

Intensive Actuarial Review:

Longview Firemen's Relief and Retirement Fund

October 2018



PENSION REVIEW BOARD

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Executive Summary

Introduction

This intensive actuarial review of Longview Firemen's Relief and Retirement Fund ("Longview Fire" or "the Fund") is intended to assist the Fund's board of trustees and the City of Longview ("the City") in assessing the Fund's ability to meet its long-term pension obligation.

Longview Fire has been working with the City since 2012 on a four-step plan to increase both the city and member contributions to improve the Fund. Currently, active members of the Fund contribute either 15.00% or 17.00% of pay depending on their hire date. The City currently contributes 18.00% and effective October 2018, the City will contribute 19.00% of pay. The Fund has also made several benefit reductions for current and future members. These changes have helped to improve the amortization period to 40.2 years as of the 2017 valuation, compared to 50.7 years at the end of 2016.

Despite these changes, the review shows that at the current contribution rates and benefit levels, the unfunded liability can be expected to continue to grow and the funded status to continue to languish. The Pension Review Board (PRB) encourages the Fund and the City to review the findings and conclusions of this report carefully and jointly adopt a forward-looking plan to address these risks and guide the Fund towards a path of long-term sustainability. The PRB can provide technical assistance in formulating such a plan.

Overview

Longview Fire's unfunded actuarially accrued liability (UAAL or "unfunded liability") increased from \$16.9 million at the end of 2005 to over \$50 million by the end of 2017. This chronic underfunding can be primarily attributed to actual returns consistently lower than the investment return assumption; repeated liability losses due to adverse experience compared to the Fund's other assumptions; and contributions consistently lower than the annual benefit accrual plus growth of existing unfunded benefits. The Fund is facing substantial financial stress and is taking risks in its approach to funding.

Conclusion

Longview Fire should consider the following additional actions to help ensure financial stability and mitigate the risks that lead to underfunding: working with its actuaries and other consultants to ensure assumptions are neither too aggressive nor too conservative; evaluating asset allocation decisions and appropriate risk levels on a forward-looking basis; developing a more robust investment policy; and ensuring contributions are adequate to fully fund Longview Fire over a reasonable period.

To address the funding and governance risks, the Fund and the City should develop written funding, benefit, and investment policies that are linked to provide a formal risk-/cost-sharing arrangement. A strong funding policy that requires payment of an actuarially determined contribution (ADC) is encouraged. In addition to helping maintain a sound funding level, putting such forward-looking policies into place can help reduce uncertainty for stakeholders who would know, in advance, how future adverse experience will be managed.

Background

Texas Government Code Section 801.202(2) requires the PRB to conduct intensive studies of potential or existing problems that threaten the actuarial soundness of or inhibit an equitable distribution of benefits in one or more public retirement systems. The PRB identified a set of key metrics, in addition to amortization period, to determine and prioritize retirement systems for intensive actuarial review as included page 13 of the Appendix. After evaluating these metrics, the PRB selected Longview Firemen’s Relief and Retirement Fund (“Longview Fire” or “the Fund”) for review. The following data points were calculated as of the Fund’s December 31, 2016 actuarial valuation and financial audit available to the PRB at the time the Fund was selected for review in April 2018:

Plan Profile (as of 12/31/2017)
Actuarial Accrued Liability: \$93,381,961
Market Value of Assets: \$43,004,267
Normal Cost: 15.14% of payroll
Contributions: 16.84% employee 18.25% employer
Membership: 175 active 147 annuitants
Social Security Participation: No

- Its **funded ratio** of 45.53% was second lowest among its TLFRA peer plans and one of the lowest in the state of Texas.
- The 50.7-year **amortization period** on its unfunded actuarial accrued liability was the third highest among its peers and the sixth highest finite period in the state.
- Its **assumed rate of return** on assets of 8.00% was tied for the highest within its peer group and among the highest in the state.
- Its 383.31% **UAAL as a percent of payroll** was the second highest in its peer group and sixth highest in the state.

- **Actual contribution as a percent of its Actuarially Determined Contribution (ADC)** of 70.47% was the lowest among its TLFRA peer plans.

Since selecting Longview Fire, the PRB received the Fund’s 2017 actuarial valuation in July 2018. The 2017 data was used for the entirety of this review and is summarized in the table below.

Amort. Period (Years)	Funded Ratio	UAAL as % of Payroll	Assumed Rate of Return	Payroll Growth Rate	Actual Cont. as % of ADC ¹	DROP as % of FNP	Non-Investment Cash Flow as % of FNP
40.2	46.05%	389.47%	8.00%	3.00%	81.06%	0.00%	-5.56%

*Contribution, DROP and cash flow data are from the Fund’s 12/31/2017 financial audit.

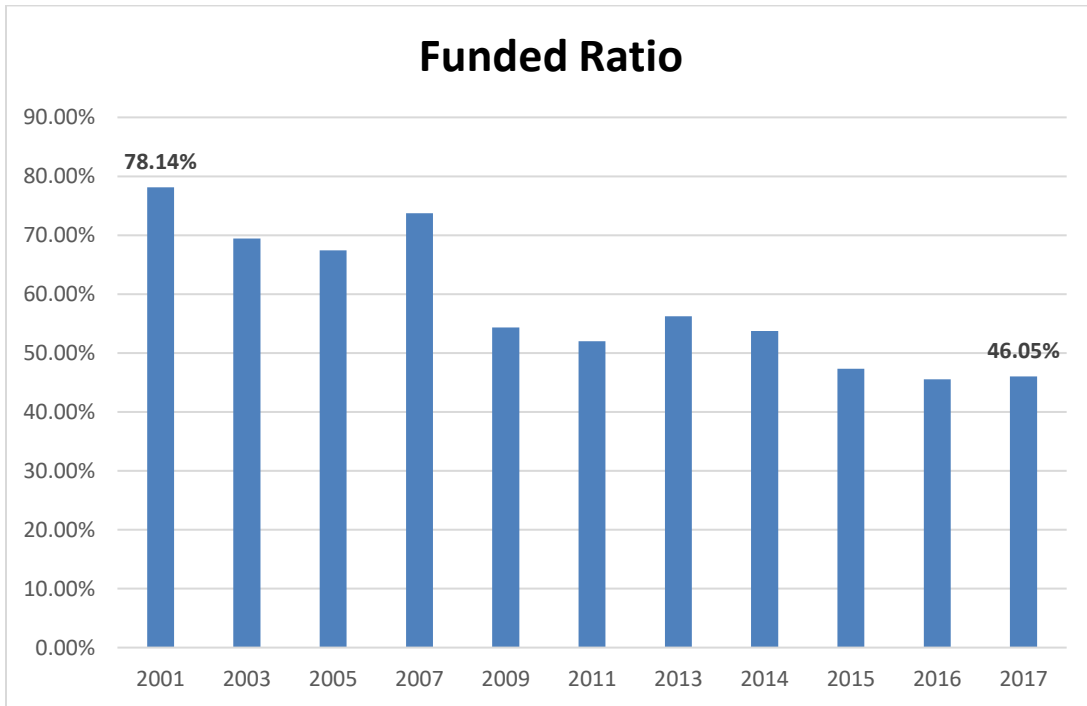
¹ For plans whose contributions are made as a fixed rate based on statutory or contractual requirements, the ADC for this purpose is the contribution needed to fund the benefits accrued in the current year and maintain an amortization period that does not exceed 30 years, as required to be reported under Texas Government Code §802.101(a).

