Wichita Falls Firemen's Relief and Retirement Fund

Valuation as of January 1, 2015

August 19, 2015

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Wichita Falls Firemen's Relief and Retirement Fund

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Section I - Report Text

Wichita Falls Firemen's Relief and Retirement Fund

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1. Summary of Valuation Results

This report presents the results of the January 1, 2015 actuarial valuation of the Wichita Falls Firemen's Relief and Retirement Fund. The valuation was made, in part, to determine whether the plan satisfies the portions of Title 8 of the Texas Government Code relevant to the fund. The following table summarizes the 2012 and the 2015 valuation results. The figures on lines d. through f., below, were taken from Exhibit 2 of this report.

		Valuation as of 12/31/2012	Valuation as of 01/01/2015
a.	Actuarial Value of Assets	$41,964,674	$47,133,894
b.	Actuarial Present Value of Accumulated Plan Benefits	$53,719,401	$54,899,270
c.	Accumulated Benefit Funding Ratio (line a. divided by line b.)	78.1%	85.9%
d.	Unfunded Actuarial Accrued Liability (UAAL)	$24,641,489	$25,117,876
e.	Annualized Compensation	$8,962,581	$9,629,250
f.	Amortization Period	63.2 Yrs.	105.9 Yrs.

It is important to note that the January 1, 2015 amortization period is based on the 2015 City contribution rate of 12.52 percent of pay. The City of Wichita Falls currently plans to lower its contribution rate for 2016 to 12.00 percent of pay. Under that contribution rate, the fund would not be able to amortize its unfunded actuarial accrued liability (UAAL). Retirement systems which cannot amortize their UAAL are said to have an infinite amortization period.

Lines a. through c. in the above table compare the actuarial value of assets with the sum of the values of retirement, death, disability, and termination benefits which members had accumulated as of the valuation date. The values of accumulated benefits were calculated using the same actuarial assumptions as were used for the valuation. The ratio on line c. shows that as of January 1, 2015, fund assets were 85.9 percent of the value of accumulated benefits under the plan. This is a measure of funding on an ongoing-plan basis.

On a plan termination basis, using the actuarial equivalence assumptions in the plan document, the present value of accrued retirement benefits was approximately $69,747,793. This produces a funding ratio of 67.6 percent. The accrued benefit funding ratio is lower than the ongoing-plan funding ratio due, in part, to the difference between the distribution of retirement ages assumed for purposes of the valuation and the plan's normal retirement age of 50, the point at which retirement benefits first become payable.

It is unusual for public pension plans to terminate. However, in the event of plan termination, is likely that the plan would not distribute lump sums. Instead, the plan would probably be closed to new entrants and existing plan members would cease to accrue additional benefits. Under this scenario, use of the valuation mortality and rate of return assumption (rather than the actuarial equivalence assumptions) would be the best measure of the value of plan benefits. Using the valuation mortality and rate of return assumption, the present value of accrued retirement benefits is $71,696,009. The produces a funding ratio of 65.7 percent.

More important than funding ratios, however, is the plan's amortization period.

Lines d. through f., above, summarize the valuation of the fund under the actuarial cost method, which looks at the progress in funding both current and future benefits.

Guidelines published by the Texas Pension Review Board specify that funding should be adequate to amortize the unfunded actuarial accrued liability over a period not to exceed 40 years, with 15 to 25 years being a more preferable target. (PRB Guidelines are set out in full on Appendix D.) The amortization period as of January 1, 2015, was 105.9 years. Thus, the plan does not meet Pension Review Board amortization period guidelines.

Requirements for Plans Which Do Not Represent an Adequate Funding Arrangement

Section 802.106(d) of the Texas Government Code states that, "A public retirement system shall provide to each active member and annuitant a summary of the financial condition of the retirement system, if the actuary of the system determines, based on a computation of advanced funding of actuarial costs, that the financing arrangement of the system is inadequate. The actuarial determination must be disclosed to members and annuitants at the time annual statements are next provided..." Thus, the Wichita Falls Firemen's Relief and Retirement Fund must provide active members, retirees, vested terminated members, and beneficiaries the notice required under Section 802.106. The actuaries will provide the board a suggested notice. In addition, House Bill 3310, passed earlier this year, requires the City and the retirement system to prepare a Funding Soundness Restoration Plan if the fund's amortization period is greater than 40 years. Recommendations concerning the Funding Soundness Restoration Plan are set out in Subsection 2, below.

2. Discussion of Valuation Results

The amortization period as of December 31, 2012, was 63.2 years. If all of the prior valuation's assumptions had been realized exactly, the amortization period as of January 1, 2015, would have decreased to 61.2 years due to the passage of time. The amortization period as of December 31, 2014, however, was 60.4 years, using the 2012 actuarial assumptions and methods. The decrease in the City's contribution rate for 2015 raised the amortization period to 69.1 years.

Changes in the Actuarial Assumptions

The assumed retirement age for active members was changed from age 57 to a retirement table developed based on the fund's experience with respect to retirement. Twenty years of service is required in order to be eligible for service retirement under the fund. The rate at which an active members' salary is assumed to increase each year was changed from 4.75 percent per year to a table based on a member's years of service. The table was developed based on the fund's experience with respect to salary increases. The assumed increase in aggregate compensation was lowered by one-quarter of one percent to 4.50 percent per year.

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The mortality table used for the valuation was changed from (a) the *Employee and Healthy Annuitant Combined Rates* from the RP-2000 Mortality Table, projected to 2015 using Scale AA, with separate rates for males and females, to (b) the *Employee and Healthy Annuitant Combined Rates* from the RP-2000 Mortality Table, projected to 2024 using Scale AA, with separate rates for males and females. The mortality changes were made in order to recognize mortality improvement through the valuation date and provide a margin for future mortality improvement. Disability rates were changed from SOA Disability Study Table, Class 1 rates, to the tabular rates listed in Appendix B. Termination rates were not changed; however, they were listed as tabular rates, rather than under their original name, Table T-1 from the *Actuary's Pension Handbook*.

Changes in the Actuarial Cost Method

The valuation date was changed to the first day of the plan year. In addition, the formula used to calculate the amortization period was changed to the formula set out in Appendix D. The changes were made in order to most accurately reflect the actuarial position of the plan. The individual entry age normal actuarial cost method was used for both the 2015 valuation and the previous valuation.

The changes in assumptions, along with the changes in actuarial cost methods, raised the amortization period to 105.9 years.

Summary of the Fund's Condition

Based on the 2015 valuation results, the actuaries recommend that (a) the City of Wichita Falls increase its contribution rate by at least one percent of pay and that (b) fund members also increase their contribution rate by at least one percent of pay.

Test calculations indicate that a one percent of pay increase in the City's contribution rate (with no change in the contribution rate of fund members) would produce an amortization period of 61.9 years. Similarly, a one percent of pay increase in the members' contribution rate (with no change in the contribution rate of the City) would produce an amortization period of 63.6 years. If the City of Wichita Falls and the members of the fund each increase their contribution rate by one percent of pay, it is estimated that the resulting amortization period would be 48.0 years. Contribution increases by both the City and fund members would result in a much stronger plan. Whether contribution rates need to be increased even further could be determined based on future valuations.

House Bill 3310 requires that each valuation report give the contribution rate needed in order to produce a 30-year amortization period. Increasing the City contribution rate to 17.27 percent of pay (with no increase in the member contribution rate) would produce a 30-year amortization period as of January 1, 2015.

3. Fund Experience with Respect to Major Actuarial Assumptions

As part of the valuation, a study was made of the plan's experience with respect to rate of return and average age at retirement. Salary increases—on an individual as well as on an aggregate basis—were also studied. The valuation was based upon an assumed rate of return of 8.00 percent per annum. A portion of active fire fighters from age 50 through age 62 were assumed to retire, each year. The distributed retirements produced an average expected retirement age of 55.2. Individual salaries were assumed to increase at a series of rates which change over the member's period of service. Based on the plan's average entry age of 25, a member's compensation increases will average 5.41 percent per year over his or her career. Total payroll was assumed to increase 4.50 percent per year. The rates of retirement at each attained age and the rates of salary increase, based on years of service, are listed in Appendix B.

Exhibit 4 of this report shows a graph which summarizes the fund's rate of return measured at market value. This exhibit also shows the average rates of return for the 34 full-time fire departments in the TLFFRA system which operate on a calendar-year basis. (TLFFRA rates of return for 2014 are preliminary.)

Using the market value of assets, the Wichita Falls fund's approximate annual rates of return for the years ending December 31, 2010, through 2014, were 13.41%, 1.53%, 9.27%, 12.12%, and 7.12%, respectively. The average rate of return for the five-year period ending December 31, 2014, was 8.61%. The fund's average annual rate of return since December 31, 1995, was 7.66%.

Exhibit 5 of this report shows the fund's rates of return measured at actuarial value. The average rate of return on the actuarial value of assets over the last two years was 8.91%.

Exhibit 6 shows the development of assumed retirement ages. Development of the distribution of retirements was one of the studies authorized by the Board. This study was needed in order to develop probabilities of retirement at each eligible retirement age. The ages at retirement of 110 fund members who took service retirement under the fund were used to develop the distribution and the retirement probabilities.

Exhibit 7 shows the development of assumed salary increases. The Board agreed to have this second study performed in order to measure the distribution of salary increase rates by years of service. As a general rule, the rates at which a fire fighter's salary increases are greater in the early years of his or her career. This is true for the group as a whole, even though promotion causes some members to receive significant pay increases later in their careers.

Exhibit 8 shows plan experience with respect to average ages at retirement and pay increase rates. There were six retirements during the last two years. Over the last ten years, the two-year average age at retirement has ranged from 53.694 to 58.150. The average age at retirement over the entire ten-year period was 54.439.

