



**TEXAS PENSION REVIEW BOARD
ACTUARIAL COMMITTEE MEETING**

AGENDA

**Thursday, September 19, 2019 – 1:00 PM
Friday, September 20, 2019 – 9:30 AM
Capitol Extension, Committee Room E1.012
1100 N. Congress Avenue, Austin, Texas 78701**

Note: The Actuarial Committee may take up any item posted on the agenda at any time during its meeting on Thursday, September 19, 2019 or at any time during the continuation of the meeting on the following day, Friday, September 20, 2019, for which a separate meeting notice has been posted.

The Committee may discuss or take action regarding any of the items on this agenda.

1. Meeting called to order
2. Roll call of Committee members
3. **TAB 1** Approval of the September 13, 2018 Committee meeting minutes
4. Intensive actuarial reviews of the following:
 - a. **TAB 2A** Odessa Firemen's Relief & Retirement Fund
 - b. **TAB 2B** Paris Firemen's Relief & Retirement Fund
5. **TAB 3** Informal guidance for developing a Funding Policy (SB 2224)
6. Invitation for audience participation

Note: The Committee anticipates recessing after the last item above and resuming Friday morning to take up any remaining agenda items.

7. **TAB 4** Update on revised Funding Soundness Restoration Plan from City of Irving and Irving Firemen's Relief & Retirement Fund
8. **TAB 5** Informal guidance for conducting Investment Practices and Performance Evaluations (SB 322)
9. **TAB 6** Rulemaking relating to fee disclosures (SB 322)

10. Date and location of next Actuarial Committee meeting – TBD
11. Invitation for audience participation
12. Adjournment

NOTE: The Committee may go into closed session concerning any item on this agenda if authorized under the Texas Open Meetings Act, Government Code, Code Ch. 551. Persons with disabilities who plan to attend this meeting and who may need special assistance are requested to contact Mr. Wes Allen at (800) 213-9425/ (512) 463-1736 three to five (3-5) working days prior to the meeting date so that appropriate arrangements can be made.

TAB 1

**Pension Review Board
Actuarial Committee Meeting Minutes
September 13, 2018**

1. Meeting called to order (0:06)

The third meeting of 2018 of the Pension Review Board (PRB) Actuarial Committee was called to order by Chair Keith Brainard on Thursday, September 13, 2018 at 10:30 AM at Capitol Extension, Committee Room E1.012, 1400 N. Congress Avenue, Austin, Texas 78701.

2. Roll call of Committee members (01:35:40)

Board Members Present:

Chair Keith Brainard
Marcia Dush
Josh McGee

A quorum being present, the meeting was called to order by Chair Brainard.

3. Approval of the April 24, 2018 Committee meeting minutes (0:21)

Chair Brainard entertained a motion to suspend the reading of the minutes of the Actuarial Committee meeting held April 24, 2018, and to approve them as circulated.

Motion made by Mr. McGee and seconded by Ms. Dush.

Motion Approved Unanimously

4. Discuss and consider intensive actuarial reviews of the following:

a. Orange Firemen's Relief & Retirement Fund (30:18)

Chair Brainard stated that the PRB is statutorily tasked with conducting studies on public retirement systems.

Brad Heinrichs and Drew Ballard, actuaries with Foster and Foster, and Jody Keller, Board Chairman represented the Orange Firemen's Relief and Retirement Fund (Orange Fire, the Fund). Sean Oubre, City Manager represented the City of Orange (the City).

Mr. Oubre noted that the City and Fund have a long-standing relationship and that the City looked forward to resolving the issues with the plan together. He noted that the City was in the process of adopting a budget, which made the timing of the review difficult. He also noted that they have a collective bargaining agreement with both police and fire plans. Mr. Oubre stated that last year, Orange Fire came to an agreement on a two-year deal and set a parameter to resolve plan funding issues by both parties, agreeing to a cost-of-living adjustment (COLA) and designating money to go towards the retirement plan. He noted that funding problems may be solved by realigning benefits and raising contributions and acknowledged bond ratings a factor of the City's interest in the state of the plan. He also made the Board aware that there was a transition occurring with City management and that the new team will be made aware of the plan funding issues.

Mr. Keller stated that Orange Fire's board did not have the authority to set benefits or alter the contribution rate, but they could bring recommendations to the plan members. He noted that both employee and City contributions were recently increased. He added

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that the Fund has notified its members of a study regarding possible benefit changes, but he did not believe the members fully understood the changes, thus the benefit change was voted down by the members. He noted that in the future, he would like the actuaries to speak directly to the members, so the members understand the funding issue.

Chair Brainard asked for clarification regarding the proposed benefit changes.

Mr. Keller stated that there was a special study completed on annuity payments after death. The Fund proposed removing that benefit but allowing for the option to buy back into the benefit.

Mr. Heinrichs noted that the normal form of payment was joint survivor with the spouse getting a subsidized payment. He stated that they wanted to make it clear to members that a married member would receive a 66.67% joint survivor benefit whereas a single member would receive a life annuity. He wanted to make sure benefits were equitable to all members, regardless of marital status; however, he believed the proposed benefit change was not fully understood by the members.

Mr. Heinrichs stated that he was working with the Fund for about a year and when he was asked to conduct an actuarial valuation (AV) as of January 1, 2017, he immediately noted several assumptions as potential issues. He stated that the amortization period increased about ten years and that the Fund needed benefit reductions or contribution increases. He stated that this information was relayed to the plan members and it failed to pass. He stated that one of the benefits of the PRB Actuarial Committee meeting will be that they will be more likely to get the members to understand the status of the Fund. He added that the Fund plans to lower their assumptions. He stated that he encouraged the Fund to discuss changing investment strategy with their investment consultant or lowering the assumed rate of return.

Chair Brainard noted that based on current assumptions, if the plan achieved its 7.75% investment return assumption, in 30 years they would be funded at about the same level, which was a little below 60%. He stated that it speaks volumes about the challenges the Fund was facing.

Mr. Heinrich agreed, and stated that it will be difficult for the Fund to overcome the challenges and noted that they were currently in the beginning stages of plan reform. He noted there was a need to educate members and rally support to make changes to the benefits or contributions. He stated he would continue to work with the Fund to make sure the assumptions were reasonable.

Mr. McGee stated that it was great to see both parties participating in the discussion. He noted that the Fund was experiencing severe funding problems and he appreciated the willingness to make changes. Mr. McGee noted for the committee that a big challenge with firefighter plans under the Texas Local Fire Fighters Retirement Act (TLFFRA) was the governance model. He added that there should be negotiation between the Fund and City regarding the benefit levels and paying the cost of the benefits. He stated that governance constraints could be difficult for a board chair.

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Mr. McGee addressed the second piece of governance, which was the approach to assumptions. He stated that often assumptions are considered in isolation, and that there was a need to look at aggregate results through stress testing.

Ms. Dush stated that her concern, from a fiduciary point of view, was that if they were funding benefits but could not secure the funding needed for the benefits, the fiduciary is placed in a difficult situation and unable to properly perform their role.

Chair Brainard noted that Orange Fire's investment expenses were the highest of their peer group, at more than 100 basis points. He added that about 2/3rds of the expense was for the investment consultant. He asked how long the Fund had that particular consultant.

Mr. Keller noted that the Fund's investment consultant planned to provide testimony. He stated that they have had their investment consultant for 10 years. Mr. Brainard asked if the Plan had a contract with the investment consultant and for how long the contract was.

Tim Sharpe, Investment Consultant, Greystone Consulting, stated that he has served the Orange Fire board for many years. Chair Brainard stated that the Committee had concerns regarding his costs. He asked Mr. Sharpe if he was the consultant for any other plans in the peer group. Mr. Sharpe stated that he was and handed information to the Committee. He added that he had an at-will contract with the Fund.

Chair Brainard asked Mr. Sharpe to detail the services he provides funds.

Mr. Sharpe stated that the fees paid by other managers are negotiated with an individual contract with the Fund. He added that the Fund had a contract with his firm to provide consultation and separate contracts with managers. He noted that all managed accounts are not commingled. He stated that the manager fees range 25 basis points up to 78 basis points, and that the fees go towards helping boards select money managers. Mr. Sharpe added that when a manager is selected, his firm negotiates with the manager on behalf of the Fund.

Chair Brainard noted that the services offered were consulting, custodial and bank services, asset allocation advisement, and management selection. Mr. Sharpe added that manager research is also a service offered and the managers are not held to trading with Morgan Stanley, but that they have the option to do so. Additionally, he stated that the firm does stress testing on the portfolio.

Chair Brainard asked if Mr. Sharpe's firm received a portion of the manager fee or a payment from the manager. Mr. Sharpe stated that no, each member was a third-party entity.

Mr. McGee asked how many of the managers traded with Morgan Stanley and if Morgan Stanley benefits from them using their platform. Mr. Sharpe said that yes, most of the trades go through Morgan Stanley because the trade is done at the inside market without a commission, the manager is held to best execution, and added that Morgan Stanley does not profit.

Chair Brainard asked that Mr. Sharpe send staff a document detailing all active managers and the significant changes that have occurred in the past year and a half.

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Additionally, Chair Brainard requested Mr. Sharpe send staff individual performance of the managers compared to a benchmark.

Ms. Dush stated that there needed to be an understanding of future cash flows in order to perform an efficient analysis as well as some idea of a 30-year forecast.

Mr. Sharpe stated that the goals were to meet the actuarial assumption with the lowest risk possible.

Mr. McGee stated that Mr. Sharpe had the top four highest fees in the peer group and the investment performance for Orange Fire was below the Fund's assumed rate of return as well as plan performance. Mr. McGee recommended the plan to have a discussion regarding investment expense.

Chair Brainard noted that the Committee did not usually get involved with investment issues; however, the PRB was available for assistance and would like to help the Fund restore funding levels. He noted there appeared to be a governance issue that extended beyond Orange Fire.

Ms. Dush asked if the Fund's board was aware of best practice for going out to bid for investment services. Mr. McGee added that sometimes it was easy to get into circular reasoning around the investment rate of return where no one was making a decision regarding an appropriate rate of return and level of risk for a plan.

Ms. Dush added that in the Actuarial Standards of Practice (ASOP), the actuary was not supposed to give weight to active management over the rate of return unless they were nearly certain they were able to outperform the index for a long period of time.

Mr. Heinrichs stated that discussion on the return assumptions was something that began in the first meeting and added that there would be more changes in the future, including a formal experience study.

Mr. Oubre requested a specific timeline for the City and Fund to come up with a solution. Ms. Kumar stated that the PRB staff appreciated the response and dedication from the Fund and City. She added that the PRB's goal was to include the reviews in the biennial report for the legislature. She stated that if a system was working towards a goal or solution, the PRB would be sure to share any updates with the legislature. Chair Brainard encouraged all parties to communicate with the PRB staff before November.

Ms. Dush asked if there was any other requirement regarding Orange Fire's Funding Soundness Restoration Plan (FSRP) and Ms. Kumar stated that the City and Fund provided a joint FSRP and the PRB staff would be monitoring it. Mr. Heinrichs noted that the FSRP will likely be revised again.

Chair Brainard asked Kenny Herbold, PRB Staff Actuary, for any additional comments regarding Orange Fire. Mr. Herbold stated that staff recommended Orange Fire perform a peer group study to ensure they were receiving a good value on investment related expenses.

Chair Brainard entertained a motion to direct staff to finalize the draft intensive review of Orange Firemen's Relief and Retirement Fund, incorporating changes agreed upon by

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the Committee and any technical changes, to present to the full Board for final review at its October 4th meeting.

Motion was made by Ms. Dush and seconded by Mr. McGee.

Motion Approved Unanimously

b. Longview Firemen's Relief & Retirement Fund (01:19:13)

Mr. Herbold gave a brief description of the reasoning behind selecting Longview Firemen's Relief & Retirement Fund (Longview Fire, the Fund) for intensive review. He referenced the sources of change in the unfunded accrued liability, expected and unexpected gains and losses, benefit changes made to the Fund as well as any change in assumptions. Mr. Herbold noted that a \$16.5 million change in the liability experience was noticeably higher than anticipated and stated that the Fund's assumptions accounted for the likelihood of gains and losses but the increase to the unfunded liability was not predicted.

Chair Brainard asked Mr. Herbold if he could give some examples of the experiences that may have led to the increase in the unfunded liability. Mr. Herbold stated that he did not have the specific information, only that the Fund reported their unfunded liability assumptions and current position, and the two were very different.

Mr. Herbold stated that changes were made to the assumptions that resulted in an additional gain in the liabilities. He explained that Longview Fire's retrospective look at their Fund saw liabilities historically increasing, but instead of anticipating an increase to liabilities, they projected a decrease. Mr. Herbold suggested that it could be helpful to look at what happens in the aggregate liability. Ms. Dush asked over what time period was the \$16.5 million loss and Mr. Herbold confirmed that, based off of the actuarial valuations from 2015 to 2017, the loss was over a 12-year period. He added that the experience study reviewed a 5-year period. Mr. Herbold recommended that the Fund conduct an actuarial audit.

Ms. Dush asked if there was a change in actuary during the period of loss. Mr. Herbold stated that the Fund had the same actuary during the 5-year review period but was unsure of the actuaries during the 12 years that they experienced losses.

Mr. McGee asked if there was an actuarial valuation or a comprehensive annual financial report (CAFR) in the subsequent year that showed the liability loss. Mr. Herbold stated that there was a report that contained that information. Mr. McGee further stated that the Fund lowered liability assumption in one year and experienced losses the following year that fit a pattern in their annual report, which was larger than their reduction in liabilities using assumptions.

Mr. Herbold noted that the Fund had a large allocation to illiquid investments in the recent past. He stated that the Fund recognized that those investments may not have been in their best interest and were in the drawdown period and explained that the Fund was waiting for the investments to mature so they could receive a positive return instead of selling them at a loss. Mr. Herbold added that Longview would bring down their target allocation in alternatives to a 10% range.

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Mr. Herbold stated that in 2012, Longview Fire implemented a multi-step plan in tandem with their sponsor to increase contributions to get them to a higher funded level. He added that despite the increases to contributions, the Longview Fire's funded ratio stagnated, and decreased. Mr. Herbold stated that the review recommended that the Fund adopt a funding policy as a guide to full funding, which would in turn allow for a bit more flexibility than a fixed-rate contribution.

Chair Brainard asked representatives for Longview Fire and the City of Longview to provide testimony.

Representatives for the Fund included Brad Heinrichs, Foster & Foster, Actuary; Kolby Beckham, Chairman of the Fund; and Charles Smith, Robert Harrell, Inc., Investment Consultant. Angela Cohen, Finance Director, represented the City of Longview.

Chair Brainard asked the members to provide any prepared remarks.

Mr. Beckham stated that the relationship between the Fund and the City was paramount to recognizing the problems that have been associated with other funds and that the Fund began working with the City on a solution to underfunding in 2011.

Mr. Beckham mentioned how active the members of the Board are in the decision-making process, as well as the positive changes that have been made to the plan such as bringing the amortization down from infinity to 37.3 years. He stated that some changes could take a little longer to be realized. He added that the Fund was looking to incrementally bring down the assumed rate of return from 8% to 7.75% and that the Fund moved to performing AVs annually. He noted that when the Fund changed consultants, adopted a new investment policy statement.

Chair Brainard commended the Fund for their willingness to speak with the Board about their current state and the willingness of the Fund's members to accept a decrease in benefits in order to increase funding. He asked Mr. Heinrichs to clarify the liability experience that Mr. Herbold mentioned earlier.

Mr. Heinrichs mentioned that salary increases were higher than expected that could, in turn, be attributed to one-time events, such as the turnover being less than expected. He stated that the normal cost was elevated, and the unfunded liability decreased. Mr. Heinrichs stated that when examining the aggregate value of assets, the year was more neutral.

Chair Brainard asked Mr. Heinrichs to share that information with PRB staff.

Ms. Dush asked if the Fund did benefit certifications for actual calculations as a part of the experience study. Mr. Heinrichs stated that they have not done benefit calculations for actual calculations for this plan and added that the Fund was different from some other plans he has worked with in that they do not have several forms of optional payment, which left little actuarial work with the calculations.

Ms. Dush suggested that having looked at an actual benefit calculation may have provided some insight into the difference between how pay is treated and the actual calculations. She recommended spot-checking benefits.

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Mr. Heinrichs stated that they do these calculations for other clients, but the Fund decided to perform their own calculations in-house.

Mr. Beckham stated that the Fund had a two-layer spot checking platform as a part of their annual audit that looked at benefits calculations.

Ms. Dush stated that a variation in losses and gains would be preferable to consecutive losses. Mr. Heinrichs stated that those losses were predicted, and they were not alarming to the actuaries. Mr. McGee noted that it would not be alarming to see losses in a year, but when the trend contains consistent historical losses, then there is a reason to be concerned.

Mr. Heinrichs stated that they had retirement losses and termination losses, and that they look at other public safety plans across the country to get a better idea of where to go from there. Ms. Dush stated that past performance does not predict future performance. Mr. Heinrichs stated that the Fund was not meeting assumed rates of return but there was room to meet those returns.

Mr. McGee stated that perhaps what is working for other plans did not work for Longview Fire, and that the assumptions used may need to be questioned and reexamined. He agreed that the asset allocation in alternatives was too high and that the target for funding going into the plan to secure benefits was too low. Mr. McGee stated that taking a hard look at the investment rate of return and lowering the expected rate of return would be beneficial due to the fact that 8% is outside of the norm for public plans right now and outside of current market projections.

Mr. Smith shared the positive results that the Fund experienced since January of 2017. He explained that they diversified where they could among domestic equity and fixed income and took out higher fee active managers and replaced them with lower-cost index funds.

Mr. Brainard asks Mr. Smith if he advised the Fund on their investment return assumption.

Mr. Smith stated that they perform an annual study and that this year's study showed their return assumption at 7.44% without inflation at the beginning of the year. He clarified that the assumption was based on a 10-year time horizon with a standard deviation that helped predict the risk.

Chair Brainard asked Mr. Smith to provide supporting documentation for his explanation and commented that a 7.44% return assumption net of inflation was well outside of the national average.

Mr. McGee suggested to staff that it would be beneficial to include capital market projections with ranges on what others are predicting in those capital market assumptions. He stated that a 7.44% return was surprisingly high.

Ms. Dush asked if the 10-year time horizon was a forward-looking set of assumptions or retrospective. Mr. Smith clarified that it was a forward-looking projection.

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Mr. McGee stated that the consequences of setting a return assumption too high are far greater than setting your return assumptions a little lower because you must make up for those losses.

Ms. Dush stated that the actuarial assumptions should not include bias, it should be an expectation. She added that assumptions should not be too conservative or too aggressive and should not consider any alpha for active management.

Mr. McGee noted that the fees that the Fund was paying to their consultants were a little higher than what was recommended for the services that they received and stated that the median for public funds was in the 50 basis point range.

Ms. Dush added that the fees could impact the investments and Mr. McGee agreed that alternative investments could have an effect on those. He asked what the breakdown of the alternatives portfolio looked like.

Mr. Smith responded that hedge funds comprised 13% and private equity comprised 10%, with a total of 23% invested in alternatives. Mr. Beckham added that they are working on lowering the target percentage.

Mr. Beckham cited his concerns with the portrayal of Longview Fire in the review and asked the Committee to work closely with the PRB staff to accurately represent the efforts to achieve the funding goals of the Fund.

Chair Brainard assured the representatives that the PRB staff was committed to transparency and would be working closely with them to fairly reflect the situation.

Mr. McGee added that there would be continued attention to the areas that needed improvement, but the Fund was to be commended in the areas where it was improving.

Chair Brainard entertained a motion to direct staff to finalize the draft intensive review of Longview Firemen's Relief and Retirement Fund, incorporating changes agreed upon by the Committee and any technical changes, to present to the full Board for final review at its October 4th meeting.

Motion was made by Mr. McGee seconded by Ms. Dush.

Motion Approved Unanimously

c. Irving Firemen's Relief & Retirement Fund (review timeline) (02:11:51)

Ms. Kumar updated the Committee that Irving Firemen's Relief & Retirement Fund would be reviewed at the next meeting on October 4, 2018. She noted that the plan was still working on the 2017 valuation. She added that due to the goal of including the review in the biennial report, staff would have the final draft of the review at the October Board meeting.

5. Receive updates on the intensive actuarial reviews of the following:

a. Galveston Employees' Retirement Plan for Police (00:45)

Ms. Kumar provided an update on the Galveston Employees' Retirement Plan for Police (Galveston Police, the Plan). Ms. Kumar stated that since the review, the City and Plan provided updates to the Committee in April. She stated that the City mentioned to the

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members that they were conducting an actuarial audit of the 2018 AV, in which assumptions were reasonable. Staff also, based on recommendation, sent a letter to the city to come up with a funding solution.

Chair Brainard requested the representatives of the City and Plan to provide testimony. Mark Fenlaw, Rudd and Wisdom and Dan Buckley, Deputy City Manager represented the City. Dave Sawyer, Actuary, Retirement Horizons, and Stephan Smith of Locke Lorde represented the Plan.

Mr. Buckley stated that an actuarial audit was completed, and they were pleased to see there were no material issues. He noted that the actuary did have some minor suggestions, but it would not make any significant change. He stated that the City developed ideas regarding retirement age and increasing City contributions, but without consensus. Mr. Buckley stated that the City engaged Rudd and Wisdom to develop a funding mechanism. He noted a concern that even if the Plan were to increase its funding status, poor governance could return the Plan to a poor condition. Mr. Buckley stated that Mr. Fenlaw developed a Plan where if changes were made, contribution changes would be triggered. Mr. Buckley stated that this would establish parameters and prevent the plan from deteriorating. He noted that the City and board have yet to discuss the plan together, but Mr. Buckley intended to either meet with Mr. Gainer or the Board to discuss Mr. Fenlaw's plan.

Chair Brainard requested Mr. Buckley to summarize any plan design changes, plan funding changes, or governance changes.

Mr. Buckley deferred to Mr. Fenlaw regarding funding changes and stated they needed to establish a methodology so that the Plan could not independently modify the plan to its detriment or the taxpayer' detriment. Additionally, Mr. Buckley restated that retirement age is another aspect the City is looking to change.

Mr. Fenlaw stated that they developed a modified actuarially determined contribution (ADC) plan. He noted that the Plan could not follow a similar funding structure as the Texas Municipal Retirement System (TMRS) because the City does not have control over the benefit design of the Plan. Mr. Fenlaw stated that his plan puts in constraints and guidelines to protect the contribution rates from rising for either party and provide for ways to increase benefits. He noted that it was still a draft, but it would bring governance aspects to the funding policy to protect both the Plan's and the City's interest long term. He noted he was open to the review by the Plan's actuary and stated that the plan does not cover every contingency.

Mr. Smith noted that the Plan also put together a proposal to try and reach an agreement with the City and the Plan's proposal resulted in a reduction in the aggregate contribution rate and more efficient spending. He added that the Plan's proposal allowed for member and city rates to adjust based on the performance of the plan and would also bring governance changes such as proposing a change to the voting structure for plan amendments that may negatively impact the Plan's funding.

Mr. Sawyer stated that it appeared that both parties agreed on moving to an ADC rate rather than a fixed rate. Additionally, he stated that both parties agreed on having a closed amortization period, but other than that, both parties diverged in their proposals.

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Mr. Sawyer stated that the City's plan would have the City contribute \$2 for every \$1 the members contribute as a risk-management method and that the City's plan would also require a super majority when voting. He stated that the 2-to-1 cost sharing would reduce the member contribution rate from what they are currently contributing.

Ms. Dush asked if implementing a new plan would require any legislation. Mr. Smith stated that they would require a legislative solution to change the funding of the Plan.

Chair Brainard asked if the City was adopting legislative changes and Mr. Buckley stated that the City was adopting a legislative agenda. He added that ideally, both the Plan and City would work together to achieve any legislative changes, but the City was prepared to do it unilaterally if needed.