Risk Analysis

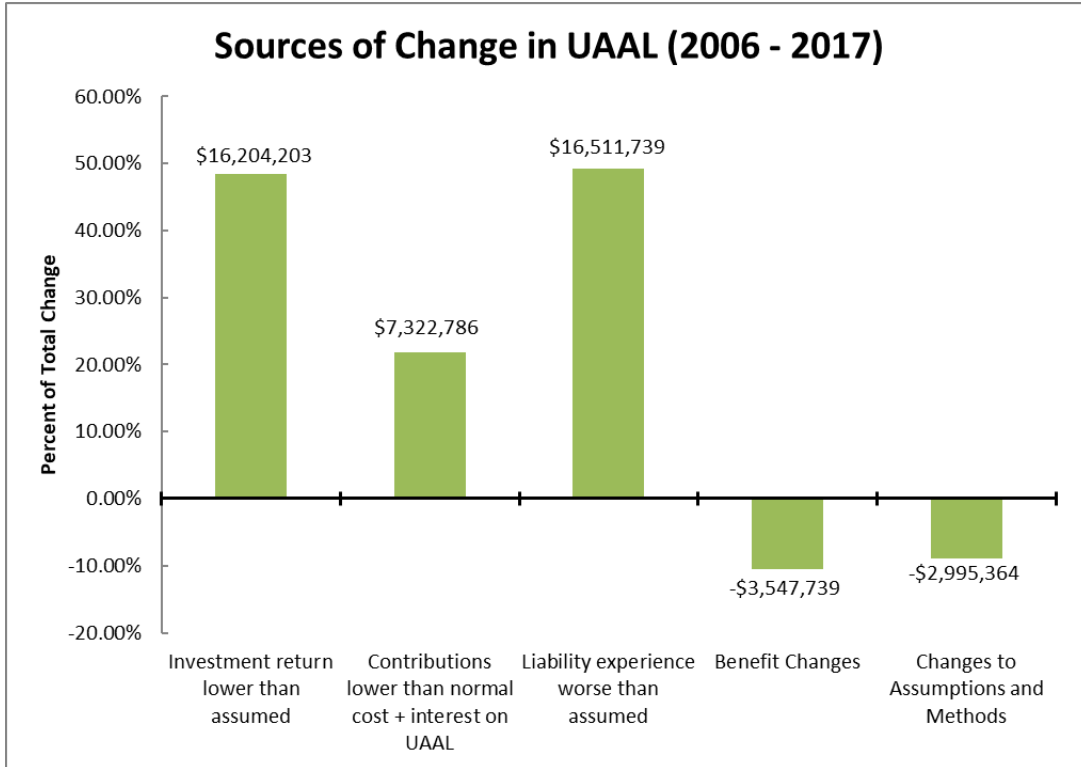
A pension fund faces multiple risks, which can be boiled down to one primary concern of whether there will be enough money to pay benefits when they are due. Since 2012, Longview Fire has made benefit changes for future members, and both the City and members have made contribution increases. However, actual experience consistently not meeting assumptions and a fixed rate contribution structure pose a relatively high level of risk to the Fund. These risks increase the probability of a continued period of substantial financial stress for the Fund and could raise the likelihood of deteriorating funding conditions in the coming years.

Funding Risk

Longview Fire's December 31, 2017 actuarial valuation shows that the Fund is approximately 46% funded on an actuarial basis, and according to reports filed with the PRB, it has not had a funded ratio above 60% since 2007.



Longview Fire’s significant growth in unfunded liability, which increased from \$16.9 million at the end of 2005 to over \$50 million by the end of 2017, can be attributed to 3 key issues: actual returns consistently lower than the assumed investment return; contributions consistently lower than the annual benefit accrual plus growth of existing unfunded benefits; and repeated liability losses due to adverse experience compared to the fund’s assumptions.



Liability Experience Compared with Assumptions

In all but one of the past 12 actuarial valuations, Longview Fire’s liability increased more than expected, resulting in an increase in the unfunded liability (UAAL) of \$16.5M for the 2006-2017 period. This \$16.5M liability increase resulted from experience not meeting assumptions in areas other than investment returns, which caused a separate, additional \$16.2M liability increase (discussed in the following section).

Of the \$16.5 million loss, more than \$10 million occurred between 2006 and 2009, and the losses that occurred over the past 5 years resulted in less than a 2% loss on the total actuarial accrued liability in a given year, as shown in the following graph.

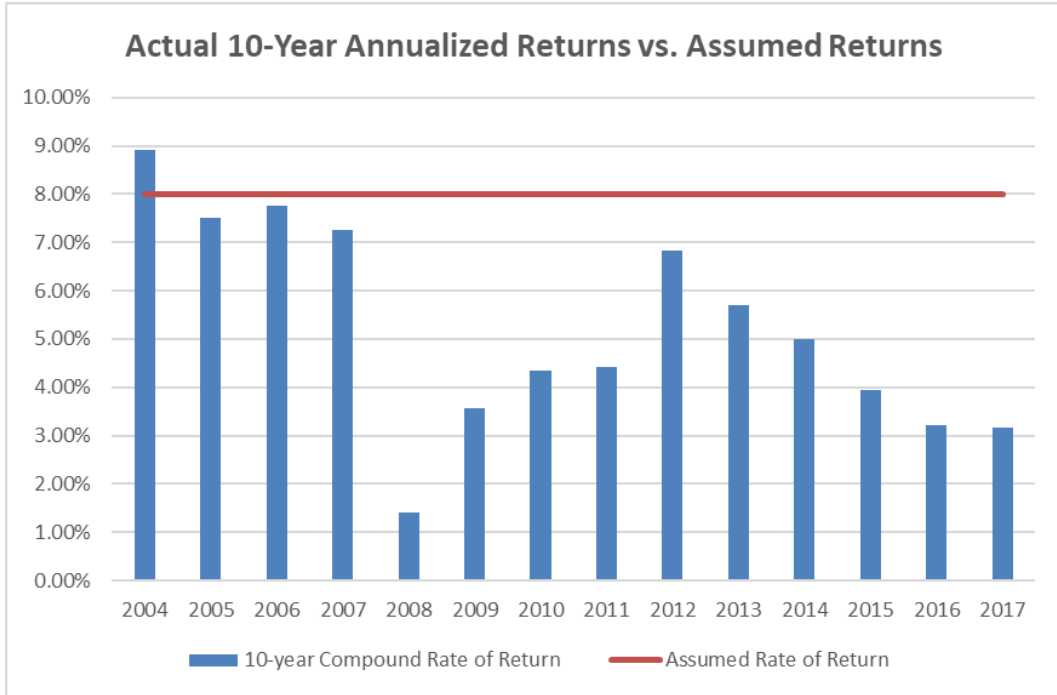


It is rare for plan experience to exactly match assumptions in any given year and a 1-2% gain or loss in a single year is by no means alarming or even unusual. Generally, a plan should expect to have gains in some years (i.e. the liability increases less than expected) and losses in others (i.e. the liability increases more than expected), such that the difference between the assumptions and reality are close to zero over time. However, consistent losses (or gains), even when seemingly insignificant if viewed in isolation, are not expected and the impact can be compounded over time. For example, the 1-2% individual losses over the past 5 valuations have accumulated to an approximate 5% loss on the total AAL and accounts for nearly 40% of the increase in the UAAL over the same period.