Annual pay increases for members with at least two full years of service averaged approximately 3.7 percent per year over the last two years. Over the last ten years, the figure was approximately 4.5 percent per year. These rates include raises from all sources, including overtime, inflation, longevity, merit, and promotion.

The annual increase in gross aggregate payroll was 0.2 percent over the last two years when adjusted for any changes in the number of covered members and pay periods. Over the last ten years, the average annual increase in aggregate payroll was approximately 2.8 percent per year. Aggregate payroll affects how much money the fund receives in contributions each year. The number of active fire fighters covered under the plan increased from 148 as of December 31, 2012, to 156 as of December 31, 2014.

The actuaries believe that the results on Exhibits 4 through 8 show that the assumptions used for the valuation fall within the reasonable range, both on an aggregate and on an individual basis. Exhibits 4 through 8 also demonstrate that the assumptions used for the valuation were realistic and reasonable and comply with applicable actuarial standards.

Exhibit 9 shows a comparison of the plan's expected and actual unfunded actuarial accrued liability based on the 2006 through 2015 valuations. This type of calculation is called an "actuarial gain and loss analysis." The calculation measures the effect of plan experience under all assumptions, combined.

The last column of Exhibit 9 develops the projected actuarial accrued liability as of January 1, 2017. Next, this value is compared with the expected actuarial value of assets in order to calculate the projected amortization period. As of January 1, 2017, the projected amortization period is 96.7 years.

The projected amortization period is based on the assumption that the market value of plan assets grows at 8.00 percent per year after December 31, 2014. It should be noted that demographic experience less favorable than assumed, a decrease in the number of covered fire fighters, or lower-than-assumed return on plan assets could result in an amortization period which is above the range projected. *As noted on page one, a decrease in the City contribution rate would also produce a higher-than-projected amortization period.*

4. Notes Concerning the Valuation and the Amortization Period

It should be noted that valuation calculations measure plan soundness under the assumption that retirements, deaths, disabilities and terminations will occur approximately in accordance with assumed rates. A sudden increase in the number of benefits being paid is not taken into account by the valuation calculations.

Amortization periods in this report are given to the nearest tenth of a year. The report does not intend to imply that the actuarial assumptions and the valuation calculations are capable of measuring the amortization period that closely. The periods are given to the nearest tenth of a year in order to provide as much information as possible when results at different valuation dates or results under different actuarial assumptions are compared with one another.

5. Actuarial Certification

Section 802.101 of the Texas Government Code requires that the governing body of a public retirement system employ an actuary to make a valuation of the assets and liabilities of the system at least once every three years. The valuation must be performed on the basis of assumptions that are reasonable in the aggregate, considering the experience of the program and reasonable expectations, and that, in combination, offer the actuary's best estimate of anticipated plan experience under the program.

The valuation detailed in this report meets the State of Texas standards listed above. The assumptions used for the valuation were also individually reasonable and were consistent with one another. The assumptions used for the valuation fall within the reasonable range of actuarial assumptions, both on an aggregate and on an individual basis.

Pension Review Board Guidelines for Actuarial Soundness state that (a) the funding of a pension plan should reflect all plan obligations and assets, (b) the allocation of the normal cost portion of contributions should be level or declining as a percent of payroll over all generations of taxpayers, (c) funding of the unfunded actuarial accrued liability should be level or declining as a percent of payroll over the amortization period, and (d) the choice of assumptions should comply with applicable actuarial standards.

The valuation detailed in this report meets the Pension Review Board Guidelines for actuarial assumptions and methods listed above.

The valuation was performed using employee census data as of January 1, 2015, furnished by the Wichita Falls Firemen's Relief and Retirement Fund. Financial information for 2010 through 2013 came from the plan's December 31, 2010 through 2013 audited financial statements. The 2014 financial information came from the fund's preliminary 2014 financial statements. A review of all data supplied showed that the information was reasonable, consistent, and complete. Accordingly, the information was relied upon as furnished.

Wichita Falls Firemen's Relief and Retirement Fund

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The firm of John M. Crider, Jr. - Consulting Actuary, which prepared the January 1, 2015 valuation, is compensated solely by the Wichita Falls Firemen's Relief and Retirement Fund with respect to work on the plan. This report has been prepared and certified by John M. Crider, Jr., an actuary for the firm of John M. Crider, Jr. - Consulting Actuary, who certifies that he is a member of the American Academy of Actuaries and that he meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein. This report has been reviewed by Donna L. Hamaker, an actuary for the firm of Hamaker Consulting, who certifies that she is a member of the American Academy of Actuaries and that she meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein. Both actuaries satisfy the experience requirement of Section 802.106(d) of the Texas Government Code for plans which represent an inadequate funding arrangement.

This report presents the actuarial position of the Wichita Falls Firemen's Relief and Retirement Fund as of January 1, 2015. The valuation and associated calculations have been performed in accordance with generally accepted actuarial principles and practices. The valuation conforms to the parameters specified in Governmental Accounting Standards Board (GASB) Statements No. 67 and No. 68 for financial reporting by the fund and by the City of Wichita Falls.

Exhibits 1 and 2 of this report show the results of the valuation. The previous valuation's results are shown for purposes of comparison. The development of the actuarial value of assets is shown on Exhibit 3. Graphs summarizing the fund's rate of return history are provided on Exhibits 4 and 5. The results of the retirement experience study and the salary increase study appear on Exhibits 6 and 7, respectively.

Exhibit 8 documents the fund's experience with respect to average ages at retirement and salary increases. Exhibit 9 shows the plan's experience with respect to all assumptions, combined, and provides a range in which the amortization period is estimated to fall as of January 1, 2017.

The disclosures required under GASB Statements No. 67 and No. 68 will be furnished in separate reports.

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Thank you for the opportunity to serve the Wichita Falls Firemen's Relief and Retirement Fund. Please feel free to contact us if you have any questions about this report.

Prepared and Certified By

original signed by
John M. Crider, Jr.

John M. Crider, Jr.
Associate of the Society of Actuaries
Member, American Academy of Actuaries

Reviewed By

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Donna L. Hamaker

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Section II - Exhibits

Wichita Falls Firemen's Relief and Retirement Fund

Valuation as of January 1, 2015

Exhibit 1, Development of the Normal Cost Percentage

		Valuation as of 12/31/2012		Valuation as of 01/01/2015
Assumed Retirement Age (ARA)		57		RR Table 0515
Assumed Rate of Return		8.00%		8.00%
Salary Scale		4.75%		SS Table 0515
Increase in Payroll for Amortization		4.75%		4.50%
Assumed Contribution Percentage of Members		12.00%		12.00%
Assumed Contribution Percentage of City		12.95%		12.52%
1. Number of Participants				
a. Actives below earliest ARA		143		119
b. Actives in ARA range		-		36
c. Actives above latest ARA		5		1
d. Service retired		88		91
e. Disability retired		2		2
f. Vested and non-vested terminated		2		3
g. Spouses and alternate payees		22		22
h. Children		0		0
i. Total		262		274
2. Annualized Compensation				
a. Actives at or below latest ARA	$	8,962,581	$	9,629,250
b. Average compensation		62,675		62,124
3. Annual Retirement Income				
a. Actives below earliest ARA	$	16,297,522	$	14,034,257
b. Actives in ARA range		-		2,552,277
c. Actives above latest ARA		260,904		69,864
d. Service retired		2,982,003		3,347,666
e. Disability retired		37,490		37,490
f. Vested and non-vested terminated		0		0
g. Spouses and alternate payees		240,798		255,408
h. Children		0		0
i. Total	$	19,818,717	$	20,296,962

Wichita Falls Firemen's Relief and Retirement Fund

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Exhibit 1, Development of the Normal Cost Percentage (continued)

		Valuation as of 12/31/2012		Valuation as of 01/01/2015
4. Plan Normal Cost				
a. Service retirement	$	983,613	$	1,182,062
b. Death in active service		38,107		39,541
c. Disability		128,378		138,448
d. Termination		149,598		161,354
e. Total	$	1,299,696	$	1,521,405
5. Anticipated Employee Contributions		1,075,510	$	1,155,510
6. Net Employer Normal Cost (4 - 5)		224,186	$	365,895
7. Net Employer Normal Cost, Expressed as a Percentage of Covered Payroll (6 ÷ 2a)		2.50%		3.80%
8. Normal Cost Percentage for Members		12.00%		12.00%
9. Total Normal Cost Percentage for the Plan (7) + (8)		14.50%		15.80%

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Exhibit 2, Unfunded Actuarial Accrued Liability and Amortization Period

	Valuation as of 12/31/2012	Valuation as of 01/01/2015
Assumed Retirement Age (ARA)	57	RR Table 0515
Assumed Rate of Return	8.00%	8.00%
Salary Scale	4.75%	SS Table 0515
Increase in Payroll for Amortization	4.75%	4.50%
Assumed Contribution Percentage of Members	12.00%	12.00%
Assumed Contribution Percentage of City	12.95%	12.52%
1. Present Value of Future Benefits Payable to Individuals Receiving or Due Benefits		
a. Service retired	$ 30,103,003	$ 34,134,897
b. Disability retired	430,232	425,480
c. Vested and non-vested terminated	58,977	16,837
d. Spouses and alternate payees	1,629,496	1,694,391
e. Children	0	0
f. Total	$ 32,221,708	$ 36,271,605
2. Present Value of Future Benefits Payable to Active and Overage Members		
a. Service retirement	$ 43,008,998	$ 46,043,177
b. Death in active service	679,867	630,574
c. Disability	2,856,170	2,930,967
d. Termination	1,298,530	1,431,029
e. Total	$ 47,843,565	$ 51,035,747
3. Total Present Value of Future Benefits (1f + 2e)	$ 80,065,273	$ 87,307,352

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Exhibit 2, Unfunded Actuarial Accrued Liability and Amortization Period (continued)