Mr. McGee commended the City and Plan for making progress. He stated that he liked the move to a closed amortization period ADC rate and encouraged a layered amortization period. He stated that the funding policy needed to ensure there would not be an adverse situation in the future. Additionally, Mr. McGee stated that he liked the cost-sharing discussion the City and Plan was having.

Ms. Dush agreed with Mr. McGee's suggestion of the layered amortization period and recommended a stress test that would show what a couple of bad years of investment returns would look like for the plan.

Mr. Sawyer stated that he recommended a stress test as well and there were plans to conduct one in the future. He noted that he believed the Plan's proposal had some flexibility for monitoring contribution rates and amortization periods once the amortization period decreased to 25 years.

Mr. McGee noted that when he read the proposal by the Plan, he was concerned about fitting everything into a 30-year closed amortization period. He stated that the flexibility may allow for a divergence from plan cost. He recommended having a 30-year closed amortization period for the current unfunded liability and then layering and smoothing adverse experience. He stated that employer contribution being greater than the normal cost is an indication of benefit generosity.

Chair Brainard asked for clarification on how plan changes would affect all members.

Mr. Fenlaw stated that there was a discussion about changing the retirement age but that the Plan was not receptive to changing the retirement age. He stated that as it stood, the City's proposal would not directly affect anyone's benefits, just the contribution rates.

Mr. Buckley stated that the City would like to discuss a combination of both changes to contribution rates and retirement age, as well as governance.

Mr. Fenlaw stated that they are looking at the Plan from a cost-sharing approach and does not agree with the concept that the Police should be contributing more than normal cost.

Mr. Sawyer stated that changes would not affect retirees and added that it would improve the Plan's funded status and provide better security. He noted that the active members would have to either contribute more or reduce benefits at some point in the near future. He stated that initially it would not look like there are any changes, but he did not think that is how it would play out.

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Chair Brainard asked if there was anything in the proposal that would be a deal-breaker. Mr. Smith said that he has not yet been able to look through the proposal. Mr. Sawyer agreed, saying it was currently too soon to tell. Mr. Buckley said that the next steps were for the Plan and City to meet again and noted that the governance issue is a major problem that had to be addressed.

Chair Brainard stated that he shared the notion that the governance issue is a major issue that would affect the future health of the plan.

Ms. Dush asked Ms. Kumar if the PRB staff would have to prepare an actuarial impact statement supporting the proposal. Ms. Kumar clarified that per mandate, the PRB was required to prepare actuarial impact statements for all pension legislation.

b. Staff update on Marshall Firemen's Relief & Retirement Fund (02:12:57)

Ms. Kumar stated that the PRB staff presented the report at the June Board meeting. She stated that since then, the PRB issued a letter to the city by request of the members and fund, as well as encouraged the city and fund to work together.

Mr. McGee asked if there has been a reply from the City of Marshall. Ms. Kumar stated that there was not a response, but the letter was an informational letter outlining what was done with the review.

6. Discuss and consider interim study topics, including the following:

a. Asset Pooling for Small Plans (02:14:29)

Ms. Kumar stated that staff was still working on a draft of the study and would have it ready for the October board meeting.

b. Funding Policies for Fixed Rate Plans (02:15:21)

Ms. Kranes stated that given declining funded levels, staff wanted to establish the importance of having a funding policy for all pension plans regardless of their contribution structure. She noted that in Texas, nearly 80% of plans had a non-ADC funding structure, which requires a very strong funding policy to guide the plan and sponsor on action for when the contribution rate is no longer adequate to fund benefits. She stated that the goal of a plan's funding policy should be getting the plan to full funding.

Ms. Dush stated that regarding governance issues, a fiduciary needed a say in if they are able to bring in the contributions needed to pay benefits. She emphasized that there needed to be a method linking contributions and benefits. She added that because the paper would go to the legislature, she wanted to ensure the reader would be able to understand the paper.

Mr. McGee stated he would send additional notes to staff and that he felt there was value in looking at other funding policies. He requested staff include the importance of receiving the full ADC to fund the benefits and emphasized to make clear the importance of funding the ADC to the legislators.

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Ms. Dush asked if anything prevented funds from setting a contribution level a couple of years out in order to mitigate potential budgeting issues. Mr. McGee stated that the City of Houston did that, so there was nothing preventing that type of budgeting.

Chair Brainard emphasized that in fixed rate plans, if the contribution rate was not going to change, the benefit structure would have to change.

Ms. Kumar stated that a first draft of the paper would be available at the October Board meeting.

7. Date and location of next Actuarial Committee meeting – TBD (02:25:35)

Chair Brainard requested that staff get in touch with the Committee members to set the time and location of the next Actuarial Committee meeting.

8. Invitation for audience participation (02:25:54)

David Stacy, Midland Firemen's Relief and Retirement Fund provided comments regarding the governance structure of public pension boards. He noted there were several comments regarding the governance structure of the TLFFRA. He disagreed that the governance structure of the TLFFRA boards was inadequate. He stated that the TLFFRA statute dictated the composition of the boards and added that boards that are larger than 7 become difficult to manage and make decisions. He stated that the governance structure of TLFFRA boards was as sound as possible, but it may be poorly implemented in some places.

Ms. Dush noted that the problem was less about the governance of the board and more about the cooperation between a TLFFRA board and the city, especially in a collective bargaining situation.

Mr. McGee agreed with Ms. Dush and stated that additional scrutiny needed to be applied to assumptions. He stated that bargaining is occurring over the wrong element.

9. Adjournment (02:32:23)

Chair Brainard motioned to adjourn the meeting. Motion was made by Mr. McGee and seconded by Ms. Dush.

Motion Approved Unanimously

In Attendance:

PRB Staff

Anumeha Kumar
Eusebio Arizpe
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**Pension Review Board
Actuarial Committee Meeting Minutes
September 13, 2018**

Guests

David C. Reeder – Denton Firemen’s Relief & Retirement Fund
Michael Trainer – San Antonio Fire & Police Pensioners Association
Charles Bray – Texas Emergency Services Retirement System
Paul Brown – TEXPERS
Shawn Oubre – City of Orange
Dan Buckley – City of Galveston
Mark Fenlaw – Rudd and Wisdom
Kenneth Oliver – Texas Municipal Retirement System
Dan Wattles – Texas Municipal Retirement System
Ben Marts – Odessa Firemen’s Relief & Retirement Fund
Alva Littlejohn – Lubbock Fire Pension Fund
Tim Sharpe – MS Graystone
Stefan Smith – Galveston Police Pension Plan
David Sawyer – RHI
Steve Madden – Texas County & District Retirement System
Kolby Beckham – Longview Firemen’s Relief & Retirement Fund
Jody Cowart – Orange Firemen’s Relief & Retirement Fund
Jason C. Maddox – Orange Firemen’s Relief & Retirement Fund
Brian Jones – Longview Fire
Cody Caples – Orange Firemen’s Relief & Retirement Fund
Pattie Featherston – Austin Police Retirement System
Max Patterson – TEXPERS
Rebecca Morris – Rudd and Wisdom
David Keller – Houston Firefighter’s Relief & Retirement Fund
Joe Gimenez – G3PR
Eddie Solis
Tyler Grossman – El Paso Firemen’s Pension Fund
David Stacy – Midland Firemen’s Relief & Retirement Fund
Rene Lara – Texas AFL-CIO

Chair Keith Brainard

TAB 2A

DRAFT

Intensive Actuarial Review:

Odessa Firemen's Relief and Retirement Fund

September 2019



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Executive Summary

Introduction

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

Odessa Fire and the City have recently made contribution increases, benefit cuts, and actuarial and investment assumption changes, but the changes have not been enough to put the Fund on a solid path to sustainability. The Pension Review Board (PRB) encourages the Fund and the City to review this report carefully and jointly adopt both short- and long-term plans to address these risks. The PRB can provide technical assistance in formulating the plan.

Overview

Odessa Fire is currently projected to run out of assets within the next 25 years. Because benefits were not prefunded, current contributions are being used to pay benefits, like in a pay-as-you-go pension structure. Current contributions, however, are barely covering half of annual benefit payments, so the Fund is also tapping into its investment income to make up the difference. Using contributions and investment returns to pay current benefits robs the Fund of the advantages of compound interest that prefunding offers.

These practices have resulted in liability growth close to 10% per year, while assets have increased less than 2% per year, despite the past decade's strong bull market. Diverting investment income to make benefit payments affects the Fund like an oil leak in an automobile engine: the car's owner can keep adding oil, but the problem will persist until the leak is plugged. Even worse, Odessa Fire's growing benefit payments will eventually drain the Fund's assets completely unless measures are taken to plug the hole.

Another consequence of not prefunding benefits is that highly liquid assets are needed to make benefit payments, as evidenced by the Fund's extremely low non-investment cash flow rates. However, the current asset allocation is heavily weighted towards equities and alternatives implying a long-term investment horizon which the Fund does not have the luxury of relying on.

Constantly underfunding a plan places the benefits of both retirees and active members at significant risk and/or places the burden of paying for services already rendered on future generations of taxpayers and employees through contribution increases or reduction of future benefits.

Conclusion

To plug the immediate leak in the system, Odessa Fire and the City should work together to determine the best balance between increased contributions and benefit reductions. To help the City and the Fund consider funding options, the PRB has developed projections including both contribution increases and a one-time cash infusion. For the longer term, a strong funding policy should be adopted to restore and preserve fiscal health. The Fund should also monitor investment managers' performance against benchmarks; adopt an asset allocation plan; and review the Fund's professional advisors regularly.

Background

Texas Government Code Section 801.202(2) requires the Pension Review Board (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 the following key metrics, in addition to amortization period, to determine and prioritize retirement systems for intensive actuarial review. The PRB selected Odessa Firemen's Relief and Retirement Fund ("Odessa Fire" or "the Fund") for review based on the 2018 actuarial valuation data shown below and at the request of the City of Odessa. Unless otherwise noted, the following metrics were calculated as of January 1, 2018.

Amort. Period (Years)	Funded Ratio	UAAL as % of Payroll	Assumed Rate of Return	Payroll Growth Rate	Actual Cont. as % of ADC ¹	Non-Investment Cash Flow as % of FNP	DROP as % of FNP
47.1	43.08%	510.60%	7.75%	3.50%	81.31%	-11.16%	4.54%

Contribution and cash flow data are from the Fund's 12/31/2017 financial audit.

Plan Profile (2018 AV)

Actuarial Accrued Liability: \$106,469,004

Market Value of Assets: \$45,718,416

Normal Cost: 14.93% of payroll

Contributions: 18.00% employee
20.00% employer

Membership: 165 active
182 annuitants

Social Security Participation: Yes

At the time the Fund was selected for review:

- Its funded ratio of 43.08% was the sixth lowest in the state.
- Its non-investment cash flow as a percent of FNP was the second lowest in the state.
- Its UAAL as a percent of payroll was the fourth highest in the state.
- Actual contribution as a percent of actuarially determined contribution (ADC) was the 17th lowest in the state and the third lowest in its peer group.²

¹ For plans whose contributions are 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).

² See [Appendix](#) for peer group information.

Key Findings

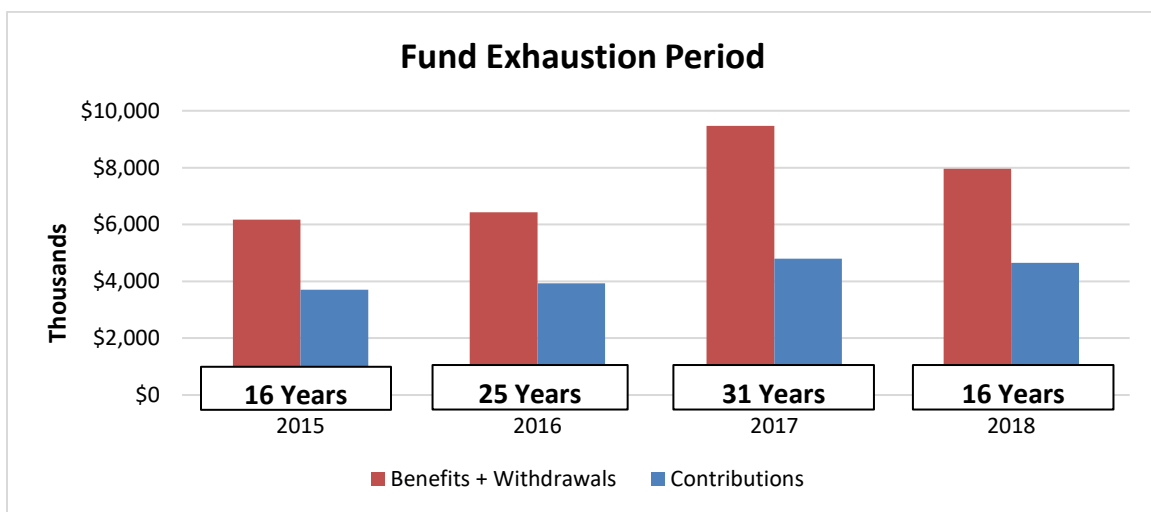
Odessa Fire should be recognized for making several significant changes in recent years in an attempt to address the long-term funding challenges it faces. In their 2016 Funding Soundness Restoration Plan (FSRP), the Fund and City reduced benefits for all employees, on a prospective basis, and increased both the City and employee contributions. To address lagging investment performance, the board took proactive steps to transition to a new investment consultant. In addition, the Fund has taken steps to improve internal data control processes.

However, the changes made in the FSRP have not been sufficient to keep the Fund on a steady path towards paying off its unfunded liability in less than 40 years (or the 30 years recommended by PRB Guidelines). The PRB has identified several specific areas of concern that warrant the Fund and City's careful consideration.

Fund Exhaustion in 16 Years

The various risks faced by a pension fund all boil down to one relatively simple question, "Will there be enough money to pay benefits when due?" The Governmental Accounting Standards Board (GASB) requires single-employer defined benefit pension plans to compare projections of the pension plan's assets to projected benefit payments and identify the year when projected assets will no longer be sufficient to cover 100% of the projected benefit payments, if such date exists.³ In other words, this projected date, sometimes called the Fund's exhaustion or depletion date, is the date the Fund is expected to run out of money, potentially leaving retirees vulnerable to not receiving promised benefits.

Odessa Fire has reported an exhaustion date every year since this requirement has been in effect (beginning with the 12/31/2015 annual financial report). This date improved somewhat following the 2016 plan changes made in accordance with the FSRP but returned to an alarming 16 years as of 12/31/2018.

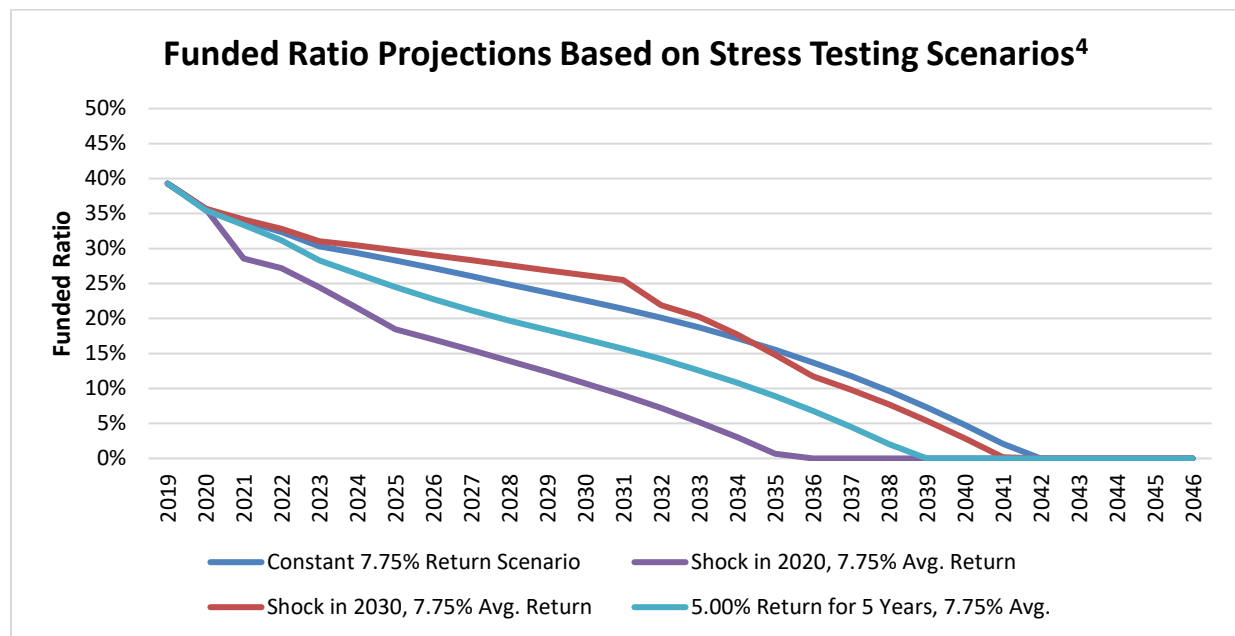


³ [Statement No. 68 of the Governmental Accounting Standards Board](#)

It is important to recognize that this projection does not include contributions expected to finance the benefits of new members hired after the valuation date. However, the PRB estimates that including those contributions would only postpone the exhaustion date by 5-10 years. While this projection does not guarantee that the Fund's assets will deplete in 16 (or 25) years, it should raise red flags that all stakeholders should take very seriously.

As part of this review, the PRB conducted some limited stress testing to help Odessa Fire trustees better understand how well the Fund would stand up to different market conditions. Even in scenarios where the assumed rate of return is achieved over a 30-year period, but the Fund experiences either a single negative investment shock or a short period of returns below the actuarial assumption, assets are expected to deplete sooner than under the simple constant 7.75

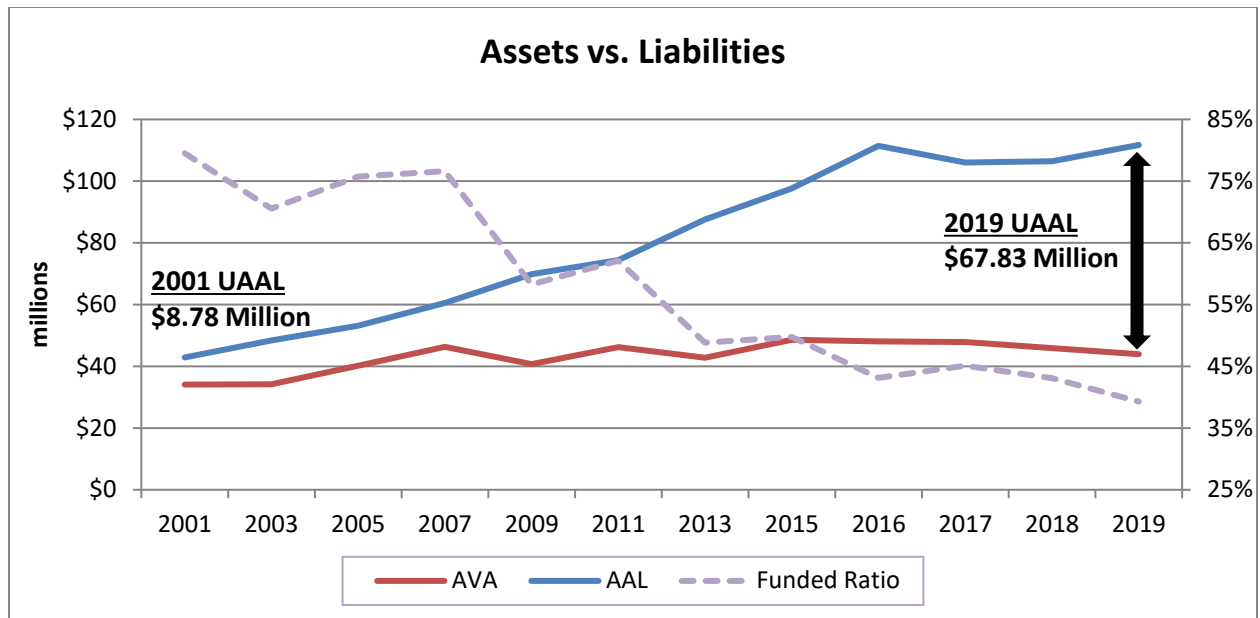
% return in all years. The chart below shows several investment return scenarios where the average rate of return is 7.75% over the 30-year period of 2019 - 2048. The scenarios are: 1) a constant 7.75%, 2) a negative "shock" of -20% in 2020 with above average returns of 8.71% in all other years, 3) a negative shock of -20% in 2030 with above average returns of 8.71% in all other years, and 4) 5% for 5 years (2019-2023), followed by above-average returns of 8.30%.



Assets Relatively Flat Since 2001

Since 2001, Odessa Fire's unfunded actuarial accrued liability (UAAL) has grown by nearly \$60 million. The Fund's actuarial value of assets (AVA) has remained relatively flat over the same time period, averaging a 1.6% annual growth rate while liabilities were growing at more than 10% per year until the 2016 FSRP changes.

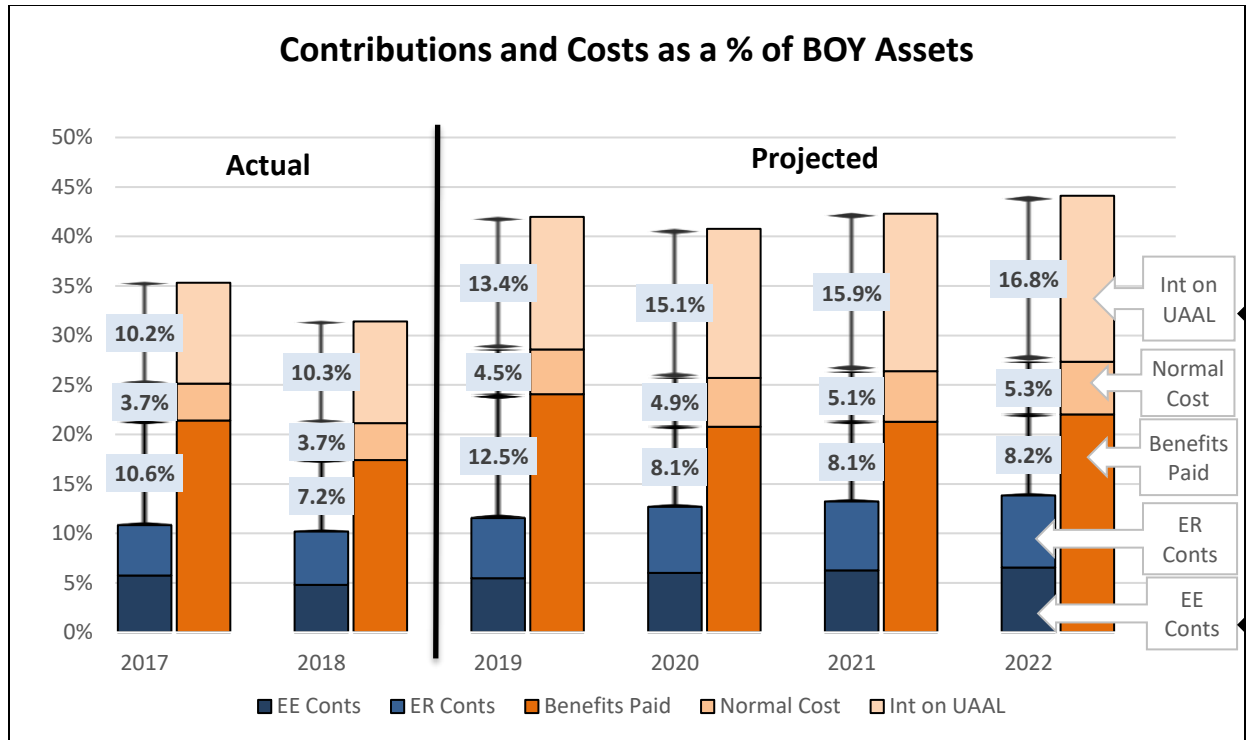
⁴ Projections were calculated using expected salaries, projected actuarial accrued liability, and expected benefit payments provided by the Fund's actuary.