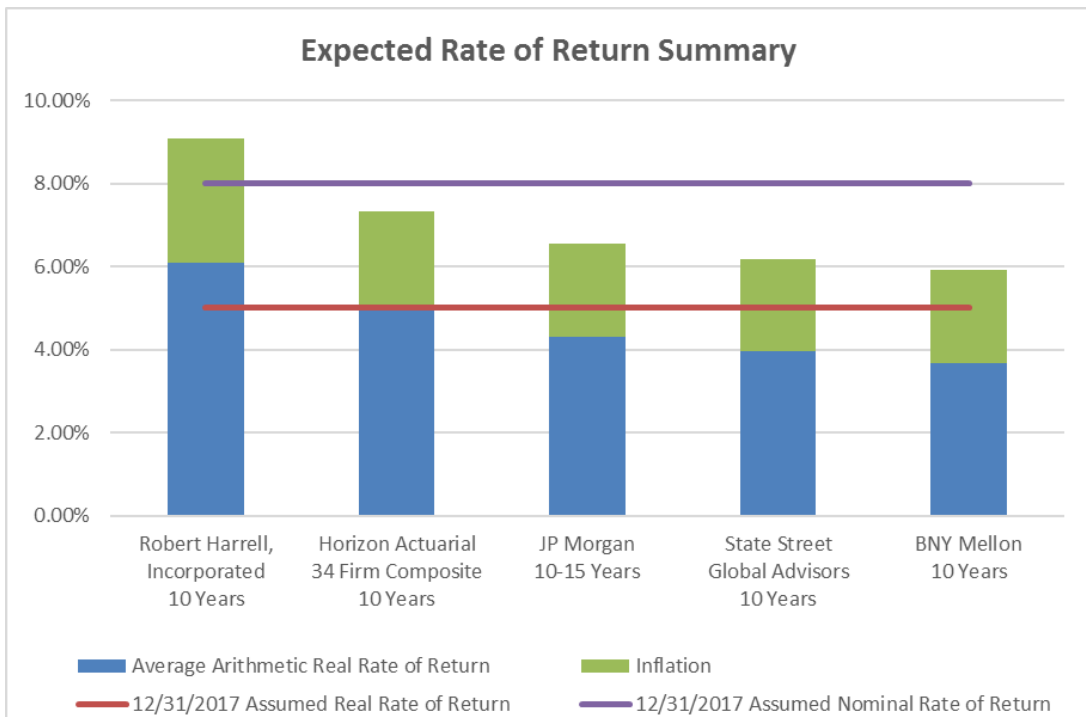
In 2016, the Fund’s actuary performed an experience study, which compared the plan’s actual experience against what was assumed would occur for the period of January 1, 2009 through December 31, 2015. Following the study, several assumptions were changed. The Fund should continue to closely monitor its assumptions. If future valuations show that Longview Fire continues to experience these types of losses, valuable insight may be gained by further investigation of the causes of both the consistent demographic losses and the unusually large loss between 2006 and 2009. While Longview Fire is not required by state law to have an audit of the Fund’s actuarial reports, engaging an outside, independent actuary to perform such an audit is one approach the board could consider to gain additional insight.

Investment Experience and Asset Allocation

Longview Fire’s actual investment return has been consistently lower than the assumed investment return, increasing the UAAL by more than \$16.2 million between 2006 and 2017. As illustrated in the following graph, the Fund has not achieved an 8% annualized return (the Fund’s current assumed rate of return) over a consecutive 10-year period in any of the 13 periods ending December 31, 2005 through December 31, 2017.



To assess the reasonableness of the assumed investment return, generally accepted practice involves calculating an expected rate of return based on a plan’s current, and future expected, asset allocation utilizing a range of forward-looking capital market projections, as illustrated in the graph below. This graph indicates that the expected rate of return produced by the capital market assumptions provided by the plan’s investment consultant, RHI, exceeds those calculated using published capital market assumptions from recognized sources for the same time horizon.



Over the last few years, Longview Fire’s governing board recognized that some of its alternative investments were not a proper fit for the Fund. As a result, the Fund indicated that it is considering shifting towards a strategy that focuses on using low cost, passively managed index funds. The calculated rates of return shown above do not take this change into account.

According to the 2016 data as reported by TLFRA systems, the aggregate asset allocation of TLFRA plans into alternative investments was approximately 8%. Comparatively, Longview Fire currently maintains a high percentage allocated to alternative investments, as shown in the table below.

Asset Allocation				
Asset Class	Equities	Fixed Income	Alternatives	Cash
Minimum Allocation	45.00%	20.00%	0.00%	N/A
Current Allocation ²	46.85%	23.88%	25.32%	4.00%
Maximum Allocation	65.00%	35.00%	35.00%	N/A

Fixed-Rate Funding Model and Contribution Insufficiency Risk

Most Texas plans use a fixed percent of pay funding approach. This is especially true for plans governed by the TLFRA statute; however, the statute does not require a fixed-rate contribution structure. Under a fixed-rate funding structure, no formal amortization policy (i.e. the expected time to fully fund the plan) exists; therefore, the plan’s actuary estimates the amortization period at each valuation date based on the current financial condition of the plan and the current contribution rates.

The nature of a fixed-rate, percent-of-pay contribution policy may exacerbate this risk over the long-term because:

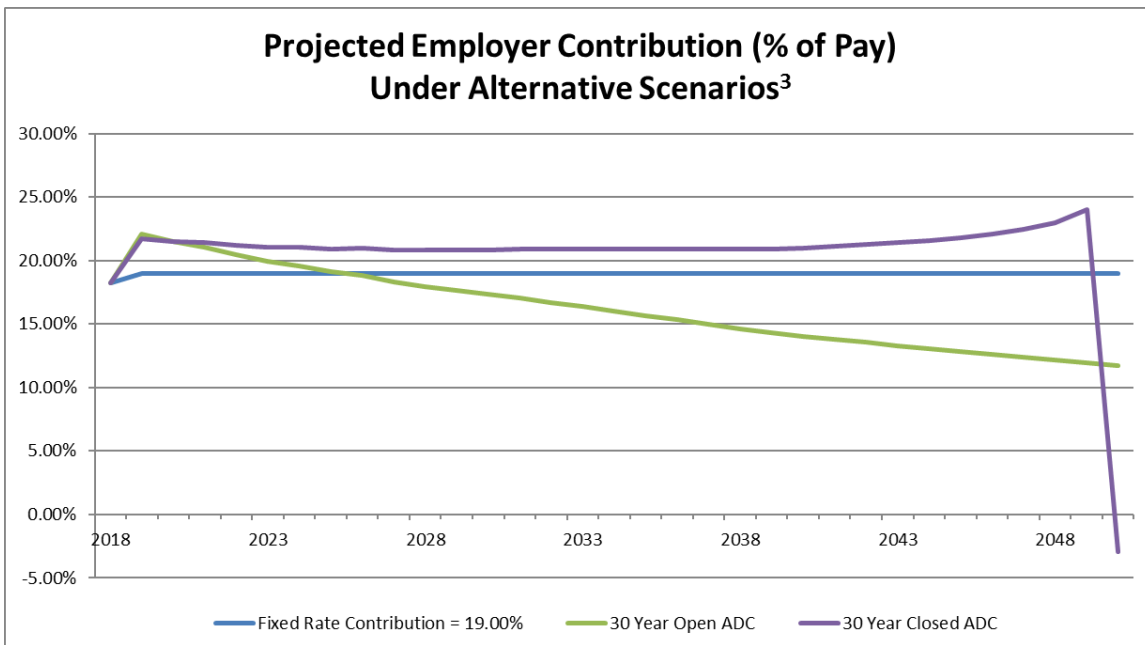
- 1) Contributions to percent-of-pay plans are inherently back-loaded because the expected contributions to a percent-of-pay plan grow on a nominal basis at the assumed rate of total payroll growth.
- 2) Fixed-rate plans provide budgetary stability for the employer in the short term, but do not include any inherent mechanisms for reacting to changes in a plan’s financial condition.

