Orange Firemen's Relief and Retirement Fund

Valuation as of January 1, 2015

June 18, 2015

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Section I - Report Text

Orange 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 Orange 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	$8,766,374	$9,383,309
b. Actuarial Present Value of Accumulated Plan Benefits	$13,890,352	$14,349,640
c. Accumulated Benefit Funding Ratio (line a. divided by line b.)	63.1%	65.4%
d. Unfunded Actuarial Accrued Liability (UAAL)	$6,544,945	$6,961,980
e. Annualized Compensation	$1,996,008	$2,292,120
f. Amortization Period	82.3 Yrs.	58.2 Yrs.

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 65.4 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, the present value of accrued retirement benefits was approximately $15,339,218. This produces a funding ratio of 61.2 percent. The accrued benefit funding ratio is lower than the ratio on page one 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. 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 58.2 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 Orange 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.

2. Discussion of Valuation Results

The amortization period as of December 31, 2012, was 82.3 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 80.3 years due to the passage of time. The amortization period as of January 1, 2015, however, was 51.6 years, using the 2012 actuarial assumptions

and methods. The amortization period was lower than expected primarily due to the rate of return on the actuarial value of assets, which was higher than assumed.

Changes in the Actuarial Assumptions

The assumed rate of return on the actuarial value of assets was lowered from 8.00 percent per annum to 7.75 percent per annum. 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 4.00 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 mortality table used for the valuation was changed from 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 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 individual entry age normal actuarial cost method was used for both the 2015 valuation and the previous valuation. Please see Appendix B for the rationale for the actuarial assumptions and the rationale for the changes in actuarial assumptions and methods.

The changes in assumptions, along with the changes in actuarial cost methods, raised the amortization period to 58.2 years. Of this increase, 7.6 years was attributable to the one quarter of one percent decrease in the assumed rate of return.

Summary of the Fund's Condition

Based on the 2015 valuation results, the actuaries recommend that (a) the City of Orange 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 46.3 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 47.4 years. If the City of Orange 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 39.8 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.

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 7.75 percent per annum. A portion of active fire fighters from age 50 through age 60 were assumed to retire, each year. The distributed retirements produced an average expected retirement age of 54.2. 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 4.96 percent per year over his or her career. Total payroll was assumed to increase 4.00 percent per year. The rates of retirement at each attained age and the rates of salary increase, based on years of service, are listed on Appendix B.

Orange Firemen's Relief and Retirement Fund

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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 not yet available.)

Using the market value of assets, the Orange fund's approximate annual rates of return for the years ending December 31, 2010, through 2014, were 11.34%, -1.39%, 10.91%, 15.07%, and 2.46%, respectively. The average rate of return for the five-year period ending December 31, 2014, was 7.50%. The fund's average annual rate of return since December 31, 1995, was 6.78%.

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 9.11%.

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 30 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 three retirements during the last two years. Over the last ten years, the two-year average age at retirement has ranged from 50.688 to 62.083. The average age at retirement over the entire ten-year period was 53.826.

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Annual pay increases for members with at least two full years of service averaged approximately 4.9 percent per year over the last two years. Over the last ten years, the figure was approximately 4.3 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 0.3 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 2.7 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 was the same for the 2006 through 2015 valuations.

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 2008 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 runs from 56.6 years to 59.2 years.

The projected amortization period range is based on the assumption that the market value of plan assets grows at 7.75 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.

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.

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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 City of Orange and the Orange 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.

The firm of John M. Crider, Jr. – Consulting Actuary, which prepared the January 1, 2015 valuation, is compensated solely by the Orange 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 Orange 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 Orange.

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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.

Thank you for the opportunity to serve the Orange 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
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Reviewed By

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Section II - Exhibits

Orange 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 1415
Assumed Rate of Return	8.00%	7.75%
Salary Scale	4.00%	SS Table 1415
Increase in Payroll for Amortization	4.00%	4.00%
Assumed Contribution Percentage of Members	11.00%	11.00%
Assumed Contribution Percentage of City	14.00%	14.00%
1. Number of Participants		
a. Actives below earliest ARA	34	29
b. Actives in ARA range	-	6
c. Actives above latest ARA	3	2
d. Service retired	29	30
e. Disability retired	2	1
f. Vested and non-vested terminated	2	1
g. Spouses and alternate payees	6	5
h. Children	0	0
i. Total	76	74
2. Annualized Compensation		
a. Actives at or below latest ARA	$ 1,996,008	$ 2,292,120
b. Average compensation	58,706	65,489
3. Annual Retirement Income		
a. Actives below earliest ARA	$ 2,699,707	$ 2,680,759
b. Actives in ARA range	-	291,621
c. Actives above latest ARA	157,213	147,938
d. Service retired	770,583	864,616
e. Disability retired	52,631	26,690
f. Vested and non-vested terminated	0	0
g. Spouses and alternate payees	72,097	80,158
h. Children	0	0
i. Total	$ 3,752,231	$ 4,091,782

Orange 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	$ 163,647	$ 230,601
	b. Death in active service	5,723	5,733
	c. Disability	25,179	25,356
	d. Termination	30,464	33,701
	e. Total	$ 225,013	$ 295,391
5.	**Anticipated Employee Contributions**	219,561	$ 252,133
6.	**Net Employer Normal Cost (4 - 5)**	5,452	$ 43,258
7.	**Net Employer Normal Cost, Expressed as a Percentage of Covered Payroll (6 ÷ 2a)**	0.27%	1.89%
8.	**Normal Cost Percentage for Members**	11.00%	11.00%
9.	**Total Normal Cost Percentage for the Plan (7) + (8)**	11.27%	12.89%