The stagnant asset level appears to be largely attributable to benefit payments significantly higher than contributions, the effect of which is compounded given the low funded ratio of the past decade. In the 2018 annual financial report, the auditor noted the Fund's contribution arrangement (2018 total contributions received of \$4,655,268) was only enough to cover roughly 60% of the total benefit disbursements (\$7,958,420) and stated, "As the Plan matures, we expect this gap to widen and then stabilize."⁵

The gap between contributions received and benefits paid puts a large onus on investments to make up the remaining assets needed to pay benefits due, much less cover the normal cost, the interest accrued on the unfunded liability, and make progress towards decreasing the UAAL to put the Fund on a path to full funding. As evidenced in the chart below, the investment return needed just to pay benefits in recent years was near or higher than the assumed return and is only projected to get higher as total assets decrease. This means that in the years in which the Fund experiences positive asset returns, at least some, if not all, of the investment gains would be needed to pay benefits rather than grow the assets. In years in which losses are experienced, assets would have to be sold at the worst time to cover benefit payments, further exacerbating the loss.

⁵ Odessa Firefighters' Relief and Retirement Fund Financial Statements and Independent Auditor's Report, December 31, 2018 and 2017, page 1.



Asset Allocation Process

According to the Fund and based on a review of the current and previous investment policy statements, the board does not have an asset allocation plan nor does it engage in any strategic asset allocation review. The board is relying primarily on the investment consultant to recommend and set the Fund's strategic asset allocation. This approach does not follow the industry best practices. The Government Finance Officers Association (GFOA) recommends retirement systems establish an asset allocation plan within their overall investment policy.⁷ The first step to develop an asset allocation should be for the board of trustees, in consultation with the investment consultant, to conduct a thorough assessment of the Fund's funding goals, risk tolerance, investment horizon, and liquidity needs.^{8,9}

Odessa Fire's asset allocation process appears to be based on an asset-only model with an expected long-term investment horizon which may not adequately consider the funding status and liquidity needs associated with the Fund's liabilities. Further, the focus appears to be on achieving a predetermined overall target rate of return, currently set as 7.75%. The IPS does not discuss how risk is measured, nor what constitutes a reasonable level of risk given the Fund's near-term liquidity needs to pay out benefits.

⁷ *Asset Allocation for Defined Benefit Plans*, Government Finance Officers Association, October 2009, <https://www.gfoa.org/asset-allocation-defined-benefit-plans>.

⁸ *Pension Investing: Fundamentals and Best Practices*, Nicholas Greifer, Government Finance Officers Association, https://www.gfoa.org/sites/default/files/PensionInvesting_FundamentalsAndBestPractices.pdf

⁹ *A Primer for Investment Trustees: Understanding Investment Committee Responsibilities*, Jeffery Bailey and Thomas Richards, CFA Institute Research Foundation, <https://www.cfainstitute.org/-/media/documents/book/rf-publication/2017/rf-v2017-n3-1.ashx>

On the surface, this makes it seem like the asset allocation is being structured to meet the pre-determined assumed rate of return, rather than the assumed rate of return being calculated as a function of a fund-appropriate asset allocation.

If the Fund were in a stronger financial position, this approach might not raise significant concern. However, given the reported exhaustion period, lack of any asset growth for nearly two decades, and projected negative cash flow illustrating a high likelihood of the need for greater liquidity, the lack of consideration given to these pressing issues does raise alarm.

Revised Funding Soundness Restoration Plan

Odessa Fire's 2016 FSRP changes lowered the Fund's amortization period from infinite (as of 1/1/2016) to 46.5 years (as of 1/1/2017). Higher amortization periods are more sensitive to even small actuarial losses. Thus, even though only 20% of the asset losses experienced in 2018 are reflected in the calculation due to asset smoothing, the Fund's amortization rose to 77.5 years as of its 1/1/2019 valuation.

The FSRP, despite attempting to address the long-term funding challenges, is therefore already insufficient to achieve the 40-year amortization period by the target date (2026). Texas Government Code §802.2015(d) requires the Fund to work with the City of Odessa to develop a revised FSRP before the end of November 2019.¹⁰

¹⁰ [Texas Government Code §802.2015](#)

Analysis/Recommendations

Funding Options

As of the January 1, 2019 actuarial valuation, Odessa Fire's UAAL was \$67,827,402 and would take approximately 77.5 years to amortize, assuming all assumptions are met. Based on amortization period projections provided by the Fund's actuary, the PRB estimates a reduction in UAAL of approximately \$7.2 million would bring the Fund back in compliance with current FSRP requirements and achieve an amortization period of 40 years by the target date (end of 2026). The UAAL would need to be reduced by approximately \$18.3 million to bring the projected funding period within the *PRB Pension Funding Guidelines* preferred maximum of 30 years.^{11, 12}

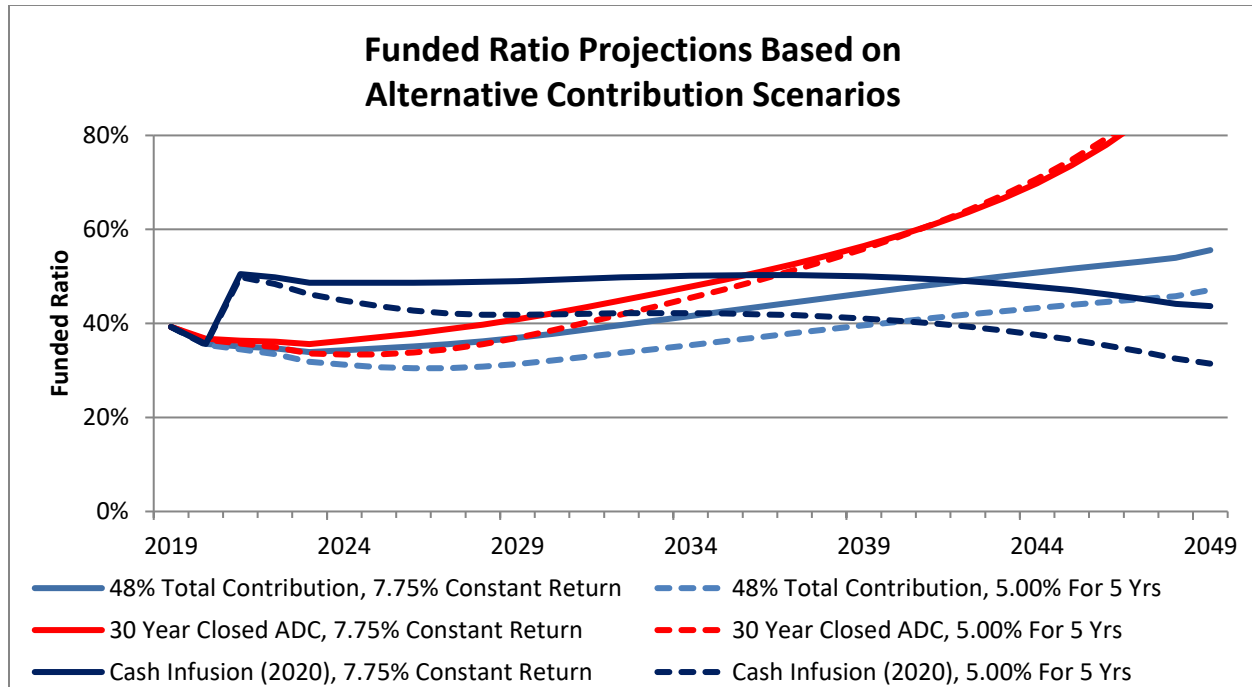
To shore up funding, Odessa Fire and the City should work together to determine the best balance between increased contributions and benefit reductions. However, it should be noted that a reduction in future benefit accruals will have virtually no impact on near-term cash outflows and the threat of a potential asset exhaustion date. Thus, certain actions which may achieve compliance with state law, may not properly address the risks faced by the Fund. Given Odessa Fire's current funding level, an increase in contributions over the near term is likely needed to stabilize the Fund.

Multiple options exist for adjusting contributions to the Fund. For example, contribution increases from the City, the employees, or both could be utilized alone or in combination with a one-time cash infusion. To help the City and the Fund begin to consider options for how to remedy the funding shortfall, the PRB developed some projections based on different contribution scenarios.

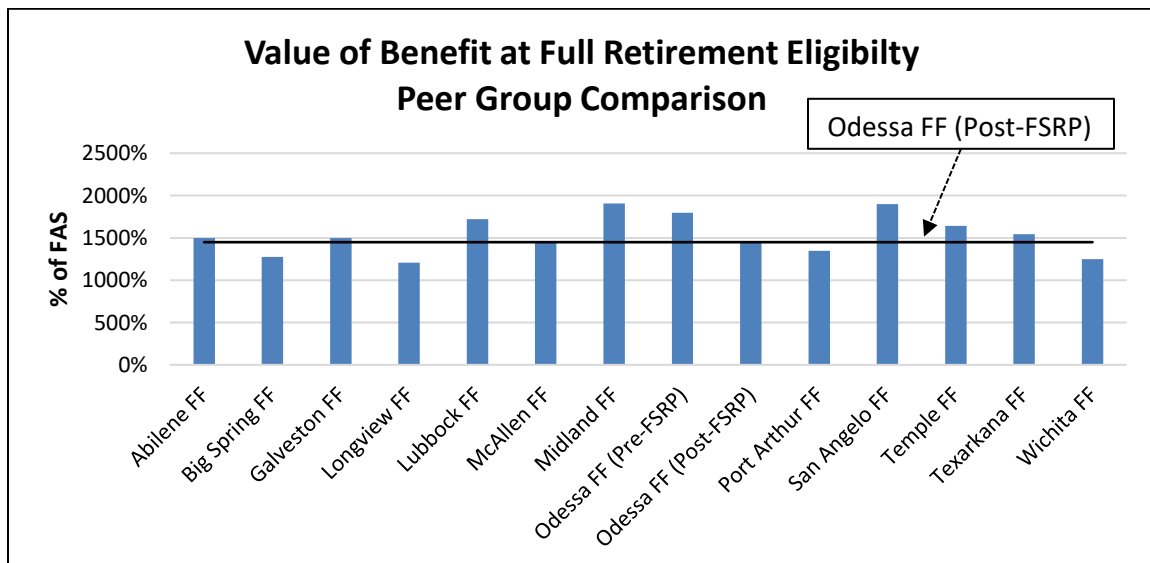
The following graph illustrates three potential options as examples: increasing the total contribution rate from 38% to 48% beginning in 2020; basing the total contribution on a 30-year closed ADC rate; or leaving the contribution arrangement as it currently is but assuming a significant one-time cash infusion of \$18.3 million to the Fund during the 2020 fiscal year. The alternative contribution scenarios are shown using two different investment scenarios to illustrate how each scenario reacts to changing market conditions: 1) a constant 7.75% (solid line) and 2) 5% for 5 years (2019-2023), followed by above-average returns of 8.30% (dotted line). In all three scenarios, the Fund avoids depleting its actuarial assets for at least 30 years.

¹¹ These estimates are based solely on information provided in conjunction with the 1/1/2019 actuarial valuation and identify the minimum necessary to comply with state law and PRB guidelines. They do not take into account the open group projection analysis used in other areas of this review.

¹² *Pension Funding Guidelines*, Texas Pension Review Board, 30 June 2017, <https://www.prb.texas.gov/txpen/wp-content/uploads/2017/03/Funding-Guidelines.pdf>



While further benefit reductions will not help in the near term, they should still be considered for the long term. To help both the City and the Fund understand how current benefit levels compare to peer systems, the graph below depicts the present value of benefits at full retirement eligibility (as a percent of final average salary), both before and after the 2016 FSRP changes, in comparison with its peers.¹³ Prior to the changes made in the 2016 FSRP, the Fund's value of benefit was the third highest amongst its peers but fell below the peer group average after the benefit changes.



¹³ For this graph, Odessa Fire's peers are defined as other defined benefit TLFFRA plans that have a similar amount of actuarial assets, within roughly \$15 million of Odessa Fire's assets, or are located relatively close geographically. Please refer to the [Peer Group Value of Benefits Comparison](#) in the appendix for more details.

When developing the revised FSRP, the Fund and the City are encouraged to think beyond the 40-year amortization period requirement and develop a strong funding policy. The goals of a funding policy are threefold: establish clear and concrete funding objectives, set boundaries on what is allowable for actuarial calculations, and develop plans for both positive and negative experiences. The funding policy should strive to balance the three primary pension funding goals so that member benefits are secure; employers are afforded some level of contribution predictability from year to year; and liabilities are managed so that future taxpayers are not burdened with costs associated with a previous generation's service. For more detail, please see the PRB's *January 2019 Interim Study: Funding Policies for Fixed-Rate Pension Plans*.¹⁴

The Fund should use the new funding policy requirement in Senate Bill 2224 (86R) and the revised FSRP process as an opportunity to work with the City of Odessa to address both the short- and long-term challenges faced by the Fund before funding levels deteriorate further.¹⁵

Investment Practices and Governance

As noted above, the Fund identified concerns with their previous investment consultant and took proactive steps resulting in hiring a new consultant. This is a positive sign that the Fund is closely monitoring the performance of its advisors and is willing to take action if deemed necessary. However, the PRB has further concerns regarding the overall asset allocation and investment decision-making process.

The Fund should consider taking the following steps to continue to improve its investment governance and to gain a better understanding of the specific risks the Fund faces associated with its significant negative cash flow and potential future asset depletion.

Asset Allocation Plan

Implement GFOA's recommendation to establish an asset allocation plan within the overall investment policy.¹⁶ This provides the board a framework to create and continually monitor its asset allocation.

Asset-Liability Study

Perform asset-liability studies, which model future asset and liability cash flows under various scenarios, to identify if the asset allocation is sufficient to support the future benefit payment stream. These studies can be utilized from time to time to assist the Fund in evaluating its asset allocation and investment risks.

Stress Testing

Stress testing should be a regular part of reviewing portfolio performance, and should be used as a gauge to help assess and manage the level of risk. The Society of Actuaries Blue Ribbon Panel on Public Pension

¹⁴ *Interim Study: Funding Policies for Fixed-Rate Pension Plans*, Texas Pension Review Board, January 2019, <https://www.prb.texas.gov/txpen/wp-content/uploads/2019/02/Funding-Policy-Paper.pdf>

¹⁵ SB 2224, 86th Texas Legislature, Regular Session, 2019, <https://capitol.texas.gov/tlodocs/86R/billtext/html/SB02224F.htm>

¹⁶ *Asset Allocation for Defined Benefit Plans*, Government Finance Officers Association, October 2009, <https://www.gfoa.org/asset-allocation-defined-benefit-plans>.

Plan Funding recommends the use of stress testing as a means to measure investment and contribution risks over a 30-year period.¹⁷

Investment Practices and Performance Evaluation

Texas Government Code §802.109 (SB 322, 86R) requires certain Texas retirement systems to complete an Investment Practices and Performance Evaluation by May 1, 2020.¹⁸ This new requirement will further help current trustees, plan members, and other stakeholders gain a better understanding of current investment policies, procedures, and practices as well as how they compare against both their peers and industry best practices. This will be particularly helpful for Odessa Fire given the concerns raised in this review related to investment governance.

Review of Professional Advisor Performance

As previously noted, the board of trustees recently hired a new investment consultant after reviewing the previous consultant and determining they were not receiving sufficient value for the cost of services. The Fund should be commended for this important step.

Best practice suggests RFPs should be issued for all outside services at regular, pre-determined intervals to continuously evaluate the level of service being provided.¹⁹ The board is encouraged to review all professional advisors on a regular basis, either through internal performance review or by hiring an independent, third-party reviewer. For example, in the 2015 actuarial valuation, it was noted that the previous actuary was not fully valuing the cost-of-living adjustment. An actuarial audit, in which a second actuary reviews or audits the work of the Fund's actuary, may have discovered this and included a recommendation to fully value this benefit.

¹⁷ Society of Actuaries. Report of the Blue Ribbon Panel on Public Pension Plan Funding. Schaumburg, Illinois. Feb 2014.

¹⁸ SB 322, 86th Texas Legislature, Regular Session, 2019,
<https://capitol.texas.gov/tlodocs/86R/billtext/html/SB00322F.htm>

¹⁹ Procuring Actuarial Services, Government Finance Officers Association, October 2012,
<https://www.gfoa.org/procuring-actuarial-services>

Appendix

Key Metrics

Metric	Amortization period (47.1 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 Fund's current assumptions, an amortization period above 17 years indicates the contributions to the Fund 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 Odessa Fire, the higher the amortization period, the more sensitive it is to small changes in the UAAL.
Peer comparison	Odessa Fire currently ranks second highest amongst its peer TLFFRA plans (TLFFRA plans within a market value of assets of \$15 million and plans with a close proximity to the city).

Metric	Funded ratio (43.08%)
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	Odessa Fire's funded ratio is the lowest in its peer group and one of the lowest in the state.

Metric	UAAL as a percent of payroll (510.6%)
What it measures	The size of a plan's unfunded liability compared to the annual payroll of its 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 Fund's UAAL as a percent of payroll is the fourth highest in the State of Texas.

Metric	Assumed rate of return (7.75%)
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. Odessa Fire's assumed rate of return is 7.75%, while its actual ten-year investment rate of return for the period ending December 31, 2017 was only 3.76%.
Peer comparison	Odessa Fire's assumed rate of return is higher than the national average of 7.27%. ²⁰

Metric	Payroll growth rate (3.50%)
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. Given the Fund's inactive and active liabilities are not fully funded; contributions below expected levels will have serious consequences on the Fund's long-term solvency.
Peer comparison	The Fund's payroll growth rate of 3.50% percent is average for its peer group.

Metric	Actual contributions as a percent of actuarially determined contributions (81.31%)
What it measures	Whether the current employer contributions have met a theoretical minimum threshold. ²¹
Why it is important	The employer's portion of the contribution is less than 82% of the amount needed to fund the Fund 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 third largest shortfall percentage in its peer group.

²⁰ NASRA Issue Brief: Public Pension Plan Investment Return Assumptions. February 2019.

²¹ The theoretical minimum threshold, or actuarially determined contribution (ADC), is a target or recommended contribution "to the Fund as determined by the actuary using a contribution allocation procedure," as defined in Actuarial Standards of Practice No 4. If contributions to the Fund 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).

<i>Metric</i>	Non-investment cash flow as a percent of fiduciary net position (-11.16%)
<i>What it measures</i>	Non-investment cash flow shows how much the Fund is receiving through contributions in relation to its outflows: benefit payments, withdrawals and expenses.
<i>Why it is important</i>	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 a plan, provides information about the stability of a plan's funding arrangement.
<i>Peer comparison</i>	Odessa Fire's non-investment cash flow as a percent of FNP is the second lowest in the State. If this trend continues, the Fund could face the potential risk of needing to liquidate a portion of existing assets to pay current benefits and/or expenses.

Plan Summary

The Odessa Firemen's Relief and Retirement Fund ("Odessa Fire" or "the Fund") is established in 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. Odessa Fire, as with all TLFFRA systems, is entirely locally funded.

Benefits

Retirement Eligibility	Frozen Benefit – Age 50 with 20 Years of Creditable Service Post 2016 Benefit – Age 55 with 25 Years of Creditable Service
Vesting	Frozen Benefit – 20 Years of Service Post 2016 Benefit – 20 Years of Service, with full benefits payable at 25 years of service.
Benefit Formula	Frozen Benefit – Final Average Salary x 3.6% x Years of creditable service plus a longevity benefit equal to \$107 per month for each year of creditable service in excess of 20 years (prior to 12/31/2016) Post 2016 Benefit – Final Average Salary x 2.88% x Years of creditable service after 12/31/2016, <= 25 years.
Final Average Salary (FAS)	Frozen Benefit - Highest 5 years within final 10 years of credited service prior to 12/31/2016. Post 2016 Benefit - Final 5 years
COLA	1% applied to frozen benefit only for members hired prior to 1/31/2013, payable each January 1. Ad hoc for members who do not meet requirements for automatic COLA, 1% of monthly frozen benefit provided the Fund's investment performance is not less than a rolling 5-year average of 8.50%.
Retirement Benefit Options	3 DROP Options, must have completed 20 years of Credited Service as of 12/31/2016 for eligibility: 1. Regular DROP, 3 yr. max. 4% interest (on benefit credits only and must be participating in DROP prior to 1/1/2017) and employee contributions credited. 2. Retro DROP, 3 yr. max, employee contributions credited, no interest. 3. Immediate DROP - a partial lump sum option.
Social Security	Yes

Contributions

As of the January 1, 2018 actuarial valuation, active members of Odessa Fire contribute 18% of pay while the City of Odessa contributes 20% of pay.

Membership

Total Active Members	Retired Members	Terminated	Total Members	Active-to-Annuitant Ratio
161	180	15	356	0.89

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 percent, whichever is smaller. TLFFRA also allows a city to contribute at a higher rate than employees do through a change in city ordinance.

TLFFRA allows the board of trustees 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.

Asset Allocation

Asset Allocation (as of 12/31/2017)					
Asset Class	Equities	Fixed Income	Alternatives	Real Estate	Other*
Current Allocation	69.02%	11.93%	9.40%	7.08%	2.57%
Target Allocation	65.00%	20.00%	10.00%	5.00%	0.00%

*Other includes capital assets, receivables and cash

Investment Returns

Rates of Return (as of 12/31/2017)				
Time Period	1-year	3-year	10-year	Since 1995
Gross Return	15.21%	6.70%	N/A	N/A
Net Return	14.65%	6.12%	3.76%	7.64%

Expense Breakdown

Fiscal Year ending 12/31/2017	
Fiduciary Net Position (FNP)	\$45,717,250
Investment Expenses	\$218,069
Investment Expenses % of FNP	0.48%
Administrative Expenses	\$204,605
Administrative Expenses % of FNP	0.45%

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 plan with an asset level lower than its accrued liability has insufficient funds to cover benefits. A plan 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 plan'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 Odessa Fire.

Odessa Fire's funded status has been steadily declining since 2000. Numerous factors have contributed to this deterioration, including inadequate contributions, investment returns being lower than the chosen assumption, increased benefit payments, and the inclusion of DROP accounts accruing interest.