		Valuation as of 12/31/2012	Valuation as of 01/01/2015
4.	**Actuarial Present Value of Future Normal Cost Contributions By**		
	a. Present active members	$ 11,193,024	$ 11,855,753
	b. City	2,266,086	3,199,829
	c. Total	$ 13,459,110	$ 15,055,582
5.	**Actuarial Accrued Liability (3 - 4c)**	$ 66,606,163	$ 72,251,770
6.	**Actuarial Value of Assets**	$ 41,964,674	$ 47,133,894
7.	**Unfunded Actuarial Accrued Liability (5 - 6)**	$ 24,641,489	$ 25,117,876
8.	**Total Contributions (% of Payroll)**	24.95%	24.52%
9.	**Normal Cost (% of Payroll)**	14.50%	15.80%
10.	**Percentage of Payroll Available to Fund the Unfunded Actuarial Accrued Liability (8 - 9)**	10.45%	8.72%
11.	**Annualized Compensation**	$ 8,962,581	$ 9,629,250
12.	**Amount Available to Amortize the Unfunded Actuarial Accrued Liability (10 × 11)**	$ 936,590	$ 839,671
13.	**Years to Amortize the Unfunded Actuarial Accrued Liability Assuming the Specified Rate of Annual Payroll Increases**	63.2 Yrs.	105.9 Yrs.
14.	**Additional Amount of Employer Contribution Needed to Produce a 30-year Amortization Period, as of Dollar Amount, and as a Percent of Pay**	$ 397,042 4.43%	$ 457,389 4.75%

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Exhibit 3, Development of the Actuarial Value of Assets

	12/31/2010	12/31/2011	12/31/2012	12/31/2013	12/31/2014
1. Market Value as of January 1	$ 35,987,068	$ 39,818,257	$ 39,354,123	$ 41,756,348	$ 45,558,298
2. Contributions, Appreciation, and Interest and Dividends					
a. Contributions by the city	1,148,815	1,173,832	1,179,361	1,281,604	1,232,957
b. Contributions by members	1,031,869	1,050,410	1,081,982	1,168,703	1,144,644
c. Net realized and unrealized appreciation (depreciation)	4,110,190	(292,861)	2,751,786	3,991,110	2,080,471
d. Interest and dividends	907,340	1,161,705	1,149,756	1,334,510	1,449,701
e. Other	3,239	702	13,075	103	0
3. Disbursements					
a. Benefits paid	2,601,164	3,285,557	3,416,223	3,474,066	3,515,137
b. Contributions refunded	510,167	4,339	37,616	163,218	101,412
c. Administrative expenses	258,933	268,026	319,896	336,796	331,565
4. Subtotal of Contributions, Appreciation, Interest and Dividends, and Disbursements	3,831,189	(464,134)	2,402,225	3,801,950	1,959,659
5. Market Value as of December 31	39,818,257	39,354,123	41,756,348	45,558,298	47,517,957

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Exhibit 3, Development of the Actuarial Value of Assets (continued)

	12/31/2010	12/31/2011	12/31/2012	12/31/2013	12/31/2014
6. Actuarial Investment Gain/(Loss) for the Year					
a. Market Value as of January 1	$ 35,987,068	$ 39,818,257	$ 39,354,123	$ 41,756,348	$ 45,558,298
b. City and member contributions	2,180,684	2,224,242	2,261,343	2,450,307	2,377,601
c. Benefits and contribution refunds	3,111,331	3,289,896	3,453,839	3,637,284	3,616,549
d. Miscellaneous receipts and disbursements	3,239	702	13,075	103	0
e. Expected earnings	2,841,869	3,142,862	3,101,153	3,293,033	3,595,106
f. Expected market value of assets December 31	37,901,529	41,896,167	41,275,855	43,862,507	47,914,456
g. Actual market value of assets December 31	39,818,257	39,354,123	41,756,348	45,558,298	47,517,957
h. Actuarial investment gain/(loss)	1,916,728	(2,542,044)	480,493	1,695,791	(396,499)
7. Phase-in of actuarial investment gains and (losses)					
a. Portion of the year's actuarial investment gain/(loss) which is phased in over five years	20%	20%	20%	20%	20%
b. Line 6.h. times line 7.a.	383,346	(508,409)	96,099	339,158	(79,300)
c. Factor applied to line 7.b. to calculate the unrecognized amount as of December 31, 2014	0	1	2	3	4

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Exhibit 3, Development of the Actuarial Value of Assets (continued)

	12/31/2010	12/31/2011	12/31/2012	12/31/2013	12/31/2014
7. Phase-in of actuarial investment gains and (losses), (continued)					
d. Amount of the year's actuarial investment gain/(loss) for the year which is unrecognized as of December 31, 2014 (Line 7.b. times line 7.c.)	$ 0	$ (508,409)	$ 192,198	$ 1,017,474	$ (317,200)
e. Total unrecognized actuarial gain/(loss) for five prior years as of December 31, 2014 (sum of line 7.d. for five prior years)					384,063
8. Market Value at December 31, 2014					47,517,957
9. Actuarial Value of Assets as of January 1, 2015, Before Test for 80% to 120% of Market Value (line 8. minus line 7.e.)					47,133,894
10. Preliminary Actuarial Value of Assets Expressed as a Percentage of Year-end Market Value					99.2%
11. Actuarial Value of Assets After Limiting the Preliminary Actuarial Value of Assets to a Range of 80% to 120% of Market Value	$ 41,107,385	$ 41,581,933	$ 41,964,674	$ 44,546,841	$ 47,133,894

Wichita Falls Firemen's Relief and Retirement Fund

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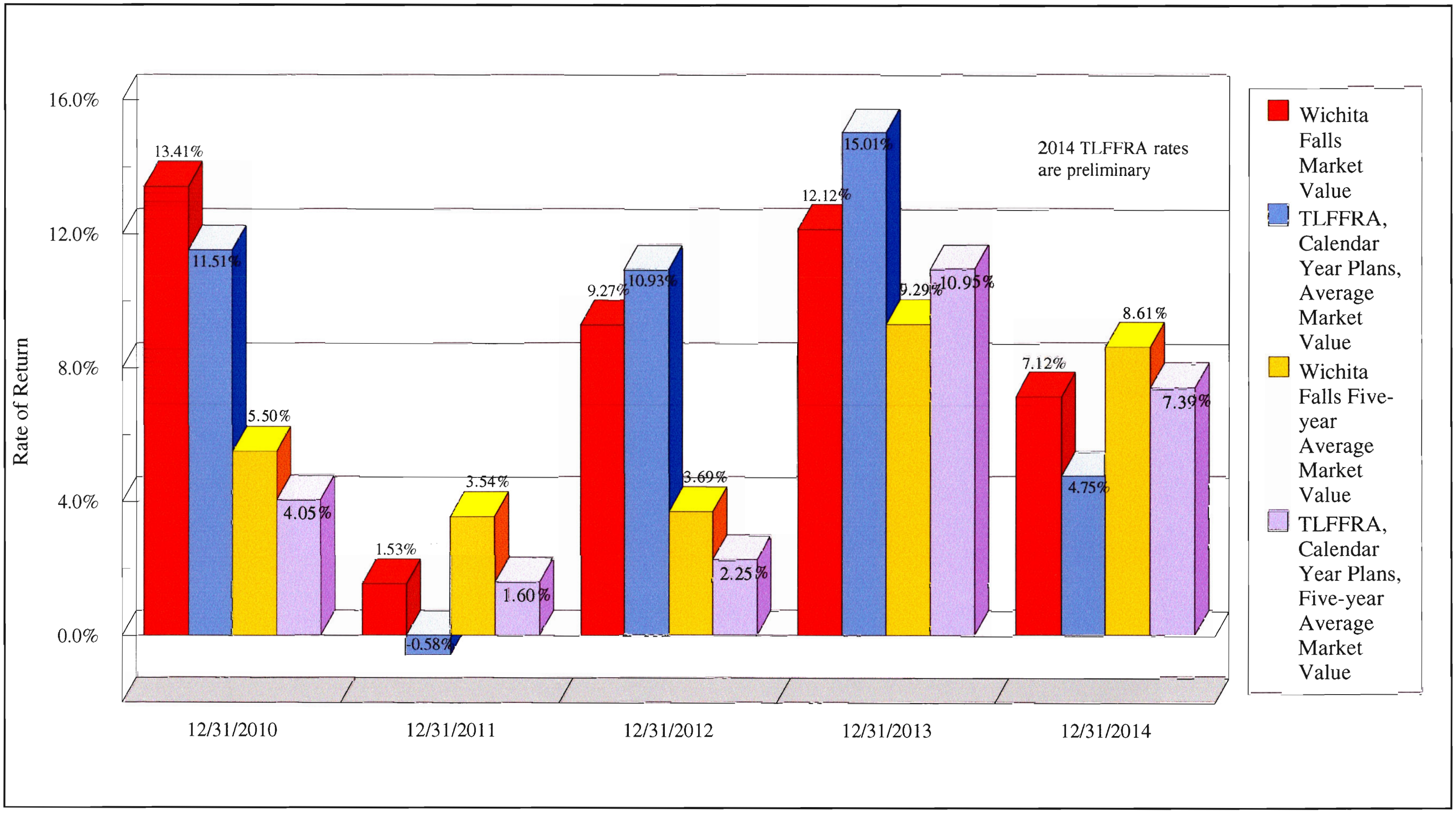
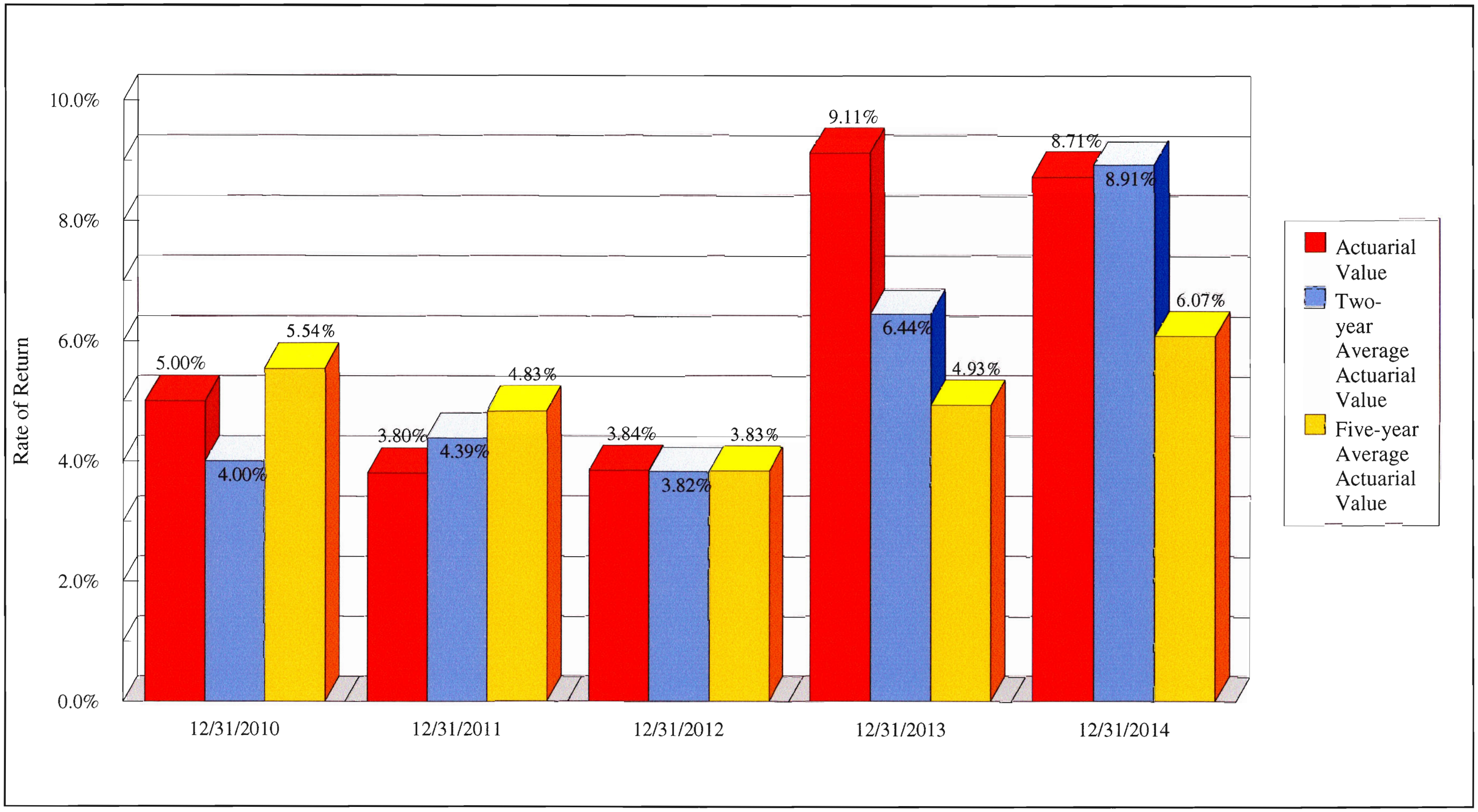
Exhibit 4, Summary of the Rate of Return on Fund Assets, Net of Expenses, Measured at Market Value