Currently, active members of the Fund contribute either 15.00% or 17.00% of pay depending on their hire date, and effective October 2018 the City will be contributing 19.00% of pay. Despite certain proactive steps taken by the City and the Fund to address funding shortfall over the past 6 years, Longview Fire contributions have averaged less than 85% of the Fund’s ADC over that period. Furthermore, the reported ADC is calculated using an open amortization period that results in perpetual negative amortization (i.e. contributions that are always less than the interest accruing on the UAAL). If the fund were to use this ADC as a funding policy, the UAAL would grow indefinitely and the “pension debt” would never be paid off.

² Current allocation as reported in the Fund’s Investment Performance and Asset Allocation Analysis as of December 31, 2017.

Expected Contribution Levels vs. Actuarially Determined Contribution									
Date (12/31)	2005	2007	2009	2011	2013	2014	2015	2016	2017
Employee Contribution	14.00%	15.00%	15.00%	15.00%	15.00%	15.00%	16.25%	16.88%	16.84%
Employer Contribution	14.00%	14.00%	15.00%	15.00%	16.00%	17.00%	17.00%	17.00%	18.25%
Employer 30-Year ADC	17.24%	11.62%	19.62%	22.14%	20.20%	20.73%	19.26%	21.27%	21.77%
% of ADC funded	81.21%	120.48%	76.45%	67.75%	79.21%	82.01%	88.27%	79.92%	83.83%
Covered Payroll	\$7,452,033	\$8,524,544	\$9,859,161	\$10,123,308	\$10,690,633	\$11,141,833	\$11,411,886	\$12,731,377	\$12,934,792
Contribution Shortfall	\$241,446	-	\$455,493	\$722,804	\$449,007	\$415,590	\$257,909	\$543,630	\$455,305

The following projection illustrates the total expected contributions into the Fund under three contribution scenarios. The scenarios are 1) maintaining the current fixed contribution rates effective October 2018; 2) adopting a funding policy that utilizes a 30-year open amortization approach; and 3) adopting a funding policy that utilizes a single-layer 30-year closed amortization approach (i.e. will fully fund the plan in 30 years). The Fund’s current fixed contribution structure under Scenario 1 is not sufficient to pay down the unfunded liability in the near future and in fact allows the UAAL to continue to grow for the next 20 years, resulting in negative amortization during that time.



Conclusion/Recommendations

Pre-funding a defined benefit plan, i.e. setting aside assets now for benefits that will be paid in the future, is necessary to help balance the three primary policy goals of benefit security, equity between generations of taxpayers and employees, and a stable contribution from year to year. Consistently underfunding a plan places the benefits of both retirees and active members at significant risk and/or

³ All current and projected assets and liabilities reflect the actuarial accrued liabilities, actuarial value of assets, plan provisions, and actuarial assumptions and methods as reported in the 12/31/2017 Actuarial Valuation prepared by Foster & Foster.

places the burden of paying for services already rendered on future generations of taxpayers and employees through the reduction of future benefits or an increase in contributions.

In the absence of a formal, written funding and risk-sharing policy, the result is a de facto risk-sharing arrangement that is simply a reaction to events, often well after the plan finds itself with financial difficulties. Plans and their sponsors can take many actions to ensure financial stability and mitigate the risks that lead to underfunding. These steps include ensuring contributions are adequate to fully fund the plan over a reasonable period; developing formal policies to guide decision-makers under different economic conditions; reviewing actuarial assumptions against actual experience and making necessary changes; and monitoring investment performance and evaluating asset allocation decisions on a forward-looking basis.

Actuarial Assumptions. Longview Fire's liability has increased more than expected in all but one of the past 12 actuarial valuations. When pension funds are consistently overestimating their assumptions, they underestimate the funding issues they are facing. Public pension plans must monitor actuarial assumptions continually through their actuarial valuations and make appropriate adjustments to mitigate bias in the assumptions that result in consistent actuarial gains or losses. Actuarial gains and losses occur when the plan's actual experience does not match expected experience.

Over time, without required changes, pension funds such as Longview Fire, whose assumptions consistently diverge from actual experience in the same direction (i.e. consistently seeing actuarial gains or consistently seeing actuarial losses) can exacerbate the issue of intergenerational inequity, causing one group of members and taxpayers to over- or under-pay. Boards of trustees should continue to work with their actuaries and other consultants to ensure assumptions are neither too aggressive nor too conservative, while striving to maintain (or achieve) sound fiscal health to secure existing accrued benefits. PRB's *Pension Funding Guidelines* recommend that systems monitor, review, and report the impact of actual plan experience on actuarial assumptions at least once every five years.

In addition, if the Fund continues to experience liability losses, while not required by state law, an actuarial audit of the Fund's actuarial valuations, studies and reports performed by an independent actuary is one approach the board could consider to gain additional insight into this concern.

Investment Performance. The Fund continues to maintain a relatively risky target asset allocation, compared to other TLFRA systems. Evidence suggests that to maintain an 8.00% expected return, public pension portfolios have increased risk by more than three-fold between 1995 and 2016.⁴ It is important that asset allocation decisions are made based on the associated riskiness of the investments and a determination of whether individual investments are appropriate by themselves, as well as within the context of the total risk the Fund is accepting.

According to ASOP 27 and generally accepted actuarial standards of practice, investment allocation decisions should never be made with a goal of achieving a specific assumed rate of return. The assumed rate of return should only be calculated once an appropriate allocation and associated level of risk is determined. The Fund is encouraged to develop an investment policy statement that considers the

⁴ https://www.pacificresearch.org/wp-content/uploads/2017/06/2017-02-01-Risk_Taking_Appropriateness.pdf

plan's general funding policy; follows industry best practices, including outlining general objectives that consider appropriate risk levels; and establishes policies and procedures for evaluating the impact of changes to the funding policy and the Fund not achieving its investment objectives.

Adequate Funding. The Plan and City took proactive steps beginning in 2012 to both increase contribution rates in recent years and lower future benefit accruals. While the actions taken are commendable and in compliance with TLFRA statute's minimum contribution requirement, the current contribution structure still has not been enough to meet the Plan's ADC rate. To address this concern, a strong funding policy that requires payment of an ADC is encouraged. Numerous actuarial methods can be utilized to help mitigate contribution volatility, including directly smoothing contribution rates or adding "guardrails" that require the stakeholders to come back to the table if the contribution rate falls outside a specified range. If funding according to an ADC is not adopted, a funding policy that fully funds the plan over a finite period, such as 30 years, is recommended.

Governance Risk

When public pension plans and their sponsors wait too long to address them, the funding challenges compounding over time can reach a point where incremental improvement, such as the contribution increases made for Longview Fire, are not sufficient to make consistent, long-term improvements to the overall health of the plan. Longview Fire and the City of Longview have yet to make difficult decisions on additional needed changes to its actuarial assumptions and funding policy. Although a series of contribution increases have been implemented, these haven't been enough to place the Fund on a path to sound financial footing. If necessary changes are ultimately made, they may right the ship, but they will potentially be made under less than ideal conditions.

Governance is essentially decision-making, and decision-making for public pension plans must balance the competing interests of plans and their sponsors and should feature collaboration between the two. Overall, Longview Fire's governance has been proactive regarding its benefit and contribution structure. Starting in 2012, The Fund and the City developed a four-step plan to tackle funding issues without being statutorily subject to any such requirement. The plan included increasing the City's contribution rate from 15% of payroll in 2012 to 19% as of October 2018 and adding a new tier with a lower benefit design for future members in January 2016. The board has also been proactive in making investment management changes after a period of inadequate results. However, even with these contribution increases, the unfunded liability is expected to continue to grow, requiring additional changes in the future.

