



Firemen's Relief and Retirement Fund
City of Lufkin, Texas

Actuarial Valuation Report for
Year Ended December 31, 2012

Retirement Horizons Inc.
May 30, 2013



May 30, 2013

Board of Trustees
Firemen's Relief & Retirement Fund
300 East Shepherd Street
Lufkin, Texas 75901

Re: 2012 ACTUARIAL VALUATION

Ladies and Gentlemen:

The Board of Trustees for the Lufkin Firemen's Relief & Retirement Fund retained Retirement Horizons Inc. (RHI) to perform an actuarial valuation as of December 31, 2012. This report summarizes the results of our study including an analysis of current funded status and a projection of valuation results. This report also provides financial disclosure information in accordance with GASB 25 and 27, organized as follows:

- Section 1 – Valuation Highlights
- Section 2 – Executive Summary
- Section 3 – Actuarial Exhibits
- Section 4 – Valuation Basis

The 2012 actuarial valuation was based upon member census data, asset information and plan provisions provided by the Firemen's Relief & Retirement Fund. RHI prepared the 2012 valuation in accordance with generally accepted actuarial principles and practices, and performed testing as needed to assure the accuracy of the underlying input and the results of the study. We certify the amounts presented in this actuarial report have been determined according to the actuarial assumptions and methods selected by the Board of Trustees with review and concurrence by RHI.

Guidelines issued by the Texas Pension Review Board for actuarial soundness recommend fully amortizing this unfunded liability over a period of 15 to 25 years (maximum of 40 years). Based on results of the 2012 actuarial valuation and provided future plan experience is consistent with the valuation basis, the current contribution rate total of 36.2% is expected to amortize the unfunded actuarial liability over 89.6 years, compared to 53.7 years as of the 2010 valuation. Therefore, the current financing arrangement is *not sufficient* to satisfy PRB guidelines, and we encourage the Board to review any alternatives for improving long-term actuarial soundness, as well as to consider the member notice required under Texas Government Code Section 802.106 (d).

The undersigned are available to respond to any questions regarding the information contained in this report or to provide further details or explanations as needed, respectfully submitted by Retirement Horizons Inc.

A handwritten signature in blue ink that reads "Mickey G. McDaniel".

Mickey G. McDaniel
Fellow of the Society of Actuaries
Member of the American Academy of Actuaries
Enrolled Actuary No. 11-03883

A handwritten signature in blue ink that reads "David A. Sawyer".

David A. Sawyer
Fellow of the Society of Actuaries
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Enrolled Actuary No. 11-06271

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1. Valuation Highlights

FUNDING VALUATION	December 31, 2010	December 31, 2012
Fair Value of Assets	\$10,101,470	\$11,275,504
Average Annual Return: current year ended	11.4%	12.0%
Average Annual Return: prior year ended	13.6%	-1.0%
Actuarial Value of Assets	\$10,101,470	\$11,265,138
Average Annual Return: current year ended	1.3%	5.8%
Average Annual Return: prior year ended	4.1%	4.7%
Present Value of Projected Benefits	\$31,907,752	\$33,856,182
% funded	31.7%	33.3%
Actuarial Accrued Liability	\$27,051,949	\$29,027,659
% funded	37.3%	38.8%
Unfunded Actuarial Accrued Liability	\$16,950,479	\$17,762,521
% of valuation payroll	408.7%	411.0%
Assumed Contribution Rates (as % of payroll)		
- City	23.50%	23.00%
- Firefighters	13.20%	13.20%
- Total	36.70%	36.20%
Remaining UAAL Amortization Period	53.7 years	89.6 years
PRB Contribution Rates (as a % of payroll)		
- Minimum (40-year amortization period)	38.3%	38.9%
- Preferred (25-year amortization period)	42.9%	43.8%
DEMOGRAPHICS		
Active Participants	77	75
Terminated Participants	4	12
Retired Participants	53	56
Total	134	143
Valuation Payroll	\$4,244,377	\$4,321,795
ASSUMPTIONS AND METHODS		
Investment Return	7.50%	7.50%
Salary Scale	3.00%	3.00%
Payroll Growth	2.00%	2.00%
Asset Method	3-Year Smoothing	3-Year Smoothing

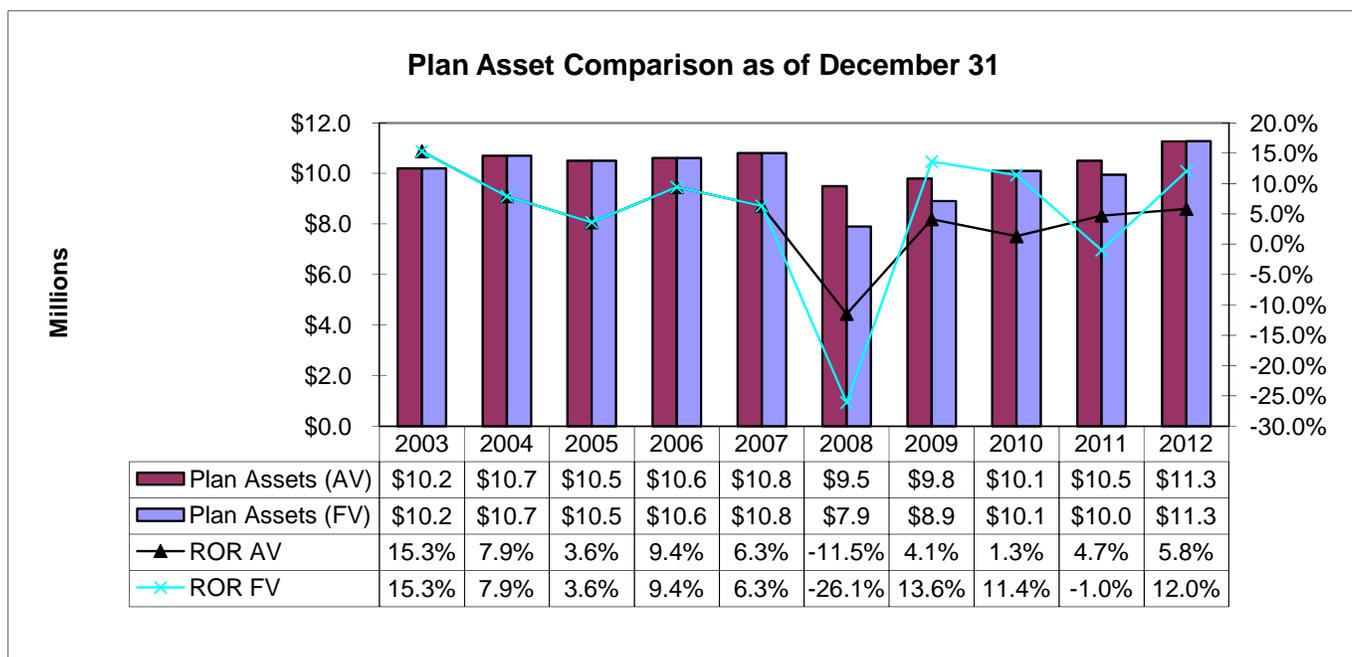
1. Valuation Highlights (continued)

GASB ACCOUNTING VALUATION	December 31, 2010	December 31, 2012
Total Annual Required Contribution (ARC)	\$1,728,850	\$1,830,246
% of covered payroll	41.7%	41.5%
Net Employer Annual Pension Cost (APC)	\$1,195,773	\$1,265,268
% of covered payroll	28.8%	28.7%
Net Pension Obligation	\$2,263,975	\$2,724,122
% of covered payroll	54.6%	61.8%

2.1 Plan Asset Values

The *fair value (FV)* of plan assets was \$11.3 million as of December 31, 2012, compared to \$10.1 million for the prior valuation as of December 31, 2010. The net increase of \$1.2 million over the 2-year period was primarily attributable to a net investment income of \$1.1 million and positive net cash flow of \$0.1 million (total contributions of \$3.2 million less total disbursements of \$3.1 million). Please see Exhibit 3.1 for more details on the development of the fair value of plan assets.

The net rate of return on the *fair value* of assets was -0.1% for plan year 2011 and 12.0% for plan year 2012, for an average annual rate of 5.3% per annum over the 2-year period. Although the Fund exceeded the long-term actuarial assumption of 7.5% in 6 of the last 10 years, the average annual rate of return over this period was 4.5% due to the severity of the 2008 financial market crisis and another downturn in 2011.



In response to the financial market meltdown during 2008 and precipitous drop in the fair value of assets, the Fund adopted an asset smoothing method effective December 31, 2008, to spread fluctuations in the rate of return on the fair value of assets compared to the long-range assumption over a 3-year period. The *actuarial value (AV)* of assets is developed as the fair value of assets as of the measurement date plus 2/3rd of the unrecognized (gain)/loss for the current year and 1/3rd of the unrecognized (gain)/loss for the prior year, subject to corridor limits not less than 80% and not greater than 120% of the fair value of assets as of the measurement date. In addition, the AV was re-initialized to the FV as of December 31, 2010.

As developed in Exhibit 3.2, the actuarial value of assets was \$11.3 million as of December 31, 2012, compared to \$10.1 million as of December 31, 2010. After application of the 3-year asset smoothing method and full recognition of the 2008 investment loss, the average annual rate of return on the actuarial value of assets was 4.7% for the 2011 plan year and 5.8% for the 2012 plan year, compared to the long-term investment return assumption of 7.5%.