Wichita Falls Firemen's Relief and Retirement Fund

Valuation as of January 1, 2015

Exhibit 5, Summary of the Rate of Return on Fund Assets, Net of Expenses, Measured at Actuarial Value



Wichita Falls Firemen's Relief and Retirement Fund

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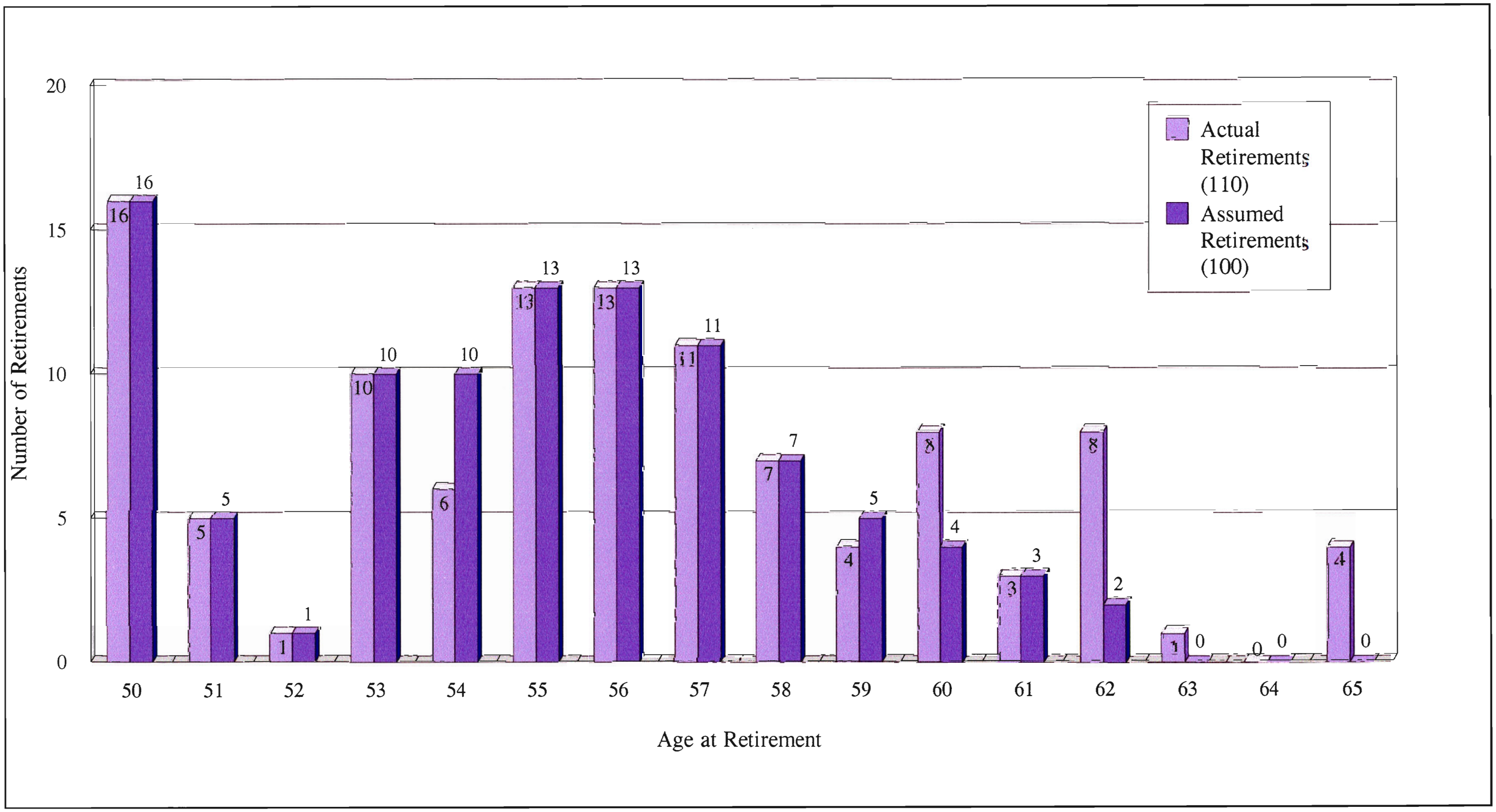
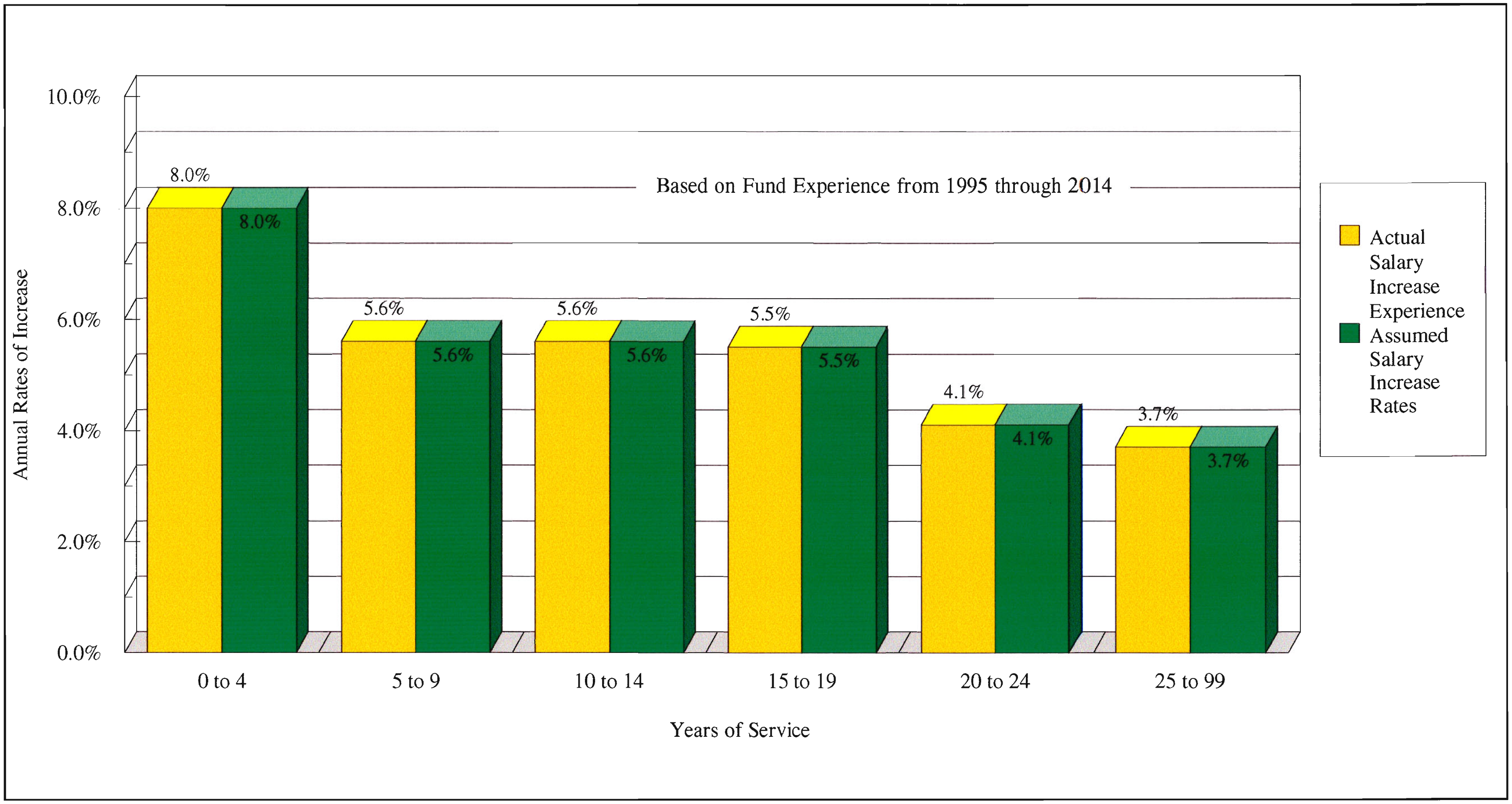
Exhibit 6, Actual Retirements by Age 1985 through 2014, and Assumed Retirements