Assets and Liabilities

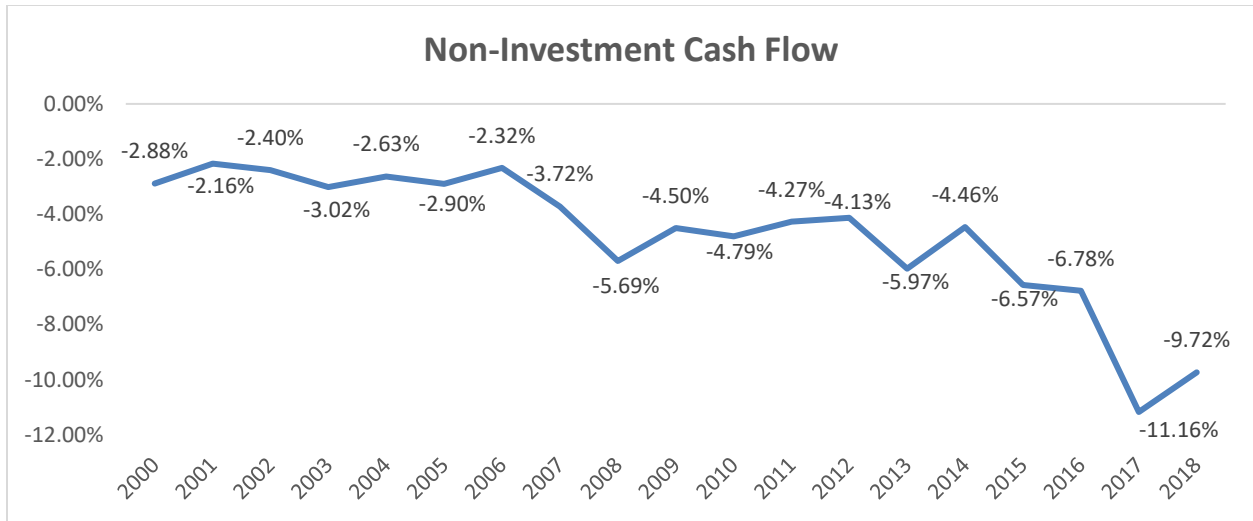
Funding Trends									
Funded Ratio, Assets, Liabilities and Year over Year Growth									
Valuation Year	2007	2009	2011	2013	2015	2016	2017	2018	2019
Funded Ratio	76.59%	58.28%	62.09%	48.82%	49.75%	43.12%	45.12%	43.08%	39.29%
Am Period (years)	38	Infinite	71	Infinite	Infinite	Infinite	46.5	47.1	77.5
UAAL (in millions)	\$14.16	\$29.13	\$28.19	\$44.83	\$49.09	\$63.35	\$58.20	\$60.60	\$67.83
AVA (in millions)	\$46.43	\$40.70	\$46.17	\$42.76	\$48.59	\$48.03	\$47.85	\$45.87	\$43.89
AVA Growth (YoY)	7.35%	-6.29%	6.51%	-3.77%	6.60%	-0.58%	-0.19%	-2.09%	-2.18%
AAL (in millions)	\$60.50	\$69.83	\$74.36	\$87.59	\$97.68	\$111.38	\$106.05	\$106.47	\$111.71
AAL Growth (YoY)	6.75%	7.43%	3.19%	8.53%	5.60%	6.78%	-2.42%	0.2%	2.43%

Odessa Fire's actuarial accrued liability (AAL) nearly doubled between 2007 and 2019. During the same time period, the actuarial value of assets (AVA) declined. The Fund was 77% funded in 2000 but fell to below 40% in 2019.

Cash Flow

Odessa Fire had the second lowest non-investment cash flow in the State of Texas in 2017. The large drop in 2017 was primarily caused by larger than normal DROP distributions. Total contributions have grown on average by 7% annually since 2009 but are being outpaced by the average growth in yearly benefit disbursements of 8%. Benefit disbursements and contribution refunds are nearly double the amount of contributions the Fund receives.

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 plan 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
Midland Firemen's Relief & Retirement Fund	\$ 89,754,731	12/31/2015	44.7	65.78%	264.77%	8.00%	4.50%	12/31/2016	89.77%	0.32%	-2.44%
Abilene Firemen's Relief & Retirement Fund	\$ 57,127,453	10/1/2017	31.9	55.69%	341.79%	8.00%	4.00%	9/30/2017	97.77%	0.34%	-4.77%
Wichita Falls Firemen's Relief & Retirement Fund	\$ 51,447,622	1/1/2018	Infinite	57.70%	316.54%	7.75%	4.00%	12/31/2017	63.05%	N/A	-5.31%
Port Arthur Firemen's Relief & Retirement Fund	\$ 49,890,603	12/31/2015	18.3	77.97%	160.73%	8.00%	4.00%	12/31/2017	100.07%	N/A	-2.01%
McAllen Firemen's Relief & Retirement Fund	\$ 49,459,309	10/1/2016	41.4	69.11%	187.25%	7.75%	4.00%	9/30/2017	89.78%	N/A	-2.19%
Odessa Firemen's Relief & Retirement Fund	\$ 45,717,250	1/1/2018	47.1	43.08%	510.60%	7.75%	3.50%	12/31/2017	81.31%	4.54%	-11.16%
Galveston Firefighter's Relief & Retirement Fund	\$ 44,651,640	12/31/2017	26.8	69.16%	248.42%	7.75%	3.00%	12/31/2017	63.67%	N/A	-4.75%
Longview Firemen's Relief & Retirement Fund	\$ 44,353,523	12/31/2017	40.2	46.05%	389.47%	8.00%	3.00%	12/31/2017	81.60%	0.00%	-5.56%
Temple Firemen's Relief & Retirement Fund	\$ 44,243,769	9/30/2016	28.4	75.12%	164.97%	7.75%	3.75%	9/30/2018	95.60%	N/A	-4.44%
Killeen Firefighters' Relief & Retirement Fund	\$ 43,947,221	9/30/2016	22.8	69.74%	114.49%	7.75%	3.25%	9/30/2017	95.94%	N/A	-0.29%
Texarkana Firemen's Relief & Retirement Fund	\$ 34,819,005	12/31/2017	15.0	86.32%	123.72%	7.75%	3.25%	12/31/2017	101.88%	N/A	-3.61%

Peer Group Sponsor Funding Comparison

Peer Group Plans	General Fund Expenditures (GFE)	EOY GF Bal	UAAL	Expected Employer Contributions	ADC	30-yr Shortfall	30-Y SF % of ADC	30-Y SF % of GFE
Midland Firemen's Relief & Retirement Fund	\$ 119,672,568	\$ 84,781,426	\$ 58,952,399	\$ 3,609,935	\$ 5,180,744	\$ 1,570,809	30.32%	1.31%
Abilene Firemen's Relief & Retirement Fund	\$ 86,557,678	\$ 28,228,036	\$ 47,286,729	\$ 2,663,240	\$ 2,761,469	\$ 98,229	3.56%	0.11%
Wichita Falls Firemen's Relief & Retirement Fund	\$ 75,116,308	\$ 18,302,309	\$ 37,628,438	\$ 1,525,133	\$ 2,321,579	\$ 796,446	34.31%	1.06%
Port Arthur Firemen's Relief & Retirement Fund	\$ 56,688,967	\$ 24,633,956	\$ 16,966,441	\$ 1,307,126	N/A	No Shortfall	N/A	N/A
McAllen Firemen's Relief & Retirement Fund	\$ 108,224,906	\$ 52,747,641	\$ 21,571,433	\$ 1,497,603	\$ 1,668,099	\$ 170,496	10.22%	0.16%
Odessa Firemen's Relief & Retirement Fund	\$ 96,559,369	\$ 25,859,030	\$ 60,600,337	\$ 2,373,699	\$ 2,987,300	\$ 613,601	20.54%	0.64%
Galveston Firefighter's Relief & Retirement Fund	\$ 46,926,941	\$ 19,821,390	\$ 19,767,545	\$ 1,352,717	N/A	No Shortfall	N/A	N/A
Longview Firemen's Relief & Retirement Fund	\$ 59,460,750	\$ 19,184,004	\$ 50,377,694	\$ 2,360,600	\$ 2,815,904	\$ 455,304	16.17%	0.77%
Temple Firemen's Relief & Retirement Fund	\$ 71,640,414	\$ 27,779,728	\$ 16,392,673	\$ 1,380,104	N/A	No Shortfall	N/A	N/A
Killeen Firefighters' Relief & Retirement Fund	\$ 76,891,477	\$ 22,315,018	\$ 18,990,872	\$ 1,878,929	\$ 2,020,571	\$ 141,642	7.01%	0.18%
Texarkana Firemen's Relief & Retirement Fund	\$ 32,041,049	\$ 14,114,855	\$ 5,584,452	\$ 880,171	N/A	No Shortfall	N/A	N/A

Peer Group Expense Comparison

Peer Group Plans	10 yr. return (Net) ²²	Active/ Annuitants	Average Benefit	NPL	Admin Expenses	Admin Exp as % of Assets	Investment Expenses	Inv Exp as % of Assets	Other Expenses	Total Expenses	Exp as % of Assets
Midland Firemen's Relief & Retirement Fund	3.97%	1.26	\$ 49,417	\$ 58,207,074	\$ 145,324	0.16%	\$ 735,812	0.82%	\$134,245	\$ 1,015,381	1.13%
Abilene Firemen's Relief & Retirement Fund	4.40%	0.94	\$ 41,351	\$ 52,087,861	\$ 38,825	0.07%	\$ 224,051	0.39%	-	\$ 262,876	0.46%
Wichita Falls Firemen's Relief & Retirement Fund	5.81%	1.15	\$ 32,947	\$ 70,486,203	\$ 157,958	0.31%	\$ 198,290	0.39%	-	\$ 356,248	0.69%
Port Arthur Firemen's Relief & Retirement Fund	5.98%	1.42	\$ 46,802	\$ 12,214,539	\$ 59,039	0.12%	\$ 47,624	0.10%	-	\$ 106,663	0.21%
McAllen Firemen's Relief & Retirement Fund	4.17%	1.65	\$ 33,865	\$ 25,632,406	\$ 33,822	0.07%	\$ 295,831	0.60%	-	\$ 329,653	0.67%
Odessa Firemen's Relief & Retirement Fund	3.76%	0.91	\$ 52,055	\$ 92,884,709	\$ 204,605	0.45%	\$ 218,069	0.48%	-	\$ 422,674	0.92%
Galveston Firefighter's Relief & Retirement Fund	5.30%	1.59	\$ 12,259	\$ 12,508,868	\$ 133,006	0.30%	\$ 102,848	0.23%	-	\$ 235,854	0.53%
Longview Firemen's Relief & Retirement Fund	3.17%	1.19	\$ 42,251	\$46,871,450	\$ 97,453	0.22%	\$ 176,452	0.40%	-	\$ 273,905	0.62%
Temple Firemen's Relief & Retirement Fund	4.17%	1.32	\$ 48,054	\$ 16,382,826	\$ 47,886	0.11%	\$ 105,167	0.24%	-	\$ 153,053	0.35%
Killeen Firefighters' Relief & Retirement Fund	4.30%	3.13	\$ 35,937	\$ 16,319,951	\$ 96,351	0.22%	\$ 54,185	0.12%	-	\$ 150,536	0.34%
Texarkana Firemen's Relief & Retirement Fund	5.73%	1.12	\$ 31,216	\$ 6,016,096	\$ 60,495	0.17%	\$ 232,794	0.67%	-	\$ 293,289	0.84%

²² All 10-year returns are as of the respective plan's 2017 fiscal year.

Peer Group Value of Benefits Comparison

Peer Group Plans	Retirement Age	YCS	(a) Multiplier as % of FAS	Normal Form of Payment	COLA	Social Security?	(b) Annuity Factor ²³	(a)*(b) PVFB as % of FAS
Abilene Firemen's Relief & Retirement Fund	50	20	60.00%	Life Annuity with 2/3 continued to surviving spouse (J&2/3)	None	No	24.9775	1498.65%
Big Spring Firemen's Relief & Retirement Fund	50	20	51.00%	Life Annuity with 2/3 continued to surviving spouse (J&2/3)	None	No	24.9775	1273.85%
Galveston Firefighter's Relief & Retirement Fund	50	20	60.00%	Life Annuity with 2/3 continued to surviving spouse (J&2/3)	None	No	24.9775	1498.65%
Longview Firemen's Relief & Retirement Fund	55	20	60.00%	Life Annuity	None	No	20.1329	1207.97%
Lubbock Fire Pension Fund	50	20	68.92%	Life Annuity with 2/3 continued to surviving spouse (J&2/3)	None	No	24.9775	1721.45%
McAllen Firemen's Relief & Retirement Fund	50	20	58.00%	Life Annuity with 2/3 continued to surviving spouse (J&2/3)	None	Yes	24.9775	1448.70%
Midland Firemen's Relief & Retirement Fund	50	20	75.00%	Life Annuity with 75% continued to surviving spouse (J&75%)	None	No	25.3996	1904.97%
Odessa Firemen's Relief & Retirement Fund (Pre-FSRP)	50	20	72.00%	Life Annuity with 2/3 continued to surviving spouse (J&2/3)	None	Yes	24.9775	1798.38%
Odessa Firemen's Relief & Retirement Fund (Post-FSRP)	55	25	72.00%	Life Annuity	None	Yes	20.1329	1449.57%
Port Arthur Firemen's Relief & Retirement Fund	50	20	54.00%	Life Annuity with 2/3 continued to surviving spouse (J&2/3)	None	No	24.9775	1348.79%
San Angelo Firemen's Relief & Retirement Fund	50	20	66.00%	Life Annuity with 72% continued to surviving spouse (J&72%)	1.2% after age 65	No	28.7490	1897.43%
Temple Firemen's Relief & Retirement Fund	50	20	65.75%	Life Annuity with 2/3 continued to surviving spouse (J&2/3)	None	No	24.9775	1642.27%
Texarkana Firemen's Relief & Retirement Fund	50	20	61.80%	Life Annuity with 2/3 continued to surviving spouse (J&2/3)	None	No	24.9775	1543.61%
Wichita Falls Firemen's Relief & Retirement Fund	55	20	50.00%	Life Annuity with 2/3 continued to surviving spouse (J&2/3)	None	Yes	24.9775	1248.88%

²³ Calculated using 2.5% interest rate, male members with spouses 2 years younger, and RP 2006 Healthy Annuitant mortality with fully generational projection using scale MP2018.

Comments from Odessa Firemen's Relief and Retirement Fund



VIA EMAIL

September 6, 2019

Texas Pension Review Board
P.O. Box 13498
Austin, TX 78711-3498

Re: Odessa Firefighters' Relief and Retirement Fund
Intensive Actuarial Review Response

To Whom It May Concern:

Texas Government Code Section 801.202(2) requires the Pension Review Board (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 Odessa Firefighter's Relief & Retirement Fund was made aware of our selection on May 16, 2019, at the request of the City of Odessa.

Based on these requirements, we are writing to respond to the Pension Review Board's (PRB) draft of the Intensive Actuarial Review that was done on behalf of the Odessa Firefighters' Relief and Retirement Fund (Fund). The contents of the remainder of this letter and its attachments will illustrate to the PRB the steps that the Fund has made in the previous months, and years, to improve actuarial soundness and comment on or correct any data needing review.

Upon initial review of the draft it appears we did not receive the full report with pages 20 and 21 missing, or possibly it was just mis-numbered.

Plan Summary

On page 16 of the draft report, Plan Summary – there are two discrepancies worth noting. First, under vesting: post 2016 benefit vesting is twenty (20) years of service, with full benefits payable at twenty-five (25) years of service. Secondly, is the Social Security notation: the No should be Yes. All current members of the Odessa Firefighter's Relief & Retirement Fund pay into Social Security. It should be noted that the City of Odessa recently approved the construction of a new fire station that will produce new active members creating payroll and contribution growth which will directly assist the funding of the plan. The plan's actuary has been made aware of this information and has discussed the impact of it in their portion of the response.

Attachments

Attached to this letter is response and correspondence from the Fund's investment consultant, Jeff Swanson, and actuary, Brad Heinrichs, in relation to the Intensive Actuarial Review draft.

It is clear in both Foster & Foster and Southeastern's response that the Fund has taken extraordinary measures over the past several years to improve and restore actuarial soundness. Much consideration has been given to all aspects of the Fund by the Board of Trustees, Actuary, and Investment Consultant. The Fund is in current, and continuous, conversation with the City of Odessa to improve the funding status.

If you have any questions, please do not hesitate to contact us.

Respectfully submitted,



Travis Jones - Chairman

September 5, 2019

Board of Trustees
Odessa Firefighters'
Relief and Retirement Fund
1921 E. 37th St, Suite C
Odessa, TX 79762

Re: Pension Review Board (PRB) Intensive Actuarial Review

Dear Board:

Foster & Foster has reviewed the Intensive Actuarial Review of your fund and have several comments that we would like for you to pass along to the PRB. First, I think the review was well-done given the amount of information that the PRB had at its disposal, and in general do not dispute the math used in the additional calculations performed by the PRB. We believe, however, that some additional commentary should be included to help properly frame the entire picture as to what has occurred or will occur in the future with this Fund. For purposes of organizing my thoughts into a beneficial format, we will separate our comments into the following three (3) categories: Fund Status as of December 2015, Board Actions Since 2015, and Future Projections/Solutions.

Fund Status as of December 2015

Foster & Foster was engaged to become the Fund's actuary in December of 2015 and was asked to quickly complete the January 1, 2015 Actuarial Report. The most recent actuarial valuation had been completed as of January 1, 2013. A paraphrased summary of results and the assumptions that we inherited are as follows:

Assumed Rate of Return:	8.25% (down from 8.50% in the 2011 valuation)
Payroll Growth Rate:	4.50%
Salary Increases:	4.50%

Amortization Period:	Infinite
Funded Ratio:	49.7%
% of Accrued PVB to Total:	77.4%
Total Normal Cost Rate:	18.7%
City Contribution Rate:	16.0%
Member Contribution Rate:	15.0%

Number of Active Firefighters:	163
Number of Actives 2003:	164
Number of Money Managers:	1
Number of Inv. Consultants:	0

Our initial comments to the Board were as follows:

- 1) We are concerned about the assumptions being used to develop the funded status, adequacy of the contributions, and amortization period. As you can see from the statistics on the prior page, three of the major assumptions were rather aggressive relative to those used by our other 350 public plans, or by most other public funds that exist across the country. In our initial review, it did not appear that the plan had been coming close to meeting those assumptions for as far back as we could see. We recommended (and the Board approved) an Experience Study.
- 2) Even if those assumptions were reasonable, the funded ratio was extremely low and the amortization period was infinite, which clearly means that an infusion of cash or a reduction of benefits was desperately needed.
- 3) We were troubled that 77.4% of the total present value of benefits had already been accrued. This indicated to us only 22.6% of the total PVB is "in play," or, said differently, less than one-fourth (1/4) of the total liability could be lowered by a reduction in benefits. Additionally, the employees are already paying for a majority (15% of the 18.7%) of their annual accrual of benefits, based on the inherited assumptions.

Board Actions Since 2015

The Board approved and we delivered an Experience Study on July 19, 2016. As we feared, the results of the Study showed that the picture was quite a bit worse than the Board had previously been led to believe. Using a 7.75% Assumed Rate of Return (which we continue to feel remains on the aggressive end of the spectrum) and a 3.5% payroll growth assumption (also still somewhat aggressive), along with changes to salary scales, retirement rates, withdrawal rates, and disability rates, the Fund was 14.5% of pay away on an annual basis from achieving a 40-year amortization. The Fund was 25.4% of annual payroll away from achieving a 20-year amortization.

Clearly, adjustments needed to be made, and the Board immediately made the following actions:

- 1) Began by approving all of the assumption changes outlined in our Experience Study.
- 2) Voted to begin performing annual actuarial valuations instead of bi-annual, to better monitor their funded status and amortization period.
- 3) Engaged our firm to perform an actuarial analysis of multiple benefit reduction/contribution increase scenarios.
- 4) Conducted meetings with All of the members (with the actuary and the City Manager present) to provide information about the status of the Fund and to inform them that benefit reductions or contribution increases were imminent.

The results of the 1/1/2016 Actuarial Valuation using the new assumptions showed that the 40-year funding cost was 47.0%, which meant that the Fund was 16.0% of annual payroll away from a 40-year amortization, and not the 14.5% as illustrated in the Experience Study based upon the 1/1/2015 valuation.

By the end of 2016, the Board/City/Members agreed to substantial benefit reductions as well as to increase contributions. At that time, under our guidance, the Board filed a Funding Soundness Restoration Plan with the PRB. The 1/1/2017 Actuarial Valuation showed the impact of the benefit changes and contribution rate increases. The stats were as follows:

Assumed Rate of Return:	7.75% (down from 8.25% in the 2015 valuation)
Payroll Growth Rate:	3.50% (down from 4.5% in the 2015 valuation)
Salary Increases:	6.40% (up from 4.5% in the 2015 valuation)

Amortization Period:	46.5 (previously infinite)
Funded Ratio:	45.1% (up from 41.8%)
% of Accrued PVB to Total:	84.6% (up from 77.9%)
Total Normal Cost Rate:	15.1% (down from 21.6%)
City Contribution Rate:	20.0% (up from 16.0%)
Member Contribution Rate:	18.0% (up from 15.0%)

Number of Active Firefighters:	161
Number of Actives 2003:	164
Number of Money Managers:	1
Number of Inv. Consultants:	0

As you can see above, these changes were substantial. Many representatives from other TLFFRA funds viewed these changes to be drastic. Both the Members and the City shared the pain caused by these changes.

The 2018 Actuarial Valuation prompted the Board to make further changes. They did not sit idle, since their objective is to obtain an acceptable amortization period and for this Fund to be sustainable over the long term. Upon receiving the 2018 Valuation, the Board decided to make some changes to the way it handles its investments. They hired Southeastern Advisors, an investment consulting firm, to provide them with an analysis and opinion as to how they were currently invested relative to their goal of achieving a 7.75% Assumed Rate of Return. While we will leave the technical details to Mr. Swanson, the Fund's Consultant, the Board made several changes to its money management process. At a minimum, they hired new managers and a new custodian. We are told that their ability to achieve a 7.75% return assumption is much greater now, and at less risk, than what was previously possible.

Unfortunately, the market took a major downturn at the end of 2018, causing nearly all pension funds across the country to sustain major investment losses. These losses were manifested in Odessa's 1/1/2019 Actuarial Valuation, shown in the statistics below:

Assumed Rate of Return:	7.75%
Payroll Growth Rate:	3.50%
Salary Increases:	6.40%

Amortization Period:	77.5
Funded Ratio:	39.3%
% of Accrued PVB to Total:	83.6%
Total Normal Cost Rate:	14.9%
City Contribution Rate:	20.0%
Member Contribution Rate:	18.0%

Number of Active Firefighters:	160
Number of Actives 2003:	164
Number of Money Managers:	10+
Number of Inv. Consultants:	1

The 40-year funding cost for this Fund is currently 42.75%, which is 4.75% more per year than what is currently being contributed.

Future Projections

Since the 1/1/2019 Actuarial Valuation, the stock market has erased the losses it sustained at the end of 2018, and the Fund is on more stable ground. If we were to update the previous valuation with today's assets, we believe that you would see numbers like those inherent in the 2018 valuation, with an amortization period in the mid 40's.

It is our opinion that future benefit cuts are not a good idea, in spite of the Fund's current funded status, for the following reasons:

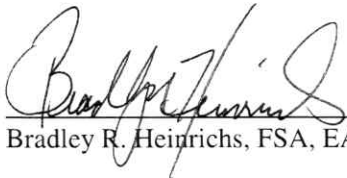
- 1) With 84% of the total PVB already accrued, benefit reductions for current members would make very little difference in the overall result. In other words, there isn't much meat left on the bone.
- 2) The Members contribute 18% of pay, and their Normal Cost is less than 15% of pay. This means that the Members are paying 3.1% more for their benefit than what they are earning.
- 3) As illustrated nicely in the Intensive Review, the pension benefits provided to Odessa Firefighters are now worse than those Fire Departments that Odessa competes with for talent. Specifically, neighboring cities like Midland and San Angelo now have larger benefits than Odessa. Furthermore, what is not inherent in the Peer Value Benefits Comparison is that Odessa Firefighters now pay much more for their lower benefits than their peers. This issue is currently causing retention problems within the Odessa Fire department.


- 4) **Help is on the way!** It is our understanding that the City has agreed to add another fire station, and the department size is expected to grow from the 160 actives shown in the 2019 valuation to approximately 210 over the next three years. These future Members will bring along at least an additional few million dollars in extra annual payroll, which would add an approximate \$700,000 of additional annual contributions to help pay down the Unfunded Liability. This \$700,000 would represent over 5% of current payroll, which would bring the Fund in line with a 40-year amortization.

The Board has requested that Foster & Foster perform a special actuarial analysis to estimate the impact of the changes to the size of the Fire department that will be occurring over the next few years in conjunction with the strong investment performance thus far in 2019. The results of this analysis will be completed and ready for discussion with a Foster & Foster representative in attendance at the scheduled September 19, 2019 PRB meeting. We feel that the result of this analysis will illustrate that no further action is currently needed in the form of a revised Funding Soundess Restoration Plan.