In the area of investment governance, Longview Fire amended its investment policy statement in May 2017. The Fund removed a number of important elements from its previous IPS that are best practices according to the Government Finance Officers Association (GFOA). The TLFRA statute requires boards of trustees to give special consideration to the preferred investment practices of the GFOA. The GFOA recommends that investment policy statements include detailed policies in areas such as roles and responsibilities, risk tolerances, liquidity, and manager performance evaluation, among others.⁵ The

⁵ <http://www.gfoa.org/investment-policies-defined-benefit-plans>
<http://www.gfoa.org/investment-policy>

purpose for having a detailed written policy is to help guide board members in their decision-making and ensure both current and future boards follow similar objectives within the same framework.

Conclusion/Recommendation

The PRB encourages Longview Fire and the City of Longview to develop policies that proactively manage risk. This includes following best practices in investment policy statements as well as laying out a formal risk-sharing plan. To proactively manage governance and funding risk, retirement plans and their sponsors should work together to adopt written policies far in advance, that can guide them through both good and bad years and shield against the risk of either party's exclusion or disengagement from decision-making. Funding and benefit policies can be adopted that provide a framework for how benefit and contribution levels may be modified under different conditions. An advantage of such policies is that changes to plan benefits and costs are known and understood by all parties in advance, rather than negotiated under difficult circumstances.

For example, a benefit policy can outline the primary objectives the employer wishes to achieve, which can be as detailed as a specified replacement ratio, or as general as offering competitive benefits at a reasonable cost, as well as identifying policies and procedures designed to determine if the objectives are being met and how they can be reviewed at reasonable intervals. A benefit policy can also outline potential benefit enhancements or reductions based on the funding goals as outlined in the funding policy. The funding policy might incorporate objectives associated with benefit security, contribution stability and intergenerational equity and outline how those objectives will be met through contribution changes, as well as referencing potential changes outlined in the benefit policy. The coordinated policies might limit future benefit enhancements, cost of living adjustments, and/or contribution rate reductions such that they can only be considered or made if the Fund's funded ratio remains greater than a chosen threshold. In addition, if the funded ratio falls below a certain threshold, the stakeholders may be required to come back to the table to make necessary contribution and benefit adjustments.

Finally, the board is encouraged to reassess its investment policy statement to balance its desire to streamline the policy with the guidance provided by the GFOA. Doing so would help ensure that current and future boards maintain thorough policies that clearly delineate roles and responsibilities, risk tolerances, liquidity needs, and a detailed process for evaluating manager performance against appropriate benchmarks.

Appendix

Key Metrics

Amort. Period (Years)	Funded Ratio	UAAL as % of Payroll	Assumed Rate of Return	Payroll Growth Rate	Actual Cont. as % of ADC ⁶	DROP as % of FNP	Non-Investment Cash Flow as % of FNP
50.7	45.53%	383.31%	8.00%	3.00%	70.47%	0.55%	-5.93%

*Contribution, DROP and cash flow data are from the Fund's 12/31/2016 financial audit.

Metric	Amortization period (50.7 years)
What it measures	Approximately how long it would take to fully fund the unfunded actuarial accrued liability (UAAL) based on the current funding policy.
Why it is important	Given the Plan's current assumptions, an amortization period greater than 17 years indicates that contributions to the Plan in the coming year are less than the interest accumulated for that same period, and therefore the total UAAL is expected to grow over the near term. In addition, for a plan that contributes on a fixed-rate basis such as Longview Fire, the higher the amortization period, the more sensitive it is to small changes in the UAAL.
Peer comparison	Longview Fire's amortization period is the third highest among its peers, the sixth highest finite period in the state and is greater than the maximum PRB pension funding guideline of 30 years.

Metric	Funded ratio (45.53%)
What it measures	The percent of a fund's actuarially accrued liabilities covered by its actuarial value of assets.
Why it is important	The lower the funded ratio, the fewer assets a fund has to pay its current and future benefit payments.
Peer comparison	Longview Fire's 45.53% funded ratio is the second lowest among its TLFFRA peer plans, and one of the lowest in the state of Texas.

⁶ For plans whose contributions are made as a fixed rate based on statutory or contractual requirements, the ADC for this purpose is the contribution needed to fund the benefits accrued in the current year and maintain an amortization period that does not exceed 30 years, as required to be reported under Texas Government Code §802.101(a). For Longview Fire, the recommended contribution rate comes from the actuarial valuation with a valuation date that is on or before the first day of the fiscal year shown (12/31/2015 AV in this case). The expected employee contribution was 16.25% in this case to reflect the increase in the contribution from 16% to 17% effective October 1, 2016. The employer contribution rate is calculated as the actual \$ contribution during the fiscal year shown as reported in the Fund's 2016 CAFR (\$2,105,902) divided by the covered payroll reported for the same period.

Metric	UAAL as a percent of payroll (383.31%)
What it measures	The size of a plan's unfunded liability compared to the annual payroll of the active members.
Why it is important	Provides a way to compare plans of various sizes and expresses the outstanding "pension debt" relative to current personnel costs.
Peer comparison	The Plan's UAAL as a percent of payroll is was the second highest in its peer group, and sixth highest in the state.

Metric	Assumed rate of return (8.00%)
What it measures	The estimated annual rate of return on the Fund's assets.
Why it is important	If actual future returns are lower than the assumed rate of return, future contributions will need to increase significantly, especially for a poorly funded plan. Longview Fire's assumed rate of return is 8.00%, while its actual ten-year investment rate of return for the period ending December 31, 2017 was 3.17%.
Peer comparison	Longview Fire is tied for the second highest assumed rate of return in the state.

Metric	Payroll growth rate (3.00%)
What it measures	The estimated annual growth in the total payroll of active members contributing into the Fund.
Why it is important	Contributions are calculated as a percent of active members' pay and are back-loaded based on the expected growth in total payroll. If payroll does not increase at this rate, actual contributions will not meet those expected in the Fund's actuarial valuations. Persistent contributions below expected levels could have serious consequences on the Fund's long-term solvency.
Peer comparison	The Fund's payroll growth rate of 3.00% is tied for the lowest in its peer group of TLFFRA plans with similar asset size and one of the lowest in the state.

Metric	Actual contributions as a percent of actuarially determined contributions (70.47%)
What it measures	Whether the current employer contributions have met a theoretical minimum threshold. ⁷
Why it is important	The employer's portion of the contribution is less than 65% of the amount needed to fund the plan on a rolling 30-year amortization period. The PRB's 2014 Study of the Financial Health of Texas Public Retirement Systems found that plans that have consistently received adequate funding are in a better position to meet their long-term obligations.
Peer comparison	This is the largest shortfall percentage in its peer group.

Metric	DROP balance as a percent of fiduciary net position (0.55%)
What it measures	The amount of the Fund's assets that are designated for lump-sum payouts to retired members as a percent of its total assets.
Why it is important	Viewing this metric as a percent of total net assets (or fiduciary net position (FNP)) shows how large a decrease in the Fund's assets could be if most or all DROP participants decided to take their balances out in a short amount of time.
Peer comparison	Longview Fire's DROP balance as a percent of FNP is the lowest among its peer group and one of the lowest in the state.

Metric	Non-investment cash flow as a percent of fiduciary net position (-5.93%)
What it measures	Non-investment cash flow shows how much the plan is receiving through contributions in relation to its outflows: benefit payments, withdrawals and expenses.
Why it is important	Viewing this metric as a percent of total net assets (or fiduciary net position (FNP)), in conjunction with the funded ratio and recognition of the relative maturity of the plan, provides information about the stability of a plan's funding arrangement.
Peer comparison	Longview Fire's non-investment cash flow as a percent of FNP is the second lowest in its peer group and one of the lowest in the state.