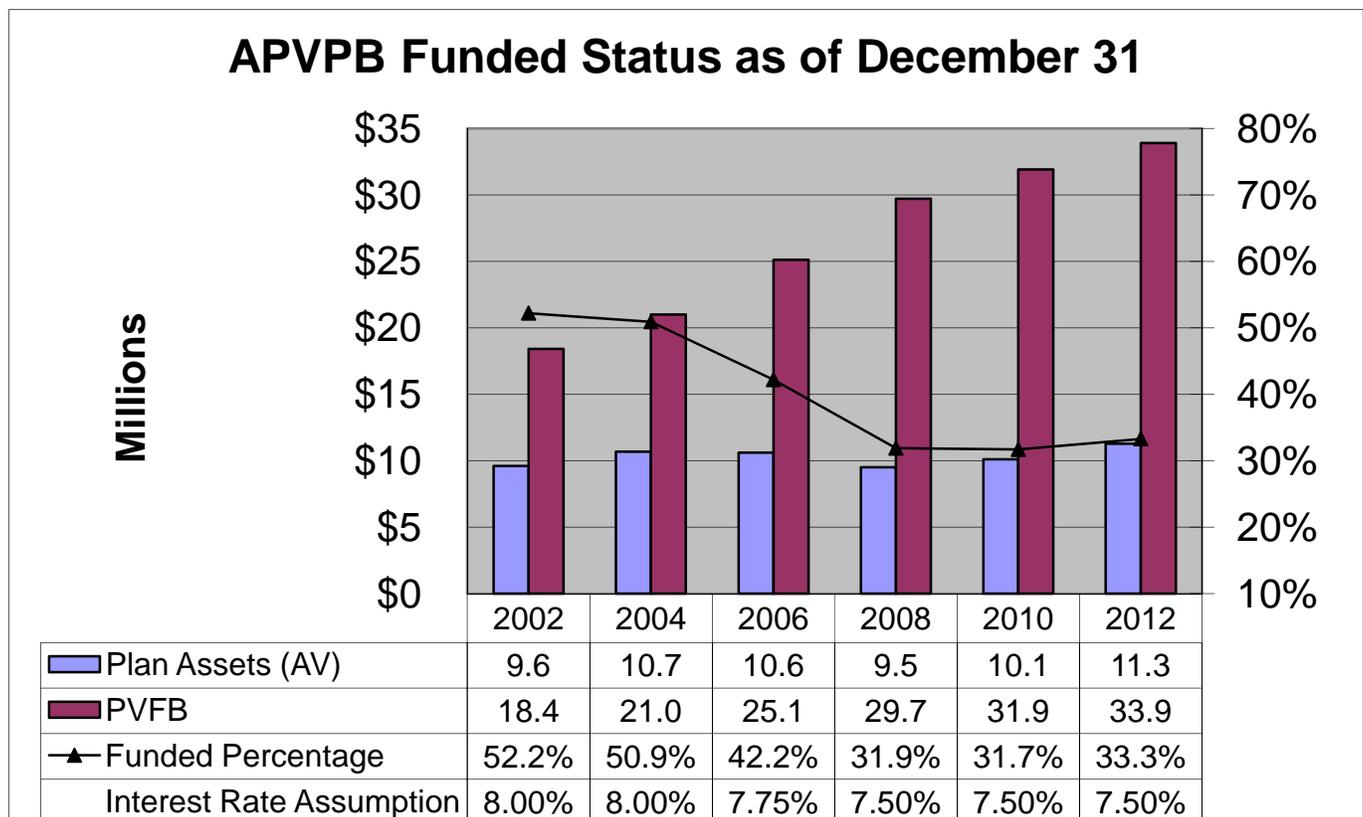
2.2 Actuarial Present Value of Projected Benefits

The true cost of a pension plan is the accumulation of benefit payments less investment income (net of expenses), over the lifetime of the program. In the actuarial valuation process, we use a mathematical model to project the future stream of plan benefits. The model incorporates current plan provisions and member census data, using the actuarial assumptions to predict future events.

Discounting the stream of expected future benefit payments for the time value of money produces the *actuarial present value of projected benefits (APVPB)*. This represents the hypothetical amount of plan assets necessary to fully fund all future plan costs – assuming future plan experience follows the actuarial assumptions. This measure of pension liability includes benefits that have not yet been earned for current employees, based on expected future pay increases as well as projected service, a portion of which will be funded by future contributions.

The total APVPB was \$33.9 million as of December 31, 2012, compared to \$31.9 million for the prior valuation as of December 31, 2010. The net increase of \$2.0 million is primarily attributable to normal operation of the plan. Please see Exhibit 3.3 for more details on the development of the APVPB.

Comparing the actuarial value of plan assets to the APVPB provides one measure of long-term funding policy progress. The funded status on this basis increased to 33.3% as of December 31, 2012, compared to 31.7% for the prior valuation as of December 31, 2010. As summarized below, the APVPB funded status has dropped from 52.2% to 33.3% over the last 10 years, due to unfavorable Fund experience that generated actuarial losses and movement to more conservative valuation basis:

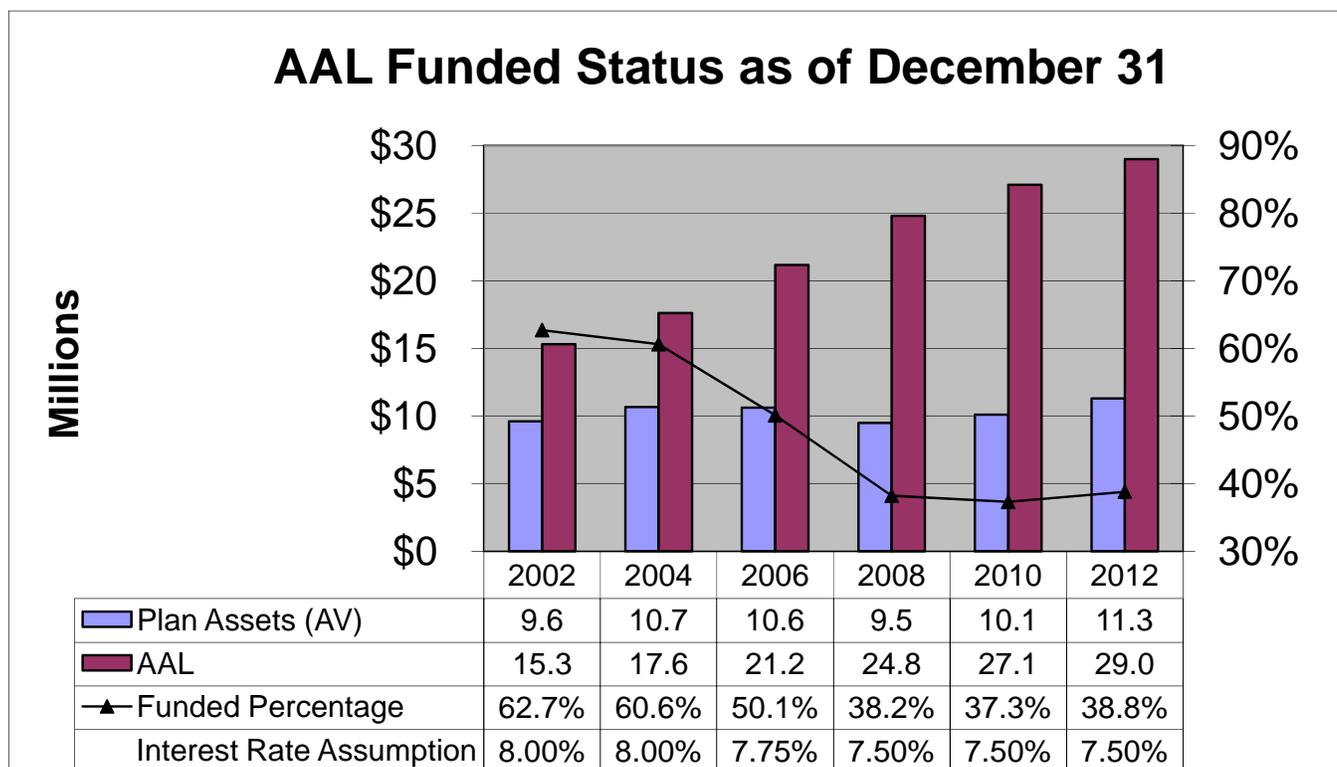


2.3 Actuarial Accrued Liability

As a practical matter, few plan sponsors can afford to fully fund benefits before they have been earned. Generally accepted actuarial principals apply a mathematical formula known as an actuarial cost method to allocate the APVPB over periods of employee service. The portion of cost attributable to periods of employee service rendered prior to the valuation date is the *actuarial accrued liability (AAL)*, and the allocation to the current year is referred to as *normal cost (NC)*.

Comparing AAL to the actuarial value of plan assets provides a more appropriate measure of progress in the long-term funding policy compared to employee services rendered. The *unfunded actuarial accrued liability (UAAL)* was \$17.8 million (38.8% funded status) as of December 31, 2012, compared to \$17.0 million (37.3% funded status) for the prior valuation as of December 31, 2010. Please see Exhibit 3.4 for more details on the development of the UAAL.

The net increase in UAAL of \$0.8 million based on the 2012 valuation is primarily attributable to normal operation of the plan as liabilities mature. Over the last 10-years, the UAAL funded status has dropped from 62.7% to 38.8%, due to unfavorable Fund asset experience that generated actuarial losses and movement to a more conservative valuation basis:



2.4 Funding Policy Analysis

Under generally accepted actuarial practice, a sound funding policy should provide monies sufficient to cover the current year normal cost and amortize the UAAL over a reasonable period. GASB accounting rules apply a 30-year UAAL amortization period for calculation of the annual required contribution.

Recently revised Texas Pension Review Board guidelines for actuarial soundness recommend a funding policy that will amortize the UAAL over a period of 15-25 years, not to exceed a maximum period of 40 years. Furthermore, plan improvements should not be considered if the resulting expected amortization period would exceed 25 years.