Wichita Falls Firemen's Relief and Retirement Fund

Valuation as of January 1, 2015

Exhibit 7, Actual and Assumed Individual Salary Increase Rates By Years of Service



Wichita Falls Firemen's Relief and Retirement Fund

Valuation as of January 1, 2015

Exhibit 8, Average Age at Retirement and Salary Increase Rates

	12/31/2005	12/31/2006	12/31/2007	12/31/2008	12/31/2009
Average Ages at Retirement					
1. Average Age at Retirement for the Year	56.063	51.417	54.119	53.542	56.125
2. Two-year Average Age at Retirement	54.179	55.133	53.781	53.909	54.833
3. Average Age at Retirement Over the Last Ten Years	56.013	55.881	55.575	55.074	54.671
4. Number of Retirements During The Year	4	1	7	4	4
Average Individual Salary Increases					
5. Average Individual Salary Increase Rate Over the Last Year	1.3%	5.4%	8.3%	6.5%	4.3%
6. Average Individual Salary Increase Rate Over the Last Two Years		3.3%		7.4%	
7. Average Individual Salary Increase Rate Over the Last Ten Years				5.2%	

Wichita Falls Firemen's Relief and Retirement Fund

Valuation as of January 1, 2015

Exhibit 8, Average Age at Retirement and Salary Increase Rates (continued)

	12/31/2005	12/31/2006	12/31/2007	12/31/2008	12/31/2009
<u>Average Aggregate Salary Increases</u>					
8. Number of Active Members in the Valuation		152		164	
9. Average Aggregate Salary Increase Rate Over the Last Two Years Adjusted for Changes in the Number of Plan Members and the Number of Pay Periods		4.7%		0.8%	
10. Average Aggregate Salary Increase Rate Over the Last Ten Years Adjusted for Changes in the Number of Plan Members and the Number of Pay Periods				3.1%	

Wichita Falls Firemen's Relief and Retirement Fund

Valuation as of January 1, 2015

Exhibit 8, Average Age at Retirement and Salary Increase Rates (continued)

	12/31/2010	12/31/2011	12/31/2012	12/31/2013	12/31/2014
Average Ages at Retirement					
1. Average Age at Retirement for the Year	54.688	52.560	57.125	62.250	52.083
2. Two-year Average Age at Retirement	55.167	53.694	54.220	58.150	53.778
3. Average Age at Retirement Over the Last Ten Years	54.726	54.374	54.379	54.519	54.439
4. Number of Retirements During The Year	8	7	4	1	5
Average Individual Salary Increases					
5. Average Individual Salary Increase Rate Over the Last Year	1.6%	9.5%	2.2%	2.9%	5.1%
6. Average Individual Salary Increase Rate Over the Last Two Years	2.6%		5.6%		3.7%
7. Average Individual Salary Increase Rate Over the Last Ten Years	4.9%		5.0%		4.5%

Wichita Falls Firemen's Relief and Retirement Fund

Valuation as of January 1, 2015

Exhibit 8, Average Age at Retirement and Salary Increase Rates (continued)

	12/31/2010	12/31/2011	12/31/2012	12/31/2013	12/31/2014
Average Aggregate Salary Increases					
8. Number of Active Members in the Valuation	150		148		156
9. Average Aggregate Salary Increase Rate Over the Last Two Years Adjusted for Changes in the Number of Plan Members and the Number of Pay Periods	5.3%		3.1%		0.2%
10. Average Aggregate Salary Increase Rate Over the Last Ten Years Adjusted for Changes in the Number of Plan Members and the Number of Pay Periods	3.9%		3.5%		2.8%

Wichita Falls Firemen's Relief and Retirement Fund

Valuation as of January 1, 2015

Exhibit 9, Experience Gain and Loss Analysis

						Projected
Rate of Return Assumed for Prior Valuation	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
Salary Scale Assumed for Prior Valuation	4.75%	4.75%	4.75%	4.75%	4.75%	Tabular Rates
Increase in Payroll for Amortization Assumed for Prior Valuation	4.75%	4.75%	4.75%	4.75%	4.75%	4.50%
Valuation Date	12/31/2006	12/31/2008	12/31/2010	12/31/2012	01/01/2015	01/01/2017
Expected Actuarial Accrued Liability						
1. Prior valuation Actuarial Accrued Liability (AAL)	$42,178,490	$47,582,190	$54,260,301	$60,152,150	$66,606,163	$72,251,770
2. Prior valuation Normal Cost (NC)	1,017,443	1,096,105	1,277,580	1,248,605	1,299,696	1,521,405
3. Distributions for second prior year	1,887,475	2,221,583	2,660,333	3,289,896	3,637,284	3,779,294
4. Interest on AAL for second prior year	3,374,279	3,806,575	4,340,824	4,812,172	5,328,493	5,780,142
5. Interest on NC for second prior year	81,395	87,688	102,206	99,888	103,976	121,712
6. Interest on distributions for second prior year	75,499	88,863	106,413	131,596	145,491	151,172
7. Expected prior year AAL, (1+2-3+4+5-6)	$44,688,633	$50,262,112	$57,214,165	$62,891,323	$69,555,553	$75,744,563
8. Prior valuation NC with salary scale increase	1,065,772	1,148,170	1,338,265	1,307,914	1,361,432	1,589,868
9. Distributions for immediate prior year	1,906,057	2,300,821	3,111,331	3,453,839	3,616,549	3,949,362
10. Interest on AAL for immediate prior year	3,575,091	4,020,969	4,577,133	5,031,306	5,564,444	6,059,565
11. Interest on NC for immediate prior year	85,262	91,854	107,061	104,633	108,915	127,189
12. Interest on distributions for immediate prior year	76,242	92,033	124,453	138,154	144,662	157,974
13. Expected AAL as of the valuation date, (7+8-9+10+11-12)	$47,432,459	$53,130,251	$60,000,840	$65,743,183	$72,829,133	$79,413,849
Expected Actuarial Value of Assets						
14. Prior valuation Actuarial Value of Assets (AVA)	$32,240,524	$35,584,639	$39,358,309	$41,107,385	$41,964,674	$47,133,894
15. Contributions for second prior year	1,479,528	1,764,610	2,182,481	2,224,242	2,450,307	2,441,811
16. Distributions for second prior year	1,887,475	2,221,583	2,660,333	3,289,896	3,637,284	3,779,294
17. Interest on AVA for second prior year	2,579,242	2,846,771	3,148,665	3,288,591	3,357,174	3,770,712
18. Interest on contributions for second prior year	59,181	70,584	87,299	88,970	98,012	97,672
19. Interest on distributions for second prior year	75,499	88,863	106,413	131,596	145,491	151,172
20. Expected prior year AVA, (14+15-16+17+18-19)	34,395,501	37,956,158	42,010,008	43,287,696	44,087,392	49,513,623
21. Contribution for immediate prior year	1,661,403	2,029,488	2,180,684	2,261,343	2,377,601	2,551,693
22. Distribution for immediate prior year	1,906,057	2,300,821	3,111,331	3,453,839	3,616,549	3,949,362
23. Interest on AVA for immediate prior year	2,751,640	3,036,493	3,360,801	3,463,016	3,526,991	3,961,090
24. Interest on contributions for immediate prior year	66,456	81,180	87,227	90,454	95,104	102,068
25. Interest on distributions for immediate prior year	76,242	92,033	124,453	138,154	144,662	157,974
26. Expected AVA at valuation date (20+21-22+23+24-25)	$36,892,701	$40,710,465	$44,402,936	$45,510,516	$46,325,877	$52,021,138

Wichita Falls Firemen's Relief and Retirement Fund

Valuation as of January 1, 2015

Exhibit 9, Experience Gain and Loss Analysis (continued)

