500	188	7	-	179	1	1
\$ 6,501 - 7,000	185	4	-	180	1	-
Over \$7,000	552	2	-	550	-	-
	4,829	768	25	3,733	179	124

- 1 - Surviving Spouse
- 2 - Dependent Child
- 3 - Regular Retirement
- 4 - Disability Retirement
- 5 - QDRO/Alternate Payee

Schedule of Average Benefit Payments by Years of Service and Final Average Salary: City

Retirement Effective Dates	Years of Credited Service						
	0-4	5-9	10-14	15-19	20-24	25-29	30+
Period 01/01/2011 to 12/31/2011							
*Average Monthly Benefits	0	\$838	\$1,233	\$1,942	\$3,758	\$5,311	\$6,172
Average Final Salary	0	**	**	**	**	**	**
Number of Active Retirees	0	26	15	22	36	64	15
Period 01/01/2012 to 12/31/2012							
*Average Monthly Benefits	0	\$655	\$1,182	\$2,405	\$3,567	\$5,439	\$5,410
Average Final Salary	0	**	**	**	**	**	**
Number of Active Retirees	0	16	13	16	31	64	21
Period 01/01/2013 to 12/31/2013							
*Average Monthly Benefits	0	\$873	\$1,222	\$2,536	\$3,645	\$5,439	\$6,185
Average Final Salary	0	**	**	**	**	**	**
Number of Active Retirees	0	26	23	28	32	78	24
Period 01/01/2014 to 12/31/2014							
*Average Monthly Benefits	0	\$770	\$1,492	\$2,251	\$4,146	\$5,800	\$6,047
Average Final Salary	0	\$49,262	\$48,382	\$53,096	\$69,814	\$83,750	\$76,030
Number of Active Retirees	0	36	20	26	22	75	22
Period 01/01/2015 to 12/31/2015							
*Average Monthly Benefits	0	\$864	\$1,602	\$2,263	\$3,261	\$5,679	\$6,312
Average Final Salary	0	\$58,356	\$55,376	\$54,451	\$58,034	\$80,967	\$72,302
Number of Active Retirees	0	29	20	39	26	74	13
Period 01/01/2016 to 12/31/2016							
*Average Monthly Benefits	0	\$760	\$1,744	\$2,297	\$3,551	\$5,941	\$6,909
Average Final Salary	0	\$45,589	\$61,381	\$60,057	\$65,422	\$83,454	\$85,556
Number of Active Retirees	0	26	29	29	33	108	24

Schedule of Average Benefit Payments by Years of Service and Final Average Salary: City

(Continued)

Retirement Effective Dates	Years of Credited Service						
	0-4	5-9	10-14	15-19	20-24	25-29	30+
Period 01/01/2017 to 12/31/2017							
*Average Monthly Benefits	0	\$1,099	\$1,184	\$2,302	3,903	\$6,110	\$6,576
Average Final Salary	0	\$54,331	\$47,988	\$57,059	\$70,913	\$90,146	\$80,756
Number of Active Retirees	0	10	30	37	41	83	16
Period 01/01/2018 to 12/31/2018							
*Average Monthly Benefits	0	\$777	\$1,518	\$2,240	3,538	\$6,584	\$7,198
Average Final Salary	0	\$52,255	\$59,151	\$58,463	\$63,532	\$91,902	\$88,223
Number of Active Retirees	0	27	28	45	47	90	21
Period 01/01/2019 to 12/31/2019							
*Average Monthly Benefits	0	\$1,071	\$1,393	\$2,683	3,516	\$5,977	\$7,845
Average Final Salary	0	\$64,210	\$55,938	\$63,321	\$67,818	\$87,347	\$95,520
Number of Active Retirees	0	26	37	28	33	65	12
Period 01/01/2020 to 12/31/2020							
*Average Monthly Benefits	0	\$961	\$1,437	\$2,771	4,114	\$6,220	\$7,087
Average Final Salary	0	\$70,079	\$51,620	\$69,111	\$77,107	\$94,672	\$85,742
Number of Active Retirees	0	27	32	39	47	65	12
Period 01/01/2021 to 12/31/2021							
*Average Monthly Benefits	\$250	\$1,006	\$1,301	\$2,692	3,989	\$6,544	\$7,203
Average Final Salary	\$14,737	\$67,831	\$48,931	\$66,523	\$75,160	\$99,755	\$87,542
Number of Active Retirees	1	20	22	34	40	75	25

* Monthly benefits are actual benefits received during first year of retirement. These benefits may be higher than initial benefit for those that received COLAs while in DROP or converted DROP balance to a monthly annuity. Balances may be reduced for those that took a lump sum actuarial equivalent or elected a survivor option at the time of retirement.