In conclusion, we feel that the Board has acted swiftly to make positive changes to their Plan. We intend to continue to work with the Board and its Investment Consultant to monitor experience as it pertains to the actuarial assumptions and make recommendations for change when necessary. The Board also intends to work closely with the City of Odessa to make sure that the Plan is adequately funded and is sustainable and capable of paying benefits for all current and future retirees.

Respectfully submitted,


Bradley R. Heinrichs, FSA, EA, MAAA


Drew D. Ballard, EA, MAAA

SOUTHEASTERN ADVISORY SERVICES, INC.
Registered Investment Advisor



September 5, 2019

Board of Trustees
Odessa Firefighters'
Relief and Retirement Fund
1921 E. 37th Street, Suite C
Odessa, TX 79762

Re: Pension Review Board (PRB) Intensive Actuarial Review

Dear Board:

Southeastern Advisory Services has reviewed the Intensive Actuarial Review and would like to address each of the items that are raised regarding the investment program. I would like to start by commending the Board for their commitment and diligence and in making significant progress with the assets. I believe the PRB response is reasonable and I understand the logic behind their conclusions. The comments below are offered to assist to assist you in understanding the work and recommendations we have provided thus far.

Background

The Board hired their former manager in 2013 to manage all assets of the Fund. Southeastern has had a working relationship with this manager for many years. This manager was well known for its Large Cap Domestic Value Equity product. However, we were not aware of any other institutional clients using this firm as the sole manager where they also provide total portfolio management and asset allocation. Our firm had also evaluated the firm's other product offerings periodically through the years. Based on our research, we have never approved or recommended any of the other specialty products from this manager.

Upon review of the legacy Investment Policy Statement (IPS), risk allocations, and the individual manager's products, we developed the following general concerns:

- Concentration of assets with a single firm using internal products.
- The IPS document was authored by the asset manager.
- Overly aggressive IPS allocations given the Fund's cash outflows.
- Target allocation to public equity significantly higher than any of our public fund clients.
- The allocation to international equity of 24% was the highest that we have seen.
- The allocation to emerging market equity of 10% is higher than any public fund that we advise.
- Specialty strategies (MLP/REIT/Converts) generally had not added value to the Fund.
- High management fees for institutional balanced asset management.

Following our analysis of the investment portfolios for the fiscal year ending 12/31/18, we became uncomfortable with the Fund's asset performance and the level of risk taken. We noted the following specific concerns:

- The FYE 12/31/18 loss of -6.5% ranked #88 in the Wilshire Public Fund Universe.
- During the 4Q18 market correction, the loss of -10% ranked #90 in the Wilshire Public Fund Universe.
- For the three years ending 12/31/18, the standard deviation ranked #94 in the Wilshire Public Fund Universe.
- While we found that asset manager's flagship product had merit, the other internal specialty products were generally not compelling.

After sharing our findings with the Board, it was determined that first action should be to identify new assets manager(s). In order to do so, it would be necessary to revise the IPS and identify an appropriate target index. In doing so we provided target portfolio analysis including asset allocation modeling. We also provided a comparison of capital market assumptions to the current assumed rate of return. These comparisons were used to identify a base-line allocation summarized as follows:

- 65% weighting to public equity- the most common equity target amongst our public fund clients.
- 25% weighting to fixed income- consistent with the median in the Wilshire Public Fund Universe.
- 10% weighting to international equity- consistent with the median in the Wilshire Public Fund Universe.
- Deletion of the specialty segment and the addition of private real estate.

The Board then spent the first half of 2019, revising the investment policy, identifying and hiring an independent custodian and selecting target managers/funds. The revised IPS was adopted on May 30, 2019.

PRB Specific Concerns

The Board has relied on Southeastern to provide the base-line allocation. We agree with the PRB that the Board should have an asset allocation plan and engage in a strategic asset allocation review. We also agree that this follows industry best practices. In our judgement however, we determined that moving the assets to new management with responsible risk allocations was the priority. The Board is now in an excellent position to conduct an asset allocation study that can often be a multi-quarter process. Southeastern acknowledges the Fund's negative cash flow and funded status and will provide a comprehensive asset allocation study that considers these factors in the coming quarters.

Southeastern does not rely on asset-only models when developing strategic asset allocation reviews. Our intention in setting the base-line allocation was not an effort to achieve the predetermined overall target returns of 7.75%. The base-line allocation was determined to be one that, in our judgement, was a responsible starting point from which to allocate the assets and to later conduct a comprehensive review. As an aside, we consult with every client each year on the reasonableness of the assumed rate of return and have been advocates for reducing these assumptions for many years.

Regarding the IPS, we believe risk is best measured by standard deviation. The new IPS does explain that the volatility of the total portfolio is expected to be similar to the target index. Our reporting measures this and scores each client's risk profile to their peers in the Wilshire Public Fund Universe. I believe that the asset allocation study will provide the answer to what constitutes a reasonable level of risk given the Fund's near-term liquidity needs. Once this study is completed, we are, of course, in favor of adding this into the IPS document.

In summary, we have been on retainer with the Odessa Fire for the past three quarters. In this short time, the Board has taken decisive action to address the risks and hopefully to improve future investment performance. I understand the Fund's unique challenges, the PRB's concerns and acknowledge that we have more work to do. Southeastern is committed to assisting with the Board in every way possible to ensure a responsible and profitable investment program.

Sincerely,



Jeffrey Swanson, Senior Consultant



John Small, President

TAB 2B

DRAFT

Intensive Actuarial Review:

Paris Firefighters' Relief and Retirement Fund

September 2019



TEXAS PENSION
REVIEW BOARD

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Executive Summary

Introduction

This intensive actuarial review of Paris Firefighters' Relief and Retirement Fund ("Paris Fire" or "the Fund") is intended to assist the Fund's board of trustees and the City of Paris ("the City") in assessing the Fund's ability to meet its long-term pension obligation. The plan members and the City increased their contribution rates in 2018 from 15% to 16% and 12% to 14%, respectively. Despite these increases, the unfunded liability will continue to grow, and its low funded status will continue through the next decade.

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

Paris Fire's actuarial value of assets (AVA) was lower in its latest valuation (12/31/2016) than it was in 2001, while the actuarial accrued liability has increased by more than 78% over the same time period. This has resulted in a **dramatic decrease in the funded ratio from 67.6% to 35.6%**. This underfunding can be primarily attributed to the fact that existing benefits are not funded and the contributions going into the Fund are not enough to pay current distributions, much less pre-fund future benefits or pay the interest on the existing unfunded benefit liability debt.

In fact, given the retiree (inactive member) portion of the accrued liability is less than 50% funded, in addition to using all contributions and investment income, the fund sold nearly \$1.5 million in assets between 2001 and 2016 simply to pay benefits. **At 35.6% funded, Paris Fire is essentially a pay-as-you-go plan, as its assets are leaking out of the plan faster than its contributions and investment income can replace.** Spending down assets, rather than accumulating them, means that the Fund does not reap the advantage of compound interest available to traditional, pre-funded pension plans.

The Fund's board of trustees has been slow to react to its perilous situation, appearing to have focused primarily on maintaining a low amortization period rather than heeding other warning signs such as its declining funded ratio, low cash flow, and consistently underperforming its assumed investment return during a decade-long bull market. The board has not completed legislatively-mandated minimum training requirements designed to ensure fiduciaries of public pension funds are prepared to fulfill their duties.

Conclusion

Paris Fire should consider increasing contributions to address immediate funding demands in the short-term; developing a strong funding policy to alleviate the need for stopgap measures in the future; working with its actuaries and other consultants to ensure its investment assumption is not too aggressive; as well as reviewing its investment processes to generate needed improvement in asset returns.

In addition, there is also a need for a more hands-on approach to the plan's governance by its board. Completing minimum training requirements is just an initial step toward developing proactive leadership, which should also include seeking guidance from peer systems, additional educational opportunities, and asking questions of the Fund's professional advisors and reviewing their performance regularly.

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. After evaluating these metrics, the PRB selected Paris Firefighters' Relief and Retirement Fund ("Paris Fire" or "the Fund") for review. The following data points were calculated based on the Fund's December 31, 2016 actuarial valuation and December 31, 2017 annual financial report, the information available to the PRB at the time the Fund was selected for review in May 2019:

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
41.9	35.64%	373.34%	7.50%	3.50%	80.16	N/A	-12.44%

Plan Profile

Actuarial Accrued Liability: \$14,957,795

Market Value of Assets: \$4,764,272

Normal Cost: 9.54% of payroll

Contributions: 16.00% employee
14.00% employer

Membership: 49 actives
41 annuitants

Social Security Participation: No

- Its **funded ratio** of 35.64% was the lowest in the state.
- The Fund's **non-investment cash flow as a percent of FNP** of -12.44% was also the lowest in the state.
- Its **UAAL as a percent of payroll** of 373.34% was the ninth highest in the state and the third highest among its peers.²
- **Actual contribution as a percent of its Actuarially Determined Contribution (ADC)** of 80.16% was one of the ten lowest in the state and the second lowest among peers.

Since selecting Paris Fire, the PRB received the Fund's 2018 annual financial report in June 2019. The data used in this review is from the December 31, 2016 actuarial valuation and December 31, 2018 annual financial report.

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).

² See [Appendix](#) for more detail on Paris Fire's peer group.

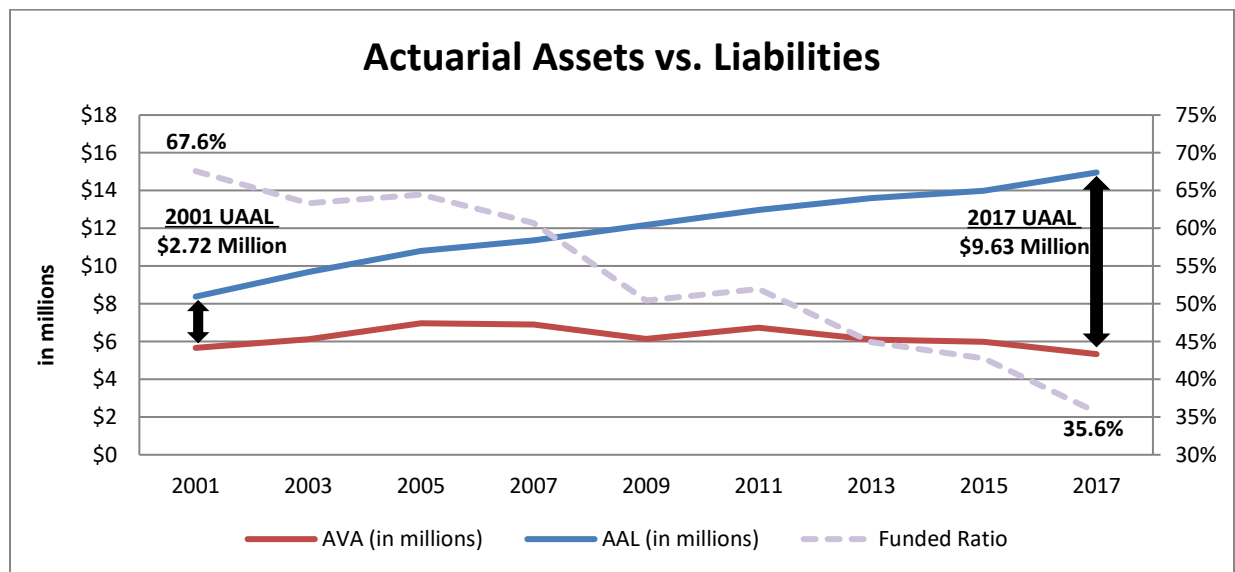
Risk Analysis

Paris Fire is one of the few Texas public retirement systems with a flat benefit design (which equates to \$94 per month per year of service credit), which is typically less risky than the more common benefit structures based on final average salary (FAS) calculations. In a flat benefit structure, distributions are driven by growth in the retiree population and, unlike FAS-based benefit designs, are not impacted by payroll growth.

Despite its lower-risk benefit design, Paris Fire is experiencing significant financial stress. High distributions compared to contributions and investment experience consistently not meeting assumptions have caused a precipitous decline in funded ratio, and if not addressed, funding levels could continue to worsen in the coming years. Since 2007, Paris Fire has changed investment managers, and both the City and members have made contribution increases. However, in the short term, the Fund will require additional contributions to put it back on the path toward financial soundness. There is also a need for a more proactive approach to the plan's governance by its board to help sufficiently mitigate these risks.

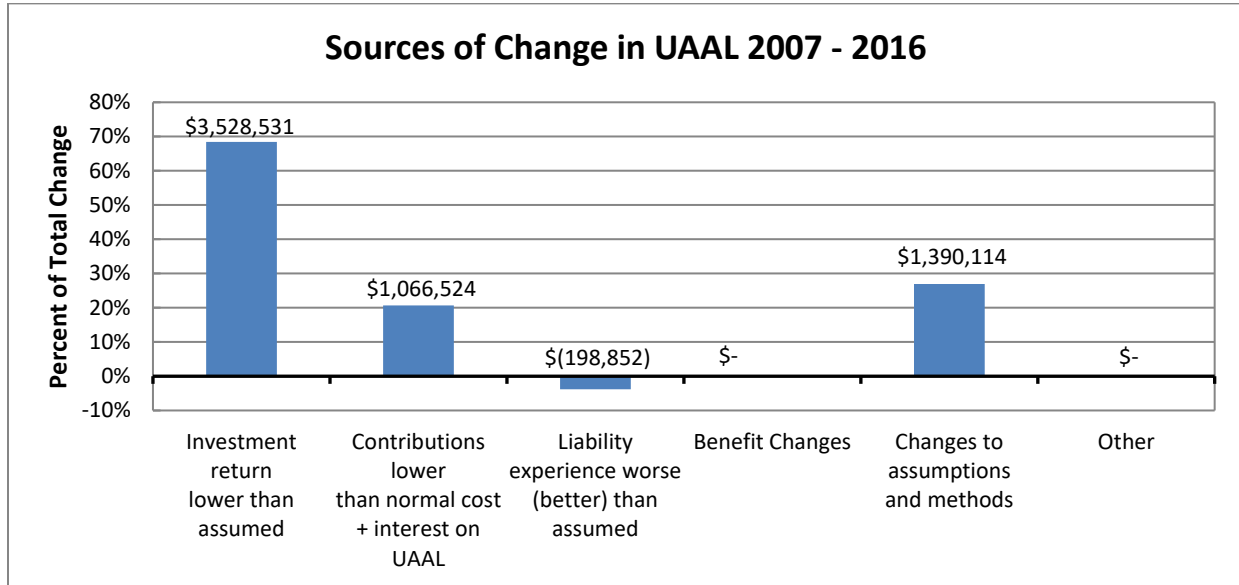
Funding Risk

Paris Fire's unfunded actuarial accrued liability (UAAL) has more than tripled since 2001, from \$2.7 million to \$9.6 million. As the Fund's actuarial accrued liability (AAL) has steadily climbed, its assets have stagnated, so much so that the projected 1/1/2019 AVA is more than 30% lower than its peak as of 1/1/2005. Paris Fire's funded ratio decreased from **60.7%** in 2007 to **35.6%** as of its December 31, 2016 actuarial valuation. This decrease in funding over the course of a decade is staggering, especially when considering that Standard & Poor's credit rating methodology considers a three-year average pension funded ratio of 60% or below as "weak."³



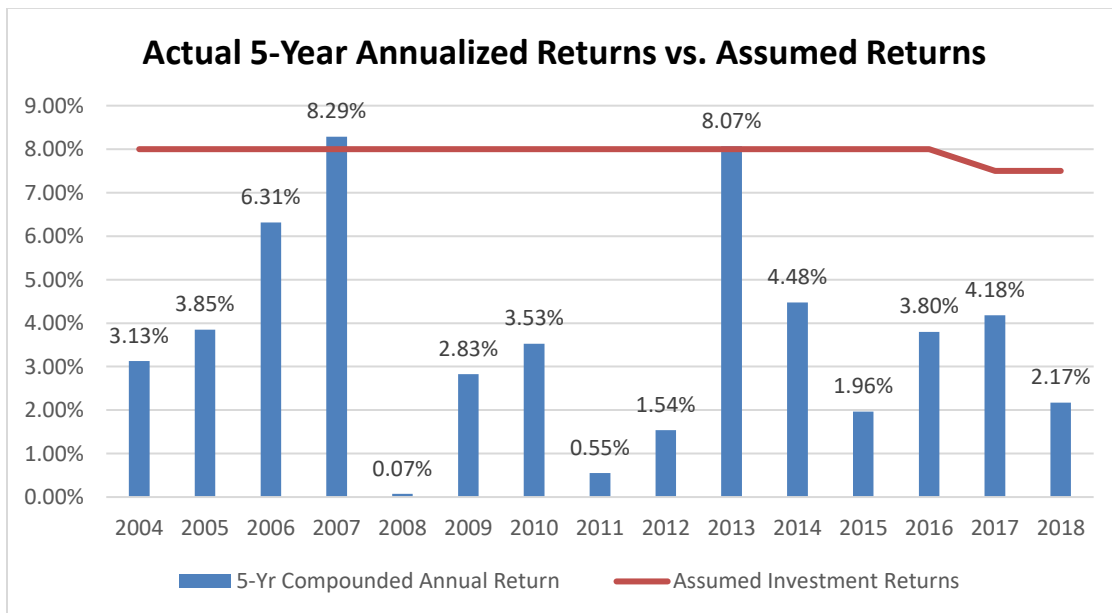
³ [U.S. State Ratings Methodology, Standard & Poor's, October 17, 2016.](#)

Based on analysis of the causes of change in the UAAL, the Fund's inability to meet or exceed its assumed investment return was by far the greatest cause of the UAAL increase, as shown in the following graph. Insufficient contributions and adjustments to actuarial assumptions have also negatively impacted the UAAL, but insufficient investment returns have outpaced all other factors, combined.



Investment Return Experience vs. Assumptions

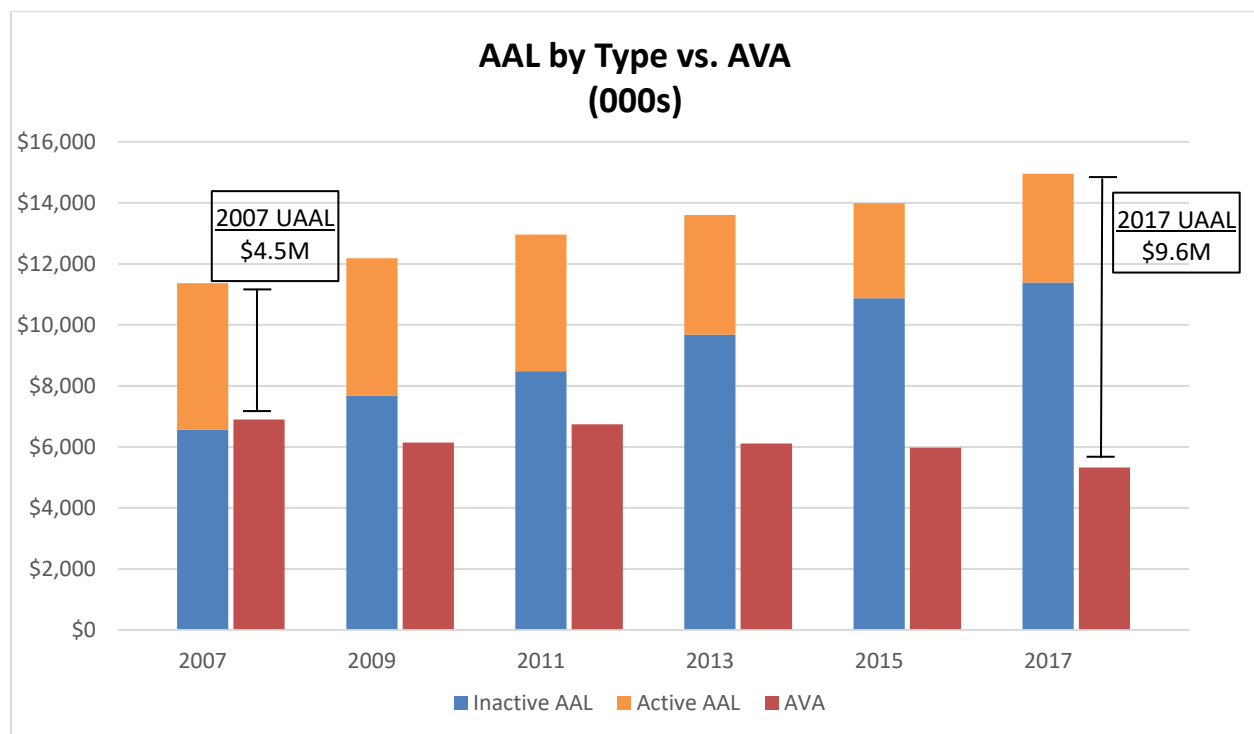
Over the time period for which data is available, Paris Fire's 5-year annualized returns fell well short of the assumed rate of return in all but two periods. Since 2008, the 5-year return has only surpassed the assumed rate once, with all other years less than 4.5%. The Fund's 10-year annualized returns are even worse, with not a single period ever reaching, much less surpassing, the assumed return.



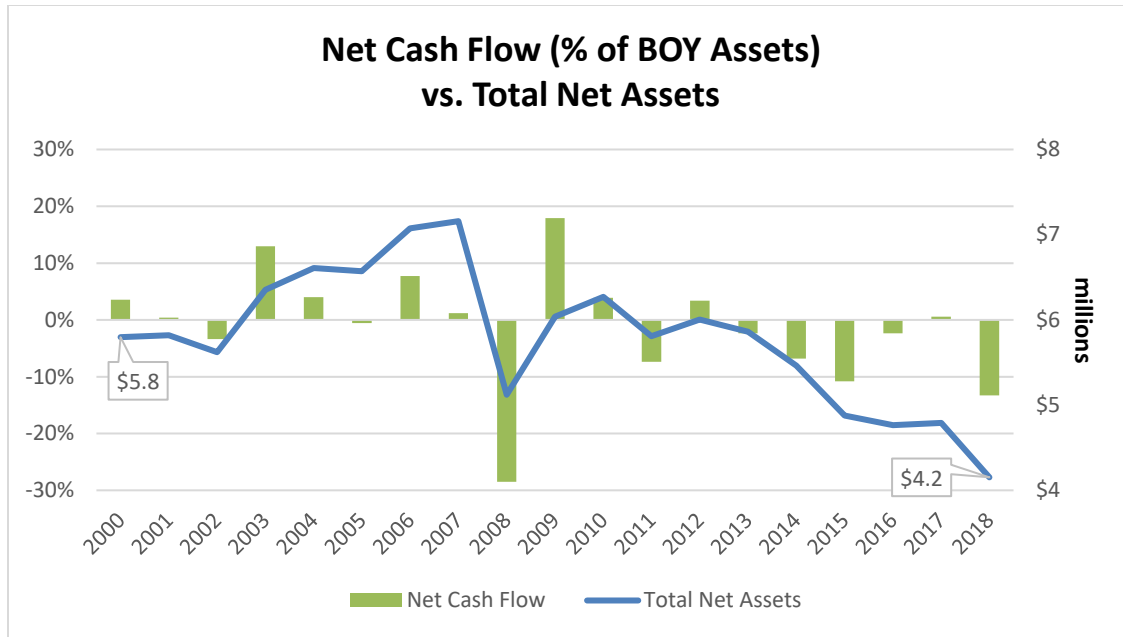
While not achieving the assumed rate of return is the largest factor causing the increase in unfunded liability, the graph shows that multi-year returns are still positive. This tells us that investment returns alone are not the cause of the rapid asset depletion mentioned above.