						Projected
Rate of Return Assumed for Prior Valuation	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
Salary Scale Assumed for Prior Valuation	4.75%	4.75%	4.75%	4.75%	4.75%	Tabular Rates
Increase in Payroll for Amortization Assumed for Prior Valuation	4.75%	4.75%	4.75%	4.75%	4.75%	4.50%
Valuation Date	12/31/2006	12/31/2008	12/31/2010	12/31/2012	01/01/2015	01/01/2017
Expected Valuation Results Before Assumption or Method Changes						
27. Expected AAL as of the valuation date (line 13)	$47,432,459	$53,130,251	$60,000,840	$65,743,183	$72,829,133	$79,413,849
28. Expected AVA at valuation date (line 26)	36,892,701	40,710,465	44,402,936	45,510,516	46,325,877	52,021,138
29. Expected Unfunded Actuarial Accrued Liability (UAAL), (line 27 minus line 28)	$10,539,758	$12,419,786	$15,597,904	$20,232,667	$26,503,256	$27,392,711
Actual Valuation Results Before Assumption or Method Changes						
30. Actual AAL before changes	$47,582,190	$54,309,741	$58,721,188	$66,606,163	$72,675,754	$79,413,849
31. AVA before changes	35,584,639	39,358,309	41,107,385	41,964,674	47,133,894	52,288,550
32. Actual UAAL before changes (line 30 minus line 31)	$11,997,551	$14,951,432	$17,613,803	$24,641,489	$25,541,860	$27,125,299
Gain/(Loss) on the Unfunded Actuarial Accrued Liability						
33. UAAL gain or (loss) since the previous valuation (line 29 minus line 32)	($1,457,793)	($2,531,646)	($2,015,899)	($4,408,822)	$961,396	$267,412
Check of Gain/(Loss) Calculation						
34. Actuarial Accrued Liability gain/(loss), (line 27 minus line 30)*	($149,731)	($1,179,490)	$1,279,652	($862,980)	$153,379	$0
35. Actuarial Value of Assets gain/(loss), (line 31 minus line 28)	(1,308,062)	(1,352,156)	(3,295,551)	(3,545,842)	808,017	267,412
36. AAL gain/(loss) + AVA gain/(loss)	(1,457,793)	(2,531,646)	(2,015,899)	(4,408,822)	961,396	267,412
37. Difference (line 33 - line 36)	0	0	0	0	0	0
Cumulative Gain/(Loss) on the Unfunded Actuarial Accrued Liability						
38. Prior three valuation cumulative gain/(loss) on AAL (from line 34)	($686,533)	($1,836,623)	($49,569)	($762,818)	$570,051	
39. Prior three valuation cumulative gain/(loss) on AVA (from line 35)	(5,165,543)	(3,415,321)	(5,955,769)	(8,193,549)	(6,033,376)	
40. Prior three valuation cumulative gain/(loss) on UAAL (line 38 plus line 39)	($5,852,076)	($5,251,944)	($6,005,338)	($8,956,367)	($5,463,325)	

* The AAL gain or (loss) is also referred to as the "demographic" gain or (loss).

Wichita Falls Firemen's Relief and Retirement Fund

Valuation as of January 1, 2015

Exhibit 9, Experience Gain and Loss Analysis (continued)

						Projected
Rate of Return Assumed for Prior Valuation	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
Salary Scale Assumed for Prior Valuation	4.75%	4.75%	4.75%	4.75%	4.75%	Tabular Rates
Increase in Payroll for Amortization Assumed for Prior Valuation	4.75%	4.75%	4.75%	4.75%	4.75%	4.50%
Valuation Date	12/31/2006	12/31/2008	12/31/2010	12/31/2012	01/01/2015	01/01/2017
Calculation of the Amortization Period						
41. Percentage of payroll available to amortize the UAAL	7.22%	7.76%	10.09%	10.58%	10.30%	8.72%
42. Annualized compensation	7,697,370	$8,915,419	$8,527,417	$8,962,581	$9,569,972	$10,515,382
43. Amount available to amortize the UAAL	555,750	691,837	860,416	948,241	985,707	916,941
44. Years to amortize the UAAL before changes in methods or assumptions	39.6	39.7	35.8	60.9	60.4	96.7
45. Years to amortize the UAAL after changes in methods and/or assumptions	34.6	24.8	38.9	63.2	105.9	-
46. Years to amortize the UAAL after changes in methods, assumptions and plan amendments	-	-	-	-	-	-

Notes

The 96.7-year projected amortization period as of January 1, 2017, assumes that there is no demographic loss for the two-year period between the January 1, 2015 and 2017 valuation dates.

For the purposes of developing the January 1, 2017 projections, the total of benefits and contribution refunds paid for the years ending December 31, 2015, and 2016, was assumed to be 104.5 percent of amounts paid for the prior year. Expenses for the years ending in 2015 and 2016 were assumed to be 104.5 percent of the prior year's expenses. The market value rate of return of the trust for the years ending in 2015 and 2016 was assumed to be 8.00 percent after expenses. The normal costs for the years ending December 31, 2016, and 2017, were assumed to be 104.50 percent of the prior year's normal cost. The City contribution rate was assumed to remain at 12.52 percent of pay.

Section III - Appendices

Actuarial Cost Method

The actuarial cost method used in the valuation is the individual entry age normal actuarial cost method. This method is also referred to as the entry age actuarial cost method under the terminology developed by the Joint Committee on Pension Terminology.

The valuation measures the actuarial balance between the present value of future benefits and the sum of (1) the present value of future contributions and (2) the actuarial value of assets. The plan is not subject to the minimum funding requirements of Internal Revenue Code Section 430.

Each employee's normal cost equals the level percentage of pay contribution which, if paid annually from date of employment to date of assumed retirement, would fully fund the employee's benefits. The employee's portion of the normal cost equals his or her anticipated employee contributions for the year. The employer normal cost for the year equals the total normal cost for all employees minus the total employee normal cost.

The actuarial accrued liability is developed by subtracting the present value of future normal costs from the present value of future benefits. The unfunded actuarial accrued liability is calculated by subtracting the actuarial value of assets from the actuarial accrued liability.

The actuarial cost method is the same as was used for the previous valuation.

Changes in the Actuarial Cost Method
The valuation date was changed to the first day of the plan year. In addition, the formula used to calculate the amortization period was changed to the formula set out in Appendix D. The changes were made in order to most accurately reflect the actuarial position of the plan. The individual entry age normal actuarial cost method was used for both the 2015 valuation and the previous valuation.

Appendix A, Actuarial Cost Method and Actuarial Value of Assets

Actuarial Value of Assets

The actuarial value of assets is smoothed market value. Calculation of the actuarial value of assets begins with the market value of assets as of the valuation date. The expected amount of return over each of the last five years is calculated and subtracted from the actual amount of return for each year. The difference for each year is phased in to the actuarial value of assets at a rate of 20 percent per year until it is fully recognized.

The actuarial value of assets as calculated above is subject to a minimum value of 80 percent of the market value of assets as of the valuation date and a maximum value of 120 percent of the market value of assets as of the valuation date.

The development of the actuarial value of assets is shown on Exhibit 3. The method used to develop the actuarial value of assets is the same as the method used for the previous valuation.

1. Rate of return on the actuarial value of assets	8.00% per annum, compounded annually
2. Mortality	Employee and Healthy Annuitant Combined Rates from the RP-2000 Mortality Table, projected to 2024 using Scale AA, with separate rates for males and females
3. Assumed retirement age for active members	Retirement rates (RR Table 0515) are shown on the table below.
4. Assumed retirement age for vested terminated members	Benefits for vested terminated members are assumed to start on the date the member attains age 50 or, if later, the date the member would have completed 20 years of service.
5. Disability	Disability rates are shown on a table below.
6. Termination	Termination rates are shown on a table below.

7. Compensation increases for individual members

Compensation increase rates (SS Table 0515) are shown on the table below.

8. Increases in total payroll

4.50% per year, compounded annually

9. Marital status

a. Proportion married — Males: 100%, Females: 100%

b. Difference in ages — Actual age differences are used for married members. Unmarried members are assumed to be married at retirement. Males are assumed to be two years older than their spouses.

10. Assumed death benefit to 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.

11. Assumed contribution rates

a. Members — 12.00% of compensation

b. City — 12.52% of compensation

12. Assumed form of payment

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.

Decrements are assumed to be annual rates, rather than probabilities, and are adjusted for the interaction between competing decrements. The 8.00 percent rate of return was set by examining the fund's rate of return history and by taking into account future expected rates of return for portfolios with similar asset allocations. The assumed 8.00 percent rate can be considered to include a provision for inflation at 3.00 percent per year, although other combinations of real return, risk premium and inflation are also accounted for by an 8.00 assumed rate. The rate of return is net of trust expenses. The same inflation component was used in the assumed rate of return on the actuarial value of assets, the assumed increases in compensation for individual members and the other actuarial assumptions.

The valuation includes provisions for mortality improvement to 2024. The mortality table used in the valuation is updated periodically. The actuaries are not aware of any significant event that has occurred since the valuation date that would have materially changed any of the demographic assumptions selected for the valuation.

Rationale for the Actuarial Assumptions

The assumed rate of return was developed using both the plan's historical rates of return and expected future rates of return. Rate of return experience studies have been performed in connection with the plan's valuations. (See Exhibit 4 and Exhibit 5 of this valuation report as well as corresponding exhibits in prior valuation reports.)

The demographic assumptions were chosen based on expected future rates of retirement, mortality, disability, and termination. Mortality was taken from published studies and was updated to reflect future improvement. Retirement and salary increase rates were developed based on the plan's own experience. (See Exhibit 6 and Exhibit 7 of this report.) Disability and termination rates were based on published rates, adjusted as necessary, to conform to the plan's own experience. Demographic assumptions were tested in connection with the valuation. (See Exhibit 8 of this report, as well as corresponding exhibits in prior valuation reports.)

Both economic and demographic assumptions were further tested through the calculation of the plan's aggregate experience with respect to both demographic decrements and economic assumptions. (See Exhibit 9 of this valuation report as well as corresponding exhibits in prior valuation reports.)

Rationale for the actuarial assumptions is also provided in the Text Section of this report.