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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 1415
Assumed Rate of Return	8.00%	7.75%
Salary Scale	4.00%	SS Table 1415
Increase in Payroll for Amortization	4.00%	4.00%
Assumed Contribution Percentage of Members	11.00%	11.00%
Assumed Contribution Percentage of City	14.00%	14.00%
1. Present Value of Future Benefits Payable to Individuals Receiving or Due Benefits		
a. Service retired	$ 7,754,814	$ 9,046,835
b. Disability retired	615,599	322,353
c. Vested and non-vested terminated	39,704	21,315
d. Spouses and alternate payees	569,871	686,118
e. Children	0	0
f. Total	$ 8,979,988	$ 10,076,621
2. Present Value of Future Benefits Payable to Active and Overage Members		
a. Service retirement	$ 7,756,854	$ 8,539,296
b. Death in active service	98,719	95,681
c. Disability	472,316	470,332
d. Termination	326,637	413,451
e. Total	$ 8,654,526	$ 9,518,760
3. Total Present Value of Future Benefits (1f + 2e)	$ 17,634,514	$ 19,595,381

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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	$ 2,332,959	$ 2,750,062
	b. City	(9,764)	500,030
	c. Total	$ 2,323,195	$ 3,250,092
5.	**Actuarial Accrued Liability (3 - 4c)**	$ 15,311,319	$ 16,345,289
6.	**Actuarial Value of Assets**	$ 8,766,374	$ 9,383,309
7.	**Unfunded Actuarial Accrued Liability (5 - 6)**	$ 6,544,945	$ 6,961,980
8.	**Total Contributions (% of Payroll)**	25.00%	25.00%
9.	**Normal Cost (% of Payroll)**	11.27%	12.89%
10.	**Percentage of Payroll Available to Fund the Unfunded Actuarial Accrued Liability (8 - 9)**	13.73%	12.11%
11.	**Annualized Compensation**	$ 1,996,008	$ 2,292,120
12.	**Amount Available to Amortize the Unfunded Actuarial Accrued Liability (10 × 11)**	$ 274,052	$ 277,576
13.	**Years to Amortize the Unfunded Actuarial Accrued Liability Assuming the Specified Rate of Annual Payroll Increases**	82.3 Yrs.	58.2 Yrs.
14.	**Additional Amount of Employer Contribution Needed to Produce a 25-year Amortization Period as of Dollar Amount and as a Percent of Pay**	$ 154,092 7.72%	$ 134,318 5.86%

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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**	$ 7,863,408	$ 8,563,462	$ 8,148,985	$ 8,728,277	$ 9,594,819
2.	**Contributions, Appreciation, and Interest and Dividends**					
	a. Contributions by the city	284,686	287,395	305,597	305,342	319,060
	b. Contributions by members	223,682	225,810	240,316	239,666	250,694
	c. Net realized and unrealized appreciation (depreciation)	786,295	(242,054)	757,428	1,201,981	143,874
	d. Interest and dividends	182,825	238,778	219,981	197,324	211,163
	e. Other	8	2	1	0	0
3.	**Disbursements**					
	a. Benefits paid	636,952	770,867	839,479	923,389	1,052,659
	b. Contributions refunded	52,654	39,704	0	39,044	31,950
	c. Administrative expenses	87,836	113,837	104,552	115,338	125,686
4.	**Subtotal of Contributions, Appreciation, Interest and Dividends, and Disbursements**	700,054	(414,477)	579,292	866,542	(285,504)
5.	**Market Value as of December 31**	8,563,462	8,148,985	8,728,277	9,594,819	9,309,315

Orange Firemen's Relief and Retirement Fund

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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	$ 7,863,408	$ 8,563,462	$ 8,148,985	$ 8,728,277	$ 9,594,819
b. City and member contributions	508,368	513,205	545,913	545,008	569,754
c. Benefits and contribution refunds	689,606	810,571	839,479	962,433	1,084,609
d. Miscellaneous receipts and disbursements	8	2	1	0	0
e. Expected earnings	602,391	652,145	620,171	660,266	723,648
f. Expected market value of assets December 31	8,284,569	8,918,243	8,475,591	8,971,118	9,803,612
g. Actual market value of assets December 31	8,563,462	8,148,985	8,728,277	9,594,819	9,309,315
h. Actuarial investment gain/(loss)	278,893	(769,258)	252,686	623,701	(494,297)
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.	55,779	(153,852)	50,537	124,740	(98,859)
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	$ (153,852)	$ 101,074	$ 374,220	$ (395,436)
	e. Total unrecognized actuarial gain/(loss) for five prior years as of December 31, 2014 (sum of line 7.d. for five prior years)					(73,994)
8.	**Market Value at December 31, 2014**					9,309,315
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.)**					9,383,309
10.	**Preliminary Actuarial Value of Assets Expressed as a Percentage of Year-end Market Value**					100.8%
11.	**Actuarial Value of Assets After Limiting the Preliminary Actuarial Value of Assets to a Range of 80% to 120% of Market Value**	$ 9,035,613	$ 8,888,475	$ 8,766,374	$ 9,237,517	$ 9,383,309