Cash Flow

The purpose of pre-funding a defined benefit plan is to build an asset balance sufficient to support benefit payments, which is why, negative non-investment cash flow is expected in a mature plan. In a well-funded plan, the combination of new contributions and investment growth are sufficient to pay benefits, fund new benefit accruals and pay down any outstanding unfunded actuarial accrued liability (UAAL). However, in the case of Paris Fire, where the retiree (inactive) portion of the AAL is less than 50 percent funded, **contributions and investment income are only being used to pay benefits.**

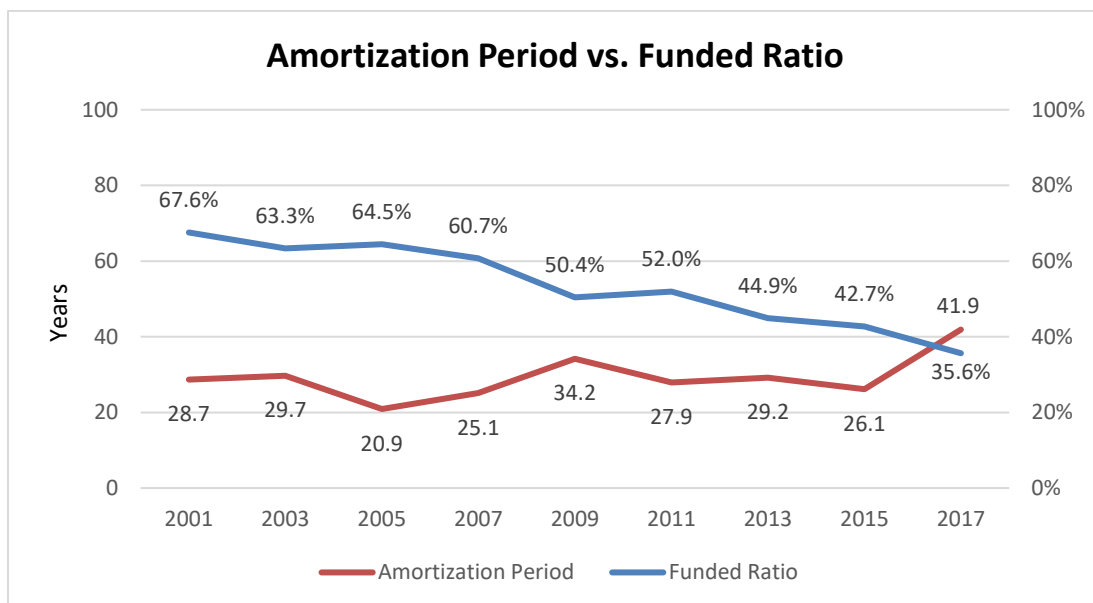


Not only is Paris Fire experiencing negative non-investment cash flow, its total net cash flow (contributions and investment income minus benefit payments, withdrawals and expenses) was negative, averaging -1.05% since 2001. **This means that in addition to using all contributions and investment income, the fund sold nearly \$1.5 million in assets simply to pay benefits.**



Measuring Plan Health

Using amortization period as the sole measurement of fund health for the past decade would give a false impression of Paris Fire's financial well-being because its amortization period was less than 30 years for most of its recent history. However, a review of the long-term trend of Paris Fire's assets or funded ratio would have indicated the Fund was facing difficulties. **This is one of the reasons the PRB recommends a comprehensive review of multiple factors relating to a pension plan's long-term sustainability**, including funded ratio and cash flow, when assessing the condition of a pension plan.



Conclusions/Recommendations

Pre-funding a defined benefit plan, i.e. setting aside assets now for benefits that will be paid in the future, is necessary for a plan's ability to sustain itself over the long-term. Consistently underfunding a plan places the benefits of both retirees and active members at significant risk and/or 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.

Short- and Long-term Funding Options

The Fund currently cannot earn a high enough investment return on a regular basis to cover its benefit payments, normal cost and interest on the unfunded liability. To shore up funding, Paris Fire and the City should work together to determine the best balance between increased contributions and benefit reductions, even though Paris Fire already has a flat dollar benefit design. Given Paris Fire's current funding level, an increase in contributions over the near term is likely needed to stabilize the Fund.

For the long term, the Fund and the City are encouraged to develop a strong funding policy. The goals of a funding policy are threefold: establish clear and concrete funding objectives, set boundaries on what is allowable for actuarial calculations, and develop plans for both positive and negative experiences. The funding policy should strive to balance the three primary pension funding goals so that member benefits are secure; employers are afforded some level of contribution predictability from year to year; and liabilities are managed so that future taxpayers are not burdened with costs associated with a previous generation's service. For more detail, please see the PRB's *January 2019 Interim Study: Funding Policies for Fixed-Rate Pension Plans*.⁴ The Fund should use the new funding policy requirement in Senate Bill 2224 (86R) as an opportunity to work with the City of Paris to address both the short- and long-term challenges faced by the Fund before funding levels deteriorate further.⁵

Governance Risk

Monitoring Investment Performance and Expenses

According to the investment policy statement (IPS), the Fund's board of trustees should "systematically and regularly monitor the Plan's investments to assure the objectives are being met and policy guidelines are being followed." The IPS requires the investment manager to provide performance reports to the board and make periodic presentations. However, Paris Fire was unable to explain how this information is used to monitor the investment manager's performance. The Fund's consultants responded to PRB inquiries regarding the board's performance monitoring. While the Fund appears to be engaged in some level of monitoring, it was not clear how closely the board is following its responsibilities outlined in the IPS to evaluate investment performance through a systematic, regular process.

Further, the quarterly investment performance reports provided by the Fund's investment manager show performance **gross** of investment fees while the equity benchmark is net of fees. Therefore, while the

⁴ *Interim Study: Funding Policies for Fixed-Rate Pension Plans*, Texas Pension Review Board, January 2019, <https://www.prb.texas.gov/txpen/wp-content/uploads/2019/02/Funding-Policy-Paper.pdf>

⁵ SB 2224, 86th Texas Legislature, Regular Session, 2019, <https://capitol.texas.gov/tlodocs/86R/billtext/html/SB02224F.htm>

performance reports appear to show investment performance beating the established benchmark, once investment fees are deducted, the total returns fall short of a straight passive investment approach in funds that track the chosen benchmarks. Also, the performance reports do not include a benchmark for specialty investments. Since the Fund's most recent asset breakdown shows nearly 20% of assets invested in this class, the board should consider adding relevant benchmarks corresponding to the assets in this class.

Time-weighted Returns ⁶ (as of 12/31/2018)	1-Year	3-Year	Since Sept. 2014
Total Gross Return	-5.81%	5.08%	3.81%
Total Net Return⁷	-6.84%	4.28%	3.04%
Benchmark (60% Equities (Net) / 40% Fixed Income)	-6.04%	5.06%	3.53%
Equities Gross Return	-9.87%	6.16%	5.15%
Benchmark (MSCI ACWI IMI Net)	-10.08%	6.49%	4.14%
Fixed Income Gross Return	-0.96%	3.64%	2.11%
Benchmark (Bloomberg Barclays U.S. Universal USD)	-0.25%	2.56%	2.22%
Specialty Gross Return	-4.44%	3.74%	2.72%

After the board determined that the previous investment manager was not producing returns on par with other TLFFRA systems, the Fund selected their current investment manager in the fall of 2014. Paris Fire continues to lag behind most of its TLFFRA peers in short- and long-term returns and currently pays one of the highest levels of investment expenses, as a percent of assets, in its peer group and across the state.⁸ In 2017, **investment expenses as a percent of assets** were 0.91% and in 2018 increased to **1.03%**.

Board Education

Recognizing the importance of trustee training, the Legislature adopted the Minimum Education Training (MET) requirement for pension trustees in 2013. This program requires trustees to complete seven hours of training in core content areas such as investments, actuarial matters and governance, during the first year they begin service. After the first year of service, trustees are only required to complete four hours of continuing education in core or non-core areas every two years. The core is designed to cover the fundamental competencies of public pensions necessary for trustees to successfully discharge their duties. The non-core includes topics that go beyond the basics and are designed to allow trustees to gain further expertise in additional areas related to their duties.

As of the time of this review, only one Paris Fire trustee was compliant with these MET Program requirements. Only one of the other six trustees had completed the basic 7-hour core training. As a

⁶ From Westwood Trust's Portfolio Performance Detail as of 12/31/2018, except where noted.

⁷ Calculated by PRB. 2018 investment fees were 1.03% of assets; 3-year fee average was 0.80% of assets; and 4-year fee average was 0.77% of assets.

⁸ See [Appendix](#) for more detail on Paris Fire's peer group.

comparison, in 2017, over 90% of TLFFRA systems were fully compliant with the MET Program requirements.

Conclusions/Recommendations

Monitoring Investments

Investment benchmarks should be regularly reviewed to see if they are appropriate and have been met or exceeded. The board should identify benchmarks for specialty investments and add those to the IPS to allow measurement of the performance of those assets.

Best practices include revisiting manager selection periodically, including evaluating performance, fees, and the value provided by the managers. The board should review whether its active management approach is providing returns in excess of the additional expense and may want to explore passive investment strategies for one or more asset classes. Additionally, the board should consider adding to the IPS specific actions to take if returns are not met over a market cycle, such as re-evaluating the investment goals, modifying the asset mix, revising manager composition, or a combination of these.

Since it is not expected that board members be investment experts, it is important that the information presented by consultants and managers allow trustees to easily assess investment performance. Paris Fire should ask its investment manager to report returns net of fees to more easily view the actual performance of the fund, particularly because investment expenses tend to be higher as a percentage of assets for smaller plans.

Finally, the board should consider engaging an independent third party to review its governance processes to assess how they compare against industry best practices. This type of review could include looking at the board's investment decision-making processes, delegation of authority, and board investment expertise to help identify potential improvements. Due to its small size, Paris Fire is not required to conduct the Investment Practices and Performance evaluation in Texas Government Code §802.109 (SB 322, 86R), but could benefit greatly from conducting even a limited-scope evaluation.

Board Member Education

Paris Fire's trustees should complete MET core training as soon as possible, which is provided online, free of cost by the PRB, and continue seeking opportunities for continuing education to keep their knowledge up to date.

Appendix

Key Metrics

Metric	Amortization period (41.9 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 18 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 Paris Fire, the higher the amortization period, the more sensitive it is to small changes in the UAAL.
Peer comparison	Paris Fire's amortization period is the fourth highest among its peers and is greater than the maximum PRB pension funding guideline of 30 years.

Metric	Funded ratio (35.64%)
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	Paris Fire's 35.64% funded ratio is the lowest among its TLFFRA peer plans, and the lowest in the state of Texas.

Metric	UAAL as a percent of payroll (373.34%)
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 Fund's UAAL as a percent of payroll is the third highest in its peer group, and ninth highest in the state.

Metric	Assumed rate of return (7.50%)
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. Paris Fire's assumed rate of return is 7.50%, while its actual ten-year investment rate of return for the period ending December 31, 2018 was 5.08%.
Peer comparison	Paris Fire has the third highest assumed rate of return in its peer group and the median of all plans in the state.

Metric	Payroll growth rate (3.50%)
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 3.50% was the second highest payroll growth rate in its peer group of TLFFRA plans with similar asset size and higher than the state average.

Metric	Actual contributions as a percent of actuarially determined contributions (80.16%)
What it measures	Whether the current employer contributions have met a theoretical minimum threshold. ⁹
Why it is important	The employer's portion of the contribution in 2017 was slightly greater than 80% 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 was the second largest shortfall percentage in its peer group and one of the ten lowest in the state.

Metric	Non-investment cash flow as a percent of fiduciary net position (-12.44%)
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	Paris Fire's non-investment cash flow as a percent of FNP as of 12/31/2017 was the lowest in the state.

⁹ 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 Paris Firefighter's Relief and Retirement Fund ("Paris Fire" or "the Fund") was established in 1941 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. Paris Fire, as with all TLFFRA systems, is entirely locally funded.

Benefits

Tiers	Tier 1: Service before 1/1/2004 Tier 2: Service on or after 1/1/2004
Retirement Eligibility	55 years of age; 20 years of service Or Rule of 80 with 20 years of service
Vesting	Fully vested after 10 years of service
Primary Benefit Formula	Tier 1: Monthly benefit = 2% x FAS before 1/1/2004 or \$85.50 x years of service (< 3 years) AND \$85.50 x years of service (> 3 years) OR \$94 x years of service at retirement Tier 2: Monthly benefit = \$94 x years of service at retirement Minimum service retirement benefit is \$500 per month
Final Average Salary (FAS)	Tier 1: Highest five years; Tier 2: N/A
COLA	None
Retirement Benefit Options	2-year Retro DROP: Eligible once a member has satisfied Service Retirement requirements. 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 DROP accounts. DROP balance is distributed as a lump sum.
Participates in Social Security?	No

Contributions

As of October 1, 2018, active members of Paris fire contribute 16% of pay, while the City of Paris contributes 14% of pay.

Membership

Total Active Members	Total Annuitants	Terminated	Total Members	Active-to-Annuitant Ratio
49	41	6	96	1.20

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 trustees' 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.

Asset Allocation

Asset Allocation (as of 12/31/2018)					
Asset Class	Equities	Fixed Income	Alternatives	Real Estate	Other
Current Allocation	54.12%	33.79%	4.52%	4.09%	3.48%
Target Allocation	50.00%	30.00%	20.00%*		-

*Labeled as "Specialty" in Paris Fire's 2018 Investment Policy Statement, includes both Alternatives and Real Estate.

Investment Returns

Annualized Rolling Rates of Return (as of 12/31/2018)				
Time Period	1-year	3-year	10-year	Since 2000
Net Return	-7.20%	3.48%	5.08%	3.16%

Expense Breakdown

Plan Expenses (as of 12/31/2018)	
Fiduciary Net Position (FNP)	\$4,152,311
Investment Expenses	\$42,973
Investment Expenses % of FNP	1.03%
Administrative Expenses	\$31,444
Administrative Expenses % of FNP	0.76%

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 plan with an asset level lower than its accrued liability has insufficient funds to cover benefits. A plan 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 plan'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 Paris Fire.

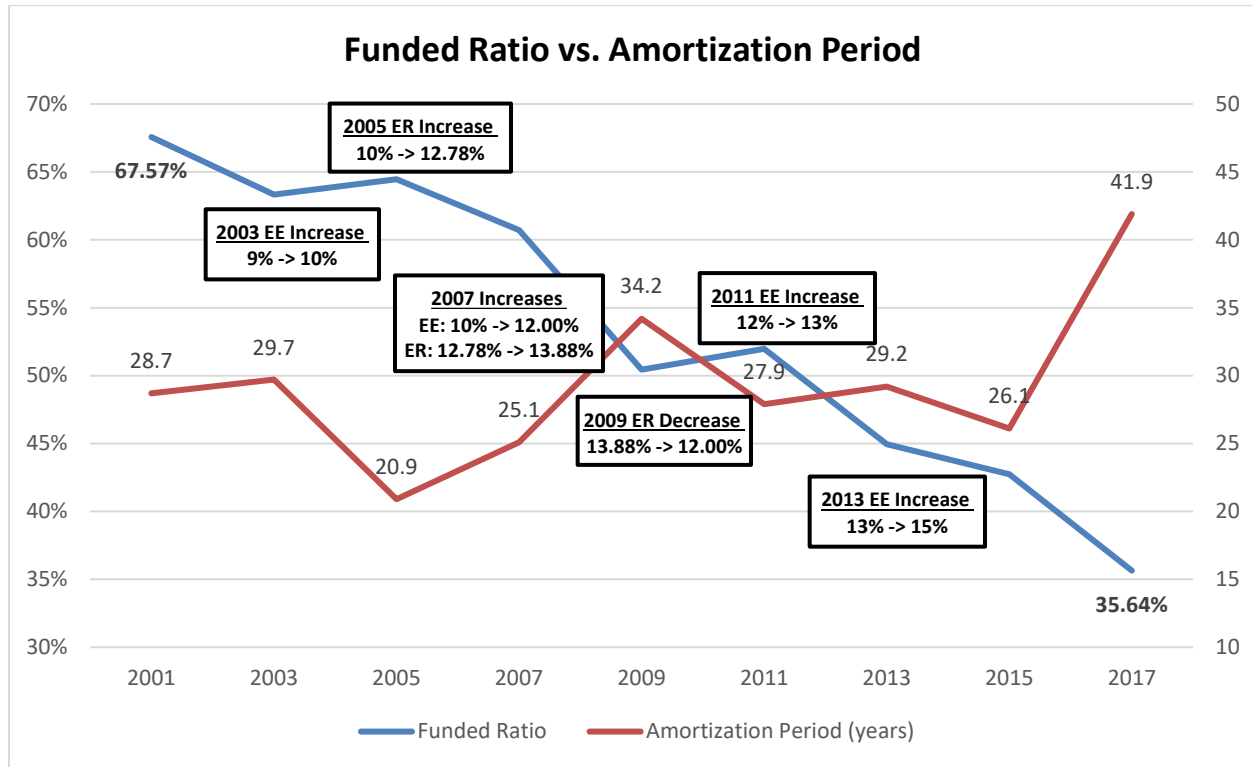
Paris Fire's funded status has been steadily declining since 2001. Numerous factors have contributed to this deterioration, including investment returns being lower than the chosen assumption, increased benefit payments, and a fixed-rate funding structure. The following sections discuss these and other factors in detail.

Assets and Liabilities

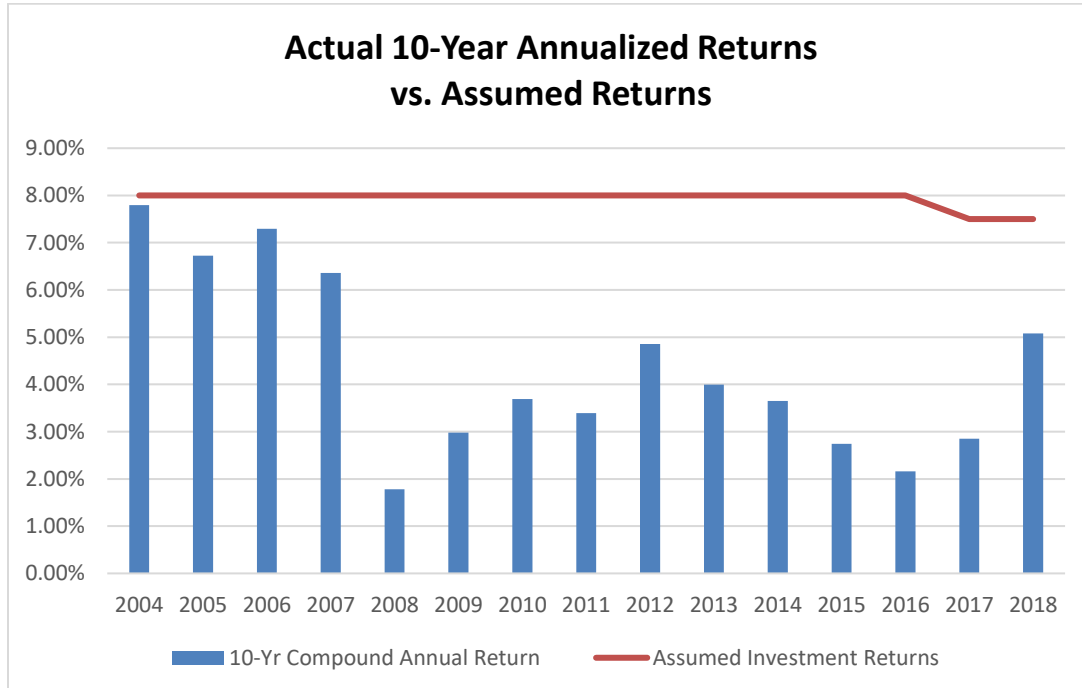
Funding Trends									
Funded Ratio, Assets, Liabilities and Year over Year Growth									
Valuation Year	2001	2003	2005	2007	2009	2011	2013	2015	2017
Funded Ratio	67.57%	63.33%	64.47%	60.70%	50.45%	51.96%	44.94%	42.74%	35.64%
Am Period (years)	28.7	29.7	20.9	25.1	34.2	27.9	29.2	26.1	41.9
UAAL (in millions)	\$2.72	\$3.55	\$3.84	\$4.47	\$6.04	\$6.23	\$7.49	\$8.01	\$9.63
AVA (in millions)	\$5.66	\$6.13	\$6.97	\$6.90	\$6.14	\$6.74	\$6.11	\$5.98	\$5.33
AVA Growth (YoY)	-	4.04%	6.63%	-0.48%	-5.64%	4.71%	-4.75%	-1.08%	-5.59%
AAL (in millions)	\$8.38	\$9.68	\$10.81	\$11.37	\$12.18	\$12.96	\$13.60	\$13.99	\$14.96
AAL Growth (YoY)	-	7.46%	5.68%	2.56%	3.51%	3.17%	2.42%	1.43%	3.39%

The Fund's actuarial accrued liability (AAL) more than tripled between the beginning of 2001 and the beginning of 2017. During the same time period Paris Fire went from 70% funded and dropped to below 36% as of their latest valuation.

Funded Ratio vs. Amortization Period with Contribution History (2001 -2017)



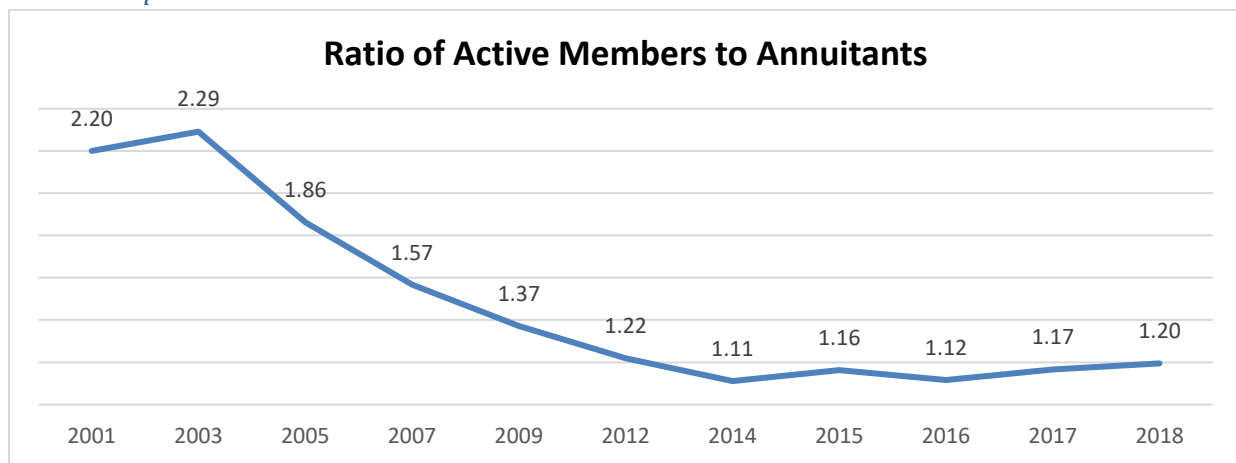
Investment Returns



Outflows

Outflows as a Percent of Total Net Assets (Reported over the Last Ten Years)										
Fiscal Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Benefit Payments	11.89%	14.07%	14.69%	16.85%	14.37%	19.92%	21.56%	21.59%	21.37%	24.55%
Withdrawals	0.80%	0.57%	0.56%	0.08%	1.22%	2.07%	2.16%	2.26%	4.72%	0.80%
Admin Expenses	1.11%	1.36%	1.64%	0.53%	0.25%	0.45%	0.13%	0.79%	0.78%	0.76%
Investment Expenses	-	-	-	1.08%	0.99%	1.09%	0.71%	0.69%	0.91%	1.03%
Other Expenses	0.42%	0.25%	0.07%	-	-	-	-	-	-	-
Total Expenses	1.53%	1.61%	1.72%	1.61%	1.25%	1.55%	0.84%	1.48%	1.69%	1.79%

Membership



Peer Group Key Metric Comparison

		Funding Valuation 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
Corsicana Firemen's Relief & Retirement Fund	\$8,344,317	12/31/2016	28.9	53.14%	211.44%	7.00%	3.00%	12/31/2017	101.06%	N/A	-8.11%
Orange Firemen's Relief & Retirement Fund	\$8,154,674	1/1/2017	69.3	49.86%	336.03%	7.75%	4.00%	12/31/2017	72.93%	N/A	-6.77%
Sweetwater Firemen's Relief & Retirement Fund	\$7,826,879	12/31/2016	27.5	69.99%	229.12%	8.00%	4.00%	12/31/2017	100.00%	N/A	-4.07%
Marshall Firemen's Relief & Retirement Fund	\$7,712,228	12/31/2016	56.4	42.02%	398.51%	7.75%	4.00%	12/31/2017	77.36%	4.40%	-2.90%
Plainview Firemen's Relief & Retirement Fund	\$6,154,425	12/31/2017	44.8	37.67%	517.48%	7.50%	3.50%	12/31/2017	98.82%	N/A	-3.35%
Paris Firefighters' Relief & Retirement Fund	\$4,764,272	12/31/2016	41.9	35.64%	373.34%	7.50%	3.50%	12/31/2017	80.16%	N/A	-12.44%
Brownwood Firemen's Relief & Retirement Fund	\$4,158,090	12/31/2017	38.6	45.03%	263.23%	7.25%	3.25%	12/31/2017	93.90%	N/A	-1.49%
Atlanta Firemen's Relief & Retirement Fund	\$3,744,867	12/31/2016	28.4	82.13%	136.63%	7.40%	3.00%	12/31/2017	112.63%	N/A	-2.72%
San Benito Firemen Relief & Retirement Fund	\$3,503,753	9/30/2017	21.8	60.68%	152.30%	7.50%	4.00%	9/30/2016	143.37%	N/A	-0.88%

*Paris Fire's contribution, DROP and cash flow data are from the Fund's 12/31/2017 annual financial report.