Changes in Actuarial Assumptions and Rationale for Changes in the Actuarial Assumptions

The assumed retirement age for active members was changed from age 57 to a retirement table developed based on the fund's experience with respect to retirement. Twenty years of service is required in order to be eligible for service retirement under the fund. The rate at which active members' salary is assumed to increase each year was changed from 4.75 percent per year to a table based on a member's years of service. The table was developed based on the fund's experience with respect to salary increases. The assumed increase in aggregate compensation was lowered by one-quarter of one percent to 4.50 percent per year.

The mortality table used for the valuation was changed from (a) the *Employee and Healthy Annuitant Combined Rates* from the RP-2000 Mortality Table, projected to 2015 using Scale AA, with separate rates for males and females, to (b) the *Employee and Healthy Annuitant Combined Rates* from the RP-2000 Mortality Table, projected to 2024 using Scale AA, with separate rates for males and females The mortality changes were made in order to recognize mortality improvement through the valuation date and provide a margin for future mortality improvement. Disability rates were changed from SOA Disability Study Table, Class 1 rates, to the tabular rates listed in this Appendix B. Termination rates were not changed; however, they were listed as tabular rates, rather than under their original name, Table T-1 from the *Actuary's Pension Handbook*.

The effects of the assumption changes are described in the Text Section of the report. The assumption changes were made in order to align the assumptions with actuarial requirements, the plan's experience studies, as well as to most accurately reflect anticipated plan experience.

Wichita Falls Firemen's Relief and Fund

Valuation as of January 1, 2015

Appendix B, Actuarial Assumptions

Retirement Rates By Attained Age and Age at Date of Employment (RR Table 0515)

	Age at Date of Employment																
Attained Age	26 or earlier	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
46	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
47	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
48	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
49	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
50	0.1600	0.1600	0.1600	0.1600	0.1600	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
51	0.0500	0.0500	0.0500	0.0500	0.0500	0.2100	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
52	0.0100	0.0100	0.0100	0.0100	0.0100	0.0100	0.2200	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
53	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.3200	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
54	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.4200	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
55	0.1300	0.1300	0.1300	0.1300	0.1300	0.1300	0.1300	0.1300	0.1300	0.5500	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
56	0.1300	0.1300	0.1300	0.1300	0.1300	0.1300	0.1300	0.1300	0.1300	0.1300	0.6800	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
57	0.1100	0.1100	0.1100	0.1100	0.1100	0.1100	0.1100	0.1100	0.1100	0.1100	0.1100	0.7900	0.0000	0.0000	0.0000	0.0000	0.0000
58	0.0700	0.0700	0.0700	0.0700	0.0700	0.0700	0.0700	0.0700	0.0700	0.0700	0.0700	0.0700	0.8600	0.0000	0.0000	0.0000	0.0000
59	0.0500	0.0500	0.0500	0.0500	0.0500	0.0500	0.0500	0.0500	0.0500	0.0500	0.0500	0.0500	0.0500	0.9100	0.0000	0.0000	0.0000
60	0.0400	0.0400	0.0400	0.0400	0.0400	0.0400	0.0400	0.0400	0.0400	0.0400	0.0400	0.0400	0.0400	0.0400	0.9500	0.0000	0.0000
61	0.0300	0.0300	0.0300	0.0300	0.0300	0.0300	0.0300	0.0300	0.0300	0.0300	0.0300	0.0300	0.0300	0.0300	0.0300	0.9800	0.0000
62	0.0200	0.0200	0.0200	0.0200	0.0200	0.0200	0.0200	0.0200	0.0200	0.0200	0.0200	0.0200	0.0200	0.0200	0.0200	0.0200	1.0000
63	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Salary Increase Rates By Years of Service (SS Table 0515)

Years of Service	Annual Rate of Increase	Years of Service	Annual Rate of Increase
0	8.00%	20	4.10%
1	8.00%	21	4.10%
2	8.00%	22	4.10%
3	8.00%	23	4.10%
4	8.00%	24	4.10%
5	5.60%	25	3.70%
6	5.60%	26	3.70%
7	5.60%	27	3.70%
8	5.60%	28	3.70%
9	5.60%	29	3.70%
10	5.60%	30	3.70%
11	5.60%	31	3.70%
12	5.60%	32	3.70%
13	5.60%	33	3.70%
14	5.60%	34	3.70%
15	5.50%	35	3.70%
16	5.50%	36	3.70%
17	5.50%	37	3.70%
18	5.50%	38	3.70%
19	5.50%	39 or more	3.70%

Disability and Termination Rates By Attained Age

Attained Age	Disability Rate	Termination Rate	Attained Age	Disability Rate	Termination Rate
18	0.00075	0.055000			
19	0.00080	0.055000			
20	0.00085	0.055000	45	0.00335	0.006233
21	0.00090	0.054723	46	0.00367	0.005660
22	0.00096	0.054010	47	0.00402	0.005397
23	0.00101	0.052906	48	0.00441	0.005454
24	0.00106	0.051456	49	0.00485	0.005822
25	0.00111	0.049706	50	0.00533	0.000000
26	0.00112	0.047700	51	0.00586	0.000000
27	0.00113	0.045486	52	0.00645	0.000000
28	0.00114	0.043105	53	0.00710	0.000000
29	0.00118	0.040600	54	0.00780	0.000000
30	0.00122	0.038011	55	0.00858	0.000000
31	0.00125	0.035373	56	0.00943	0.000000
32	0.00130	0.032715	57	0.01036	0.000000
33	0.00136	0.030064	58	0.01137	0.000000
34	0.00143	0.027441	59	0.01247	0.000000
35	0.00152	0.024866	60	0.01367	0.000000
36	0.00162	0.022354	61	0.01497	0.000000
37	0.00173	0.019922	62	0.01638	0.000000
38	0.00187	0.017586	63	0.01779	0.000000
39	0.00203	0.015367	64	0.01920	0.000000
40	0.00221	0.013283			
41	0.00239	0.011378			
42	0.00259	0.009700			
43	0.00281	0.008269			
44	0.00307	0.007107			

Wichita Falls Firemen's Relief and Retirement Fund

Valuation as of January 1, 2015

Appendix C, Summary of Principal Fund Provisions

Authority for the Fund and Definitions

The Wichita Falls Firemen's Relief and Retirement Fund is 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.

Effective January 2015, the City of Wichita Falls will begin contributing to the fund at a rate equal to 12.52 percent of each member's total pay (including regular, longevity and overtime pay, but excluding lump sum distributions for unused sick leave, or vacation).

Fund members contribute to the fund at a rate of 12.00 percent of pay. Employee contributions are "picked up" by the City, as permitted under Section 414(h)(2) of the Internal Revenue Code. For this reason, a member's contributions are excluded from taxable income when paid into the fund.

Fund members receive credit for service for the period during which they pay into, and keep on deposit in the fund, the contributions required by the fund. Service is also granted for certain periods during which a member received disability benefits from the fund.

Retirement, death, disability, and termination benefits are calculated based upon a member's average salary for the 78 consecutive biweekly pay periods which produce the highest average.

The fund was established October 1, 1941, and was most recently amended August 24, 2011.

Eligibility

All active fire fighters of the Wichita Falls Fire Department are members of the Wichita Falls Firemen's Relief and Retirement Fund.

Service Retirement Benefits

A member is eligible for service retirement upon completion of 20 years of service and attainment of age 50. A member who retires under the service retirement provisions of the fund will receive a monthly benefit equal to 2.55 percent of his average salary, multiplied by his years of credited service.

Service retirement benefits are payable for the member's lifetime. In the event the member's death precedes that of his spouse, two-thirds of the member's pension will be continued to the spouse for her lifetime. In lieu of the normal form of benefit, a member may elect at the time of his retirement to receive a modified monthly amount payable under one of several optional forms described below.

Disability Benefits

An active member will qualify for a disability benefit if he becomes disabled from any cause for either physical or mental reasons except as provided below. For the first two years, the member need only be disabled to the extent of being unable to perform the duties of a position offered him in the fire department providing pay that is greater than or equal to the pay he would have received as an active employee of the fire department. After two years, the member must be unable to perform the duties of any occupation for which he is reasonably suited by reason of education, training or experience.

A member will not be eligible for benefits if his disability is the result of:

a. excessive and habitual use of drugs, intoxicants, or narcotics;

b. injury or disease sustained while willfully and illegally participating in fights, riots, civil insurrections, or while committing a felony;

c. injury or disease sustained while serving in the armed forces;

d. injury or disease diagnosed or discovered subsequent to termination of employment;

e. injury or disease sustained as a result of an act of war, declared or undeclared; or

f. any attempt at suicide while sane or insane, or by injuries intentionally self-inflicted.

A member must make an application for initial disability benefits in accordance with procedures adopted by the board of trustees. If the member was hired on or after January 1, 2004, the member must also make an application for continuing disability benefits before the end of the first two-year period of the member's disability. The application for continuing disability benefits must also be made in accordance with procedures adopted by the board of trustees.

<u>Amount of Disability Benefit</u>
The amount of disability benefit payable under the fund will vary according to the member's age at hire and his age at the date he becomes disabled. For members hired on or before December 31, 2003, disability benefits are as follows:

a. If the member is less than 50 years of age at the date he becomes disabled, his initial disability benefit will equal 50 percent of his average monthly salary. Once the member attains age 50, his benefit will change to 2.55 percent of his average monthly salary, multiplied by the number of years of service he would have accrued if his service had continued uninterrupted to age 50.

b. If the member has attained 50 years of age at the date he becomes disabled, his monthly benefit will equal 2.55 percent of his average monthly salary multiplied by his years of service.

For members hired on or after January 1, 2004, disability benefits are as follows:

c. If the member is less than 50 years of age at the date he becomes disabled and the member was disabled while on duty, his initial disability benefit will equal 50 percent of his average monthly salary.