Based on results of the 2012 valuation and provided future experience is consistent with the valuation basis, the current contribution rate total of 36.2% is expected to amortize the unfunded actuarial liability over 89.6 years compared to 53.7 years based on the 2010 valuation as developed in Exhibit 3.5. This unfavorable movement in the actuarial soundness measurement is attributable to several factors:

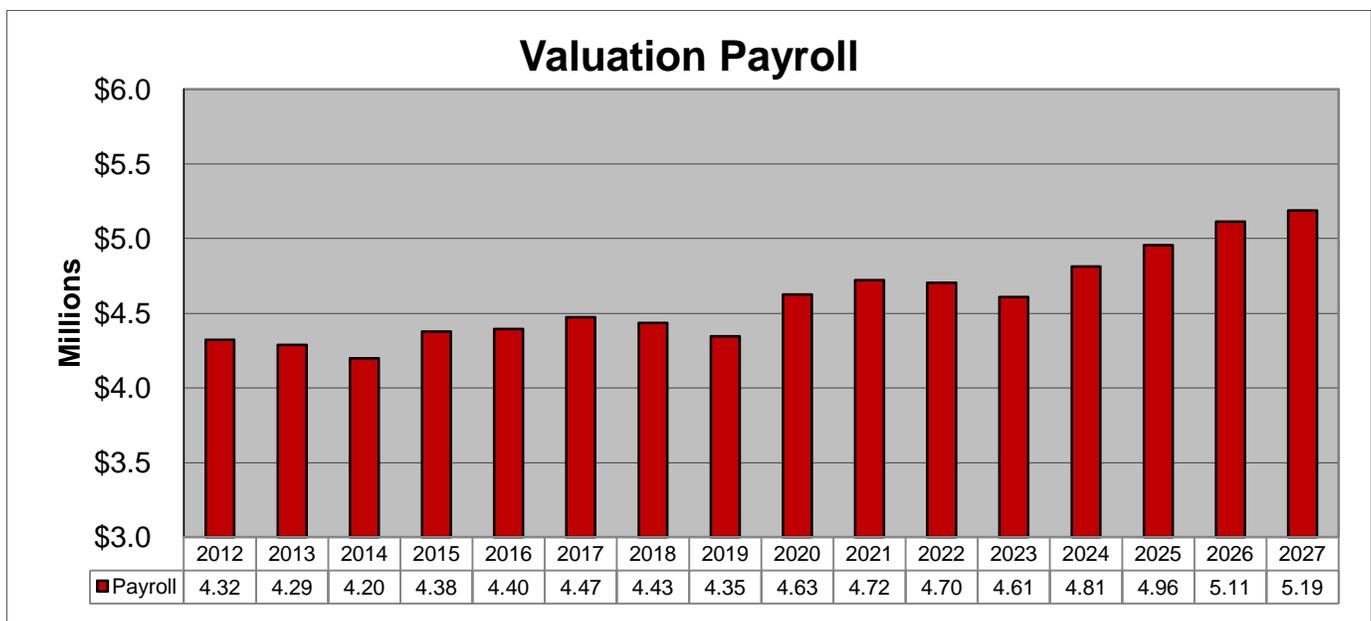
- Contribution Rate: The City contribution rate decreased from 23.5% as of January 1, 2011 to 23.0% as of January 1, 2013, while the Firefighter contribution rate remained at 13.2% of pay. Based on the 2012 valuation and holding all other variables constant, the expected amortization period would have been 23.9 years lower had the 0.5% reduction in the City contribution rate not occurred.
- Investment Return: The annual rate of return on a *fair value* basis was -1.0% for 2011 and +12.0% for 2012. After applying the 3-year smoothing, the annual rate of return on an *actuarial value* basis was 4.7% for 2011 and 5.8% for 2012. Based on the 2012 valuation and holding all other variables constant, the expected amortization period would be 26.5 years lower if the Fund had achieved the 7.5% long-term rate of return assumption on the actuarial value of assets over 2011-2012.
- Payroll Growth: The expected amortization period is calculated using the level percentage of pay method, assuming total payroll will grow at a long-term rate of 2.0% per annum, but actual payroll growth averaged only about 1.0% per annum during 2011-2012, due to what we understand is a temporary reduction in active members. This reduces projected pay and contributions into the Fund, with the shortfall compounded into future years. It is important to note that refilling these positions could have a positive effect on future valuation results, which would be further enhanced by net expansion of the workforce. Based on the 2012 valuation and holding all other variables constant, the expected amortization period would decrease to 39.0 years if the future payroll growth rate was increased to 3.0% per annum, or an infinite period if the future payroll growth rate was reduced to 1.5% per annum.

It is important to keep in mind that the combined effect of the factors above on the expected amortization period would be less than the sum of the individual changes, because the calculation process has a high degree of financial “leverage.” For example, a 0.5% increase in the total contribution rate would reduce the expected amortization period by 23.9 years based on the 2012 valuation (from 89.6 to 65.7 years) as noted above, but only 2.6 years if the current expected amortization period starting point was already at 40 years as required under PRB guidelines (from 40 to 37.4 years.)

2.5 Open Group Forecast Valuation

The measurements of liabilities and costs summarized in the funding policy analysis are based only on the current group of plan members as of the measurement date, what is generally referred to as a closed group valuation. Based on the results from the 2012 valuation, we can project pension plan liabilities and costs using an open group forecast assuming a stable number of active employees.

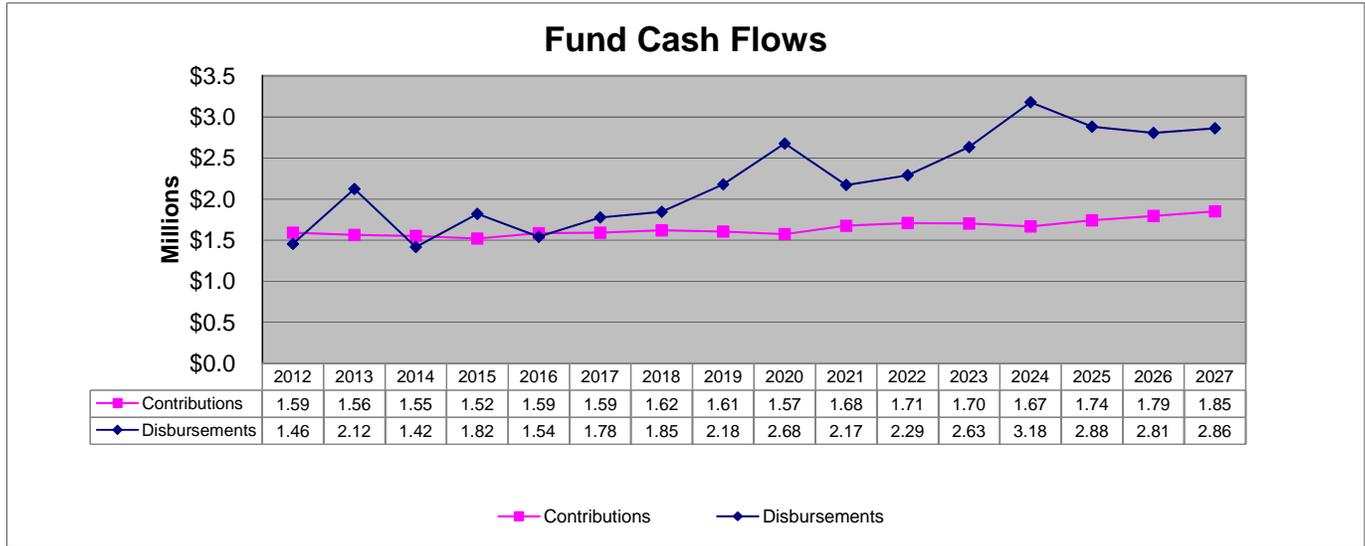
As members of the current workforce exit according to assumed rates of termination, disability, retirement and death, we assume they are replaced by entry-level Firefighters with an average age of 25 and average salary of \$43,000 (current dollars). Based on the 2012 census with 75 active members, valuation payroll is expected to increase from \$4.3 million to \$5.2 million over the next 15 years. Compared to projections based on the 2010 census with 77 members, this represents a cumulative payroll decrease of \$1.5 million over the same projection period.



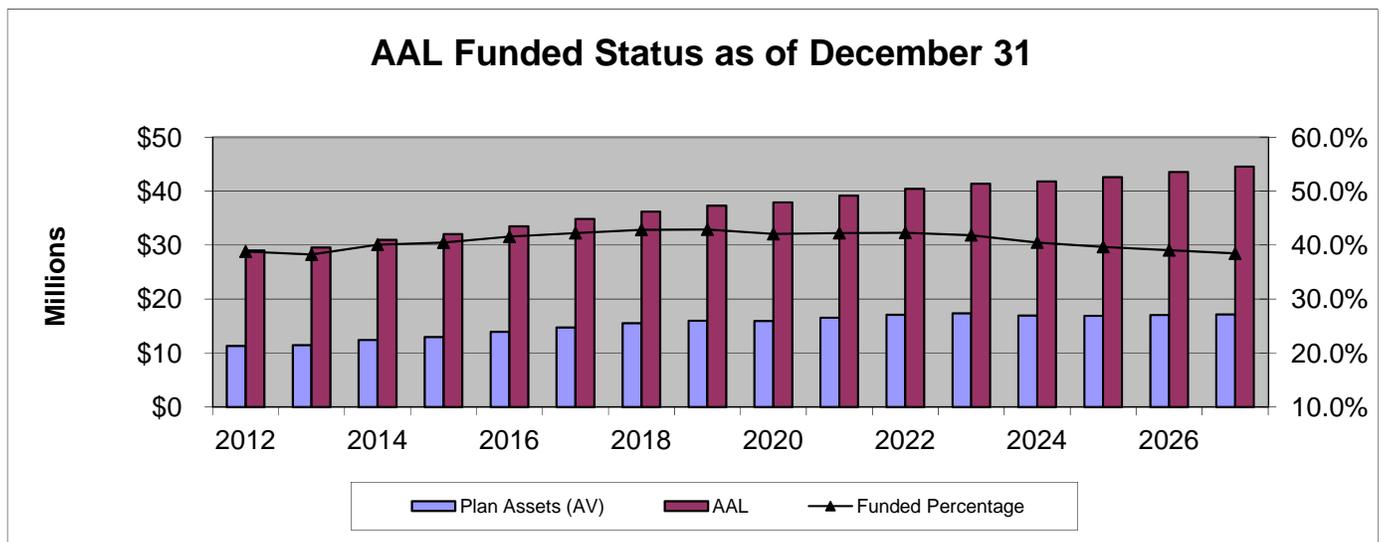
It is important to note that under this projection, although salary increases for individual active employees are assumed to increase at 3.0% per annum, total payroll based on the 2012 census is expected to increase at an average annual rate of 1.2% over the next 15 years, as the more experienced/higher paid Firefighters retire and are replaced by younger/lower paid new hires. Over the long-term, however, we expect the payroll growth will gradually increase consistent with the expected amortization calculation.

2.5 Open Group Forecast Valuation (continued)

Total contributions are expected to increase from \$1.59 million to \$1.85 million over the next 15 years with total benefit payments expected to increase from \$1.46 million to \$2.86 million over the same time period. As a result, net fund cash flow is expected to decline from a surplus of \$0.13 million to a shortfall of \$1.01 million (including projected DROP payouts) as illustrated below.