Schedule of Average Benefit Payments by Years of Service and Final Average Salary: Staff

Retirement Effective Dates	Years of Credited Service		
	0-5	6-15	16-25
Period 01/01/2018 to 12/31/2018			
*Average Monthly Benefits	-	\$ 356	-
Average Final Salary	-	\$ 19,410	-
Number of Active Retirees	-	1	-
Period 01/01/2019 to 12/31/2019			
*Average Monthly Benefits	-	\$ 4,816	-
Average Final Salary	-	\$ 146,515	-
Number of Active Retirees	-	3	-
Period 01/01/20 to 12/31/2020			
*Average Monthly Benefits	-	-	-
Average Final Salary	-	-	-
Number of Active Retirees	-	-	-
Period 01/01/21 to 12/31/2021			
*Average Monthly Benefits	-	-	-
Average Final Salary	-	-	-
Number of Active Retirees	-	-	-

* Monthly benefits are actual benefits received during first year of retirement. These benefits may be higher than initial benefit for those that received COLAs while in DROP or converted DROP balance to a monthly annuity. Balances may be reduced for those that took a lump sum actuarial equivalent or elected a survivor option at the time of retirement.

Since the Staff Plan was separated from the City plan in 2007 some members are in both the City Plan and the Staff Plan. This represents only the years as part of the Staff Plan and the benefit paid by the Staff Plan. The portion attributed to the City Plan is counted under the amounts reported for the City Plan.

Schedule of Benefits by Type

September 30

Fiscal Year Ended	Retirement Benefits	Actuarial Equivalent	Disability Benefits	Survivor Benefits	DROP Payments	Total Benefits
City Plan						
September 30, 2011	\$ 94,629,017	\$ 1,231,860	\$ 5,673,945	\$ 13,724,270	\$ 10,893,575	\$ 126,152,667
September 30, 2012	102,819,849	1,022,189	5,648,866	14,190,329	14,108,183	137,789,416
September 30, 2013	110,170,397	947,258	5,477,370	14,649,530	12,476,037	143,720,592
September 30, 2014	118,458,335	3,260,271	5,320,505	15,282,876	13,745,000	156,066,987
September 30, 2015	127,146,361	1,369,546	5,400,724	15,746,605	13,397,352	163,060,588
September 30, 2016	136,814,999	1,524,938	5,349,863	16,447,307	21,903,824	182,040,931
September 30, 2017	149,317,259	1,548,691	5,324,746	16,706,717	21,871,121	194,768,534
September 30, 2018	160,170,170	875,608	5,285,218	17,231,458	28,978,582	212,541,036
September 30, 2019	171,687,119	920,891	5,261,167	17,899,384	25,734,915	221,503,476
September 30, 2020	178,887,438	724,957	5,191,272	19,151,120	23,236,549	227,191,336
September 30, 2021	188,161,116	575,710	5,136,081	20,548,531	24,372,952	238,794,390
Staff Plan						
September 30, 2018	\$ 1,780	\$ -	\$ -	\$ -	\$ -	\$ 1,780
September 30, 2019	55,314	-	-	-	140,214	195,528
September 30, 2020	179,160	-	-	-	-	179,160
September 30, 2021	181,061	-	-	-	-	181,061

Schedule of Average Benefit Payment Amounts

September 30

Year	Number of Retirees	Benefits Paid During the Year	Average Monthly
City Plan			
2011	3,517	\$ 126,152,667	\$ 2,989
2012	3,636	137,789,416	3,158
2013	3,706	143,720,592	3,232
2014	3,820	156,066,987	3,405
2015	3,906	163,060,588	3,479
2016	4,042	182,040,931	3,753
2017	4,252	194,768,534	3,817
2018	4,391	212,541,036	4,034
2019	4,583	221,503,476	4,028
2020	4,679	227,191,336	4,046
2021	4,829	238,794,390	4,121
Staff Plan			
2018	1	\$ 1,780	\$ 356
2019	4	195,528	4,074
2020	4	179,160	3,733
2021	4	181,061	3,772

**Independent Auditor's Report On Internal Control Over
Financial Reporting and on Compliance and Other Matters
Based on Audit of Financial Statements
Performed in Accordance with Governmental Auditing
Standards**



Independent Auditor's Report on Internal Control over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance with *Government Auditing Standards*

To the Board of Trustees
Employees' Retirement Fund of the
City of Fort Worth, Texas

We have audited, in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the combined financial statements of the Employees' Retirement Fund of the City of Fort Worth, Texas (the Fund) which comprise the combined statement of fiduciary net position and the related combined statement of changes in fiduciary net position as of and for the year ended September 30, 2021, and the related notes to the combined financial statements, which collectively comprise the Fund's combined financial statements, and have issued our report thereon dated December 16, 2021.

Internal Control over Financial Reporting

In planning and performing our audit of the combined financial statements, we considered the Fund's internal control over financial reporting (internal control) as a basis for designing the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinions on the combined financial statements, but not for the purpose of expressing an opinion on the effectiveness of the Fund's internal control. Accordingly, we do not express an opinion on the effectiveness of the Fund's internal control.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the Fund's combined financial statements will not be prevented or detected and corrected on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

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Compliance and Other Matters

As part of obtaining reasonable assurance about whether the Fund's combined financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the combined financial statements. However, providing an opinion on compliance with those provisions was not an objective of our audit and, accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the Fund's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Fund's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

A handwritten signature in black ink that reads "Eric Bailly LLP". The signature is written in a cursive, flowing style.

Boise, Idaho
December 16, 2021



“The road to success is not a path
you find, but a trail you blaze.”

— *Opera singer Robert Breault*