If such member's disability occurred off duty, the percentage of his average salary payable until the member attains age 50 will be as specified in the following table:

Number of Completed Years of Credited Service	Disability Benefit as a Percent of the Member's Average Salary
0	5.0%
1	5.0%
2	10.0%
3	15.0%
4	20.0%
5	25.0%
6	30.0%
7	35.0%
8	40.0%
9	45.0%
10	50.0%

d. Once the member attains age 50, his benefit will change to 2.55 percent of his average monthly salary, multiplied by the number of years of service he would have accrued if his service had continued uninterrupted to age 50.

A member's disability benefit will commence once his regular salary, including vacation and sick leave pay, has ceased. Disability benefits are payable in the same joint-and-survivor form as service retirement benefits. However, disability benefits stop if the member recovers to the point he no longer meets the definition of disability under the fund.

Death Benefits

If a member dies while in active service, his widow will receive an immediate monthly benefit, payable for as long as she is living. If a widow remarries on or after July 30, 1998, she no longer forfeits her benefit. However, if an individual becomes eligible for widow's benefits as a result of the death of more than one member of the fund, the only benefit payable will be the greatest of the amounts otherwise due. The amount of the benefit will be calculated as follows, based on the member's age at the date of his death:

a. If the member was not eligible for service retirement on the date of his death, a benefit equal to two-thirds of the service retirement benefit that the member would have been entitled to receive if his service had continued uninterrupted until age 50, but using the member's average monthly salary as of the date of his death; or

b. If the member was eligible for service retirement on the date of his death, a benefit equal to two-thirds of the service retirement benefit that the member was eligible to receive as of the date of his death.

In addition to the above widow's benefit, each unmarried child of the member will receive a monthly benefit of $230. Orphan benefits will continue until the child reaches age 18. However, benefits will continue until age 23 for a child who is a full-time student. Orphan benefits are continued to disabled children for life.

The total of all benefits paid as a result of the death of an active fund member may not exceed the disability or retirement benefit such member had earned as of the date of his death. The total of all benefits paid as a result of the death of a retired member may not exceed the retirement benefit the member was receiving as of the date of his death. Benefits are reduced pro rata, if necessary, in order to satisfy these limitations.

Termination Benefits

Members with at Least Twenty Years of Service
A fund member who terminates employment after completing at least 20 years of credited service, but prior to the date he attains age 50, will be entitled to receive a monthly benefit starting at age 50. The amount the member will receive equals the monthly service retirement benefit he had accumulated on the date he separated from service.

Members with Less Than Twenty Years of Service
A fund member who terminates employment prior to completing 20 years of service will be entitled to the return of the excess of his contributions to the fund over the amount of any benefits he has received from the fund. Such refund will not include any interest on the member's contributions.

Optional Forms of Payment

In lieu of the joint-and-survivor form of payment specified in the plan, a member who retires under the service or vested termination provisions of the fund may elect to receive his benefits under one or more of the options listed below. However, Option 3 may not be combined with any other option. A member who retires under the disability provisions of the fund may elect to receive his benefits under Option 1 or under Option 2, below.

Option 1
Under Option 1, a larger monthly benefit is paid while the member is living. Payments cease, however, upon the member's death.

Option 2
Under Option 2, a larger monthly benefit is paid while the member is living. Payments are continued for the member's lifetime with payments guaranteed for at least 10 years.

Option 3
Under Option 3, a member receives a larger monthly benefit under the fund until age 62. At age 62, the monthly amount is reduced. The amounts of monthly benefits are set so as to produce an approximately level total benefit when Social Security payments are taken into account.

Option 4
Under Option 4, a member receives a reduced monthly benefit in return for a lump sum payment upon retirement. The initial payment is referred to as the DROP payment. The date a member has both attained age 53 and completed 23 years of credited service is referred to as the member's DROP Eligibility Date. A member may retire under the DROP if his retirement date falls on or after his DROP Eligibility Date.

The monthly benefit of a member who retires under the DROP equals the monthly benefit he was entitled to as of his DROP Eligibility Date using the benefit formula in effect on his actual date of retirement. The DROP payment equals the member's monthly benefit multiplied by the number of months, not in excess of 24, between the member's DROP Eligibility Date and his date of actual retirement.

Option 5
Under Option 5, a member receives a reduced initial monthly benefit. However, in the event the member survives his spouse, upon the spouse's death, the monthly benefit being paid to the member will increase to the amount that would have been paid had the member elected Option 1, above, at his date of retirement. In the event the member's death precedes that of his spouse, two-thirds of the reduced pension will be continued to the spouse for her lifetime.

Option 6
Under Option 6, a member receives a reduced initial monthly benefit which increases either by one-half of one percent or by one percent, each year. The member elects the percentage by which the benefit will increase annually. The reduction in the initial monthly amount keeps the benefit cost neutral to the fund.

Amendment of the Plan

The plan document may be amended as provided in Section 7 of the Texas Fire Fighters' Retirement Act (Article 6243e. V.T.C.S.). Amending the plan requires approval of any proposed change by (a) an eligible actuary and (b) a majority of the participating members of the fund.

Appendix D, Glossary of Terms Used in the Report

Actuarial Assumptions

In order to project future retirement benefits and to calculate the contributions necessary to fund those benefits, the actuary must choose an earnings rate which will be representative of the trust fund's future rate of return over the long term. Expected rates of mortality, disability, termination and retirement must be selected as well. It is also necessary to choose the assumed rates at which members' compensation will increase. Each of these assumed rates is referred to as an actuarial assumption. The actuary monitors the plan's experience with respect to each assumption and changes assumptions as required. The actuarial assumptions used in this valuation are listed on Appendix B.

Actuarial Cost Method

The actuarial cost method is the means for distributing the cost of a member's pension over his or her period of service with the employer. The cost attributed to each specific year is referred to as the normal cost for that year. The pattern of normal costs is what distinguishes one cost method from another. The specific actuarial cost method used for the actuarial valuation is described on Appendix A.

Actuarial Present Value

Actuarial valuations discount the value of future pension and other benefits from the date they are assumed to be paid, back to the valuation date. Payments are discounted for interest and for the probability that they will ultimately be paid. Probabilities that are taken into account include death, disability and termination.

Actuarial Value of Assets

The assets of the trust fund can be measured in several ways. If the value of assets is measured by the amount that was paid for them, assets are said to be valued at cost. Assets valued on the basis of the price between a willing buyer and a willing seller are said to be accounted for at market value. The actuarial value of assets is the value of fund assets used in the actuarial valuation. The actuarial value of assets may be set at cost, at market, or some combination of values. Actuarial value is chosen so as to smooth temporary fluctuations of the trust fund. The method used to develop the actuarial value of assets for the valuation is described on Appendix A.

Amortization Period

The portion of the employer's contribution not needed to meet the normal cost for the year is applied to amortizing the unfunded actuarial accrued liability (UAAL). The amortization payment is first applied toward interest on the UAAL. Any remaining amount reduces principal. By taking into account the size of the UAAL, the amount available to amortize the UAAL, and the plan's assumed interest rate, the actuary can calculate the length of time that will be required to reduce the UAAL to zero. This time span is called the amortization period. It is important to note that the periodic amortization payments are not level. Rather, payments are assumed to increase each year by a percentage equal to the growth in total payroll.

The amortization is calculated using a net annual interest accumulation, $(1+j)$, equal to (a) one plus the assumed rate of return, $(1+i)$, divided by (b) one plus the assumed rate of increase in total payroll, $(1+k)$. The net interest rate (j) equals the net annual interest accumulation minus one. The payment available, as of the valuation date, to amortize the UAAL is calculated as the percentage of payroll available for amortization multiplied by annualized compensation. Annualized compensation equals expected compensation for the 12-month period following the valuation date adjusted, using the valuation interest rate, to an equivalent single-payment amount as of the valuation date.

The amortization period equals difference of A minus B, divided by C, where:

$A = \log [(1+j) \times \text{Amortization Payment}]$,

$B = \log [(1+j) \times \text{Amortization Payment} - (j \times \text{UAAL})]$, and

$C = \log [1+j]$.

Entry Age Normal Cost Method

Under the entry age normal cost method, the cost of a member's pension is spread over his or her entire career. The normal cost of benefits is calculated so as to be a level amount when expressed as a percentage of pay. A detailed description of the cost method used appears on Appendix A.

Normal Cost

The normal cost is the portion of the cost of a member's pension that is attributed to a specific year.

Texas Pension Review Board Guidelines for Actuarial Soundness

The Texas Pension Review Board has published guidelines which specify the basis for determining whether a public pension plan complies with the requirements of Section 802.101 of the Texas Government Code. The guidelines, as amended September 28, 2011, provide that valuations should meet the following requirements.

1. The funding of a pension plan should reflect all plan obligations and assets.

2. The allocation of the normal cost portion of contributions should be level or declining as a percent of payroll over all generations of taxpayers and should be calculated under applicable actuarial standards.

3. Funding of the unfunded actuarial accrued liability should be level or declining as a percent of payroll over the amortization period.

4. Funding should be adequate to amortize the unfunded actuarial accrued liability over a period not to exceed 40 years, with 15 to 25 years being a more preferable target. Benefit increases should not be adopted if all plan changes being considered cause a material increase in the amortization period and if the resulting amortization period exceeds 25 years.

5. The choice of assumptions should be realistic and reasonable and should comply with applicable actuarial standards.

Unfunded Actuarial Accrued Liability

The unfunded actuarial accrued liability (UAAL) represents the difference between (a) the present value of future benefits and (b) the sum of the present value of future normal costs and the actuarial value of assets. The UAAL is used in calculating the amortization payment for the year, which is a part of the annual contribution requirement. The UAAL does not represent a measure of the degree to which accrued benefits are funded. Many plans which are fully funded as far as accrued benefits are concerned nevertheless have unfunded actuarial accrued liabilities.