Orange Firemen's Relief and Retirement Fund

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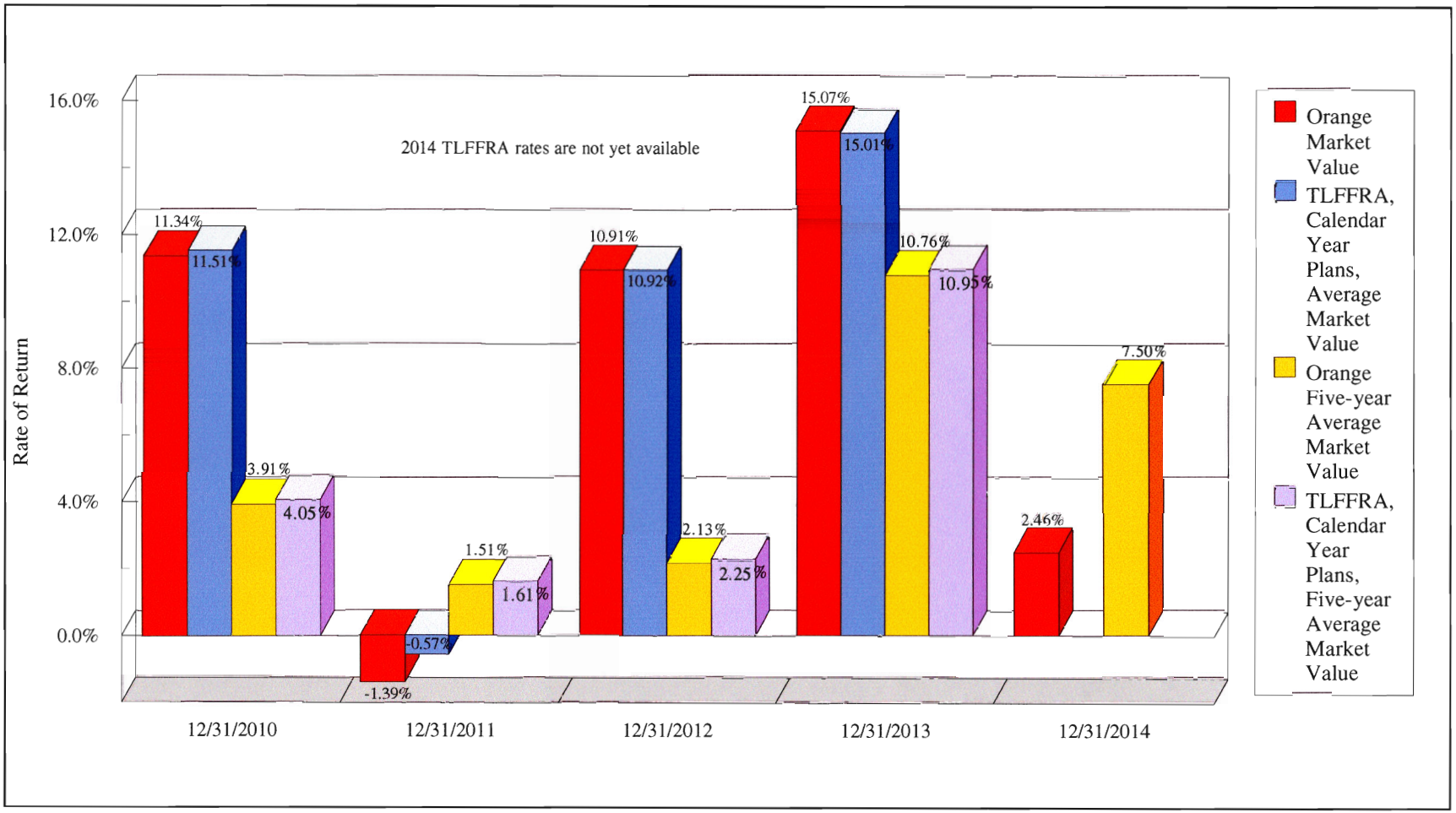
Exhibit 4, Summary of the Rate of Return on Fund Assets, Net of Expenses, Measured at Market Value



Orange Firemen's Relief and Retirement Fund

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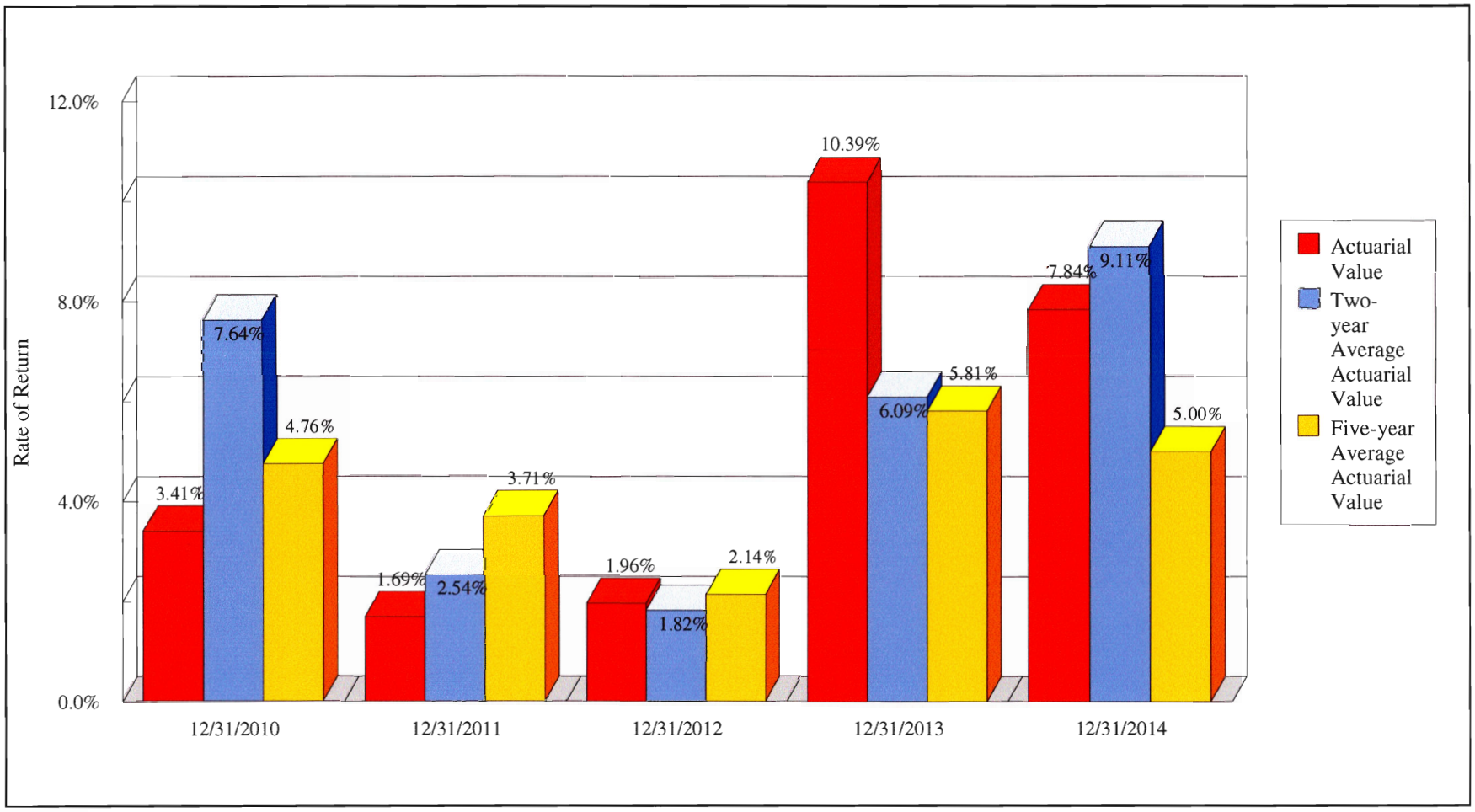
Exhibit 5, Summary of the Rate of Return on Fund Assets, Net of Expenses, Measured at Actuarial Value