⁷ The theoretical minimum threshold, or actuarially determined contribution (ADC), is a target or recommended contribution "to the plan as determined by the actuary using a contribution allocation procedure," as defined in Actuarial Standards of Practice No 4. If contributions to the plan are made as a fixed rate based on statutory or contractual requirements, the ADC for this purpose is the contribution needed to fund the benefits accrued in the current year and maintain an amortization period that does not exceed 30 years, as required to be reported under Texas Government Code §802.101(a).

Plan Summary

The Longview Firemen's Relief and Retirement Fund ("Longview Fire" or "the Fund") was established in 1937 under the Texas Local Fire Fighter's Retirement Act (TLFFRA). TLFFRA provides general guidelines for fund management, but leaves administration, plan design, contributions, and specific investments to the discretion of the board of trustees. Longview Fire, as with all TLFFRA systems, is entirely locally-funded.

Benefits

Tiers	Tier 1 – Hired before 1/1/2016 Tier 2 – Hired on or after 1/1/2016
Retirement Eligibility	Tier 1 – Age: 50 years; Years of Credited Service (YCS): 20 years Tier 2 – Age: 55 years; YCS: 20 years
Vesting	Fully vested after 20 YCS
Benefit Formula	Tier 1 – 80% x Final Average Salary + \$80 per month for each year of service in excess of 20 years. Tier 2 – YCS x 3.0% x Final Average Salary (max 75% FAS) + \$80 per month for each year of service in excess of 25 years.
Final Average Salary (FAS)	Hired before 1/23/1993 – Highest consecutive 36 months Hired on or after 1/23/1993 – Highest consecutive 60 months
COLA	None
Retirement Benefit Options	3-year Retro DROPs: Eligible once a member has satisfied Service Retirement requirements, not to exceed 36 months Retro DROP accumulation includes the sum of the monthly service retirement benefit the member would have received if had retired on the DROP determination date plus an amount equal to the member contributions to the fund while a DROP participant. No interest is credited on Retro DROP. DROP balance is distributed as a lump sum
Social Security	No

Contributions

As of October 1, 2017, active members of Longview Fire hired before 1/1/2016 contribute 17.00% of pay and those hired on or after 1/1/2016 contribute 15.00% of pay, while the City of Longview (the City) contributes 18.00% of pay. City contributions will increase to 19% of pay as of October 1, 2018.

Membership

Total Active Members	Retired Members	Beneficiaries	Total Annuitants	Terminated	Total Members	Active-to-Annuitant Ratio
175	121	26	147	1	323	1.19

TLFFRA Board Structure

Active Members	3 - Members of the retirement system; elected by fund members. Three-year terms.
Sponsor Government	1 - Mayor or designated representative, or the political subdivision's Chief Operating Officer or designated representative. 1 - Chief Financial Officer of the political subdivision, or designated representative. Terms correspond to term of office.
Taxpayer, Not Affiliated With Fund/Sponsor Govt.	2 - Residents of the State of Texas, must not be officers/employees of the political subdivision; elected by other Board of Trustee members. Two-year terms.

Contribution and Benefit Decision-Making

TLFFRA authorizes members of the retirement systems to determine their contribution rates by voting. The statute requires cities to make contributions at the same rate paid by employees or 12%, whichever is smaller. TLFFRA also allows a city to contribute at a higher rate than employees do through a change in city ordinance.

TLFFRA gives the board the power to make decisions to modify the benefits (increases and reductions). However, a proposed addition or change must be approved by the actuary and a majority of participating plan members. Benefit changes cannot deprive a member, retiree or beneficiary of the right to receive vested accrued benefits.

Historical Trends

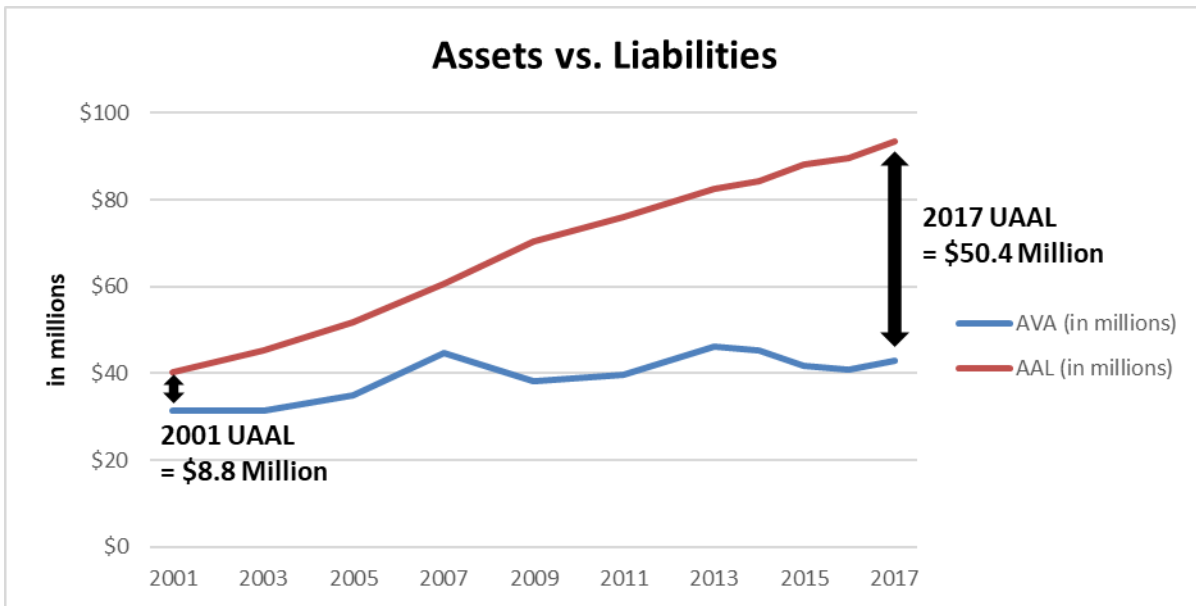
To conduct an intensive review of risks associated with the long-term funding of a pension Fund, it is important to analyze trends in multiple metrics. A Fund with an asset level lower than its accrued liability has insufficient funds to cover benefits. A Fund can experience an increase in unfunded liability due to various factors, including insufficient investment returns, inadequate contributions and inaccurate or overly aggressive assumptions. Hence, a single metric cannot effectively capture the different drivers contributing to the increase of a Fund’s unfunded pension obligation. This section analyzes historical trends in various metrics identified by the PRB and makes comparisons to understand the sources of growth in unfunded liability for Longview Fire.