Below is a projection of plan assets compared to the AAL, assuming plan experience is consistent with the open group forecast, including an average annual rate of return of 7.5% on the actuarial value of assets. The AAL funded status is projected to increase from 38.8% to a peak of just 42.9% over the next 7 years, and then decline slightly as the cash flow gap between total contributions and benefit payments widens at the end of the projection period.

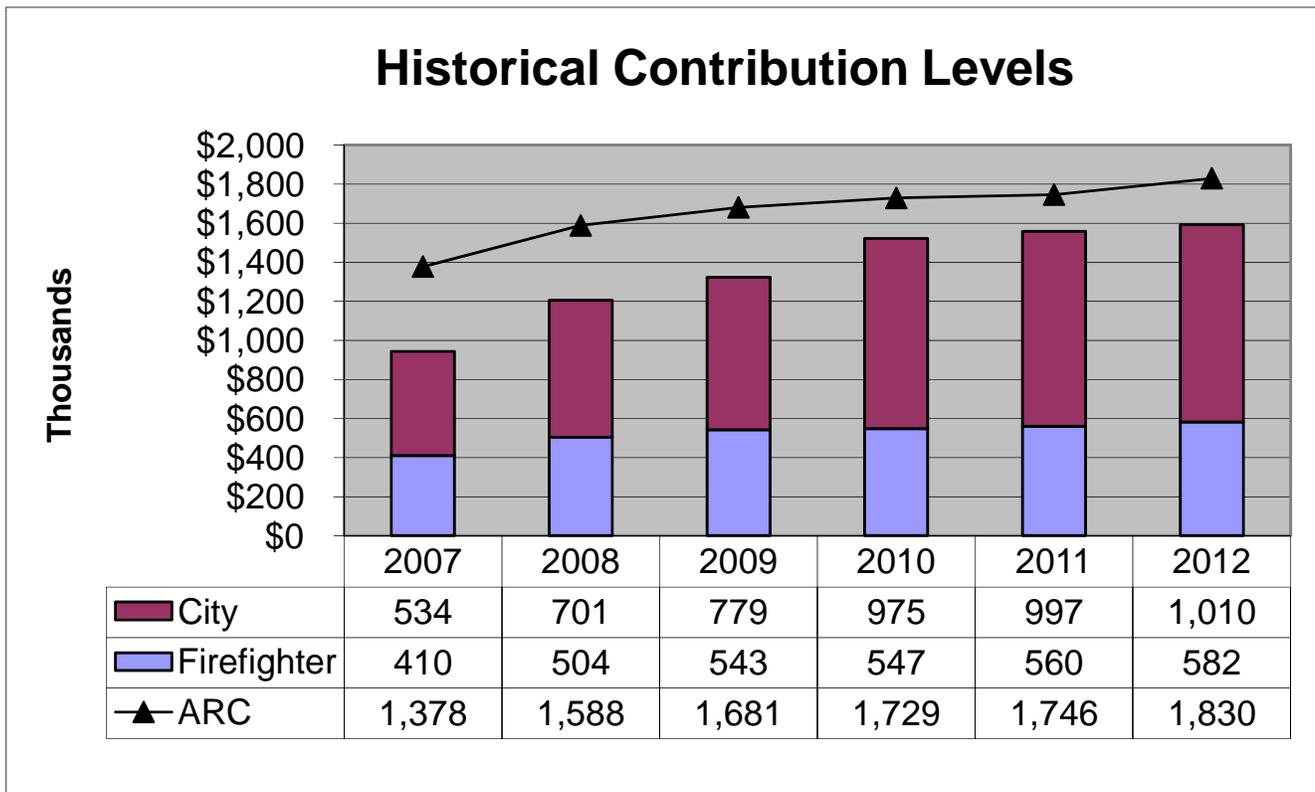


2.6 GASB 25 Accounting Information

To ensure consistent financial reporting and actuarially sound long-term funding policy by the retirement system, GASB 25 requires calculation and disclosure of the *annual required contribution (ARC)*. This minimum funding guideline is calculated as the sum of two components:

- Normal Cost: The portion of APVPB assigned to the current year by the actuarial cost method.
- Amortization Cost: Repayment of the UAAL determined as a level-dollar or level-percent of pay amortization over a maximum period of 40 years (reduced to 30 years after June 15, 2006).

For plans receiving actual contributions more or less than the ARC amount, an additional amortization of the funding excess or deficiency must be included in the ARC calculation for the following year. Please see Exhibit 3.7 for a summary of GASB 25 disclosure information. As the graph below illustrates, total funding by Firefighters and the City has not been sufficient to cover the ARC for an extended period of time, although the contribution gap has narrowed in the last few years:



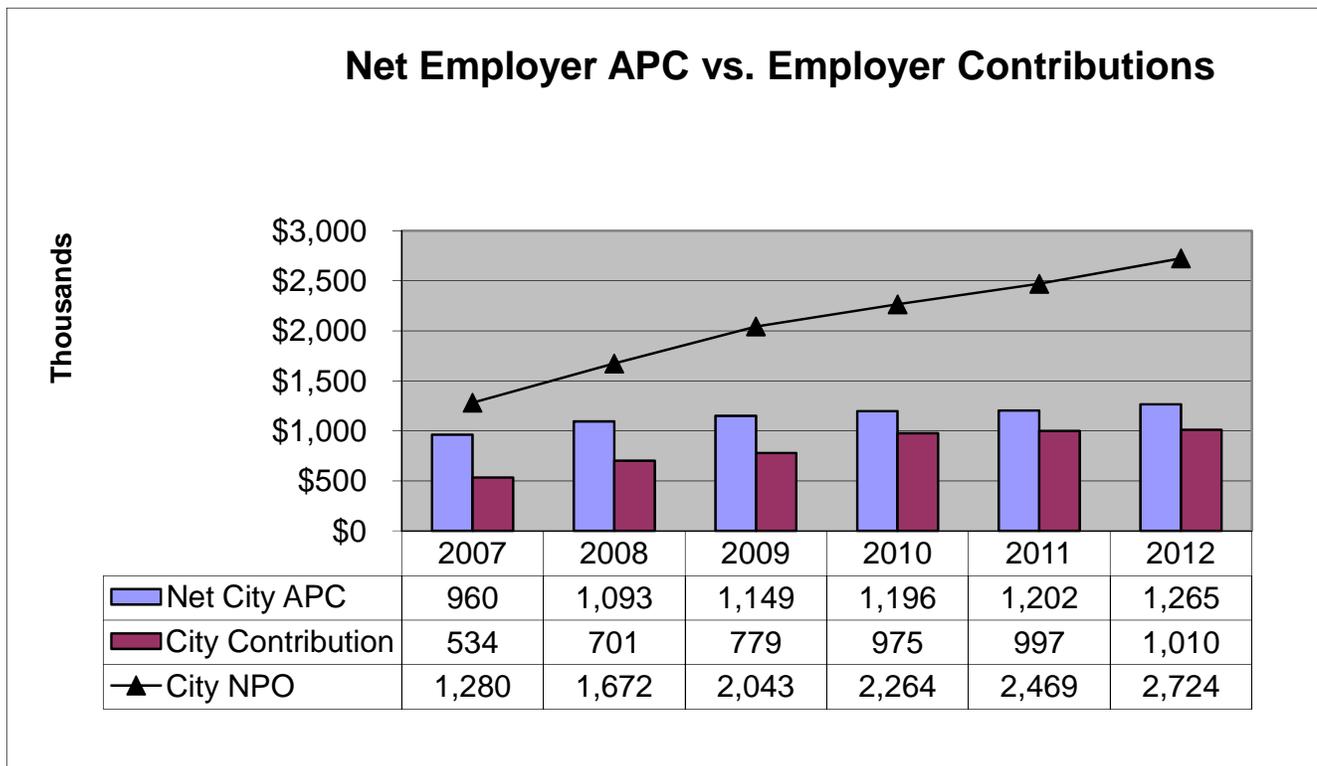
2.7 GASB 27 Accounting Information

In addition to the financial reporting and disclosure required for the retirement plan under GASB 25, the governmental entity sponsoring the retirement program has additional financial reporting and disclosure requirements under GASB 27. This standard generally requires employers to recognize annual pension cost (APC) equal to the GASB 25 annual required contribution (ARC), net of employee contributions.

If actual employer funding is less than (or greater than) the APC, the employer must recognize a liability (or asset) on its balance sheet referred to as the *net pension obligation (NPO)*. This employer balance sheet liability is calculated as the sum of three components:

- Cumulative difference between net employer annual pension cost and actual contributions.
- Interest on the net pension obligation at the rate assumed for the actuarial valuation.
- Adjustment for amortization of any funding shortfall already included in the GASB 25 ARC.

Please see Exhibit 3.8 for a summary of GASB 27 disclosure information. As illustrated below, City contributions have not been sufficient to cover the net APC under GASB 27 for the last several years. This continued funding shortfall has caused the balance sheet liability (NPO) to increase from \$1.3 million to \$2.7 million over the last 5 years.



Based on the 2012 valuation results and provided future plan experience is consistent with the valuation basis, the 2012 contribution rate totaling 36.2% of pay will not be sufficient to cover the net employer APC under GASB 27. Assuming 2013 payroll of \$4.3 million, the projected NPO balance sheet liability is expected to reach \$3.0 million by December 31, 2013.