Orange Firemen's Relief and Retirement Fund

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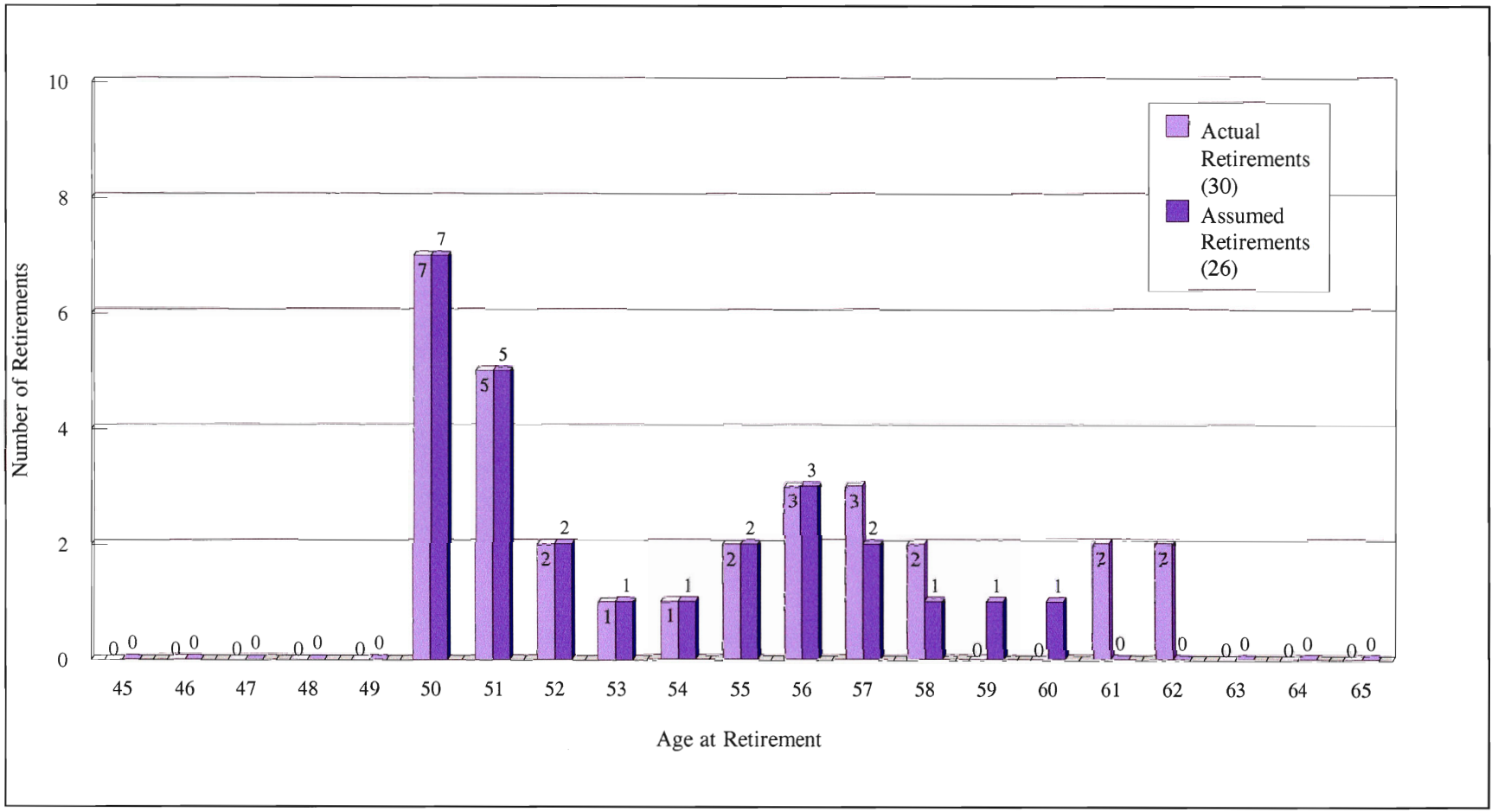
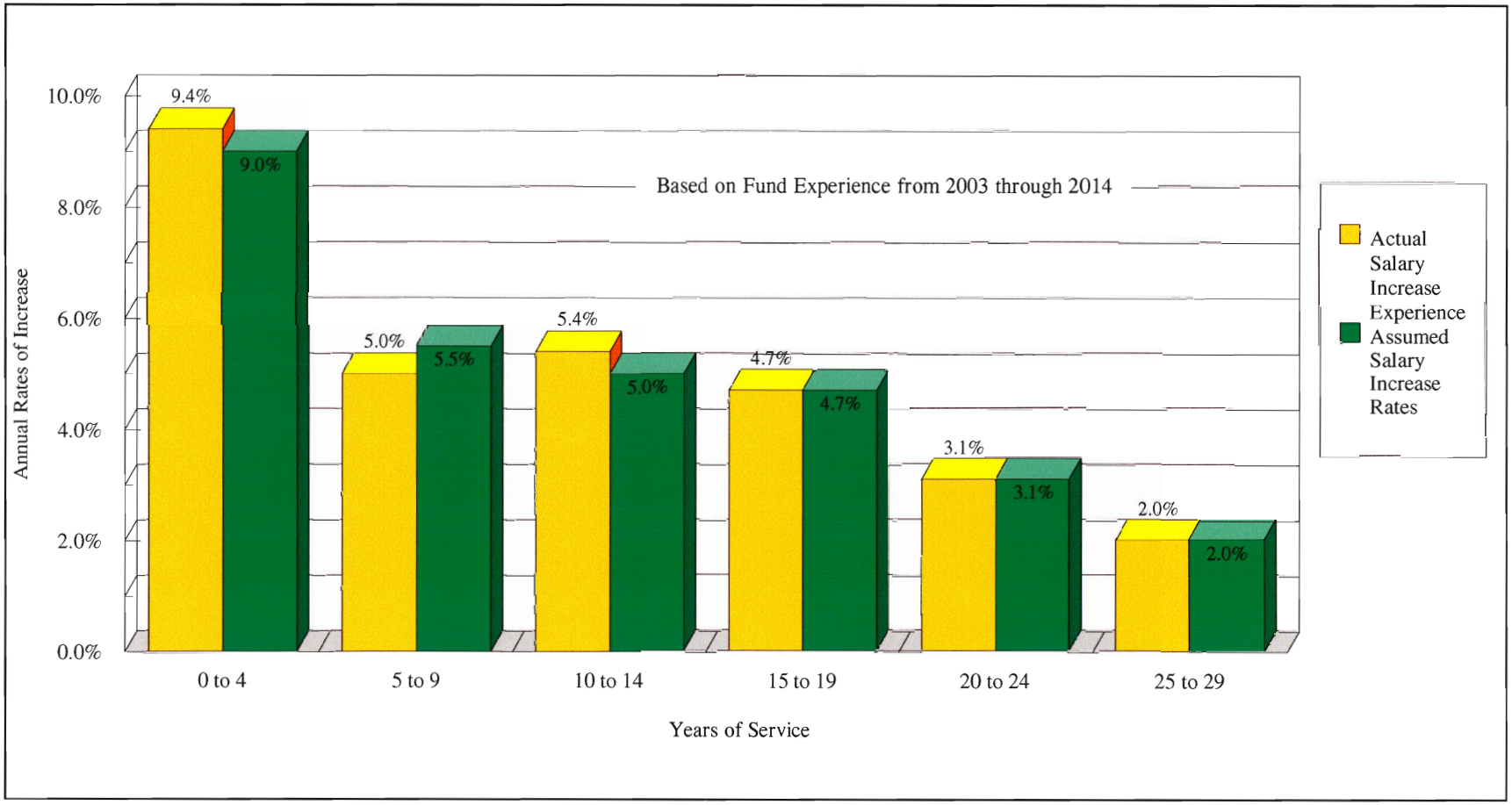
Exhibit 6, Actual Retirements by Age 1985 through 2014, and Assumed Retirements



Orange 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



Orange 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**	50.083	62.083	-	57.500	-
2. **Two-year Average Age at Retirement**	55.417	56.083	62.083	57.500	57.500
3. **Average Age at Retirement Over the Last Ten Years**	55.298	55.821	55.800	56.083	56.083
4. **Number of Retirements During The Year**	1	1	0	1	0
Average Individual Salary Increases					
5. **Average Individual Salary Increase Rate Over the Last Year**	5.2%	6.0%	4.1%	11.1%	0.8%
6. **Average Individual Salary Increase Rate Over the Last Two Years**		5.3%		7.3%	
7. **Average Individual Salary Increase Rate Over the Last Ten Years**					

Orange 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
Average Aggregate Salary Increases					
8. Number of Active Members in the Valuation		37		37	
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		-0.9%		11.7%	
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		2.6%		4.4%	

Orange 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	51.292	50.083	55.208	54.250	54.583
2. Two-year Average Age at Retirement	51.292	50.688	52.646	54.729	54.361
3. Average Age at Retirement Over the Last Ten Years	55.547	54.333	54.358	54.340	53.826
4. Number of Retirements During The Year	2	2	2	2	1
Average Individual Salary Increases					
5. Average Individual Salary Increase Rate Over the Last Year	4.5%	5.8%	8.5%	3.0%	7.8%
6. Average Individual Salary Increase Rate Over the Last Two Years	2.5%		5.5%		4.9%
7. Average Individual Salary Increase Rate Over the Last Ten Years			3.6%		4.3%

Orange 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	37		37		37
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	-0.5%		3.6%		0.3%
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	3.3%		3.0%		2.7%

Orange 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%	7.75%
Salary Scale Assumed for Prior Valuation	4.00%	4.00%	4.00%	4.00%	Tabular Rates
Increase in Payroll for Amortization Assumed for Prior Valuation	4.00%	4.00%	4.00%	4.00%	4.00%
Valuation Date	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)	$11,390,544	$12,687,217	$13,679,257	$15,311,319	$16,345,289
2. Prior valuation Normal Cost (NC)	197,401	230,519	220,987	225,013	295,391
3. Distributions for second prior year	562,852	667,156	810,571	962,433	1,138,840
4. Interest on AAL for second prior year	911,244	1,014,977	1,094,341	1,224,906	1,266,760
5. Interest on NC for second prior year	15,792	18,442	17,679	18,001	22,893
6. Interest on distributions for second prior year	22,514	26,686	32,423	38,497	44,130
7. Expected prior year AAL, (1+2-3+4+5-6)	$11,929,615	$13,257,313	$14,169,270	$15,778,309	$16,747,363
8. Prior valuation NC with salary scale increase	205,297	239,740	229,826	234,014	307,207
9. Distributions for immediate prior year	626,826	689,606	839,479	1,084,609	1,195,782
10. Interest on AAL for immediate prior year	954,369	1,060,585	1,133,542	1,262,265	1,297,921
11. Interest on NC for immediate prior year	16,424	19,179	18,386	18,721	23,809
12. Interest on distributions for immediate prior year	25,073	27,584	33,579	43,384	46,337
13. Expected AAL as of the valuation date, (7+8-9+10+11-12)	$12,453,806	$13,859,627	$14,677,966	$16,165,316	$17,134,181
Expected Actuarial Value of Assets					
14. Prior valuation Actuarial Value of Assets (AVA)	$8,211,861	$8,115,580	$9,035,613	$8,766,374	$9,383,309
15. Contributions for second prior year	420,519	500,123	513,205	545,008	592,544
16. Distributions for second prior year	562,852	667,156	810,571	962,433	1,138,840
17. Interest on AVA for second prior year	656,949	649,246	722,849	701,310	727,206
18. Interest on contributions for second prior year	16,821	20,005	20,528	21,800	22,961
19. Interest on distributions for second prior year	22,514	26,686	32,423	38,497	44,130
20. Expected prior year AVA, (14+15-16+17+18-19)	8,720,784	8,591,112	9,449,201	9,033,562	9,543,050
21. Contributions for immediate prior year	513,147	508,368	545,913	569,754	616,246
22. Distributions for immediate prior year	626,826	689,606	839,479	1,084,609	1,195,782
23. Interest on AVA for immediate prior year	697,663	687,289	755,936	722,685	739,586
24. Interest on contributions for immediate prior year	20,526	20,335	21,837	22,790	23,880
25. Interest on distributions for immediate prior year	25,073	27,584	33,579	43,384	46,337
26. Expected AVA at valuation date (20+21-22+23+24-25)	$9,300,221	$9,089,914	$9,899,829	$9,220,798	$9,680,643

Orange 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%	7.75%
Salary Scale Assumed for Prior Valuation	4.00%	4.00%	4.00%	4.00%	Tabular Rates
Increase in Payroll for Amortization Assumed for Prior Valuation	4.00%	4.00%	4.00%	4.00%	4.00%
Valuation Date	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)	$12,453,806	$13,859,627	$14,677,966	$16,165,316	$17,134,181
28. Expected AVA at valuation date (line 26)	9,300,221	9,089,914	9,899,829	9,220,798	9,680,643
29. Expected Unfunded Actuarial Accrued Liability (UAAL), (line 27 minus line 28)	$3,153,585	$4,769,713	$4,778,137	$6,944,518	$7,453,538
Actual Valuation Results Before Assumption or Method Changes					
30. Actual AAL before changes	$12,552,544	$13,677,322	$15,012,233	$15,757,531	$17,134,181
31. AVA before changes	8,954,534	9,035,613	8,766,374	9,426,974	9,667,714
32. Actual UAAL before changes (line 30 minus line 31)	$3,598,010	$4,641,709	$6,245,859	$6,330,557	$7,466,467
Gain/(Loss) on the Unfunded Actuarial Accrued Liability					
33. UAAL gain or (loss) since the previous valuation (line 29 minus line 32)	($444,425)	$128,004	($1,467,722)	$613,961	($12,929)
Check of Gain/(Loss) Calculation					
34. Actuarial Accrued Liability gain/(loss), (line 27 minus line 30)*	($98,738)	$182,305	($334,267)	$407,785	$0
35. Actuarial Value of Assets gain/(loss), (line 31 minus line 28)	(345,687)	(54,301)	(1,133,455)	206,176	(12,929)
36. AAL gain/(loss) + AVA gain/(loss)	(444,425)	128,004	(1,467,722)	613,961	(12,929)
37. Difference (line 33 - line 36)	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)	N/A	N/A	($250,700)	$255,823	
39. Prior three valuation cumulative gain/(loss) on AVA (from line 35)	N/A	N/A	(1,533,443)	(981,580)	
40. Prior three valuation cumulative gain/(loss) on UAAL (line 38 plus line 39)	N/A	N/A	($1,784,143)	($725,757)	

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

Orange 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%	7.75%
Salary Scale Assumed for Prior Valuation	4.00%	4.00%	4.00%	4.00%	Tabular Rates
Increase in Payroll for Amortization Assumed for Prior Valuation	4.00%	4.00%	4.00%	4.00%	4.00%
Valuation Date	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	11.88%	13.44%	13.84%	13.72%	12.11%
42. Annualized compensation	$1,999,997	1,907,382	1,996,008	2,153,275	2,479,157
43. Amount available to amortize the UAAL	237,600	256,352	276,248	295,429	300,226
44. Years to amortize the UAAL before changes in methods or assumptions	24.7 / 36.4	34.1	62.2	51.6	56.6
45. Years to amortize the UAAL after changes in methods and/or assumptions		34.3	82.3	58.2	-
46. Years to amortize the UAAL after changes in methods, assumptions and plan amendments	21.4 / 30.1	-	-	-	-

with demographic loss of $0	56.6
with demographic loss of $98,738	59.2

Notes

The 56.6-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. The 59.2-year projected amortization period as of January 1, 2017, assumes that the demographic loss for the two-year period between the January 1, 2015 and 2017 valuation dates equals $98,738, the same demographic loss as occurred between the 2006 and 2008 valuations. Please see line 34 of the 2008 column for the 2006 to 2008 demographic loss.

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 105.0 percent of amounts paid for the prior year. Expenses for the years ending in 2015 and 2016 were assumed to be 105.0 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 7.75 percent after expenses. The normal costs for the years ending December 31, 2016, and 2017, were assumed to be 104.00 percent of the prior year's normal cost. The assumed growth rate of benefit payments and contribution refunds over the next two years is greater than the expected long-term rate.

The amortization periods as of December 31, 2008, are shown using the actuarial value of assets with and without the 120 percent of market value limitation.

Section III - Appendices

Orange Firemen's Relief and Retirement Fund

Valuation as of January 1, 2015

Appendix A, Actuarial Cost Method and Actuarial Value of Assets

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 member's benefits. The employee normal cost for each participant equals his anticipated employee contributions for the year. Each year's employer normal cost 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.

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.

Orange Firemen's Relief and Retirement Fund

Valuation as of January 1, 2015

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 valuation 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 method as was used for the previous valuation.

Orange Firemen's Relief and Retirement Fund

Valuation as of January 1, 2015

Appendix B, Actuarial Assumptions

1. Rate of return on the actuarial value of assets	7.75% 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 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 the table below.
6. Termination	Termination rates are shown on the table below.

Orange Firemen's Relief and Retirement Fund

Valuation as of January 1, 2015

Appendix B, Actuarial Assumptions

7. Compensation increases for individual members	Compensation increase rates (SS Table 1415) are shown on the table below.
8. Increases in total payroll	4.00% per year, compounded annually
9. Marital status	
a. Proportion married	Males: 90%, Females: 90%
b. Difference in ages	Actual age differences are used for married members. Ninety percent of members are assumed to be married at retirement. Males are assumed to be three 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 23.
11. Assumed contribution rates	
a. Members	11.00% of compensation
b. City	14.00% of compensation

12. Assumed form of payment

Members' eligible for the DROP are assumed to elect the DROP 95% of the time and straight service retirement 5% of the time. Other members are assumed to receive straight service retirement.

Decrements are assumed to be annual rates, rather than probabilities, and are adjusted for the interaction between competing decrements. The 7.75 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 7.75 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 7.75 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 tables used in the valuation are 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 though 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 rate of return on the actuarial value of assets was lowered from 8.00 percent per annum to 7.75 percent per annum. 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 4.00 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 rate of return on the actuarial value of assets was lowered to 7.75 percent in order to increase the conservatism in the rate of return assumption. The mortality table used for the valuation was changed from 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 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*.

Orange Firemen's Relief and Retirement Fund

Valuation as of January 1, 2015

Appendix B, Actuarial Assumptions

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.

Orange 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 1415)

	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	0.2692	0.2692	0.2692	0.2692	0.2692	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	0.1923	0.1923	0.1923	0.1923	0.1923	0.4615	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
52	0.0769	0.0769	0.0769	0.0769	0.0769	0.0769	0.5385	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
53	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.5769	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
54	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.6154	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
55	0.0769	0.0769	0.0769	0.0769	0.0769	0.0769	0.0769	0.0769	0.0769	0.6923	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
56	0.1154	0.1154	0.1154	0.1154	0.1154	0.1154	0.1154	0.1154	0.1154	0.1154	0.8077	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
57	0.0769	0.0769	0.0769	0.0769	0.0769	0.0769	0.0769	0.0769	0.0769	0.0769	0.0769	0.8846	0.0000	0.0000	0.0000	0.0000	0.0000
58	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.9231	0.0000	0.0000	0.0000	0.0000
59	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.9615	0.0000	0.0000	0.0000
60	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	1.0000	0.0000	0.0000
61	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	1.0000	0.0000
62	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	1.0000

Orange Firemen's Relief and Fund

Valuation as of January 1, 2015

Appendix B, Actuarial Assumptions

Salary Increase Rates By Years of Service (SS Table 1415)

Years of Service	Annual Rate of Increase	Years of Service	Annual Rate of Increase
0	9.00%	20	3.10%
1	9.00%	21	3.10%
2	9.00%	22	3.10%
3	9.00%	23	3.10%
4	9.00%	24	3.10%
5	5.50%	25	2.00%
6	5.50%	26	2.00%
7	5.50%	27	2.00%
8	5.50%	28	2.00%
9	5.50%	29	2.00%
10	5.00%	30	2.00%
11	5.00%	31	2.00%
12	5.00%	32	2.00%
13	5.00%	33	2.00%
14	5.00%	34	2.00%
15	4.70%	35	2.00%
16	4.70%	36	2.00%
17	4.70%	37	2.00%
18	4.70%	38	2.00%
19	4.70%	39 or more	2.00%

Orange Firemen's Relief and Fund

Valuation as of January 1, 2015

Appendix B, Actuarial Assumptions

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			
37	0.00173	0.019922			
38	0.00187	0.017586			
39	0.00203	0.015367			
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			

Orange 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 Orange 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 fund members, two representatives of the City of Orange, Texas, and two citizen members.

Effective October 1, 2006, the City of Orange began contributing at a rate of 14.00 percent of each member's total pay (including regular, longevity, and overtime pay, but excluding lump sum distributions for unused sick leave or vacation).

Effective November 15, 2007, members began contributing to the fund at a rate of 11.00 percent of pay. The prior member contribution rate was 9.00 percent of pay. The definition of pay for the purposes of employee contributions is the same as the definition of pay for employer contributions. 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.

A member's service equals the years and months of continuous employment with the Orange Fire Department during which the member pays into, and keeps on deposit in the fund, the contributions required by the fund. A fund member also receives service credit for those periods during which the member received a disability benefit from the fund.

Retirement, death, disability, and termination benefits are calculated using upon a member's highest 60-month average salary. Highest 60-month average salary equals 2.167 times the average of the highest 130 biweekly pay periods out of the 208 biweekly pay periods immediately prior to the member's date of termination of service. If a member's biweekly pay has been offset by workmen's compensation benefits, the total biweekly pay will include the amount by which the biweekly pay was offset.

The fund was most recently amended effective January 21, 2014.

Orange Firemen's Relief and Retirement Fund

Valuation as of January 1, 2015

Appendix C, Summary of Principal Fund Provisions

Eligibility

All fire fighters of the City of Orange, Texas, are members of the Orange 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 the sum of a. and b., below, where:

a. equals 2.60 percent of the member's highest 60-month average salary multiplied by his or her number of years of service not in excess of 20, and

b. equals $91.00 per month for each year of service in excess of 20.

Service retirement benefits are payable for the member's lifetime. In the event the member's death precedes that of his spouse, two third's of the member's pension will be continued to the spouse for her lifetime. The spouse's benefit is forfeitable upon remarriage unless the member and his spouse were married for at least five years prior to the member's retirement.

Disability Benefits

An active member who becomes disabled will receive a monthly disability benefit. Disability benefits are payable in the same form as service retirement benefits. However, disability benefits stop if the member recovers to the point that he or she no longer meets the definition of disability under the fund. There are separate benefits for duty-related disabilities and non-duty related disabilities if a member has less than 15 years of service.

Definition of Disability

For the first two and one-half years, the member need only be disabled to the extent of being unable to perform the duties of a position offered to him in the fire department providing the member with pay that is greater than or equal to the pay he would have received as an active employee of the fire department.

After two and one-half years, the member must have an impairment rating of 50 percent or greater in order to continue receiving full disability benefits.

Amount of Duty-related Disability Benefit

The amount of disability benefit payable under the fund to a member who becomes disabled as a result of his duties as a fire fighter will equal to the sum of a. and b., below, where:

a. equals 52.00 percent of the member's highest 60-month average salary, and

b. equals $91.00 per month for each year of service in excess of 20.

Disability retirement benefits are payable for the member's lifetime as long as the member remains disabled under the terms of the plan. In the event the member's death precedes that of his spouse, two third's of the member's pension will be continued to the spouse for her lifetime. The spouse's benefit is forfeitable upon remarriage unless the member and his spouse were married for at least five years prior to the member's retirement.

Amount of Benefit for Disability that is Not Duty-related

The amount of disability benefit payable under the fund to a member who becomes disabled as a result of causes other than his duties as a fire fighter will equal the amount calculated under the duty-related disability benefit provisions of the fund, multiplied by a percentage from the table, below, based on the member's years of service as of his date of disability.

Number of Completed Years of Service	Non-duty Disability Benefit as a Percent of the Duty-related Disability Benefit
0	25%
1	25%
2	25%
3	25%
4	25%
5	50%
6	50%
7	50%
8	50%
9	50%
10	75%
11	75%
12	75%
13	75%
14	75%
15 or more	100%

Death Benefits

If a member's death is duty-related, the member's spouse will receive an immediate monthly benefit, payable for as long as he or she is living. The amount of death benefit payable under the fund to a member who dies as a result of his duties as a fire fighter will equal to the sum of a. and b., below, where:

a. equals 34.67 percent of the member's highest 60-month average salary, and

b. equals $60.67 per month for each year of service in excess of 20.

The spouse's benefit is payable for life, but it ceases upon remarriage unless the deceased member and the member's spouse were married for at least five years prior to the member's death. In addition to the above spouse's benefit, each unmarried child of the member will receive a monthly benefit of 6.93 percent of the member's highest 60-month average salary. Orphan benefits continue until a child reaches age 18. If the member's spouse subsequently dies or if there is no spouse, the benefit paid to each eligible orphan will be 13.86 percent of the member's highest 60-month average salary. Orphan benefits are continue until a child reaches age 18. However, benefits will continued until age 25 for a child who is a full-time student. Orphan benefits are continued to disabled children for life.

If the member's death is determined to be not duty-related and the member had less than 15 years of service at the time if his or her death, the benefit payable to the survivors will be equal the amount calculated under the duty-related death benefit provisions of the fund, multiplied by a percentage from the same table as is used to determine disability benefits which are not duty-related.

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. Benefits are reduced pro rata, if necessary, in order to satisfy this limitations.

Termination Benefits

Members with Less Than Twenty Years of Credited 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 or her 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.

Members Twenty or More Years of Credited 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 monthly termination benefit will equal the sum of a. and b. below, where:

a. equals 2.60 percent of the member's highest 60-month average salary multiplied by his or her number of years of service not in excess of 20, and

b. equals $91.00 per month for each year of service in excess of 20.

Vested termination benefits are payable for the member's lifetime. In the event the member's death precedes that of his spouse, two third's of the member's pension will be continued to the spouse for her lifetime. The spouse's benefit is forfeitable upon remarriage unless the member and his spouse were married for at least five years prior to the member's retirement.

The accrued benefit of each fire fighter who was a member of the fund on December 31, 2007, will not be less than the benefit which the member had earned as of December 31, 2007.

Optional Forms of Payment

In lieu of the regular monthly benefit specified in the plan, a member who retires under the service provisions of the fund may elect to receive his benefits under one or more of the options listed below.

Social Security Leveling Option

Under the Social Security Leveling Option, 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.

DROP

Under the DROP, a member receives a reduced monthly benefit in return for a lump sum amount upon retirement. The lump sum amount is referred to as the DROP payment. The later of (a) the date a member has both attained age 53 and completed 23 years of service or (b) the date 36 months prior to the member's date of retirement is referred to as the member's DROP benefit calculation date. A member may retire under the DROP if his retirement date falls on or after his DROP benefit calculation date. Retirement under the plan's DROP provisions is in lieu of the regular service retirement benefit.

The monthly benefit of a member who retires under the DROP equals the monthly benefit he was entitled to as of his DROP calculation date using the benefit formula in effect on his DROP calculation date.

Upon retirement, the member will receive—in addition to his monthly retirement benefit—a single payment equal to the sum of:

a. the amount of monthly contributions which the member has made to the fund during the time he participated in the DROP; plus

b. the total of the monthly retirement benefits the member would have received between his or her DROP benefit calculation date and the date the member retired under the plan.

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.

Orange Firemen's Relief and Retirement Fund

Valuation as of January 1, 2015

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 retirement, death, disability, and termination.

Orange Firemen's Relief and Retirement Fund

Valuation as of January 1, 2015

Appendix D, Glossary of Terms Used in the Report

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) × Amortization Payment],

B = log [(1+j) × Amortization Payment - (j × 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.