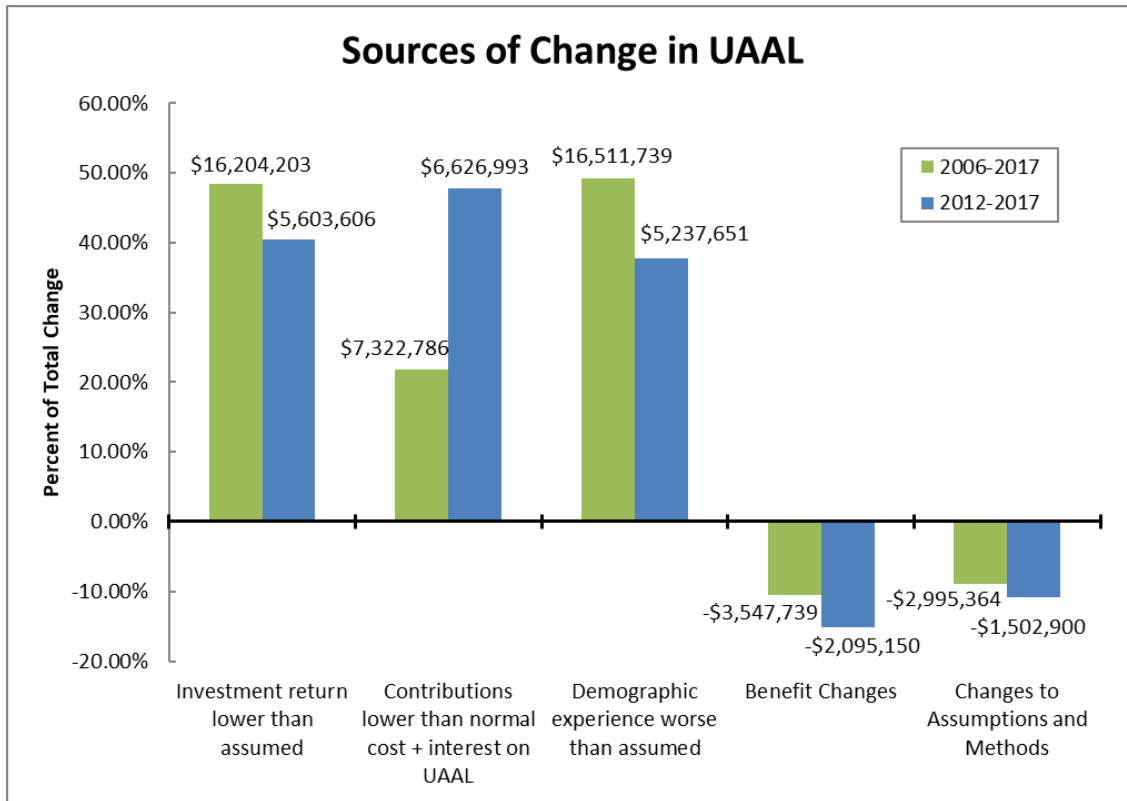
Longview Fire’s funded status has been trending downward since 2001. Numerous factors have contributed to this deterioration, including inadequate contributions, investment returns lower than the chosen assumption, and the lack of adjustments to the Fund’s assumptions. The following sections discuss these and other factors in detail.

Assets and Liabilities

Funding Trends										
Funded Ratio, Assets, Liabilities and Year over Year Growth										
Fiscal Year	2001	2003	2005	2007	2009	2011	2013	2015	2016	2017
Funded Ratio	78.14%	69.45%	67.43%	73.71%	54.35%	52.02%	56.22%	47.34%	45.53%	46.05%
Am Period (years)	71.6	Infinite	Infinite	20.1	88.6	Infinite	63.3	37.9	50.7	40.2
UAAL (in millions)	\$8.82	\$13.81	\$16.88	\$15.92	\$32.07	\$36.51	\$36.08	\$46.34	\$48.80	\$50.38
AVA (in millions)	\$31.54	\$31.40	\$34.95	\$44.64	\$38.18	\$39.58	\$46.33	\$41.66	\$40.80	\$43.00
AVA Growth (YoY)	-	-0.22%	5.50%	13.01%	-7.52%	1.81%	8.19%	-7.88%	-2.07%	5.41%
AAL (in millions)	\$40.36	\$45.22	\$51.83	\$60.56	\$70.25	\$76.09	\$82.40	\$88.00	\$89.60	\$93.38
AAL Growth (YoY)	-	5.84%	7.07%	8.09%	7.70%	4.07%	4.07%	4.55%	1.81%	4.22%

Longview Fire’s actuarial accrued liability (AAL) increased by over 130% between 2001 and 2017. The Fund’s actuarial value of assets (AVA) increased by less than 40% over the same period. The Fund was nearly 80% funded in 2001 and has been less than 50% funded since 2015.

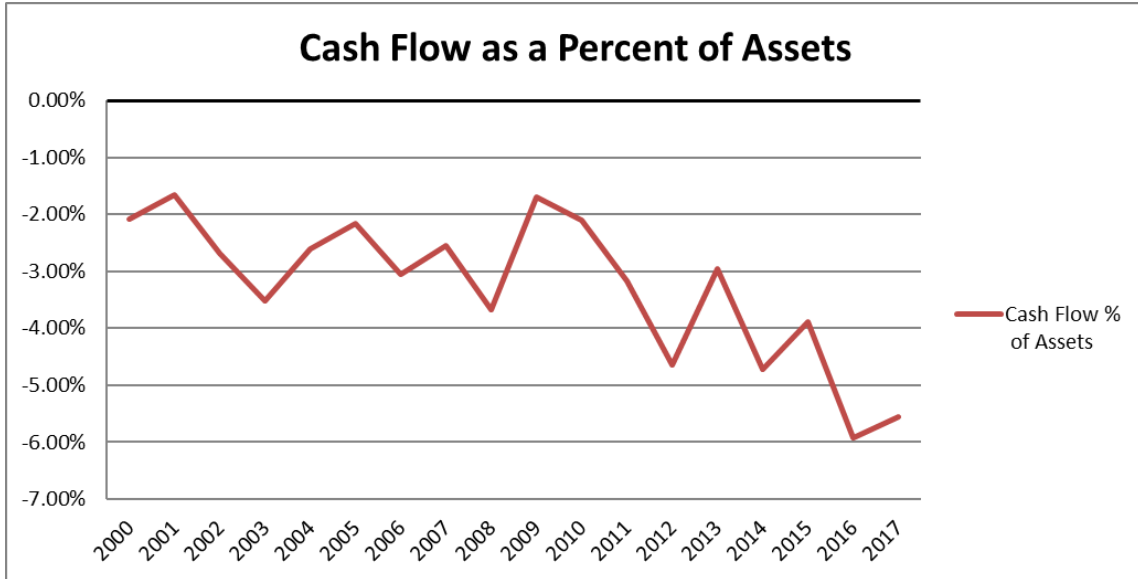




Valuation Date	Investment return lower/ (higher) than assumed	Contribution lower/ (higher) than normal cost + interest on UAAL	Liability experience worse/ (better) than assumed	Benefit Changes	Changes to assumptions & methods	Other	Total Change in UAAL	UAAL
12/31/2005	-	-	-	-	-	-	-	16,881,969
12/31/2007	(3,398,794)	(332,557)	5,717,469	(1,452,589)	(1,492,464)	100	(958,835)	15,923,134
12/31/2009	10,799,265	(779,960)	6,128,602	-	-	-	16,147,907	32,071,041
12/31/2011	3,200,126	1,808,310	(571,983)	-	-	-	4,436,453	36,507,494
12/31/2013	(3,296,512)	2,375,547	1,095,174	(606,080)	-	-	(431,871)	36,075,623
12/31/2014	3,057,982	661,829	695,866	(1,541,398)	-	-	2,874,279	38,949,902
12/31/2015	5,486,836	827,824	1,025,392	52,328	-	-	7,392,380	46,342,282
12/31/2016	2,025,189	1,237,921	698,365	-	(1,502,900)	-	2,458,575	48,800,857
12/31/2017	(1,669,889)	1,523,872	1,722,854	-	-	-	1,576,837	50,377,694
2006-2017	16,204,203	7,322,786	16,511,739	(3,547,739)	(2,995,364)	100	33,495,725	
% of Total	48.38%	21.86%	49.30%	-10.59%	-8.94%	0.00%	100.00%	
2012-2017	5,603,606	6,626,993	5,237,651	(2,095,150)	(1,502,900)	-	13,870,200	
% of Total	40.40%	47.78%	37.76%	-15.11%	-10.84%	0.00%	100.00%	

Cash flow

Longview Fire non-investment cash flow was -5.6% in 2017 and has been in decline since 2009. The decrease is due to benefit payments growing by nearly 87% between 2011 and 2016 while contributions only grew by 37% during that same period. A negative non-investment cash flow is not abnormal for mature defined benefit pension plans. However, a cash flow percentage this low is likely to be a drag on potential investment returns because a fund must either invest in a higher proportion of income-producing investments, which traditionally provide lower returns, or must liquidate existing assets to pay out current benefits and/or expenses.