2.8 Pending GASB Changes

The Governmental Accounting Standards Board has issued new rules that make sweeping changes to GASB Statements Nos. 25 and 27, increasing the complexity of the actuarial calculations and expanding the disclosure information required for both the Fund and the sponsoring employer. Below is a high-level summary of the impact for the Fund and the City of Lufkin based on our current understanding of the guidance issued to date:

- Effective Date – Financial disclosures for the Fund must comply with new GASB 67 for fiscal years beginning after June 15, 2013, and financial disclosures for the City must comply with new GASB 68 for fiscal years beginning after June 15, 2014.
- New Terminology – GASB 68 introduces new labels for the traditional actuarial terminology that was used in GASB 25 and 27. The actuarial accrued liability is referred to as the Total Pension Liability, the fair market value of assets is referred to as the Plan Fiduciary Position, and the unfunded actuarial liability is now referred to as the Net Pension Liability.
- Net Pension Liability – The City will be required to immediately recognize the unfunded actuarial liability on its balance sheet. Based on the 2012 valuation, the projected NPO balance sheet liability under GASB 27 of \$3.0 million as of December 31, 2013, would increase to a Net Pension Liability under GASB 68 of \$18.3 million as of December 31, 2014, according to our baseline forecast.
- Discount Rate Assumption – To the extent current plan assets and funding policy are not sufficient to cover projected plan benefit payments, the net pension liability would be measured using a blended discount rate based on the plan’s long-term actuarial assumption for the funded portion and a 30-year municipal bond index rate (AA/Aa or higher) for the unfunded portion. Based on the 2012 valuation projections, this provision may impact the Fund and result in a larger balance sheet liability.
- Liability Gains and Losses – Changes in the actuarial liability for inactive members due to experience gain/loss or changes in actuarial assumptions would be subject to full and immediate recognition by the City, rather than 30-year amortization under the current standards.
- Asset Gains and Losses – Differences between expected and actual rates of return on plan assets would be amortized over 5-year, rather than 30-year amortization under the current standards.
- Expanded Disclosure – The disclosure requirements for both the Fund and the City would be greatly expanded to include 10-year historical schedules of actuarial information and certain financial data that may not be readily available under current asset reporting (for example time weighted and dollar weighted rates of return). However, it is our understanding that a “fresh start” approach is permitted where the detailed historical data is not readily available.

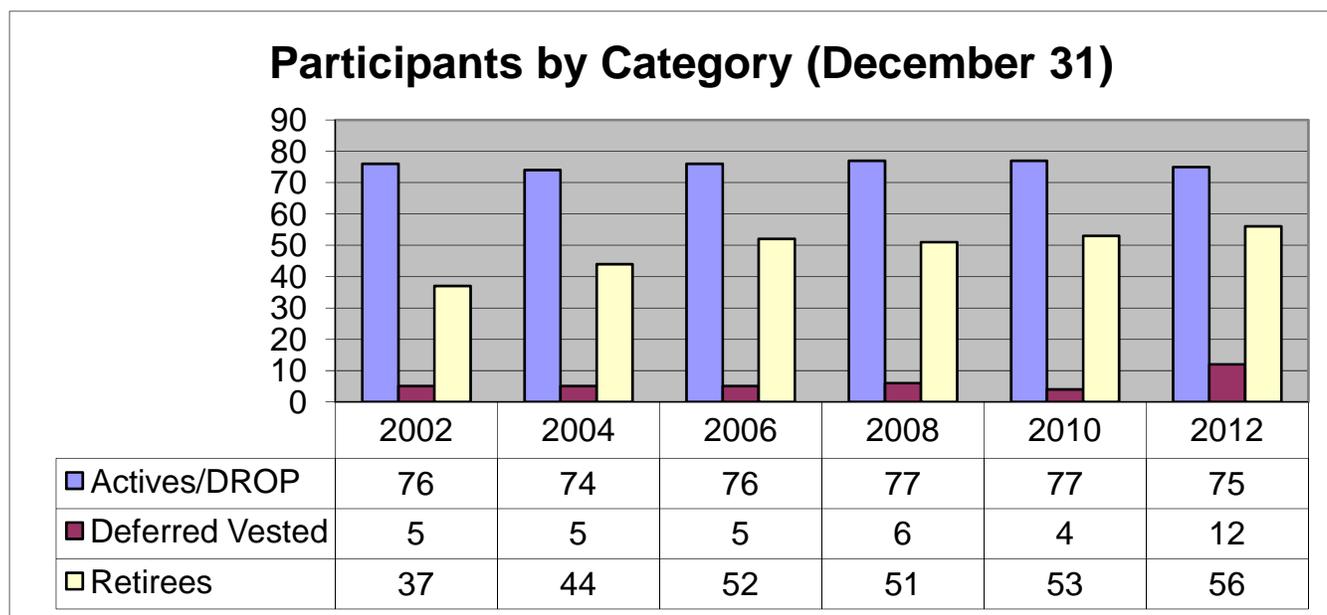
2.9 Membership Demographics

There were 75 active members (including 4 members who elected DROP) covered by the Fund as of December 31, 2012, compared to 77 from the prior valuation as of December 31, 2010. Total valuation payroll increased from \$4.24 million to \$4.32 million (about 0.9% annual rate) while average valuation pay increased from \$55,122 to \$57,624 (about 2.2% annual rate). Average age increased from 36.9 years to 37.4 years, while average service increased from 10.5 years to 11.2 years.

The number of inactive members with deferred payments/refunds due increased from 4 to 12 members. The number of retired and disabled members in pay status increased from 53 to 56 members, with the average annual benefit payments decreasing from \$22,471 to \$21,655.

Please see Exhibit 4.1 for a summary of census data used in the valuation as of December 31, 2012, along with prior valuation data as of December 31, 2010. Exhibit 4.2 provides a reconciliation of census data by member group and exhibit 4.3 provides a distribution of active members by age and service.

As indicated in the chart below, the number of active members has remained fairly stable over the last 10 years until the 2012 valuation, and the number of retired and disabled members has increased 51.4% over the same period. There were about 2.05 active members per every retired member receiving payments back in 2002, but this ratio had decreased to 1.34 active members per retired member by 2012:



Special Note – While there was a reduction in the number of active members from 77 to 75 based on the 2012 census, it is our understanding is that there were also 4 new hires early in 2013 which will result in a net increase of 2 active members. If this increase holds through the next valuation, the future payroll and corresponding contributions may be larger than assumed in the current valuation baseline forecast.

2.10 Actuarial Methods and Assumptions

Introduction

Sponsoring a defined benefit pension plan is a long-term commitment, with the ultimate cost dependent on a number of financial and demographic variables. The actuarial valuation process uses a mathematical model and applies actuarial assumptions to predict these future events. Periodic updates of the actuarial valuation process are necessary to ensure the model is financially sound, comparing emerging plan asset and liability experience to valuation projections to measure actuarial gains and losses, making adjustments to the long-term actuarial assumptions if appropriate.

Actuarial Standards of Practice (ASOP)

ASOP No. 27 provides a framework for the actuary in providing advice on development of economic actuarial assumptions, but makes an important distinction that the Fund is ultimately responsible for the final selection of these assumptions, at least for purposes of financial accounting disclosures under GASB Nos. 25 and 27. Because no one knows for certain what the future holds with respect to volatile financial markets and a dynamic global economy, ASOP No. 27 emphasizes the use of professional judgment to develop a best estimate range for each economic assumption, and then select a specific point within that range.

Under generally accepted actuarial principles, each individual assumption should represent a best estimate of expected long-term experience, and should also be reasonable and realistic in the aggregate. GASB 25 and GASB 27 accounting standards confirm that actuarial assumptions should be based on the actual plan experience (to the extent credible), emphasizing expected long-term future trends rather than giving undue weight to recent past experience.

ASOP No. 35 requires the actuary to use professional judgment in the selection of demographic and other non-economic actuarial assumptions considering the relevant universe of possible choices. It also directs the actuary to consider the specific characteristics of the particular benefit provisions and covered group of the plan being valued.

Reasonable demographic assumptions are defined as those that are expected to appropriately model the contingency being measured without producing any significant cumulative actuarial gains and losses over the measurement period. ASOP No. 35 encourages the use of more sophisticated approaches if appropriate for the situation (e.g. large plans) while also acknowledging that simplified techniques may actually be more accurate in other situations (e.g. small plans).

Please see Exhibit 4.4 for a summary of actuarial assumptions and methods used for the 2012 valuation of the Fund. The amounts presented in this actuarial report have been determined according to the actuarial assumptions and methods selected by the Board of Trustees. There have been no changes since the prior valuation other than update of the mortality table to include projected improvements in life expectancy up to the valuation date consistent with recently issued actuarial standards of practice.

2.10 Actuarial Assumptions and Methods (continued)

Interest Rate

The interest rate is the most powerful assumption in the actuarial valuation process, used to project the average rate of return expected on assets and also used to discount future benefit payments in the actuarial present value calculations. To illustrate the sensitivity, a one-percentage-point increase in the interest rate assumption will generally decrease plan liabilities and cost 15% to 20% based on plan demographics.

The net rate of return on the *fair value* of assets was -0.1% for plan year 2011 and 12.0% for plan year 2012, for an average annual rate of 5.3% per annum over the 2-year period. Although the Fund exceeded the long-term actuarial assumption of 7.5% in 6 of the last 10 years, the average annual rate of return over this period was 4.5% due to the severity of the 2008 financial market crisis and another downturn in 2011. Therefore, we encourage the Board to review this critical assumption with its new investment advisors, to confirm it is consistent with their expectations for the Fund under the revised asset allocation strategy.

Salary Scale

The salary scale used to project expected future pay increase for active members is also an important assumption used in actuarial valuation model, having about 50% to 75% of the impact that would result from a change in the interest rate assumption of similar magnitude. The Fund currently assumes a long-term salary scale assumption of 3.0%, which is lower than used by most TLFRA systems. Furthermore, basic valuation census indicates average valuation pay has increased at an annual rate of about 4.8% over the period 2007-2012.

It is important to note that the salary scale assumption should encompass more than just cost-of-living increases, but should also take into account other sources of pay increases including merit, promotion and periodic changes in the overall compensation structure. We suggest performing a special study of salary increase experience and the impact of alternative assumptions on long-term cost projections.

Amortization Method and Payroll Growth

For the level percent of pay method, the assumption used to project growth in total payroll for calculating amortization of the *UAAL* should not necessarily be the same as the salary scale assumption. Individual members may experience this rate of pay growth as they progress through their careers, but those exiting the workforce (due to termination, retirement, etc.) will in effect be replaced by lower paid entry level employees. Assuming the number of employees remains constant (i.e. no increase in head count), the net growth in total payroll will generally be less than the salary scale and closer to the basic inflation rate.

The level percent of pay amortization method was used, assuming that total payroll will grow at 2.00% per annum, which is lower than used by most TLFRA systems. The annual rate of increase averaged about 3.9% for the six years 2007-2012, but only about 0.9% during years 2011-2012 (primarily due to the reduction in the number of firefighters since the prior valuation date). We suggest performing a special study of payroll growth rate experience and the impact of alternative assumptions on long-term cost projections.