Peer Group Sponsor Funding Comparison

Peer Group Plans	Sponsor	GF Expend	EOY GF Bal	UAAL	Employer Contributions	ADC	30-yr Shortfall	30-Y SF % of ADC	30-Y SF % of GFE
Corsicana Firemen's Relief & Retirement Fund	Corsicana	\$15,802,887	\$5,342,213	\$8,135,345	\$554,105	\$548,285	\$0	0.00%	0.00%
Orange Firemen's Relief & Retirement Fund	Orange	\$22,114,218	\$7,805,235	\$8,199,175	\$333,259	\$456,978	\$123,719	27.07%	0.56%
Sweetwater Firemen's Relief & Retirement Fund	Sweetwater	\$8,733,810	\$3,929,907	\$3,617,210	\$284,446	\$284,446	\$0	0.00%	0.00%
Marshall Firemen's Relief & Retirement Fund	Marshall	\$19,191,225	\$5,563,323	\$10,641,648	\$516,808	\$668,025	\$151,217	22.64%	0.79%
Plainview Firemen's Relief & Retirement Fund	Plainview	\$13,359,607	\$15,886,659	\$10,290,086	\$507,975	\$600,643	\$92,668	15.43%	0.69%
Paris Firefighters' Relief & Retirement Fund	Paris	\$24,912,768	\$11,622,868	\$9,626,478	\$326,396	\$407,179	\$80,783	19.84%	0.32%
Brownwood Firemen's Relief & Retirement Fund	Brownwood	\$19,316,832	\$3,038,924	\$5,085,187	\$369,559	\$401,518	\$31,959	7.96%	0.17%
Atlanta Firemen's Relief & Retirement Fund	Atlanta	\$3,894,117	\$1,746,351	\$860,536	\$93,096	\$82,656	\$0	0.00%	0.00%
San Benito Firemen Relief & Retirement Fund	San Benito	\$10,728,675	\$6,526,547	\$2,270,845	\$163,218	\$163,218	\$0	0.00%	0.00%

*For comparison purposes, data in this table is from FY 2017 end-of-year reports which was available from all plans and sponsors.

Peer Group Benefit & Expense Comparison

Peer Group Plans	10 yr. return (Net)	Active/ Annuitants	Average Benefit	Benefit Payments as a % of Assets	NPL	Admin Expenses	Investment Expenses	Total Expenses	Exp as % of Assets
Corsicana Firemen's Relief & Retirement Fund	3.40%	1.59	\$41,473	17.11%	\$8,448,213	\$38,769	\$98,332	\$137,101	1.53%
Orange Firemen's Relief & Retirement Fund	4.60%	0.88	\$25,865	12.04%	\$7,604,038	\$28,872	\$97,461	\$126,333	1.40%
Sweetwater Firemen's Relief & Retirement Fund	4.91%	1.04	\$33,311	9.35%	\$4,041,873	\$35,021	\$66,056	\$101,077	1.18%
Marshall Firemen's Relief & Retirement Fund	5.22%	1.32	\$28,764	12.48%	\$10,956,082	\$16,563	\$64,001	\$80,564	0.94%
Plainview Firemen's Relief & Retirement Fund	2.88%	0.92	\$25,463	15.31%	\$10,355,264	\$20,975	\$34,590	\$55,565	0.90%
Paris Firefighters' Relief & Retirement Fund	2.85%	1.17	\$24,367	21.37%	\$10,266,996	\$37,553	\$43,407	\$80,960	1.69%
Brownwood Firemen's Relief & Retirement Fund	4.34%	1.28	\$20,716	12.46%	\$4,875,482	\$16,550	\$44,910	\$61,460	1.48%
Atlanta Firemen's Relief & Retirement Fund	4.83%	1.39	\$12,762	5.54%	\$895,803	\$22,369	\$36,271	\$58,640	1.41%
San Benito Firemen Relief & Retirement Fund	1.78%	2.60	\$23,625	6.18%	\$2,234,136	\$19,316	\$64,393	\$83,709	2.19%

*For comparison purposes, data in this table is from FY 2017 end-of-year reports except for San Benito Fire which contains FY 2018 end-of-year data due to discrepancies in their 2017 annual financial report.

Comments from Paris Firefighters' Relief and Retirement Fund

Paris Firefighters' Relief and Retirement Fund

September 9, 2019

Ms. Anumeh Kumar
Executive Director
Texas Pension Review Board
P.O. Box 13498
Austin, TX 78711-3498

RE: Intensive Actuarial Review – Draft Report

Dear Ms. Kumar:

Thank you for providing a preliminary draft of the Intensive Actuarial Review for the Paris Firefighters' Relief and Retirement Fund. The Board of Trustees has reviewed the report and has prepared the following response.

The review provides some troubling indicators of the health of the Fund. These results are not a surprise to the Board. The Board is committed to the long-term health and sustainability of the Fund so that the members will receive the benefits promised to them. While we feel that the Fund has instituted certain long-term solutions, we also recognize the need to develop a solution to shore up the Fund over the short term.

As the report points out, the Normal Cost is 9.54% of payroll. Employees currently contribute 16% of payroll, or 167.71% of the Normal Cost. The City contributes an additional 14% of payroll for a total contribution of 30% of payroll, or 314.47% of the Normal Cost. These contribution rates were recently increased from 15% of pay for the employees and 12% of pay for the City.

The report also points out that the benefit is a flat dollar benefit and is less risky when compared to pay based benefits. In addition, as pay increases over time the benefit will become more and more affordable when compared to the contribution rates.

Westwood Wealth Management has provided a separate response to any issues brought up by the review regarding the plan assets. Their response is provided by us as an attachment to this response.

For the reasons noted above and in Westwood's response, the Board is optimistic about the long-term direction of the Fund. However, we are also concerned about short-term issues which could prevent the Fund from realizing these benefits. Most troubling to the Board are the cashflow issues noted in the report. The Fund, the City, and our advisors are dedicated to working out a solution to these issues.

The review also points out a shortfall in trustee training and education. All Board members are dedicated to becoming compliant with Minimum Education Training requirements as soon as possible by utilizing the online training provided by the PRB and attending educational conferences, if feasible.

Thank you for considering this response. The Fund and City realize the need to work together to ensure the short- and long-term sustainability of the Fund. Any recommendations noted in the final report will be considered as we work to achieve this goal.

Sincerely,

A handwritten signature in black ink, appearing to read "Gene Anderson". The signature is fluid and cursive, with the first name "Gene" and last name "Anderson" clearly distinguishable.

Gene Anderson
Board Trustee
Finance Director, Paris, TX
Interim City Manager, Paris, TX

Governance Risk

Monitoring Investment Performance and Expenses

PRB draft comment: According to the investment policy statement (IPS), the Fund's Board of Trustees should "systematically and regularly monitor the Plan's investments to assure the objectives are being met and policy guidelines are being followed."

Westwood response: A review of the IPS highlights are presented in each meeting book and the investment manager confirms compliance or noncompliance in the meeting.

PRB draft comment:

Further, the quarterly investment performance reports provided by the Fund's investment manager show performance gross of investment fees while the equity benchmark is net of fees. Therefore, while the performance reports appear to show investment performance beating the established benchmark, once investment fees are included, the total returns fall short of a straight passive investment approach in funds that track the chosen benchmarks. Also, the performance reports do not include a benchmark for specialty investments. Since the Fund's most recent asset breakdown shows nearly 20% of assets invested in this class, the board should consider adding relevant benchmarks corresponding to the assets in this class.

Time-weighted Returns ⁶ (as of 12/31/2018)	1-Year	3-Year	Since Sept. 2014
Total Gross Return	-5.81%	5.08%	3.81%
Total Net Return⁷	-6.84%	4.28%	3.04%
Benchmark (60% Equities (Net) / 40% Fixed Income)	-6.04%	5.06%	3.53%
Equities Gross Return	-9.87%	6.16%	5.15%
Benchmark (MSCI ACWI IMI Net)	-10.08%	6.49%	4.14%
Fixed Income Gross Return	-0.96%	3.64%	2.11%
Benchmark (Bloomberg Barclays U.S. Universal USD)	-0.25%	2.56%	2.22%
Specialty Gross Return	-4.44%	3.74%	2.72%

Westwood response: Not including Net of Fees performance in the 12.31.18 meeting review was an oversight. We typically show Net of Fees reporting along with Gross of Fees. Going forward, we will produce the report below: Total Fund Gross and Net vs. the Policy benchmark for pertinent periods. We will continue

to show the Equities, Fixed Income and Specialty asset segments but not vs the equity or fixed income components of the Policy benchmark. The Specialty asset class (a third asset segment) does not have its own breakout of the two-part Policy Index; however, performance of each investment fund (including the funds included in the Specialty segment) is shown later in each meeting book vs. its relevant style index. The performance table above is intended to be a summary of the Total Fund.

FYI, the PRB's calculation is slightly off from the actual Net of Fees performance which is shown below.

Portfolio Performance Detail as of 12/31/2018 PARIS FIREFIGHTERS'

	1 Year	3 Year	Since Inception	Inception Date
Total	-5.81%	5.08%	3.81%	09/30/2014
Total Net of Fees	-6.68%	4.20%	2.97%	09/30/2014
60% ACWI IMI (Net)/ 40% BBG BC US Universal Index	-6.04%	5.06%	3.53%	09/30/2014
Equities	-9.87%	6.16%	5.15%	09/30/2014
Fixed Income	-0.96%	3.64%	2.11%	09/30/2014
Specialty	-4.44%	3.74%	2.72%	09/30/2014

PRB draft comment: After the board determined that the previous investment manager was not producing returns on par with other TLFFRA systems, the Fund selected their current investment manager in the fall of 2014. Paris Fire continues to lag behind most of its TLFFRA peers in short- and long-term returns and currently pays one of the highest levels of investment expenses, as a percent of assets, in its peer group and across the state.⁸ In 2017, investment expenses as a percent of assets were 0.91% and in 2018 increased to 1.03%.

Westwood response: Our fees are all-inclusive and are tiered based on assets under management. The investment expenses listed in the PRB Draft are incorrect. This was a flat calculation of fees billed in 2018: \$42,973 divided by the 12.31.18 market value of \$4,152,311 which does equal 1.03%. However, fees are calculated based on average daily market value. The market value as of 12.31.18 was much lower than the average market value throughout 2018. Blended fees for the account equate to ~ 0.91% of assets which is consistent with fees charged throughout our relationship.

Administrative costs were higher in years 2016 – 2018 because the fund hired an outside administrator with fees ~ \$14,000 per year. They have since terminated that individual and are realizing the cost savings.

Conclusions/Recommendations

Monitoring Investments

PRB draft comment: Investment benchmarks should be regularly reviewed to see if they are appropriate and have been met or exceeded. The board should identify benchmarks for specialty investments and add those to the IPS to allow measurement of the performance of those assets.

Best practices include revisiting manager selection periodically, including evaluating performance, fees, and the value provided by the managers. The board should review whether its active management approach is providing returns in excess of the additional expense, and may want to explore passive investment strategies for one or more asset classes. Additionally, the board should consider adding to the IPS specific actions to take if returns are not met over a market cycle, such as re-evaluating the investment goals, modifying the asset mix, revising manager composition, or a combination of these.

Since it is not expected that board members be investment experts, it is important that the information presented by consultants and managers allow trustees to easily assess investment performance. Paris Fire should ask its investment manager to report returns net of fees to more easily view the actual performance of the fund, particularly because investment expenses tend to be higher as a percentage of assets for smaller plans.

Finally, the board should consider engaging an independent third party to review its governance processes to assess how they compare against industry best practices. This type of review could include looking at the board's investment decision-making processes, delegation of authority, and board investment expertise. help identify potential improvements. Due to its small size, Paris Fire is not required to conduct the Investment Practices and Performance evaluation in Texas Government Code §802.109 (SB 322, 86R), but could benefit greatly from conducting even a limited-scope evaluation

Westwood response: Our meeting materials include performance of the Total Fund as well as individual investment funds. We have updated our materials to include Net of Fees performance throughout our report. A copy of the September 12, 2019 meeting book will be forwarded to the PRB following the presentation to the Board.

TAB 3



Guidance for Developing A Funding Policy

As required by Senate Bill [2224](#) (86R)

Texas Government Code §802.2011 ([SB 2224, 86R](#)) requires **the governing board of a Texas public retirement system to adopt a written funding policy by January 1, 2020**. The policy is intended to be used as a retirement system's roadmap to fully fund its long-term obligations. The policy should be created with input from the system's sponsoring governmental entity whenever possible.

The funding policy is required to be filed with its sponsor and the Texas Pension Review Board (PRB) no later than the 31st day after the date the policy is changed or adopted.

A funding policy helps a system achieve the three fundamental goals of public pension funding: benefit security, contribution stability, and intergenerational equity. While different pension plans and their governmental sponsors may prioritize these goals differently, the funding policy should strive to **balance** these three primary pension funding goals so that member benefits are secure; employers and employees are afforded some level of contribution predictability from year to year; and liabilities are managed so that future taxpayers are not burdened with costs associated with a previous generation's service. For a more detailed discussion of the benefits of adopting a funding policy, please see the PRB's [2019 Interim Study: Funding Policies for Fixed-Rate Pension Plans](#).

A funding policy should include the following components:

- I. Clear and concrete funding objectives;
- II. Actuarial methods;
- III. A roadmap to achieve funding objectives; and
- IV. Actions that will be taken to address actual experience that diverges from assumptions.

Components of a Funding Policy

I. Establishing Clear and Concrete Funding Objectives

A funding policy should clearly establish the retirement system's funding objectives. Per Government Code §802.2011, **the funding policy must target a funded ratio of 100% or greater**. The PRB recommends that systems adopt a funding policy that fully funds the plan **over as brief a period as possible**, with **10 – 25 years** being the preferable range, using a finite, or **closed, funding period**.

II. Selecting Actuarial Methods

An important role of a funding policy is to **set boundaries on what is allowable for actuarial calculations**. At a minimum, the three actuarial methods that should be addressed are the actuarial cost method, the asset-smoothing method, and the amortization policy.

Actuarial Cost Method	Asset Smoothing Method	Amortization Policy
<p>An actuarial cost method is a way to allocate pieces of a participant's total expected benefit to each year of their working career.</p> <p>The most common actuarial cost method used in Texas, and the cost method required by GASB for financial reporting disclosures, is the entry age normal (EAN) method.</p> <p>Under the EAN method, benefits are assumed to accrue as a level percentage of pay over the period from the member's entry into the plan until his/her assumed termination or retirement.</p> <p>A funding policy should state the desired goals and purpose of the cost method if it does not specify the exact cost method to be used.</p>	<p>Asset smoothing techniques can help keep contributions stable and more predictable over time. Under smoothing, asset gains and losses are generally recognized over a period of years rather than immediately.</p> <p>A five-year smoothing period where 20% of any gain or loss is recognized in each subsequent year is typically used in Texas.</p> <p>The funding policy should specify the amount of return subject to smoothing (i.e. how much is deferred), the time period of the deferral, and if the smoothed value is subject to a corridor.</p>	<p>An amortization method is a procedure for determining the amount, timing, and pattern of recognition of a plan's gains and losses. Amortization amounts can be level dollar amounts or determined as a percentage of covered payroll. Fixed dollar amounts are preferable unless payroll is expected to decrease in the future.</p> <p>One approach that helps minimize annual contribution volatility while maintaining a finite, closed funding period is the use of layered amortization, where a single closed-period amortization base is established for each year's realized experience.</p> <p>Another approach is to establish closed-period amortization bases with varying recognition periods dependent upon the cause of a gain or loss. For example, one approach might be to amortize investment and/or actuarial experience gains or losses over a 5-year period, gains or losses attributable to assumption changes over a 10-year period, and gains or losses attributable to plan amendments over a 25-year period.</p>

A funding policy may also include directions on how to account for expected plan administrative expenses, how often experience studies should be completed to maintain up-to-date demographic actuarial assumptions, and how to set the interest discount rate.

III. Developing a Roadmap to Achieve Funding Objectives

A funding policy should provide a clear plan detailing how the system's funding goals will be met.

Contribution Rates

An actuarially determined contribution (ADC) structure requires the payment of an ADC rate. An ADC is defined as the cost of benefits earned by workers in the current year (the normal cost) plus an amortization payment to recognize prior gains and/or losses. ADC contribution structures inherently adjust to the plan's changing funded status to maintain the overall trajectory towards fully funding benefit promises. This approach contrasts with fixed-rate funding structure which does not change from year-to-year unless proactive steps are taken.

If contributions are not made based on an ADC rate, the plan's governing body should establish and include the following items in the funding policy:

1. Determine an ADC that can be used as a benchmark to monitor whether the actual contributions are guiding the plan toward the stated funding objectives.

2. Establish what conditions will trigger action when the current actual contribution rate moves away from the benchmark ADC. For example, a certain funded ratio or difference between actual contribution and ADC could be used.
3. Identify tangible steps that will be taken to mitigate the differences between the actual and benchmark contribution rates, such as contribution and benefit changes. See Section IV for examples.

Benefit and Contribution Change Parameters

A funding policy should include elements designed to impede deviation from progress toward funding goals. This may be done by establishing parameters under which future benefit increases and contribution reductions can be considered.

Examples

A funding policy might state that:

- benefit enhancements can be made only if the funded ratio will remain at a certain level after the increase; or
- contribution reductions may only occur if a minimum amortization period is maintained.

IV. Adopting Actions to Address Actual Experience That Diverges from Assumptions

A funding policy should develop predetermined steps for how a plan should respond to **both positive and negative experiences that differ from the plan's assumptions**. The following methods can be used to manage funding risk.

Risk-Sharing

A funding policy should identify key risks faced by the plan and how those risks, and their associated costs, will be distributed between the employer and employees. This structure prevents one party from bearing all the risk in a funding policy. Often when there is no formal risk-sharing policy, benefit reductions or cost increases are imposed on employees, retirees or both after the plan's condition has deteriorated, rather than proactively, in advance, and in a manner transparent to members and stakeholders.ⁱ

Example: If investment returns are not as high as projected, the associated costs will need to be covered by additional contributions or benefit reductions distributed amongst members and the sponsor.

Contributions

A solution to ensure the plan meets its funding objectives is to require that the actual contribution rate is equal to or exceeds the ADC. If that is not achievable, the funding policy should identify what the trigger should be for a required adjustment to actual contribution rates. Techniques such as the following could be used to help move the actual contribution rate in the proper direction.

Contribution Corridor

Example: If the actual total contribution rate is within 2% of the ADC, no change is required. However, if the total contribution is more than 2% *over or under* the ADC, a change in contribution rates is required.

Maximum and Minimum Contribution Rates

Example: If the ADC exceeds a pre-determined maximum contribution rate, the funding policy may require the plan to adopt benefit changes. Conversely, if the ADC drops beneath a pre-determined minimum rate, the funding policy may require certain benefit increases, such as a COLA.

Contribution Smoothing

Example: If the actual total contribution rate needs to be increased by 2%, the rate could be increased in increments until the total contribution rate meets the ADC. Similarly, if the contribution rate needs to be decreased by 2%, the rate may be slowly decreased over time. The funding policy may state that the contribution rate may not increase or decrease by more than a given percentage each fiscal year.

Benefits

A funding policy may also establish when benefit adjustments will occur and include provisions that specify how both positive and negative experience will be addressed. Plans may allow for increased benefits or an increased COLA as a result of a positive deviation, but plans will need to ensure they are able to consistently meet the new funding demands of the changes.

Example: The funding policy could require that if sponsor contributions are increased, member benefits must be decreased in some proportional manner. Or, the policy may include provisions that grant a COLA to retirees if the funded ratio, after the benefit change, remains above a specified percentage. Caps may also be placed on maximum COLAs, or COLAs can be tied to inflation, to manage plan costs.

Examples of Funding Policy Components

Many pension plans across the United States have already adopted a funding policy, including several in Texas. Below are examples of components from those funding policies.

Component	Plan	Description
Benefit and Contribution Change Parameters	South Dakota Retirement System	The system may not consider benefit improvements unless the fair value funded ratio is and will remain after fully funding the cost of the improvement, over 120%. ⁱⁱ Proposed benefit improvements must be consistent with both the Board's long-term benefit goals and sound public policy with regard to retirement practices.
	City of Austin Employees' Retirement System	Employer contribution rate reductions should be considered only when annual COLA adjustments are built into funding assumptions and the funded ratio will remain greater than or equal to 105% after the reduction. ⁱⁱⁱ
	City of Austin Employees' Retirement System	A COLA may be adjusted only when the adjustment can be financially supported; the funded ratio is $\geq 80\%$ after incorporating the COLA; the amortization period is ≤ 20 years after incorporating the COLA; and the actual employer contribution rate is \geq the ADC but no more than 18% after incorporating the COLA. ^{iv}
Contribution Smoothing	Fort Worth Employees' Retirement Fund	The contribution rate may not increase more than 2% of pay in one year or 4% in total to account for the ADC increase. If the maximum contribution increase has been applied and the actual contribution is still insufficient, the City Council must consider additional benefit reductions. ^v
Risk-sharing	South Dakota Retirement System	Should the funded ratio fall below 100% or if the fixed contribution rates are not sufficient to meet the actuarial requirement, the system is required to recommend corrective action, including benefit or contribution changes, in its annual report to the Legislature and Governor. ^{vi}
	Houston Firefighters' Relief & Retirement Fund Houston Municipal Employees Pension System Houston Police Officers' Pension System	The 3 Houston plans have a statutory funding policy that established a target contribution rate and a corridor around that rate. The plans and the City are required to take corrective action, including negotiating benefit reductions, if the recommended contribution falls outside the corridor. ^{vii}

Component	Plan	Description
Risk-sharing	Galveston Employees Retirement Plan for Police	Beginning January 1, 2025, if the actuarial valuation recommends an ADC that exceeds the aggregate (employee and City) contribution rate, the excess contribution will be split equally as a percentage of pay between the City and employee contribution rates. ^{viii}
	Maine Public Employees	COLAs are tied to investment returns. Reductions to COLAs may occur after severe market losses. The reductions will be removed once markets improve. ^{ix}
	Wisconsin State Retirement System	Retirement annuities are adjusted using a formula that factors in investment returns. ^x
	Pennsylvania State Employees' Pennsylvania Public School Employees'	The employee contribution rate increases or decreases based on investment plan returns. ^{xi}

Questions Systems and Sponsors Should Discuss During Funding Policy Development

The process of developing a funding policy presents an opportunity for a system's board of trustees to have an open, robust discussion of their priorities regarding the funding needs of the plan. The policy should be created with input from the system's sponsoring governmental entity whenever possible. The following checklist represents a set of fundamental questions trustees should consider during funding policy development but is not exhaustive.