Peer Group Key Metric Comparison

		Funding Val Metrics						Fiscal Year End Metrics			
Peer Group Plans	MVA	Am Period Date	Am Period	Funded Ratio	UAAL as % of Payroll	Assumed Interest	Payroll Growth	FYE	Actual Cont. as % of ADC	DROP as % of FNP	Non-Investment Cash Flow as % of FNP
Abilene Firemen's Relief & Retirement Fund	\$52,343,510	10/1/2015	31.5	56.60%	316.19%	8.00%	4.00%	9/30/2016	97.77%	N/A	-3.35%
Wichita Falls Firemen's Relief & Retirement Fund	\$46,915,744	1/1/2017	49.4	62.48%	265.13%	8.00%	4.50%	12/31/2016	71.51%	N/A	-4.80%
Odessa Firemen's Relief & Retirement Fund	\$45,718,416	1/1/2017	46.5	45.12%	511.52%	7.75%	3.50%	12/31/2017	81.31%	4.54%	-11.16%
McAllen Firemen's Relief & Retirement Fund	\$44,759,055	10/1/2016	41.4	69.11%	187.25%	7.75%	4.00%	9/30/2016	103.85%	N/A	-3.15%
Port Arthur Firemen's Relief & Retirement Fund	\$43,469,930	12/31/2015	18.3	77.97%	160.73%	8.00%	4.00%	12/31/2016	100.39%	N/A	-5.15%
Longview Firemen's Relief & Retirement Fund	\$40,798,027	12/31/2016	50.7	45.53%	383.31%	8.00%	3.00%	12/31/2016	70.47%	0.55%	-5.93%
Galveston Firefighter's Relief & Retirement Fund	\$40,155,474	12/31/2016	Infinite	68.04%	257.06%	7.75%	3.00%	12/31/2016	79.37%	N/A	-3.04%
Temple Firemen's Relief & Retirement Fund	\$39,838,918	9/30/2016	28.4	75.12%	164.97%	7.75%	3.75%	9/30/2017	95.24%	N/A	-2.89%
Killeen Firemen's Relief & Retirement Fund	\$35,342,830	9/30/2016	22.8	69.74%	114.49%	7.75%	3.25%	9/30/2016	100.97%	N/A	3.14%
Harlingen Firemen's Relief & Retirement Fund	\$31,224,379	9/30/2017	59.1	66.06%	248.99%	7.75%	3.50%	9/30/2016	115.85%	1.12%	-3.78%
Texarkana Firemen's Relief & Retirement Fund	\$31,019,529	12/31/2015	16.3	87.37%	118.93%	7.75%	3.25%	12/31/2016	100.00%	N/A	-4.55%

Peer Group Sponsor Funding Comparison

Peer Group Plans	Sponsor	GF Expend	EOY GF Bal	UAAL	Expected Employer Contributions	ADC	30-yr Shortfall	30-Y SF % of ADC	30-Y SF % of GFE
Abilene Firemen's Relief & Retirement Fund	Abilene	\$83,561,890	\$24,912,196	\$43,412,430	\$2,642,987	\$2,703,398	\$60,411	2.23%	0.07%
Wichita Falls Firemen's Relief & Retirement Fund	Wichita Falls	\$73,605,525	\$14,329,468	\$29,905,176	\$1,353,554	\$1,735,933	\$382,379	22.03%	0.52%
Odessa Firemen's Relief & Retirement Fund	Odessa	\$79,627,501	\$48,378,438	\$60,600,337	\$2,373,699	\$2,987,300	\$613,601	20.54%	0.77%
McAllen Firemen's Relief & Retirement Fund	McAllen	\$106,200,111	\$46,387,548	\$21,571,433	\$1,497,603	\$1,668,099	\$170,496	10.22%	0.16%
Port Arthur Firemen's Relief & Retirement Fund	Port Arthur*	\$58,765,367	\$67,804,846	\$12,792,922	\$1,103,170	\$1,103,170	\$-	0.00%	0.00%
Longview Firemen's Relief & Retirement Fund	Longview	\$60,227,994	\$15,557,734	\$48,800,857	\$2,360,600	\$2,815,904	\$455,305	16.17%	0.76%
Galveston Firefighter's Relief & Retirement Fund	Galveston	\$48,539,395	\$17,786,895	\$20,353,268	\$2,849,458	\$4,475,684	\$1,626,226	36.33%	3.35%
Temple Firemen's Relief & Retirement Fund	Temple	\$68,789,608	\$28,482,112	\$14,003,032	\$1,293,576	\$1,355,539	\$61,963	4.57%	0.09%
Killeen Firemen's Relief & Retirement Fund	Killeen	\$76,816,134	\$20,151,484	\$16,234,675	\$1,843,473	\$1,921,466	\$77,993	4.06%	0.10%
Harlingen Firemen's Relief & Retirement Fund	Harlingen	\$40,931,266	\$18,512,353	\$16,040,541	\$966,349	\$1,179,590	\$213,241	18.08%	0.52%
Texarkana Firemen's Relief & Retirement Fund	Texarkana	\$32,041,046	\$14,114,855	\$4,786,718	\$784,848	\$784,848	\$-	0.00%	0.00%

* 2017 sponsor data was unavailable for Port Arthur at the time of this review. Data in this table for Port Arthur is from 12/31/2016.

Peer Group Expense Comparison

Peer Group Plans	10 yr. return (Net)	Active/ Annuitants	Average Benefit	NPL	Admin Expenses	Investment Expenses	Other Expenses	Total Expenses	Exp as % of Assets
Abilene Firemen's Relief & Retirement Fund	4.40%	0.94	\$36,556	\$50,512,956	\$29,699	\$194,616	\$-	\$224,315	0.39%
Wichita Falls Firemen's Relief & Retirement Fund	5.18%	1.15	\$29,292	\$46,175,637	\$115,843	\$227,282	\$-	\$343,125	0.73%
Odessa Firemen's Relief & Retirement Fund	2.58%	0.91	\$52,055	\$92,884,709	\$204,605	\$218,069	\$-	\$422,674	0.92%
McAllen Firemen's Relief & Retirement Fund	4.17%	1.62	\$37,994	\$27,828,153	\$56,906	\$296,057	\$-	\$352,963	0.79%
Port Arthur Firemen's Relief & Retirement Fund	5.15%	1.30	\$54,098	\$15,326,469	\$36,358	\$45,688	\$-	\$82,046	0.19%
Longview Firemen's Relief & Retirement Fund	3.22%	1.24	\$41,493	\$55,681,251	\$116,238	\$225,267	\$-	\$341,505	0.83%
Galveston Firefighter's Relief & Retirement Fund	3.74%	1.35	\$35,879	\$25,178,930	\$103,459	\$162,606	\$-	\$266,065	0.66%
Temple Firemen's Relief & Retirement Fund	4.17%	1.39	\$40,920	\$16,001,777	\$101,321	\$69,570	\$-	\$170,891	0.40%
Killeen Firemen's Relief & Retirement Fund	4.01%	3.67	\$30,021	\$21,110,703	\$94,483	\$50,299	\$-	\$144,782	0.41%
Harlingen Firemen's Relief & Retirement Fund	5.06%	1.43	\$25,706	\$38,003,230	\$24,755	\$143,491	\$-	\$168,246	0.59%
Texarkana Firemen's Relief & Retirement Fund	5.27%	1.15	\$30,731	\$7,275,575	\$85,879	\$181,904	\$-	\$267,783	0.84%

Comments from Longview Firemen's Relief and Retirement Fund