2.11 Special Study

In conjunction with the 2012 actuarial valuation, the Board requested a special study of possible benefit changes, specifically increasing the retirement eligibility requirement from age 50 to age 52, but with no changes to the vesting service requirements. As requested by the Board, this study was prepared without regard to the TLFFRA statutory requirements to “grandfather” vested accrued benefits already earned by current active members of the Fund. Therefore, the potential cost savings summarized below would not be achieved immediately following adoption of this benefit reduction, but rather gradually realized over the long-term as the current generation of active members retire and are replaced by a new generation of replacements covered by the lower cost benefit structure:

December 31, 2012	Current Plan	Proposed Plan
Unfunded Actuarial Accrued Liability (UAAL)	\$17.76 million	\$16.66 million
UAAL Funded Ratio	38.8%	40.3%
Current Contribution Rate Expected Amortization Period	89.6 years	40.2 years
PRB Contribution Rate Guidelines:		
- Required (40-year amortization)	38.94%	36.23%
- Preferred (25-year amortization)	43.75%	40.74%

Based on results of the 2012 actuarial valuation and provided future plan experience is consistent with the valuation basis, increasing the retirement eligibility from age 50 to age 52 would decrease the expected amortization period from 89.6 year to 40.2 years under the hypothetical scenario ignoring the grandfather requirements under the TLFFRA stature. In practice, the contribution rate required to achieve a 40-year expected amortization period required under PRB guidelines would gradually decrease from 38.94% to 36.23% of covered payroll. However, it is important to keep in mind these projections could also be impacted by future events:

- If the net increase in active membership that occurred in 2013 (after the valuation date) is a permanent change in the workforce, the Fund could see a reduction in the expected amortization period of 5 to 10 years in the next biennial valuation.
- Although further analysis is required to verify changes are reasonable and appropriate for the Fund, changes to bring the salary scale and payroll growth assumptions more in line with recent experience and other TLFFRA systems would also improve the expected amortization period and projected cost.
- Further decreases in contribution rates or unfavorable actuarial experience will worsen the unfunded actuarial liability and expected amortization period in the short-run.

3.1 Fair Value of Plan Assets

	Asset Values as of December 31		
	2010	2011	2012
A. Fair Value of Plan Assets			
1. Money Markets	\$1,632,872	\$213,382	\$667,522
2. Corporate Bonds	\$50,272	\$4,268,518	\$5,682,718
3. Government Participations	\$1,074,891	\$1,787	\$1,267
4. Common Stock	\$7,312,638	\$5,164,214	\$4,608,296
5. Real Estate	\$0	\$302,738	\$315,891
6. Alternative	\$22,674	\$0	\$0
7. Net Accruals	\$8,123	\$12	(\$190)
8. Total Fair Value	<u>\$10,101,470</u>	<u>\$9,950,651</u>	<u>\$11,275,504</u>
B. Change in Fair Value			
	<u>Change</u>	<u>Change</u>	
1. Contributions			
a. Firefighters	\$559,956	\$582,291	
b. City	\$996,899	\$1,010,186	
c. Total	<u>\$1,556,855</u>	<u>\$1,592,477</u>	
2. Disbursements			
a. Service and Early Retirement	(\$1,178,185)	(\$1,040,671)	
b. Disability (On-Duty)	(\$24,878)	(\$22,963)	
c. Spouses Benefits	(\$122,337)	(\$147,246)	
d. QDRO Payments	(\$4,015)	(\$48,395)	
e. Children's Benefits	(\$10,366)	(\$12,452)	
f. Disability (Off-Duty)	\$0	\$0	
g. Drop Lump Sum	(\$194,361)	\$0	
h. Refund of Contributions	(\$68,156)	(\$193,170)	
i. Balance adjustment	\$0	\$0	
j. Total	<u>(\$1,602,298)</u>	<u>(\$1,464,897)</u>	
3. Investment Return			
a. Interest and Dividends	\$300,270	\$300,243	
b. Realized and Unrealized Gain/(Loss)	(\$291,908)	\$996,646	
c. Plan Expenses	(\$113,738)	(\$99,616)	
d. Total Return	<u>(\$105,376)</u>	<u>\$1,197,273</u>	
4. Net Change	<u>(\$150,819)</u>	<u>\$1,324,853</u>	
5. Average Rate of Return			
a. Average Asset Value	\$10,078,749	\$10,014,441	
b. Income Net of Expenses	(\$105,376)	\$1,197,273	
c. Annual Rate of Return	-1.05%	11.96%	
6. Investment Gain/(Loss)	(\$861,282)	\$446,190	

3.2 Actuarial Value of Plan Assets

	Asset Values as of December 31		
	2010	2011	2012
A. Actuarial Value of Assets			
1. Fair Value at Prior Valuation	\$8,855,465	\$10,101,470	\$9,950,651
2. Contributions for Prior Year	\$1,521,937	\$1,556,855	\$1,592,477
3. Disbursements for Prior Year	(\$1,298,465)	(\$1,602,298)	(\$1,464,897)
4. Interest at Valuation Rate on:			
a. Item 1	\$664,160	\$757,610	\$746,299
b. Item 2	\$57,073	\$58,382	\$59,718
c. Item 3	(\$48,692)	(\$60,086)	(\$54,934)
5. Expected Value at Year End	\$9,751,478	\$10,811,933	\$10,829,314
6. Actual Fair Value at Year End	\$10,101,470	\$9,950,651	\$11,275,504
7. Gain/(Loss) [6. - 5.]	\$349,992	(\$861,282)	\$446,190
8. Amount Deferred for 2012	N/A	N/A	\$297,460
9. Amount Deferred for 2011	N/A	(\$574,188)	(\$287,094)
10. Amount Deferred for 2010	\$233,328	\$0	N/A
11. Amount Deferred for 2009	\$159,028	N/A	N/A
12. Preliminary Actuarial Value	\$9,709,114	\$10,524,839	\$11,265,138
13. Corridor Limits:			
a. 80% of Fair Value	\$8,081,176	\$7,960,521	\$9,020,403
b. 120% of Fair Value	\$12,121,764	\$11,940,781	\$13,530,605
14. Fair Value Reset	\$392,356	\$0	\$0
15. Final Actuarial Value	\$10,101,470	\$10,524,839	\$11,265,138
B. Change in Asset Values			
1. Contributions			
a. Firefighters		\$559,956	\$582,291
b. City		\$996,899	\$1,010,186
c. Total		\$1,556,855	\$1,592,477
2. Disbursements		(\$1,602,298)	(\$1,464,897)
3. Investment Return - Net of Expenses			
a. Expected Return		\$755,906	\$794,147
b. Gain/(Loss) Adjustment		(\$287,094)	(\$181,428)
c. Corridor Adjustment		\$0	\$0
d. Total		\$468,812	\$612,719
4. Net Change		\$423,369	\$740,299
5. Average Rate of Return			
a. Average Asset Value		\$10,078,749	\$10,588,629
b. Income Net of Expenses		\$468,812	\$612,719
c. Annual Rate of Return		4.65%	5.79%

3.3 Actuarial Present Value of Projected Benefits

	<u>December 31, 2010</u>	<u>December 31, 2012</u>
A. Assumptions		
1. Discount Rate	7.50%	7.50%
2. Mortality	RP 2000 Projected	RP 2000 Projected
B. Present Value of Projected Benefits		
1. Active	\$16,369,953	\$19,714,844
2. Accumulated DROP	\$323,666	\$557,810
3. Terminated Vested	\$470,804	\$1,141,432
4. Disabled	\$257,412	\$238,474
5. Retired	\$14,485,917	\$12,203,622
6. Total	<u>\$31,907,752</u>	<u>\$33,856,182</u>
C. Change in Present Value of Projected Benefits		<u>Change</u>
1. New Entrants		\$619,481
2. Benefits Accumulated		\$0
3. Benefits Paid		(\$3,067,195)
4. Decrease in Discount Period		\$4,726,978
5. Plan Experience		(\$490,209)
6. Actuarial Assumptions		\$159,375
7. Actuarial Methods		\$0
8. Plan Amendments		\$0
9. Net Change		<u><u>\$1,948,430</u></u>
D. Actuarial Value of Assets	\$10,101,470	\$11,265,138
E. Funded Status	31.7%	33.3%
F. Present Value of Future Payroll	\$32,434,000	\$32,227,900
G. Present Value of Future Contributions		
1. Firefighter	\$4,281,288	\$4,254,083
2. City	\$7,621,990	\$7,412,417
3. Total	<u>\$11,903,278</u>	<u>\$11,666,500</u>
H. Actuarial Present Value of Future Funding Required from Other Sources [B(6) - D - G(3)]	\$9,903,004	\$10,924,544

3.4 Actuarial Accrued Liability and Normal Cost Rate

	<u>December 31, 2010</u>	<u>December 31, 2012</u>
A. Assumptions		
1. Discount Rate	7.50%	7.50%
2. Mortality	RP 2000 Projected	RP 2000 Projected
B. Actuarial Accrued Liability (EAN)		
1. Active	\$11,514,150	\$14,886,321
2. Accumulated DROP	\$323,666	\$557,810
3. Terminated Vested	\$470,804	\$1,141,432
4. Disabled	\$257,412	\$238,474
5. Retired	\$14,485,917	\$12,203,622
6. Total	<u>\$27,051,949</u>	<u>\$29,027,659</u>
C. Actuarial Value of Assets	<u>\$10,101,470</u>	<u>\$11,265,138</u>
D. Unfunded Actuarial Liability	<u><u>\$16,950,479</u></u>	<u><u>\$17,762,521</u></u>
E. Change in Unfunded Actuarial Accrued Liability		<u>Change</u>
1. Contributions		(\$3,149,332)
2. Benefits Accumulated		\$1,191,862
3. Decrease in Discount Period		\$2,535,609
4. Plan Asset Experience		\$490,054
5. Plan Liability Experience		(\$407,731)
6. Actuarial Assumptions		\$151,579
7. Actuarial Methods		\$0
8. Plan Amendments		\$0
9. Net Change		<u><u>\$812,042</u></u>
F. Funded Status	37.3%	38.8%
G. Present Value of Future Normal Cost	\$4,855,803	\$4,828,523
H. Present Value of Future Compensation	\$32,434,000	\$32,227,900
I. Normal Cost Rate	14.97%	14.98%

3.5 Expected Amortization Period

	<u>December 31, 2010</u>	<u>December 31, 2012</u>
A. Discount Rate	7.50%	7.50%
B. Present Value Future Compensation (PVFComp)	\$32,434,000	\$32,227,900
C. Present Value Future Contributions (PVFContrb) % of PVFComp	\$11,903,278 36.70%	\$11,666,500 36.20%
D. Present Value Projected Benefits (PVFB)	\$31,907,752	\$33,856,182
E. Actuarial Accrued Liability (AAL)	<u>\$27,051,949</u>	<u>\$29,027,659</u>
F. Present Value of Future Normal Costs (PVFNC) % of PVFComp	\$4,855,803 14.97%	\$4,828,523 14.98%
G. PVFContrb available to payoff UAL % of PVFComp	\$7,047,475 21.73%	\$6,837,977 21.22%
H. Valuation Compensation	\$4,244,377	\$4,321,795
I. Current Contribution Available to pay off UAL	\$922,303	\$917,085
J. Unfunded Actuarial Liability	\$16,950,479	\$17,762,521
K. Expected Amortization Period (2% Payroll Growth)	53.7	89.6
L. Amortization Period Sensitivity		
1. Annual Payroll Growth 1.5%	infinity	infinity
2. Annual Payroll Growth 3%	34.4	39.0

3.6 Funding Policy Guidelines

	<u>December 31, 2010</u>	<u>December 31, 2012</u>
A. PRB Minimum Funding Policy¹		
1. Normal Cost	14.97%	14.98%
2. 40-year Amortization Payment: ³	23.28%	23.96%
3. Total Funding Policy	<u>38.25%</u>	<u>38.94%</u>
B. GASB ARC Funding²		
1. Normal Cost	14.97%	14.98%
2. 30-year Amortization Payment: ³	25.76%	26.51%
3. Total Funding Policy	<u>40.73%</u>	<u>41.49%</u>
C. PRB Preferred Funding Policy		
1. Normal Cost	14.97%	14.98%
2. 25-year Amortization Payment: ³	27.95%	28.77%
3. Total Funding Policy	<u>42.92%</u>	<u>43.75%</u>

Notes

- 1 Under Texas Pension Review Board guidelines for actuarial soundness, the financial arrangement should be sufficient to amortize the unfunded liability over a preferred period of 15-25 years, not to exceed 40 years.
- 2 GASB 25 Annual Required Contribution (ARC) based on amortization of the Unfunded Actuarial Liability over 30 years.
- 3 Amortization calculated under the level percent of pay method payable beginning of year, with fresh start each valuation date.

3.7 GASB 25 Accounting Information

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) - Entry Age (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll (b-a)/(c)
12/31/2004	\$10,673,969	\$17,613,892	\$6,939,923	60.6%	\$3,041,650	228.2%
12/31/2006	\$10,612,279	\$21,164,321	\$10,552,042	50.1%	\$3,552,919	297.0%
12/31/2008	\$9,456,907	\$24,777,439	\$15,320,532	38.2%	\$4,148,732	369.3%
12/31/2010	\$10,101,470	\$27,051,949	\$16,950,479	37.3%	\$4,146,970	408.7%
12/31/2012	\$11,265,138	\$29,027,659	\$17,762,521	38.8%	\$4,321,795	411.0%

The economic assumptions used for the 12/31/2012 actuarial valuation include:

Investment Return	7.50%
Projected Salary Increases	3.00%
Payroll Growth Assumption	2.00%

3.8 GASB 27 Accounting Information

A. Fund Membership		December 31, 2012
1. Retired members and their beneficiaries		56
2. Vested terminated members		12
3. Active members		75
	Electing DROP	4
	Vested	37
	Nonvested	34
4. Total Fund Membership		143

B. Annual Employer Contribution Requirement

Fiscal Year Ending	Total Annual Required Contribution (ARC)	Member Contributions	Net Employer Annual Pension Cost (APC)	Employer Contributions	Percentage of APC Contributed
12/31/2006	\$ 1,333,453	\$ 388,544	\$ 941,146	\$ 494,984	52.6%
12/31/2007	\$ 1,377,957	\$ 410,319	\$ 959,751	\$ 533,523	55.6%
12/31/2008	\$ 1,587,806	\$ 503,591	\$ 1,093,189	\$ 700,739	64.1%
12/31/2009	\$ 1,680,614	\$ 543,107	\$ 1,149,232	\$ 778,632	67.8%
12/31/2010	\$ 1,728,850	\$ 547,400	\$ 1,195,773	\$ 974,537	81.5%
12/31/2011	\$ 1,746,045	\$ 559,956	\$ 1,201,964	\$ 996,899	82.9%
12/31/2012	\$ 1,830,246	\$ 582,291	\$ 1,265,268	\$ 1,010,186	79.8%

C. Reconciliation of Net Pension Obligation (NPO)

	2011	2012	2013*
1. Balance at Beginning of Year	\$ 2,263,975	\$ 2,469,040	\$ 2,724,122
2. Annual Pension Cost (APC)			
a. Annual Required Contribution (ARC)	\$ 1,746,045	\$ 1,830,246	\$ 1,805,214
b. Firefighter Contributions	(559,956)	(582,291)	(570,477)
c. Interest on NPO	169,798	185,178	204,309
d. Amortization Adjustment on ARC	(153,923)	(167,865)	(185,208)
e. Total APC	1,201,964	1,265,268	1,253,838
3. City Contributions	(996,899)	(1,010,186)	(994,013)
4. Balance at End of Year	\$ 2,469,040	\$ 2,724,122	\$ 2,983,947

* Projected assuming no changes from 2012 valuation basis and no actuarial gain/loss.

4.1 Demographic Summary

	<u>December 31, 2010</u>	<u>December 31, 2012</u>
A. Active Members		
1. Number	77	75
2. Valuation payroll	\$4,244,377	\$4,321,795
3. Average pay	\$55,122	\$57,624
4. Average age	36.9	37.4
5. Average service	10.5	11.2
B. Terminated - Refund Due		
1. Number	N/A	7
2. Sum of EE Contributions	N/A	\$49,297
3. Average Refund Due	N/A	\$7,042
C. Deferred vested		
1. Number	4	5
2. Total Retirement Benefits	\$64,578	\$125,135
3. Average benefits	\$16,145	\$25,027
D. Disabled		
1. Number	2	2
2. Total Retirement Benefits	\$22,963	\$22,963
3. Average benefits	\$11,482	\$11,482
E. Retired		
1. Number	51	54
2. Total benefits	\$1,167,984	\$1,189,724
3. Average benefits	\$22,902	\$22,032

4.2 Data Reconciliation

	<u>Active*</u>	<u>Deferred Refund</u>	<u>Deferred Inactive</u>	<u>Disabled</u>	<u>Retired</u>	<u>Total</u>
December 31, 2010 Valuation	77	0	4	2	51	134
Change Due To:						
New hires and rehires	10	0	0	0	0	10
Termination	(6)	4	2	0	0	0
Retirement	(1)	0	0	0	1	0
Disability	0	0	0	0	0	0
Death without beneficiary	0	0	0	0	0	0
Death with beneficiary	0	0	(1)	0	2	1
Cashouts	(4)	0	0	0	0	(4)
Data corrections	<u>(1)</u>	<u>3</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>2</u>
Net change	<u>(2)</u>	<u>7</u>	<u>1</u>	<u>0</u>	<u>3</u>	<u>9</u>
December 31, 2012 Valuation	<u>75</u>	<u>7</u>	<u>5</u>	<u>2</u>	<u>54</u>	<u>143</u>

* 4 active participants were in DROP as of December 31, 2012 (4 in DROP as of December 31, 2010)

4.3 Active Members by Age and Service

Attained Age	Years of Service as of December 31, 2012							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30 & up	
Under 25	8	0	0	0	0	0	0	8
25-29	7	1	0	0	0	0	0	8
30-34	4	7	3	0	0	0	0	14
35-39	1	3	7	2	0	0	0	13
40-44	0	3	5	6	1	0	0	15
45-49	0	0	2	7	2	0	0	11
50-54	0	0	0	0	2	2	0	4
55-59	0	0	0	0	0	2	0	2
60 & up	0	0	0	0	0	0	0	0
Total	20	14	17	15	5	4	0	75

34 Not Vested	35 Vested	6 Retirement Eligible
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4.4 Assumptions and Methods

Economic Assumptions

Interest Rates:

- Investment Return 7.50% per annum.
- Salary Increases 3.00% per annum.
- Payroll Growth 2.00% per annum.

Demographic Assumptions

- Mortality RP-2000 tables for males and females projected with Scale AA to the valuation date, with sample rates per 100 lives summarized below:

<u>Age</u>	<u>Male</u>	<u>Female</u>
25	0.028	0.014
35	0.067	0.035
45	0.105	0.072
55	0.402	0.301
65	1.012	0.938
75	2.854	2.394

- Termination Table Excess T-3 (over GA-51) from the Actuary's Pension Handbook, with sample rates per 100 lives summarized below:

<u>Age</u>	<u>Rate</u>
25	5.27
30	4.83
35	4.47
40	3.84
45	3.21
50	1.52

- Retirement Active firefighters are assumed to Retro-DROP at the later of age 53 or 20 years of service (or age on the valuation date, if older) and elect the maximum DROP eligibility period. Terminated firefighters entitled to deferred benefits are assumed to retire at age 50 or age on valuation date, if older.

4.4 Assumptions and Methods (continued)

- Disability Active firefighters are assumed to incur disabilities based on experience firefighter rates that vary by age as shown below, with sample rates per 100 lives summarized below:

<u>Age</u>	<u>Rate</u>
25	0.06
30	0.06
35	0.01
40	0.27
45	1.88

Disabled firefighters are assumed to experience higher mortality during their disability as based on the healthy mortality tables set forward 10 years, with sample rates per 100 lives summarized below:

<u>Age</u>	<u>Male Rate</u>
25	0.068
35	0.107
45	0.418
55	1.041
65	2.935

- Loading for Subsidies N/A
- Marital Status 70% of all active firefighters are assumed to be married at the time benefits commence. Males are assumed to be two years older than their spouses.
- Changes in Assumptions The mortality assumption was updated to include projected improvements in life expectancy. There have been no other changes in actuarial assumptions from the prior valuation.

4.4 Assumptions and Methods (continued)

Methods

Valuation Date	December 31, 2012
Asset Valuation Method	Smoothed market value with asset gains and losses recognized over 3-years, equal to the fair value as of the measurement date less $\frac{2}{3}$ rd s of the investment gain/(loss) for the current plan year less $\frac{1}{3}$ rd of the investment gain/(loss) for the prior plan year. The smoothed market value is adjusted to remain within a corridor range of 80% to 120% of fair market value. The actuarial value was re-initialized to the fair market value as of December 31, 2010.
Actuarial Cost Method	<u>The Entry Age Normal Actuarial Cost Method</u> The present value of the projected benefit (PVB) is determined as of the date the member entered the plan (or would have entered if the plan had always been in effect). The present value of future salary (PVFS) is also determined at entry age. The percentage of the PVFS represented by the PVB is the level percent of pay which, if contributed every year, would exactly fund the benefit if the valuation actuarial assumptions were realized. The actuarial accrued liability is the theoretical value of assets which would result from the accumulation of these contributions from the plan entry until the valuation date.
DROP Provision	The present value of future benefits represents the cost in today's dollars of all future benefits to be provided under the terms of the plan to current firefighters, retirees and beneficiaries. The present value of the future DROP benefit was explicitly valued for active members attaining 20 years of service between ages 50 and 53. Under this cost method, the present value is allocated as a level percentage of the compensation of the firefighters until assumed retirement.
Changes in Methods	There have been no changes in the actuarial cost methods from the prior valuation.

4.5 Plan Provisions

Effective Date	The Plan was most recently amended and restated effective April 25, 2012.
Eligibility	A firefighter shall become a member when he first becomes employed with the Lufkin Fire Department.
Service	<p>A firefighter receives credit for the number of years and months of employment with the Fire Department. It includes the period of time during which the firefighter pays into and keeps on deposit in the fund the contributions required by this plan.</p> <p>Periods of leave of absence are deemed continuous employment but shall be excluded in determining a member's service, unless the member receives regular compensation during the leave of absence and makes the required contributions based on this compensation.</p>
Compensation	<p>Compensation includes regular salary or wages, longevity and overtime pay, but excludes car allowances and lump sum distributions for unused sick leave or vacation.</p> <p>Highest 36-Month Average Salary is the average of the firefighter's compensation for the 36 consecutive calendar months of service with the department during which his total pay was highest.</p> <p>Highest 60-Month Average Salary is the average of the firefighter's compensation for the 60 consecutive calendar months of service with the department during which his total pay was highest.</p>
Contributions	City contribution rates are 23.00% of pay effective January 1, 2013. Firefighter contribution rates remain at 13.20%.

4.5 Plan Provisions (continued)

Service Retirement

Attainment of age 50 and completion of 10 years of service (15 years of service if hired after 8/2005).

Each firefighter who retires on or after his retirement eligibility date receives a monthly retirement income equal to the sum of (a) and (b), where:

- (a) A “base” benefit of 3.35% of the Highest 60-Month Average Salary multiplied by the lesser of his years of service or 20 years; plus
- (b) A “longevity” benefit equal to \$66 for each year of service in excess of 20 years.

In no event will a retirement benefit be less than what was vested under a prior plan.

Disability Retirement

An active firefighter who has completed his probationary period is eligible for a disability benefit if he becomes disabled from any cause whatsoever for either physical or mental reasons, except for those causes specified in the plan document.

The disability benefit will commence after the expiration of all vacation and sick leave, and will continue as long as the member remains disabled. However, if the firefighter is less than 15% disabled as determined by at least two doctors, payments will be made for a maximum of five years as such determination is made. Further, disability payments may not begin as long as the firefighter is receiving a Worker’s Compensation benefit which is equal to or larger than \$100 per month.

A disability benefit is equal to the \$100 per month TLFFRA minimum disability benefit from this plan. In addition, the firefighter is provided with disability coverage under a separate disability policy provided to all municipal employees.

The Board of Trustees may require a disabled firefighter to be reevaluated from time to time in order to determine whether he has recovered or whether the percentage of disability has changed. The Board of Trustees may also require the disabled firefighter to provide evidence of income received from other sources during a period of disability.

4.5 Plan Provisions (continued)

If a disabled firefighter with credit for less than 10 years of service recovers to the extent that his disability allowance is terminated, and he does not return to the employ of the Fire Department, an amount equal to the excess, if any, of the firefighter's own contributions over the amount of disability payments which have been made on his behalf will be paid to him in a lump-sum payment.

If a disabled firefighter is age 50 with credit for at least 10 years of service (15 years of service for all firefighters hired on or after August 18, 2005), he may apply for a service retirement.

Vested Termination Benefit

Upon a firefighter's termination, he is eligible for a deferred benefit if he has completed at least 10 years of service (15 years of service for all firefighters hired on or after August 18, 2005) and agrees to leave his contributions in the Fund. The firefighter is not required to make any additional contributions to the Fund after his termination from service.

The benefit is equal to his service retirement benefit determined as of the date of separation from service. Benefits may not commence prior to attainment of age 50.

If a firefighter terminates with less than 10 years of service (15 years of service for all firefighters hired on or after August 18, 2005), he will receive an amount equal to the excess of his own contributions to the fund over the amount of benefits that he has previously received from the fund. A firefighter with 10 or more years of service (15 years of service for all firefighters hired on or after August 18, 2005) may elect a refund of his own contributions; however, he will forfeit his right to all future benefits he otherwise would have been entitled to receive.

4.5 Plan Provisions (continued)

Pre-Retirement Death Benefit

- Spouse
Upon the death of an active firefighter, a benefit is payable to his beneficiaries commencing on the first of the month following his death.
The benefit payable to the surviving spouse of a firefighter is equal to two-thirds of the service retirement benefit the firefighter would have been eligible to receive as of the date of death (without taking into consideration eligibility requirements for service retirement), but not less than 44.67% of his Highest 36-Month Average Salary. This benefit shall be paid until the earlier of remarriage or death. If the spouse remarries or subsequently divorces or again loses her new spouse to death, the spouse's pension shall be reinstated.
- Child
Each surviving unmarried child under age 18 shall receive a benefit equal to 11.17% of the firefighter's Highest 36-Month Average Salary. However, if the firefighter is unmarried or the firefighter's widow dies after being entitled to a benefit, each unmarried child will receive a benefit equal to two-thirds of the firefighter's Highest 36-Month Average Salary, but not less than 44.67% of the Highest 36-Month Average Salary. This death benefit shall be paid until age 18, or continue until age 22 as long as the child remains a full-time student. In addition, benefits are payable after age 18 for as long as a child remains totally disabled.
- Dependent Parents
If no spouse or child is entitled to a pre-retirement death benefit at the time of a firefighter's death, the amount the spouse would have received will be paid to the firefighter's dependent parents.

Post-Retirement Death Benefit

- Spouse
Upon the death of a service retiree or disabled retiree, a benefit is payable to his beneficiaries commencing on the date of death.
The benefit payable to the surviving spouse of a service retiree or disabled retiree is equal to two-thirds of the service retirement or disability retirement benefit the firefighter was receiving as of the date of death. This benefit shall be paid until the earlier of remarriage or death. If the spouse remarries and subsequently divorces or again loses her new spouse to death, the spouse's pension shall be reinstated.

4.5 Plan Provisions (continued)

- Child
Each surviving unmarried child under age 18 shall receive a benefit equal to 11.17% of the firefighter's Highest 36-Month Average Salary. However, if the firefighter is unmarried or the firefighter's widow dies after being entitled to a benefit, each unmarried child will receive a benefit equal to two-thirds of the firefighter's Highest 36-Month Average Salary. This death benefit shall be paid until age 18, or continue until age 22 as long as the child remains a full-time student. In addition, benefits are payable after age 18 for as long as a child remains totally disabled.

- Dependent Parents
If no spouse or child is entitled to a post-retirement death benefit at the time of a firefighter's death, the amount the spouse would have received will be paid to the firefighter's dependent parents.

Limitation on Death Benefits

The sum of all death benefits payable on behalf of a retired firefighter may not exceed the benefit he was receiving as of the date of his death. The sum of all death benefits payable on behalf of a non-retired firefighter may not exceed the service retirement or disability benefit that he would have been entitled to receive as of his date of death. In the event this limit is exceeded, each beneficiary is reduced pro-rata until the limit is met.

DROP Benefit

A firefighter who is eligible for a service retirement is eligible to elect an alternate form of retirement known as the Deferred Retirement Option Provision ("DROP"). Under the DROP, a firefighter is treated by the fund as if he retired, but he continues to work for the Fire Department in his regular capacity. While participating in the DROP, the City continues making contributions to the fund on the firefighter's behalf. A firefighter may participate in the DROP for a maximum of 6 years.

Each firefighter who elects the DROP has his monthly retirement income benefit calculated as of the date of election. Such monthly benefit will be deferred and will commence at the time of the firefighter's actual retirement from the department. During the time the firefighter is participating in the DROP, his monthly pension amount and his contributions are credited to his DROP account within the fund but no interest is credited.

4.5 Plan Provisions (continued)

At the time the firefighter does leave DROP and formally retires, he will begin to receive his monthly retirement income. The firefighter will also be eligible to receive the amount in his DROP account by making an irrevocable election to request payment of his DROP account in either of the methods as follows:

- (a) A lump sum; or
- (b) An amount to be paid in not more than three installments with the first installment beginning not later than 13 months after leaving the DROP and the final installment made not more than 37 months after leaving the DROP.

RETRO DROP Benefit

A firefighter who is eligible for a service retirement with more than 20 years of service is eligible to elect an alternate form of retirement known as the Reverse Deferred Retirement Option Provision (“Reverse DROP”). An eligible firefighter can elect a benefit calculation date that is no earlier than (a) 36 months prior to retirement and (b) age 50 with 20 years of service.

Each firefighter who elects the RETRO DROP will receive two benefits, one payable monthly and the other paid as a lump sum. The monthly benefit is equal to the Service Retirement Benefit the firefighter would have received as of the benefit calculation date under the plan provisions in effect as of that date. The lump sum benefit is equal to the employee’s contributions made between the benefit calculation date and the current retirement date plus the above calculated monthly benefits that otherwise would have been received between the benefit calculation date and the current retirement date.

Changes in Plan Provisions

City contribution rates decreased from to 23.50% to 22.90% as of January 1, 2012 and increased to 23.00% effective January 1, 2013. There have been no other changes in plan provisions since the prior valuation.