☐ **Introduction**

- ☐ What is the purpose of the policy? What are we trying to achieve in this policy?
- ☐ How is the plan governed? What statutes or ordinances govern plan funding?
- ☐ What are our funding priorities?

☐ **Funding Objectives**

- ☐ Over what time period will we achieve 100% funding?
- ☐ How will we measure progress towards full funding? How will we measure if our funding objectives are being met?

☐ **Actuarial Methods**

- ☐ What valuation methods do we use to determine the ADC (or benchmark ADC)?
- ☐ How frequently should we calculate the ADC (or benchmark ADC)?
- ☐ How will we ensure we are meeting the ADC (or benchmark ADC)?
- ☐ Will we employ any asset smoothing methods? If so, what are they?
- ☐ What measures do our system and sponsor need to take to achieve 100% funding?
- ☐ How should we prepare for unanticipated changes?
- ☐ How frequently will actuarial experience studies occur?
- ☐ How is the interest discount rate determined?
- ☐ Is a negative amortization period ever acceptable, and if so, under what conditions?

☐ **Plan for Achieving Funding Objectives**

- ☐ How much money do we need today to pay for future promises?
- ☐ Will we use contribution smoothing methods? If so, what are they?
- ☐ What conditions must be met to adopt benefit increases or cost-of-living adjustments?
- ☐ What conditions must be met for contribution decreases to occur?

☐ **Risk Management Policy**

- ☐ What actions will we take should actual investment returns be less than the assumed investment returns used in the actuarial valuation? Should we consider action after a certain margin or threshold (positive or negative)?
- ☐ What actions will trigger changes to our assumptions at the next actuarial valuation?
- ☐ What conditions would trigger a contribution increase and what conditions must be met for contributions to return to their normal rate?
- ☐ Could we increase contributions temporarily?
- ☐ What conditions would trigger a review of our system's funding policy?

ⁱ Brainard, Keith, and Alex Brown, *In Depth: Risk Sharing in Public Retirement Plans*. National Association of State Retirement Administrators, January 2019, <https://www.nasra.org/content.asp?contentid=124>

ⁱⁱ South Dakota Retirement System, *SDRS Funding and System Management Policies*, <https://sdrs.sd.gov/docs/SDRSFundingPolicy.pdf>.

ⁱⁱⁱ City of Austin Employees' Retirement System Benefits & Services Committee, *City of Austin Employee's Retirement System Board Approved Policy: Funding Policy and Guidelines*, 20142014. <https://www.coaers.org/Portals/0/Resources/Publications/2-c%20F-2%20Funding%20Policy%20and%20Guidelines%202014-11-25.pdf?ver=2015-06-17-102341-677>.

^{iv} *ibid.*

^v Employees' Retirement Fund of the City of Fort Worth, *Annual Actuarial Valuation*, 19 April 2019, p. 9, <https://fortworthretirementtx-investments.documents-on-demand.com/?l=f419ce743442e5119795001fbc00ed84&d=64e81193956ae911a2cd000c29a59557>.

^{vi} South Dakota Retirement System, *SDRS Funding and System Management Policies*, <https://sdrs.sd.gov/docs/SDRSFundingPolicy.pdf>.

^{vii} Retirement Horizons Incorporated, *City of Houston HMEPS Pension Reform Cost Analysis*, 15 March 2017, <https://www.houstontx.gov/pensions/public/documents/rhi-HMEPS.pdf>.

^{viii} H.B. 2763, 86th Texas Legislature, Regular Session, 2019, <https://capitol.texas.gov/tlodocs/86R/billtext/pdf/HB02763F.pdf#navpanes=0>

^{ix} Maine Public Employees Retirement System, *Summary: PLD Plan Changes*, www.mainebers.org/Pensions/PLD%202018-Summary.htm.

^x Brainard, Keith, and Alex Brown, *Shared-Risk in Public Retirement Plans*. National Association of State Retirement Administrators, June 9, 2014, p. 2, <https://www.nasra.org/files/Issue%20Briefs/NASRASharedRiskBrief.pdf>;

The Pew Charitable Trusts, *Cost-Sharing Features of State Defined Benefit Pension Plans: Distributing Risk Can Help Preserve Plans' Fiscal Health*, January 2017, p. 8, <https://www.pewtrusts.org/-/media/assets/2017/05/definedbenefitplansreport.pdf>.

^{xi} The Pew Charitable Trusts, *Cost-Sharing Features of State Defined Benefit Pension Plans: Distributing Risk Can Help Preserve Plans' Fiscal Health*, January 2017, p. 2, <https://www.pewtrusts.org/-/media/assets/2017/05/definedbenefitplansreport.pdf>.

TAB 4

Irving Firemen's Relief & Retirement Fund

Funding Soundness Restoration Plan (FSRP) – November 1, 2016

Irving Firemen's Relief and Retirement Fund (Irving Fire or the Fund) was required to submit an FSRP to the PRB by November 2016 because the amortization periods reported in the 2012 and 2014 actuarial valuations (AV) were greater than 40 years: infinite and 63.4 years, respectively. Under the FSRP requirement, Irving Fire has 10 years, from November 2016 until 2026, to **attain an amortization period at or below 40 years**.

Plan Changes from 11/1/2016 FSRP		
Employee Contributions	Employer Contributions	Other
Old: 12.00% New: 13.00%	Old: 15.65% New: 16.75%	Expanded number of employees during 2016; increasing the number of active (contributing) members by over 15% compared to the 2014 actuarial valuation.

Both plan members and the City of Irving increased contributions as part of the initial FSRP. The Irving City Council also increased fire department staffing by 50 new firefighters. Based on analysis provided in the 12/31/2015 AV and taking into account these post-valuation events, the PRB, in consultation with the plan actuary, estimated the changes would result in a **33-year amortization period**.

Events Since the Completion of the Initial FSRP

Irving Fire's **12/31/2017 AV** reported an **infinite amortization period**. This increase was primarily due to changes in actuarial assumptions, including lowering the discount rate from 8.25% to 7.50%, payroll growth rate from 4.25% to 3.50%, and expected inflation from 3.00% to 2.75% per year.

Latest Actuarial Valuation Key Data – December 31, 2017

Discount Rate	Effective Amort. Period	Funded Ratio	Market Value of Assets (MVA)	Actuarial Value of Assets (AVA)	Unfunded Actuarial Accrued Liability (UAAL)	UAAL as % of Payroll
7.50%	Infinite	71.6%	\$213,960,011	\$207,493,755	\$82,260,569	252.13%

The reported infinite amortization period indicates Irving Fire is not expected to achieve an amortization period at or below 40 years by 2026 and is required to formulate a **revised FSRP**. The revised FSRP was due to the PRB by April 17, 2019. The PRB has not received a revised FSRP.

Intensive Actuarial Review (October 2018)

Last year, the PRB performed an intensive actuarial review of Irving Fire. The Fund was selected for the review in part due to a rapid increase in its DROP balance from just over 15% of total plan assets in 2014 to nearly 30% of total assets in 2016. The review highlighted the following main risk factors facing the Fund: asset-liability mismatch associated with its DROP (guaranteed 6.25%/5.50% annual rate of return, unlimited time to accrue this guaranteed return, and the ability to withdraw with little to no restrictions); actual investment returns lower than the assumed return; and insufficient contribution over a long period. The following are the key recommendations for the Fund from that review.

Key Recommendations

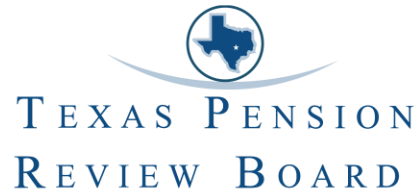
- Perform an in-depth asset-liability study to better understand the potential risks associated with its existing asset mix and the liabilities they support.
- Consider the risk a guaranteed rate of return on DROP balances places on all the Fund's stakeholders while bearing in mind the impact changes could have on DROP participant behavior.
- Develop written funding, benefit, and investment policies that are linked to provide a formal risk-/cost-sharing arrangement.
- Adopt a strong funding policy that requires payment of an actuarially determined contribution (ADC).
- Closely monitor investment returns and investment managers' performance.
- Continue to work with 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.

Actuarial Experience Study (June 2019)

Irving Fire's new actuary (Foster & Foster) advised changes to the Fund's actuarial methods and assumptions in its recently conducted actuarial experience study, including the following:

- **Change the asset valuation method from 5-year smoothing to market value** due to the fact that the City contributes a fixed rate of payroll and is not subject to the volatility that an ADC rate would have.
- **Lower the 7.5% annual investment return assumption** as actual returns over the past 28 years have averaged 6.3% per year.
- **Adjust the service-based salary scale assumption** so that it more accurately reflects plan experience.
- **Update the assumed rates of mortality** to reflect the public safety mortality tables as released by the Society of Actuaries.
- **Decrease the assumed termination rates** since the rate of actual retirement is very small in the nine years after a member first reaches retirement eligibility due to the plan's DROP option.
- **Lower the assumed disability rates** as the valuation data showed the only disability retirement currently receiving benefits occurred in 2000.

TAB 5



Guidance for Investment Practices and Performance Evaluations

As required by Senate Bill [322](#) (86R)

Texas Government Code §802.109 requires Texas public retirement systems with at least \$30 million in assets to complete an Investment Practices and Performance Evaluation. The Pension Review Board (PRB) is providing this informal guidance to assist systems in defining the scope and content of the evaluation.

The following provides guidance on the different areas required by statute to be reviewed by the independent firm performing the evaluation. The PRB recognizes that evaluations should and will vary significantly based on the specific characteristics of each system's size, governance structure, and investment program. Therefore, this guidance is intended to inform systems and their stakeholders on the basic aspects of the evaluations and associated reports and is not an exhaustive list of all items that should be reviewed.

A thorough evaluation would include the following elements:

- 1) Identify and review existing investment policies, procedures, and practices. This should include any formally established policies (e.g. Investment Policy Statement) as well any informal procedures and practices used to carry out the investment activities of the system. It is not necessary to review past policies, procedures, and practices that are no longer applicable unless they are deemed helpful to understand current policy or practice.
- 2) Compare the existing policies and procedures to industry best practices.
- 3) Generally, assess whether the board, internal staff, and external consultants are adhering to the established policies.
- 4) Identify the strengths and weaknesses of the current policies, procedures, and practices and make recommendations for improvement.
- 5) Include a detailed description of the criteria considered and methodology used to perform the evaluation, including an explanation of any metrics used and associated calculations.

Applicability

Systems with assets of **at least \$100 million** must complete an evaluation **once every 3 years**.ⁱ Systems with assets of **at least \$30 million but less than \$100 million** must complete an evaluation **once every 6 years**. Systems with assets **less than \$30 million** are **not required**, but are encouraged, to conduct an evaluation.

Deadlines

A report of the first evaluation must be filed with the governing body of the system **not later than May 1, 2020**.

Reports of subsequent evaluations must be filed with the governing body of the system not later than May 1 of the applicable year. Each report is **due to the PRB not later than 31 days after** the date the governing body of a public retirement system receives it.

Independent Firm

*(a) ... A public retirement system shall select an **independent firm** with substantial experience in evaluating institutional investment practices and performance...*

*(c) Provides that a public retirement system, in selecting an **independent firm** to conduct the evaluation described by Subsection (a):*

(1) subject to Subdivision (2), is authorized to select a firm regardless of whether the firm has an existing relationship with the retirement system; and

*(2) is **prohibited** from selecting a firm that **directly or indirectly manages investments** of the retirement system.*

Directly or Indirectly Managing Investments

The following options are provided for consideration by the Actuarial Committee:

[Option A] A firm is considered to be directly or indirectly managing investments if the firm, a subsidiary, or its parent company, has assets of the system under management.

—OR—

[Option B] A firm is considered to be directly or indirectly managing investments if the firm, a subsidiary, or its parent company, has assets of the system under management, or is responsible for selecting investment managers and receives compensation in any form related to such selections (e.g. referral fees, discounts, etc.) other than on a fee for service basis from the system.

Restriction on Performing the Evaluation

If a firm is identified as directly or indirectly managing investments of the system, the firm is not considered an independent firm and is not eligible to perform the evaluation.

Disclosure by Independent Firm

The evaluation should include a summary outlining the qualifications of the firm as well as a statement indicating the nature of any existing relationship between the firm and the system being evaluated, acknowledging that the firm is not involved in directly or indirectly managing investments of the system.

Components of Evaluation

This section provides suggested questions and topics for consideration under each of the five areas required to be covered in each evaluation.ⁱⁱ The questions below are intended to help systems identify the types of information an evaluation may include. Additionally, these questions may be helpful to systems that will use a request for proposal (RFP) to select a firm to perform the evaluation.

Each evaluation must include:

*(1) an analysis of any **investment policy or strategic investment plan** adopted by the retirement system and the retirement system 's compliance with that policy or plan;*

- Does the system have a written investment policy statement (IPS)?
- Are the roles and responsibilities of those involved in investing decisions clearly outlined?
- Is the policy carefully designed to meet the real needs and objectives of the retirement plan? Is it integrated with any existing funding or benefit policies? (i.e. does the policy take into account the current funded status of the plan, the specific liquidity needs associated with the difference between expected short-term inflows and outflows, the underlying nature of the liabilities being supported [e.g. pay-based vs. flat \$ benefit, automatic COLAs, DROP, etc.]?)
- Is the policy written so clearly and explicitly that anyone could manage a portfolio and conform to the desired intentions?
- Does the policy follow industry best practices? If not, what are the differences?
- Does the IPS contain measurable outcomes for managers? Does the IPS outline over what time periods performance is to be considered?
- Is the system following the investment policy?
- What practices are being followed that are not in, or are counter to, written investment policies and procedures?
- Are stated investment objectives being met?
- Would the retirement fund have been able to sustain a commitment to the policies during the capital markets that have actually been experienced over the past ten, twenty, or thirty years?
- Would the investment managers have been able to maintain fidelity to the policy over the same periods?
- Would the policy, if previously implemented, have achieved the objectives and results desired?
- How often is the policy reviewed and/or updated? When was the most recent substantial change to the policy and why was this change made?

Resources

[PRB - Developing an Investment Policy](#)

[GFOA - A Guide for Establishing A Pension Investment Policy](#)

[CFA - A Primer for Investment Trustees](#)

(2) a detailed review of the retirement system's **investment asset allocation**, including:
(A) the process for determining target allocations;

- Does the system have a formal and/or written policy for determining and evaluating its asset allocation? Is the system following this policy?
- If no formal policy exists, what is occurring in practice?
- Who is responsible for making the decisions regarding strategic asset allocation?
- How is the system's overall risk tolerance expressed and measured?
- How often is the strategic asset allocation reviewed?
- Do the system's investment consultants and actuaries communicate regarding their respective future expectations?
- How does the current assumed rate of return used for discounting plan liabilities factor into the discussion and decision-making associated with setting the asset allocation? Is the actuarial expected return on assets a function of the asset allocation or has the asset allocation been chosen to meet the desired actuarial expected return on assets?
- Is the system following industry best practices regarding the establishment and evaluation of the asset allocation?
- How does the asset allocation compare to peer systems?

(B) the expected risk and expected rate of return, categorized by asset class;

- What are the strategic and tactical allocations?
- What is the expected risk and expected rate of return of each asset class?
- How is this risk measured and how are the expected rates of return determined? What is the time horizon?
- What mix of assets is necessary to achieve the plan's investment return and risk objectives?
- What consideration is given to active vs. passive management?
- Are the investments reasonably diversified?
- How often are the strategic and tactical allocations reviewed?

(C) the appropriateness of selection and valuation methodologies of alternative and illiquid assets; and

- How are alternative and illiquid assets selected, measured and evaluated?
- Are the system's alternative investments appropriate given its size and level of investment expertise?
- What valuation methodologies are used to measure alternative and illiquid assets? What alternative valuation methodologies exist and what makes the chosen method most appropriate?

(D) future cash flow and liquidity needs;

- What are the plan's anticipated future cash flow and liquidity needs? Is this based on an open or closed group projection?
- When was the last time an asset-liability study was performed?
- How are system-specific issues incorporated in the asset allocation process? What is the current funded status of the plan and what impact does it have? What changes should be considered when the plan is severely underfunded, approaching full funding, or in a surplus? How does the difference between expected short-term inflows (contributions, dividends, interest, etc.) and outflows (distributions and expenses) impact the allocation? How does the underlying nature of the liabilities impact the allocation (e.g. pay-based vs. flat \$ benefit, automatic COLAs, DROP, etc.)?
- What types of stress testing are incorporated in the process?

Resources

[GFOA – Asset Allocation for Defined Benefit Plans](#)

[CFA – A Primer for Investment Trustees](#)

*(3) a review of the **appropriateness of investment fees and commissions paid** by the retirement system;*

- Does the system have a written investment management fee policy?
- What direct and indirect investment fees and commissions are paid by the system?
- How are the fees reported to the board?
- Are all forms of manager compensation included in reported fees?
- How do these fees compare to peer group and industry averages for similar services? How are the fee benchmarks determined?
- How often are the fees reviewed for reasonableness?
- Are there any fees not directly related to the management of the portfolio?
- Is an attorney reviewing any investment fee arrangements for alternative investments?

Resources

[GFOA - Investment Fee Guidelines for External Management of Defined Benefit Plans](#)

[CFA - A Primer for Investment Trustees](#)

(4) *a review of the retirement system's **governance processes related to investment activities**, including investment decision-making processes, delegation of investment authority, and board investment expertise and education;*

Transparency

- Does the system have a written governance policy statement outlining the governance structure? Is it a stand-alone document or part of the IPS?
- Are all investment-related policy statements easily accessible by the plan members and the public (e.g. posted to system website)?
- How often are board meetings? What are the primary topics of discussion? How much time, detail, and discussion are devoted to investment issues?
- Are minutes available for past meetings? How detailed are the minutes?

Investment Knowledge/Expertise

- What are the backgrounds of the board members? Are there any investment-related educational requirements for board members?
- What training is provided and/or required of new board members? How frequently are board members provided investment-related education?
- Do the board members clearly understand their fiduciary responsibilities?
- What is the investment management model (i.e. internal vs. external investment managers)?
- Does the board receive impartial investment advice and guidance?
- How frequently is an RFP issued for investment consultant services?

Accountability

- How is the leadership of the board and committee(s), if any, selected?
- How are trustees evaluated?
- Who is responsible for making decisions regarding investments, including manager selection and asset allocation? How is authority allocated between the full board, a portion of the board (e.g. an investment committee), and internal staff members and/or outside consultants? Is the board consistent in its use of this structure/delegation of authority?
- Is the current governance structure striking a good balance between risk and efficiency?
- What controls are in place to ensure policies are being followed?
- How is overall portfolio performance monitored by the board?
- How often are the investment governance processes reviewed for continued appropriateness?

Resources

[NASRA - Public Pension Governance](#)

[PEW - Making State Pension Investments More Transparent](#)

[CFA - Investment Governance for Fiduciaries](#)

[CFA - A Primer for Investment Trustees](#)

*(5) a review of the retirement system 's **investment manager selection and monitoring process.***

- Who is responsible for selecting investment managers?
- How are the managers identified as potential candidates?
- What are the selection criteria for including potential candidates?
- What are the selection criteria when deciding between multiple candidates?
- How does the selection process address ethical considerations and potential conflicts of interest for both investment managers and board members?
- Who is responsible for developing and/or reviewing investment consultant and/or manager contracts?
- What is the process for monitoring individual and overall fund performance?
- Who is responsible for measuring the performance?
- What benchmarks are used to evaluate performance?
- What types of performance evaluation reports are provided to the board? Are they provided in a digestible format accessible to trustees with differing levels of investment knowledge/expertise?
- How frequently is performance reviewed?
- Are fees considered when reviewing investment performance?
- What is the process for determining when an investment manager should be replaced?
- How is individual performance evaluation integrated with other investment decisions such as asset allocation and investment risk decisions?

Resources

[GFOA - Investment Fee Guidelines for External Management of Defined Benefit Plans](#)

[GFOA - Selecting Third-Party Investment Professionals for Pension Fund Assets](#)

[CFA - A Primer for Investment Trustees](#)

ⁱ The Houston Firefighters Relief & Retirement Fund, the Houston Municipal Employees Pension System, and the Houston Police Officers' Pension System may submit the investment evaluation reports in Vernon's Civil Statutes to satisfy the requirements of §802.109.

ⁱⁱ The first evaluation "must be a comprehensive analysis of the retirement system's investment program that covers all asset classes" while subsequent evaluations "may select particular asset classes on which to focus."

TAB 6

Investment Expense Disclosure

As required by [Senate Bill 322 \(86R\)](#)

Senate Bill 322 ([86R](#)) requires Texas public retirement systems to submit, as part of their annual financial report (CAFR), a listing by asset class of all commissions and fees paid by the system during the system's previous fiscal year for the sale, purchase, or management of system assets; and the names of investment managers engaged by the system.

The Pension Review Board (PRB) is authorized to adopt rules to implement this provision, which are intended to lend clarity and consistency to the disclosures. This document provides a starting point for the PRB's Actuarial Committee to consider rulemaking in this area.

Staff Recommendations

Staff is recommending that the Committee consider adopting rules requiring systems to report investment management fees and commissions, including carried interest/profit-sharing/performance fees, broken down by five asset classes. This information should be included in the systems' CAFR in addition to all investment activity expenses, which should include investment consultant, custodial, investment-related legal, and investment research.

1. Definition of Investment Expense

The Governmental Accounting Standards Board (GASB) defines investment expenses as investment-related costs that are separable from investment income and the administrative expense of the pension plan.¹

Staff recommends defining investment expense as:

The following, **by asset class**:

- **Direct fees and commissions**
 - Management fees
 - Fees paid from the trust
 - Fees netted from returns (at the fund level)
- **Indirect fees and commissions**
 - Performance fees (profit-sharing/carried interest)
 - Fees paid from the trust
 - Fees netted from returns (at the fund level)
 - Broker fees and commissions (per share)

¹ Statement No. 67. *Financial Reporting for Pension Plans, Governmental Accounting Standards Series No. 327-B*, June 2012, [gasb.org/resources/churl/399/602/GASBS67.pdf](https://www.gasb.org/resources/churl/399/602/GASBS67.pdf).

Most Texas public pension plans already report custodial services, investment-related legal services (if tracked separately) and investment research (if applicable) within their CAFRs. To provide standardization in investment expense reporting, staff recommends including the following in the definition of investment expenses, which should not be reported by asset class, as they generally apply to the overall investment program.

- Investment consulting
- Custodial services
- Investment-related legal services
- Investment research

Securities Lending

Systems also report securities lending income and related expenses as a separate component of total net investment income. The Government Finance Officers Association (GFOA) recommends reporting the amounts together rather than divided between investment income and investment expense.² Staff is not recommending including securities lending as a component of investment expense reporting and plans can continue reporting securities lending expenses separately from investment expense.

2. Asset Classes for Fee Reporting

Staff recommends that direct and indirect fees and commissions be reported by the following asset classes (with examples provided):

Cash & Short-Term	Real Assets (Private/Public)	Equity (Private/Public)	Fixed Income (Private/Public)	Alternatives/Other*
<ul style="list-style-type: none">• Money market securities	<ul style="list-style-type: none">• Real estate• Commodities• