

WICHITA FALLS FIREMEN'S
RELIEF AND RETIREMENT FUND

ACTUARIAL VALUATION
AS OF JANUARY 1, 2018



July 5, 2018

Board of Trustees
Wichita Falls Firemen's
Relief and Retirement Fund
624 Indiana Ave, Suite 305
Wichita Falls, TX 76301

Re: Wichita Falls Firemen's Relief and Retirement Fund

Dear Board:

We are pleased to present to the Board this report of the actuarial valuation of the Wichita Falls Firemen's Relief and Retirement Fund. Included are the related results for GASB Statement No. 67. The funding valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits and to develop the funding period required to amortize any existing Unfunded Actuarial Accrued Liability. The calculation of the liability for GASB results was performed for the purpose of satisfying the requirements of GASB Statement No. 67. Please note that these valuations may not be applicable for any other purposes.

The valuation has been conducted in accordance with generally accepted actuarial principles and practices, including the applicable Actuarial Standards of Practice as issued by the Actuarial Standards Board, and reflects laws and regulations issued to date pursuant to the provisions of the Texas Local Fire Fighters' Retirement Act (TLFFRA) and Vernon's Texas Civil Statutes, as well as applicable federal laws and regulations. Future actuarial measurements may differ significantly from the current measurements presented in this report for a variety of reasons including: changes in applicable laws, changes in plan provisions, changes in assumptions, or plan experience differing from expectations.

In conducting the valuation, we have relied on personnel, plan design, financial reports, and asset information supplied by the Fund staff, and the actuarial assumptions and methods described in the Actuarial Assumptions section of this report. While we cannot verify the accuracy of all this information, the supplied information was reviewed for consistency and reasonableness. As a result of this review, we have no reason to doubt the substantial accuracy of the information and believe that it has produced appropriate results. This information, along with any adjustments or modifications, is summarized in various sections of this report.

The total pension liability, net pension liability, and certain sensitivity information shown in this report are based on an actuarial valuation performed as of January 1, 2017. It is our opinion that the assumptions used for this purpose are internally consistent, reasonable, and comply with the requirements under GASB No. 67.

The undersigned is familiar with the immediate and long-term aspects of pension valuations, and meets the Qualification Standards of the American Academy of Actuaries necessary to render the actuarial opinions contained herein. All of the sections of this report are considered an integral part of the actuarial opinions.

To our knowledge, no associate of Foster & Foster Inc. working on valuations of the program has any direct financial interest or indirect material interest in the City of Wichita Falls, nor does anyone at Foster & Foster Inc. act as a member of the Board of Trustees of the Wichita Falls Firemen's Relief and Retirement Fund. Thus, there is no relationship existing that might affect our capacity to prepare and certify this actuarial report.

If there are any questions, concerns, or comments about any of the items contained in this report, please contact me at 239-433-5500.

Respectfully submitted,

Foster & Foster Inc.

By:



Bradley R. Heinrichs, FSA, EA, MAAA
Enrolled Actuary #17-6901

BRH/lke

Enclosures

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SUMMARY OF REPORT

The annual actuarial valuation of the Wichita Falls Firemen's Relief and Retirement Fund, performed as of January 1, 2018, has been completed and the results are presented in this Report. The pension costs, compared with those developed in the January 1, 2017 actuarial valuation, are as follows:

	New Assump/Method	Old Assump/Method	Old Assump/Method
Valuation Date	<u>1/1/2018</u>	<u>1/1/2018</u>	<u>1/1/2017</u>
Current Normal Cost Rate	15.78%	15.27%	15.21%
% of Covered Annual Payroll			
Actuarial Accrued Liability (AAL)	\$88,946,081	\$84,765,236	\$79,707,755
Actuarial Value of Assets (AVA)	\$51,317,643	\$50,932,675	\$49,802,579
Unfunded Actuarial Accrued Liability (UAAL = AAL - AVA)	\$37,628,438	\$33,832,561	\$29,905,176
Funded Ratio (AVA / AAL)	57.7%	60.1%	62.5%
Amortization Period	Infinite	56.1 years	49.4 years
Expected City Contribution Rate	12.00%	12.00%	12.00%
Expected Member Contribution Rate	13.00%	13.00%	13.00%
City 20-Year Funding Cost	24.83%	21.09%	19.90%
City 30-Year Funding Cost ¹²	19.53%	16.22%	15.39%
City 40-Year Funding Cost	17.02%	13.89%	13.21%

Please note the amortization period shown above reflects that the City is scheduled to contribute 12.83% of payroll in 2018 and 12.77% of payroll in 2019.

¹ *The Texas Pension Review Board Pension Funding Guidelines, effective June 30, 2017, state that plans with amortization periods that exceed 30 years as of June 30, 2017 should seek to reduce their amortization period to 30 years or less as soon as practicable, but not later than June 30, 2025.*

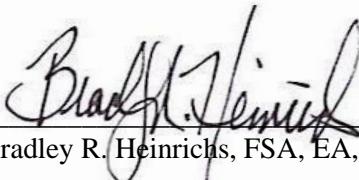
² *Per Section 802.101(a) of the Texas Government Code, the actuarial valuation must include a recommended contribution rate needed for the system to achieve and maintain an amortization period that does not exceed 30 years.*

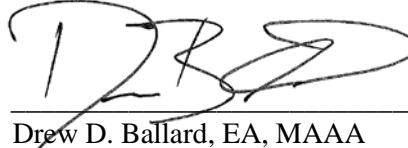
During the past year, there was net unfavorable actuarial experience. The primary components of actuarial loss were attributable to unfavorable retirement experience and average increases in pensionable earnings that exceeded the assumed rate.

The balance of this Report presents additional details of the actuarial valuation and the general operation of the Fund. The undersigned would be pleased to meet with the Board of Trustees in order to discuss the Report and answer any pending questions concerning its contents.

Respectfully submitted,

FOSTER & FOSTER INC.

By: 
Bradley R. Heinrichs, FSA, EA, MAAA

By: 
Drew D. Ballard, EA, MAAA

CHANGES SINCE PRIOR VALUATION

Benefit/Fund Changes

There have been no changes in plan benefits since the prior valuation.

Actuarial Assumption/Method Changes

As a result of an actuarial experience study dated October 6, 2017, there have been a number of changes to the actuarial assumptions and methods in conjunction with this report, as approved by the Board of Trustees. The changes are shown below and illustrated in the actuarial assumptions and methods section of this report.

- The actuarial asset method was changed to eliminate asset smoothing
- The investment return assumption was lowered from 8.00% to 7.75% per year, net of all expenses
- The assumed rates of salary increases were amended
- The payroll growth assumption was lowered from 4.50% to 4.00% per year
- The assumed rates of retirement were amended
- The assumed rates of withdrawal were amended
- The assumed rates of disablement were amended

COMPARATIVE SUMMARY OF PRINCIPAL VALUATION RESULTS

	New Assump/Method <u>1/1/2018</u>	Old Assump/Method <u>1/1/2018</u>	Old Assump/Method <u>1/1/2017</u>
A. Participant Data			
Actives	155	155	157
Service Retirees + DROP	106	106	97
Beneficiaries + Alternate Payees	27	27	25
Disability Retirees	2	2	2
Terminated Vested	1	1	2
 Total	 291	 291	 283
Covered Annual Payroll	11,887,244	11,898,175	11,279,619
Annual Rate of Payments to:			
Service Retirees + DROP	4,283,040	4,283,040	3,769,473
Beneficiaries + Alternate Payees	334,875	334,875	310,933
Disability Retirees	37,495	37,495	37,495
Terminated Vested	0	0	48,704
B. Assets			
Actuarial Value	51,317,643	50,932,675	49,802,579
Market Value	51,317,643	51,317,643	46,915,744
C. Liabilities			
Present Value of Benefits			
Active Members			
Retirement Benefits	55,530,597	49,159,698	48,146,265
Termination Benefits	2,052,487	1,780,141	1,601,305
Death Benefits	784,189	1,066,897	1,004,881
Disability Benefits	1,718,395	4,779,077	4,548,867
Service Retirees + DROP	44,279,704	43,404,521	38,302,080
Beneficiaries + Alternate Payees	2,399,518	2,364,025	2,148,253
Disability Retirees	421,221	412,248	416,897
Terminated Vested	9,913	9,913	566,677
 Total	 107,196,024	 102,976,520	 96,735,225

	New Assump/Method <u>1/1/2018</u>	Old Assump/Method <u>1/1/2018</u>	Old Assump/Method <u>1/1/2017</u>
C. Liabilities - (Continued)			
Present Value of Future Salaries	117,820,181	130,691,144	120,893,782
Normal Cost (Entry Age Normal)			
Retirement Benefits	1,498,101	1,348,272	1,282,271
Termination Benefits	183,110	152,917	136,432
Death Benefits	43,225	49,890	46,440
Disability Benefits	81,253	195,547	184,991
Total Normal Cost	1,805,689	1,746,626	1,650,134
Present Value of Future Normal Costs	18,249,943	18,211,284	17,027,470
Actuarial Accrued Liability			
Retirement Benefits	40,094,543	34,802,256	34,672,426
Termination Benefits	481,224	495,843	435,271
Death Benefits	353,604	552,283	531,291
Disability Benefits	906,354	2,724,147	2,634,860
Inactives	47,110,356	46,190,707	41,433,907
Total Actuarial Accrued Liability	88,946,081	84,765,236	79,707,755
Unfunded Actuarial Accrued Liability (UAAL)	37,628,438	33,832,561	29,905,176
Funded Ratio (AVA / AL)	57.7%	60.1%	62.5%
D. Actuarial Present Value of Accrued Benefits			
Inactives	47,110,356	46,190,707	41,433,907
Actives	29,638,516	24,845,821	25,467,112
Total Present Value Accrued Benefits	76,748,872	71,036,528	66,901,019
Funded Ratio (MVA / PVAB)	66.9%	72.2%	70.1%

GAIN/LOSS ANALYSIS

a. Total Gain/(Loss)

1. Unfunded Actuarial Accrued Liability as of January 1, 2017	29,905,176
2. Normal Cost applicable for 2017	1,650,134
3. Interest on (1) and (2)	2,524,425
4. Contributions made during 2017	2,874,474
5. Interest on (4)	114,979
6. Expected UAAL as of January 1, 2018: (1)+(2)+(3)-(4)-(5)	31,090,282
7. Actual UAAL as of January 1, 2018 (Before Changes)	33,832,561
 Total Actuarial Gain/(Loss)	 (2,742,279)

b. Gain/(Loss) on Assets

1. Actuarial Value of Assets as of January 1, 2017	49,802,579
2. Contributions Less Benefit Payments	(2,507,776)
3. Expected Investment Earnings	3,883,895
4. Expected AVA as of January 1, 2018: (1)+(2)+(3)	51,178,698
5. Actual AVA as of January 1, 2018 (Before Changes)	50,932,675
 Gain/(Loss) on Assets	 (246,023)

c. Gain/(Loss) on Liabilities

1. Expected Actuarial Accrued Liability: a(6)+b(4)	82,268,980
2. Actual Actuarial Accrued Liability (Before Changes)	84,765,236
 Gain/(Loss) on Liabilities	 (2,496,256)

ACTUARIAL ASSUMPTIONS AND METHODS

Mortality Rates

RP-2000 projected to 2024 using Scale AA -- Sex Distinct. We feel this sufficiently accommodates expected mortality improvements.

Retirement Age

Hired prior to April 21, 2016:

Years Following Retirement Eligibility	Rate
0	25.0%
1	5.0
2	5.0
3	5.0
4	5.0
5	33.3
6	50.0
7	25.0
8	25.0
9	25.0
10+	100.0

Hired after April 20, 2016:

Age	Service										
	20	21	22	23	24	25	26	27	28	29	30+
55	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
56	0.25	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
57	0.25	0.05	0.05	0.05	0.05	0.5	0.5	0.5	0.5	0.5	0.5
58	0.25	0.05	0.05	0.05	0.05	0.5	0.5	0.5	0.5	0.5	0.5
59	0.25	0.05	0.05	0.05	0.05	0.5	0.5	0.75	0.75	0.75	0.75
60+	0.25	0.05	0.05	0.05	0.05	1	1	1	1	1	1

The assumed rates of retirement were approved in conjunction with an actuarial experience study dated October 2017.

Retirement Election

Members eligible for the DROP are assumed to elect either straight service retirement benefits or the DROP, whichever is more valuable. Other members are assumed to receive straight service retirement benefits.

Termination Rates

Service	Rate
<4	8.0%
4-10	4.0
11+	0.75

The assumed rates of termination were approved in conjunction with an actuarial experience study dated October 2017.

Disability Rates

Sample rates are displayed below.

<u>Age</u>	<u>Rate</u>
25	0.056%
35	0.076%
45	0.168%
55	0.429%

The assumed rates of disablement were approved in conjunction with an actuarial experience study dated October 2017.

Interest Rate

7.75% per year, compounded annually, net of expenses. This is supported by the asset allocation of the trust and the long-term expected return by asset class.

Salary Increases

<u>Service</u>	<u>Increase</u>
<2	12.0%
2-8	6.5%
9-19	5.0%
20+	3.5%

The assumed rates of salary increase were approved in conjunction with an actuarial experience study dated October 2017.

Payroll Growth

4.00% per year for amortization of the Unfunded Actuarial Accrued Liability. The assumed payroll growth rate was approved in conjunction with an actuarial experience study dated October 2017.

Funding Method

Entry Age Normal Actuarial Cost Method

Marital Status

100% of actives are assumed to be married at time of benefit commencement. Males are assumed to be two years older than their spouses.

Dependent Children

Each member is assumed to have two children. The first child is assumed to have been born when the member was age 25. The second child is assumed to be two years younger. It is also assumed that benefits will be paid until each child reaches the age of 20.

Contribution Rates

Members – 13.00%
City – 12.00% (12.83% in 2018, 12.77% in 2019)

Actuarial Asset Method

Fair Market Value.

VALUATION NOTES

Covered Annual Payroll is the projected annual rate of pay for the year beginning on the valuation date of all active participants

Present Value of Benefits is the single sum value on the valuation date of all future benefits to be paid to current Members, Retirees, Beneficiaries, Disability Retirees and Vested Terminations.

Entry Age Normal Cost Method - Under this method, the normal cost is the sum of the individual normal costs for all active participants. For an active participant, the normal cost is the participant's normal cost accrual rate, multiplied by the participant's current compensation. The funding span utilized in determination of the normal cost rate for each benefit is to the last age at which that benefit is payable.

- (a) The normal cost accrual rate equals:
 - (i) the present value of future benefits for the participant, determined as of the participant's entry age, divided by
 - (ii) the present value of the compensation expected to be paid to the participant for each year of the participant's anticipated future service, determined as of the participant's entry age .
- (b) In calculating the present value of future compensation, the salary scale is applied both retrospectively and prospectively to estimate compensation in years prior to and subsequent to the valuation year based on the compensation used for the valuation.
- (c) The accrued liability is the sum of the individual accrued liabilities for all participants and beneficiaries. A participant's accrued liability equals the present value, at the participant's attained age, of future benefits less the present value at the participant's attained age of the individual normal costs payable in the future. A beneficiary's accrued liability equals the present value, at the beneficiary's attained age, of future benefits. The unfunded accrued liability equals the total accrued liability less the actuarial value of assets.
- (d) Under this method, the entry age used for each active participant is the participant's age at the time he or she would have commenced participation if the plan had always been in existence under current terms, or the age as of which he or she first earns service credits for purposes of benefit accrual under the current terms of the plan.

STATEMENT BY ENROLLED ACTUARY

This actuarial valuation was prepared and completed by me or under my direct supervision, and I acknowledge responsibility for the results. To the best of my knowledge, the results are complete and accurate, and in my opinion, the techniques and assumptions used are reasonable and meet the requirements and intent of the Texas Local Fire Fighters' Retirement Act (TLFFRA), and adhere to the Actuarial Standards of Practice. There is no benefit or expense to be provided by the plan and/or paid from the plan's assets for which liabilities or current costs have not been established or otherwise taken into account in the valuation. All known events or trends which may require a material increase in plan costs or required contribution rates have been taken into account in the valuation.



Bradley R. Heinrichs, FSA, EA, MAAA
Enrolled Actuary #17-6901

STATEMENT OF FIDUCIARY NET POSITION
DECEMBER 31, 2017

<u>ASSETS</u>	COST	VALUE	MARKET VALUE
Cash and Cash Equivalents:			
Checking Account	200.00		200.00
Money Market	130,986.50		130,986.50
Total Cash and Equivalents	131,186.50		131,186.50
Receivables:			
Investment Income	50,677.67		50,677.67
Total Receivable	50,677.67		50,677.67
Investments:			
U. S. Bonds and Bills	4,105,633.28		4,090,597.50
Federal Agency Guaranteed Securities	1,086,925.99		1,087,266.06
Corporate Bonds	700,547.56		719,506.49
Stocks	1,935,035.83		1,010,547.72
Mutual Funds:			
Fixed Income	8,611,903.56		8,366,862.49
Equity	15,886,189.72		17,638,724.04
Pooled/Common/Commingled Funds:			
Fixed Income	1,825,757.71		1,823,378.89
Equity	10,230,957.57		14,428,844.42
Real Estate	2,000,000.00		2,126,077.42
Total Investments	46,382,951.22		51,291,805.03
Total Assets	46,564,815.39		51,473,669.20
<u>LIABILITIES</u>			
Payables:			
DROP Distributions	129,977.76		129,977.76
Investment Expenses	26,048.14		26,048.14
Total Liabilities	156,025.90		156,025.90
NET POSITION RESTRICTED FOR PENSIONS	46,408,789.49		51,317,643.30

**STATEMENT OF CHANGES IN FIDUCIARY NET POSITION
FOR THE YEAR ENDED DECEMBER 31, 2017
Market Value Basis**

ADDITIONS

Contributions:

Member	1,463,122.44
City	1,411,351.34
 Total Contributions	 2,874,473.78
 Investment Income:	
Net Realized Gain (Loss)	4,413,508.44
Unrealized Gain (Loss)	1,326,509.34
Net Increase in Fair Value of Investments	5,740,017.78
Interest & Dividends	1,491,610.10
Less Investment Expense ¹	(198,290.19)
 Net Investment Income	 7,033,337.69
 Total Additions	 9,907,811.47

DEDUCTIONS

Distributions to Members:

Benefit Payments	4,480,824.74
Lump Sum DROP Distributions	874,731.41
Refunds of Member Contributions	26,693.49
 Total Distributions	 5,382,249.64
 Administrative Expense	 123,662.41
 Total Deductions	 5,505,912.05
 Net Increase in Net Position	 4,401,899.42
 NET POSITION RESTRICTED FOR PENSIONS	
Beginning of the Year	46,915,743.88
 End of the Year	 51,317,643.30

¹Investment related expenses include investment advisory, custodial and performance monitoring fees.

ACTUARIAL ASSET VALUATION
December 31, 2017

Actuarial Assets for funding purposes are developed by recognizing the total actuarial investment gain or loss for each Plan Year over a five year period. In the first year, 20% of the gain or loss is recognized. In the second year 40%, in the third year 60%, in the fourth year 80%, and in the fifth year 100% of the gain or loss is recognized. The actuarial investment gain or loss is defined as the actual return on investments minus the actuarial assumed investment return. Actuarial Assets shall not be less than 80% nor greater than 120% of Market Value of Assets.

Plan Year Ending	Gain/(Loss)	<u>Gains/(Losses) Not Yet Recognized</u>				
		2018	2019	2020	2021	2022
12/31/2013	1,695,791	0	0	0	0	0
12/31/2014	(396,499)	(79,299)	0	0	0	0
12/31/2015	(3,188,589)	(1,275,435)	(637,717)	0	0	0
12/31/2016	(1,442,800)	(865,680)	(577,120)	(288,560)	0	0
12/31/2017	3,256,727	2,605,382	1,954,037	1,302,692	651,347	0
Total		384,968	739,200	1,014,132	651,347	0

<u>Development of Investment Gain/(Loss)</u>	
Market Value of Assets, 12/31/2016	46,915,744
Contributions Less Benefit Payments	(2,507,776)
Expected Investment Earnings*	3,652,948
Actual Net Investment Earnings	6,909,675
2017 Actuarial Investment Gain/(Loss)	<u>3,256,727</u>

*Expected Investment Earnings = 0.08 * [46,915,744 + 0.5 * (2,507,776)]

<u>Development of Actuarial Value of Assets</u>	
(1) Market Value of Assets, 12/31/2017	51,317,643
(2) Gains/(Losses) Not Yet Recognized	384,968
(3) Actuarial Value of Assets, 12/31/2017, (1) - (2)	<u>50,932,675</u>

(A) 12/31/2016 Actuarial Assets: 49,802,579

(I) Net Investment Income:	
1. Interest, Dividends and Misc Income	1,491,610
2. Realized Gains (Losses)	4,413,508
3. Change in Actuarial Value	(1,945,294)
4. Investment & Administrative Expenses	(321,953)
Total	<u>3,637,872</u>

(B) 12/31/2017 Actuarial Assets: 50,932,675

Actuarial Asset Rate of Return = $2I/(A+B-I)$: 7.49%
Market Value of Assets Rate of Return: 15.13%

12/31/2017 Limited Actuarial Assets: 50,932,675

Actuarial Gain/(Loss) due to Investment Return (Actuarial Asset Basis) (246,023)

CHANGES IN NET ASSETS AVAILABLE FOR BENEFITS
DECEMBER 31, 2017
Actuarial Asset Basis

REVENUES

Contributions:	
Member	1,463,122.44
City	1,411,351.34
Total Contributions	2,874,473.78
Earnings from Investments:	
Interest & Dividends	1,491,610.10
Net Realized Gain (Loss)	4,413,508.44
Change in Actuarial Value	(1,945,293.66)
Total Earnings and Investment Gains	3,959,824.88

EXPENDITURES

Distributions to Members:	
Benefit Payments	4,480,824.74
Lump Sum DROP Distributions	874,731.41
Refunds of Member Contributions	26,693.49
Total Distributions	5,382,249.64
Expenses:	
Investment related ¹	198,290.19
Administrative	123,662.41
Total Expenses	321,952.60
Change in Net Assets for the Year	1,130,096.42
Net Assets Beginning of the Year	49,802,578.88
Net Assets End of the Year ²	50,932,675.30

¹Investment related expenses include investment advisory, custodial and performance monitoring fees.

²Net Assets may be limited for actuarial consideration.

STATISTICAL DATA

	<u>1/1/2016</u>	<u>1/1/2017</u>	<u>1/1/2018</u>
Actives	157	157	155
Average Current Age	39.8	39.6	38.7
Average Age at Employment	25.4	25.6	25.3
Average Past Service	14.4	14.0	13.4
Average Annual Salary	\$67,898	\$71,845	\$76,692

AGE AND SERVICE DISTRIBUTION

PAST SERVICE

AGE	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30+	Total
15 - 19	0	0	0	0	0	0	0	0	0	0	0	0
20 - 24	7	0	2	3	0	0	0	0	0	0	0	12
25 - 29	3	4	1	3	4	9	1	0	0	0	0	25
30 - 34	1	2	0	4	2	11	3	0	0	0	0	23
35 - 39	0	0	1	4	1	2	14	4	0	0	0	26
40 - 44	0	0	0	0	0	0	5	14	2	0	0	21
45 - 49	0	0	0	0	0	0	2	8	4	2	0	16
50 - 54	0	0	0	0	0	0	0	6	5	6	6	23
55 - 59	0	0	0	0	0	0	0	0	1	1	5	7
60 - 64	0	0	0	0	0	0	0	0	0	2	0	2
65+	0	0	0	0	0	0	0	0	0	0	0	0
Total	11	6	4	14	7	22	25	32	12	11	11	155

VALUATION PARTICIPANT RECONCILIATION

1. Active lives

a. Number in prior valuation 1/1/2017	157
b. Terminations	
i. Vested with deferred benefits	1 *
ii. Non-vested or full lump sum distribution received	3
c. Deaths	
i. Beneficiary receiving benefits	0
ii. No future benefits payable	0
d. Disabled	0
e. Retired or Entered DROP	9
f. Continuing participants	144
g. New entrants	11
h. Total active life participants in valuation	155

2. Non-Active lives (including beneficiaries receiving benefits)

	Service Retirees, DROP Receiving Benefits	Receiving Death / QDRO Benefits	Receiving Disability Benefits	Vested Deferred *	<u>Total</u>
a. Number prior valuation	97	25	2	2	126
b. In	10	3	0	1	14
c. Out	1	1	0	2	4
d. Number current valuation	106	27	2	1	136

* Includes non-vested members awaiting a refund of contributions.

SUMMARY OF BENEFIT PROVISIONS

Credited Service

Period of continuous employment covered by the Fund during which a member pays into, and keeps on deposit in the Fund, the contributions required by the Fund. Credited Service will be calculated in completed months.

Compensation

Total bi-weekly pay, including regular, longevity and overtime pay, and pay received during a period of sick leave or vacation, but excluding lump sum distributions for unused sick leave and/or unused vacation time and pay classified by the City or Department as "merit" pay.

Average Salary

Hired prior to April 21, 2016: Average Compensation over the 78 consecutive pay periods of service which produces the highest average, multiplied by 2.167.

Hired after April 20, 2016: Average Compensation over the 130 consecutive pay periods of service which produces the highest average, multiplied by 2.167.

Member Contributions

12.00% of Compensation. Effective April 20, 2016, 13.00% of Compensation.

Service Retirement

Date

Hired prior to April 21, 2016: Attainment of age 50 and 20 years of Credited Service.

Hired after April 20, 2016: Attainment of age 55 and 20 years of Credited Service.

Benefit

Hired prior to April 21, 2016: 2.55% of Average Salary for each year of Credited Service.

Hired after April 20, 2016: 2.50% of Average Salary for each year of Credited Service.

Form of Benefit

Life Annuity with two-thirds (2/3) continued to Surviving Spouse.

Disability

Prior to Attainment of Age 50

Hired prior to January 1, 2004: 50.0% of Average Salary, payable until attainment of age 50.

Hired After December 31, 2003:

Service related – 50.0% of Average Salary, payable until attainment of age 50.
Non-service related – Average Salary multiplied by a factor based on below table, payable until attainment of age 50.

<u>Service</u>	<u>Factor</u>
0-1	5%
2	10
3	15
4	20
5	25
6	30
7	35
8	40
9	45
10+	50

Attainment of Age 50 Following Disability

2.55% multiplied by Average Salary at time of disability for each year of service assuming the member continued employment to age 50 (maximum = 20 years of service).

Attainment of Age 50 Prior to Disability

2.55% multiplied by Average Salary at time of disability for each year of service.

Death Benefits

Surviving Spouse of Member:

Prior to Normal Retirement Eligibility

Two-thirds (2/3) multiplied by Average Salary at time of death multiplied by 2.55% for each year of service assuming the member continued employment to age 50.

Following Normal Retirement Eligibility

Two-thirds (2/3) of the member's accrued benefit, as described under the Service Retirement benefit provision.

Dependent Children of Member:

Each child is entitled to \$230 per month, payable until age 18 or until age 23 as long as the child remains a full-time student.

Retroactive Deferred Retirement Option Program

Eligibility

Hired prior to April 21, 2016: Attainment of age 55 and 25 years of Credited Service.

Participation Period

Hired after April 20, 2016: Attainment of age 57 and 25 years of Credited Service.

Hired prior to April 21, 2016: Not to exceed 24 months retroactively (53/23).

Hired after April 20, 2016: Not to exceed 24 months retroactively (55/23).

Accumulation

Sum of the monthly Service Retirement benefit the member would have received if had retired on the Retroactive DROP election date.

STATEMENT OF FIDUCIARY NET POSITION
DECEMBER 31, 2017

<u>ASSETS</u>	MARKET VALUE
Cash and Cash Equivalents:	
Money Market	2,877
Cash	128,309
 Total Cash and Equivalents	 131,186
Receivables:	
Distribution Receivable	79,084
Investment Income	37,613
 Total Receivable	 116,697
Investments:	
Investments in Partnership	3,085,488
Mutual Funds	42,174,303
U.S. Treasury and Agency Securities	5,177,864
Corporate Bonds	719,507
Real Estate Investment Trusts	0
 Total Investments	 51,157,162
 Total Assets	 51,405,045
 <u>LIABILITIES</u>	
Payables:	
Investment Expenses	26,048
 Total Liabilities	 26,048
 NET POSITION RESTRICTED FOR PENSIONS	 51,378,997

**STATEMENT OF CHANGES IN FIDUCIARY NET POSITION
FOR THE YEAR ENDED DECEMBER 31, 2017**
Market Value Basis

ADDITIONS

Contributions:

Member	1,463,122
City	1,411,351
 Total Contributions	 2,874,473

Investment Income:

Net Increase in Fair Value of Investments	5,583,486
Interest & Dividends	1,281,301
Less Investment Expense ¹	(283,488)
 Net Investment Income	 6,581,299

Other Income	347,490
 Total Additions	 9,803,262

DEDUCTIONS

Distributions to Members:

Benefits paid to participants	4,478,593
Lump Sum DROP Distributions	744,754
Refunds and drop payments	26,693
 Total Distributions	 5,250,040

Administrative Expense	124,267
 Total Deductions	 5,374,307
 Net Increase in Net Position	 4,428,955

NET POSITION RESTRICTED FOR PENSIONS

Beginning of the Year	46,950,042
 End of the Year	 51,378,997

¹Investment related expenses include investment advisory, custodial and performance monitoring fees.

NOTES TO THE FINANCIAL STATEMENTS
 (For the Year Ended December 31, 2017)

Plan Description

Plan Administration

The Wichita Falls Firemen's Relief and Retirement Fund is a single-employer defined benefit plan, established under the authority of the Texas Local Fire Fighter's Retirement Act (TLFFRA). The fund is administered by a Board of Trustees. The Board is made up of three members elected from and by the fund members, two representatives of the City of Wichita Falls, Texas, and two citizen members.

Plan Membership as of January 1, 2017:

Inactive Plan Members or Beneficiaries Currently Receiving Benefits	124
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	2
Active Plan Members	<u>157</u>
	<u><u>283</u></u>

Benefits Provided

The Plan provides retirement, termination, disability and death benefits.

Service Retirement:

Date Hired prior to April 21, 2016:

Attainment of age 50 and 20 years of Credited Service.

Date Hired after April 20, 2016:

Attainment of age 55 and 20 years of Credited Service.

Benefit Hired prior to April 21, 2016:

2.55% of Average Salary for each year of Credited Service.

Benefit Hired after April 20, 2016:

2.50% of Average Salary for each year of Credited Service.

Disability:

Prior to Attainment of Age 50:

Hired prior to January 1, 2004:

50.0% of Average Salary, payable until attainment of age 50.

Hired After December 31, 2003:

Service related – 50.0% of Average Salary, payable until attainment of age 50.

Non-service related – Average Salary multiplied by a factor based on below table, payable until attainment of age 50.

<u>Service</u>	<u>Factor</u>
0-1	5%
2	10%
3	15%
4	20%
5	25%
6	30%
7	35%
8	40%
9	45%
10+	50%

Attainment of Age 50 Following Disability:

2.55% multiplied by Average Salary at time of disability for each year of service assuming the member continued employment to age 50 (maximum = 20 years of service).

Attainment of Age 50 Prior to Disability:

2.55% multiplied by Average Salary at time of disability for each year of service.

Death Benefits:

Surviving Spouse of Member Prior to Normal Retirement Eligibility:

Two-thirds (2/3) multiplied by Average Salary at time of death multiplied by 2.55% for each year of service assuming the member continued employment to age 50.

Surviving Spouse of Member Following Normal Retirement Eligibility:

Two-thirds (2/3) of the member's accrued benefit, as described under the Service Retirement benefit provision.

Dependent Children of Member:

Each child is entitled to \$230 per month, payable until age 18 or until age 23 as long as the child remains a full-time student.

Contributions

Member contributions: 12.00% of Compensation. Effective April 20, 2016, 13.00% of Compensation.

Investments

Investment Policy:

The following was the Board's adopted asset allocation policy as of December 31, 2017:

Asset Class	Target Allocation
Domestic Equity	35%
International Equity	15%
Domestic Fixed Income	25%
Global Fixed Income	5%
Real Estate	10%
Alternative	10%
Total	100%

Concentrations:

The Plan did not hold investments in any one organization that represent 5 percent or more of the Pension Plan's Fiduciary Net Position.

Rate of Return:

For the year ended December 31, 2017, the annual money-weighted rate of return on Pension Plan investments, net of Pension Plan investment expense, was 15.42 percent.

The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

Retroactive Deferred Retirement Option Program

Eligibility Hired prior to April 21, 2016:

Attainment of age 55 and 25 years of Credited Service.

Eligibility Hired after April 20, 2016:

Attainment of age 57 and 25 years of Credited Service.

Participation Period Hired prior to April 21, 2016:

Not to exceed 24 months retroactively (53/23).

Participation Period Hired after April 20, 2016:

Not to exceed 24 months retroactively (55/23).

The DROP balance as December 31, 2017 is \$0.

NET PENSION LIABILITY OF THE SPONSOR

The components of the Net Pension Liability of the Sponsor on December 31, 2017 were as follows:

Total Pension Liability	\$ 121,933,825
Plan Fiduciary Net Position	\$ (51,378,997)
Sponsor's Net Pension Liability	<u><u>\$ 70,554,828</u></u>
Plan Fiduciary Net Position as a percentage of Total Pension Liability	42.14%

Actuarial Assumptions:

The Total Pension Liability was determined by an actuarial valuation as of January 1, 2017 updated to December 31, 2017 using the following actuarial assumptions:

Inflation	3.00%
Salary Increases	Service based
Discount Rate	4.83%
Investment Rate of Return	7.75%

Mortality Rates: RP-2000 projected to 2024 using Scale AA - Sex Distinct. We feel this sufficiently accommodates expected mortality improvements.

The most recent actuarial experience study used to review the other significant assumptions was dated October 6, 2017.

The Long-Term Expected Rate of Return on Pension Plan investments can be 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 expenses and inflation) are developed for each major asset class.

For 2017, the inflation rate assumption of the investment advisor was 2.50%.

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 geometric real rates of return for each major asset class included in the Pension Plan's target asset allocation as of December 31, 2017 are summarized in the following table:

Asset Class	Long Term Expected Real Rate of Return
Domestic Equity	7.50%
International Equity	8.50%
Domestic Fixed Income	2.50%
Global Fixed Income	3.50%
Real Estate	4.50%
Alternative	5.00%

Discount Rate:

The projection of cash flows used to determine the Discount Rate assumed that current Plan Member and Sponsor contributions will be made at the current contribution rate. Future Member's contributions in excess of their normal cost were also included. Based on those assumptions, the Pension Plan's Fiduciary Net Position was projected to provide future benefit payments for 28 years. These payments were discounted using a discount rate of 7.75%. Future benefits payments beyond 28 years were discounted using a high quality municipal bond rate of 3.44%. The high quality municipal bond rate was based on the week closest to, but not later than, the measurement date of the Bond Buyer 20-Bond Index as published by the Bond Buyer. The single equivalent discount rate was 4.83%.

	Current Discount		
	1% Decrease	Rate	1% Increase
	3.83%	4.83%	5.83%
Sponsor's Net Pension Liability	\$ 88,629,597	\$ 70,554,828	\$ 55,767,003

SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS
Last 10 Years

	<u>12/31/2017</u>	<u>12/31/2016</u>
Total Pension Liability		
Service Cost	2,514,077	1,613,166
Interest	5,887,833	5,740,141
Changes of benefit terms	-	-
Differences between Expected and Actual Experience	1,599,916	1,231,956
Changes of assumptions	24,056,360	16,673,408
Benefit Payments, including Refunds of Employee Contributions	(5,250,040)	(4,543,166)
Net Change in Total Pension Liability	28,808,146	20,715,505
Total Pension Liability - Beginning	93,125,679	72,410,174
Total Pension Liability - Ending (a)	\$ 121,933,825	\$ 93,125,679
Plan Fiduciary Net Position		
Contributions - Employer	1,411,351	1,283,410
Contributions - Employee	1,463,122	1,350,904
Net Investment Income	6,581,299	2,577,572
Benefit Payments, including Refunds of Employee Contributions	(5,250,040)	(4,543,166)
Administrative Expense	(124,267)	(115,843)
Other	347,490	250
Net Change in Plan Fiduciary Net Position	4,428,955	553,127
Plan Fiduciary Net Position - Beginning	46,950,042	46,396,915
Plan Fiduciary Net Position - Ending (b)	\$ 51,378,997	\$ 46,950,042
Net Pension Liability - Ending (a) - (b)	\$ 70,554,828	\$ 46,175,637
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	42.14%	50.42%
Covered Employee Payroll	\$ 11,254,785	10,391,569
Net Pension Liability as a percentage of Covered Employee Payroll	626.89%	444.36%

Notes to Schedule:*Changes of assumptions:*

For purposes of determining the GASB discount rate at the 12/31/2017 measurement date, a depletion date projection as of that date have been performed. The results of this projection showed a single discount rate of 4.83%. The discount rate was decreased from 6.33% to 4.83%. Other actuarial changes of assumptions in the 2017 year were a result of an actuarial experience study dated October 6, 2017, as approved by the Board of Trustees, the following changes were made:

- The actuarial asset method was changed to eliminate asset smoothing.
- The investment return assumption was lowered from 8.00% to 7.75% per year, net of all expenses.
- The assumed rates of salary increases were amended.
- The assumed rates of retirement were amended.
- The assumed rates of withdrawal were amended.
- The assumed rates of disablement were amended.

For purposes of determining the GASB discount rate at the 12/31/2016 measurement date, a depletion date projection as of that date have been performed. The results of this projection showed a single discount rate of 6.33%.

The discount rate was decreased from 8.00% to 6.33%.

SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS
Last 10 Years

	<u>12/31/2015</u>	<u>12/31/2014¹</u>
Total Pension Liability		
Service Cost	1,514,459	1,447,068
Interest	5,743,802	5,537,931
Changes of benefit terms	6,752	-
Differences between Expected and Actual Experience	(3,155,703)	(320,862)
Changes of assumptions	-	(423,984)
Benefit Payments, including Refunds of Employee Contributions	<u>(3,950,906)</u>	<u>(3,616,549)</u>
Net Change in Total Pension Liability	158,404	2,623,604
Total Pension Liability - Beginning	<u>72,251,770</u>	<u>69,628,166</u>
Total Pension Liability - Ending (a)	<u><u>\$ 72,410,174</u></u>	<u><u>\$ 72,251,770</u></u>
Plan Fiduciary Net Position		
Contributions - Employer	1,273,913	1,232,957
Contributions - Employee	1,221,926	1,144,644
Net Investment Income	421,270	3,284,243
Benefit Payments, including Refunds of Employee Contributions	<u>(3,950,906)</u>	<u>(3,616,549)</u>
Administrative Expense	(87,245)	(85,636)
Other	-	-
Net Change in Plan Fiduciary Net Position	<u>(1,121,042)</u>	<u>1,959,659</u>
Plan Fiduciary Net Position - Beginning	<u>47,517,957</u>	<u>45,558,298</u>
Plan Fiduciary Net Position - Ending (b)	<u><u>\$ 46,396,915</u></u>	<u><u>\$ 47,517,957</u></u>
Net Pension Liability - Ending (a) - (b)	<u><u>\$ 26,013,259</u></u>	<u><u>\$ 24,733,813</u></u>
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	64.08%	65.77%
Covered Employee Payroll	10,182,717	9,520,903
Net Pension Liability as a percentage of Covered Employee Payroll	255.46%	259.78%

Notes to Schedule:

¹ The 2014 results were provided by the prior actuary, John M. Crider, Jr.

Changes of benefit terms:

For measurement date 12/31/2015, amounts reported as changes of benefits resulted from:

- The member contribution rate was increased from 12.0% to 13.0% of Salary for all members.
- All future new entrants will accrue benefits under a “Tier 2” benefit structure.

SCHEDULE OF CONTRIBUTIONS
Last 10 Years

Year Ended	Contributions in relation to the				Contributions as a percentage of Covered Employee Payroll
	Contractually Required Contribution	Contractually Required Contributions	Contribution Deficiency (Excess)	Covered Employee Payroll ¹	
12/31/2017	\$ 1,411,351	\$ 1,411,351	\$ -	\$ 11,254,785	12.54%
12/31/2016	\$ 1,283,410	\$ 1,283,410	\$ -	\$ 10,391,569	12.35%
12/31/2015	\$ 1,273,913	\$ 1,273,913	\$ -	\$ 10,182,717	12.51%
12/31/2014 ¹	\$ 1,232,957	\$ 1,232,957	\$ -	\$ 9,520,903	12.95%

¹ The 2014 results were provided by the prior actuary, John M. Crider, Jr.

Notes to Schedule

Valuation Date: 01/01/2017

Actuarially Determined contribution rates are calculated as of January 1 of the year in which contributions are reported.

Methods and assumptions used to determine contribution rates:

Assumption Rationale:

The assumptions and methods stated below were utilized by the prior actuary. Since this is our second actuarial valuation, we do not have adequate historical Fund experience to incorporate a sufficient rationale for all of the actuarial assumptions stated below at this time.

Mortality Rate:

RP-2000 projected to 2024 using Scale AA - Sex Distinct. We feel this sufficiently accommodates expected mortality improvements.

Retirement Age:

Age	Service																		
	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37+	
50	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
51	0.21	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	
52	0.22	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	
53	0.32	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
54	0.42	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
55	0.55	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	
56	0.68	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	
57	0.79	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	
58	0.86	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	
59	0.91	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	
60	0.95	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	
61	0.98	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	
62	1	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	
63+	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	

The assumed rates of retirement were amended by the prior actuary in conjunction with the January 1, 2015 actuarial valuation.

Termination Rate:

Table T-1 from the Actuary's Pension Handbook. Sample rates are displayed below.

Termination	
Age	Rate
25	4.97%
35	2.49%
45	0.62%
55	0.00%

Disability Rates:

Sample rates are displayed below:

Age	Disability Rate
25	0.111%
35	0.152%
45	0.335%
55	0.858%

The assumed rates of disablement were amended by the prior actuary in conjunction with the January 1, 2015 actuarial valuation.

Interest Rate:

8.00% per year, compounded annually, net of expenses. This is supported by the asset allocation of the trust and the long-term expected return by asset class.

Salary Increases:

Service	Increase
0-4	8.0%
5-14	5.6%
15-19	5.5%
20-24	4.1%
25+	3.7%

The assumed rates of salary increase were amended by the prior actuary in conjunction with the January 1, 2015 actuarial valuation.

Payroll Growth:

4.50% per year for amortization of the Unfunded Actuarial Accrued Liability. The assumed payroll growth rate was amended by the prior actuary in conjunction with the January 1, 2015 actuarial valuation.

Marital Status:

100% of actives are assumed to be married at time of benefit commencement. Males are assumed to be two years older than their spouses.

Dependent Children:

Each member is assumed to have two children. The first child is assumed to have been born when the member was age 25. The second child is assumed to be two years younger. It is also assumed that benefits will be paid until each child reaches the age of 20.

Contribution Rates:

Members - 13.00%.

City – 12.00% (12.54% in 2017, 12.83% in 2018).

Retirement Election:

Members eligible for the DROP are assumed to elect either straight service retirement benefits or the DROP, whichever is more valuable. Other members are assumed to receive straight service retirement benefits.

Actuarial Asset Method:

All assets are valued at market value with an adjustment made to uniformly spread actuarial investment gains and losses (as measured by actual market value investment return against expected market value investment return) over a five-year period

SCHEDULE OF INVESTMENT RETURNS
Last 10 Years

Fiscal Year Ended	Annual Money-Weighted Rate of Return Net of Investment Expense
12/31/2017	15.42%
12/31/2016	5.10%
12/31/2015	0.45%
12/31/2014 ¹	7.32%

¹ The 2014 results were provided by the prior actuary, John M. Crider, Jr.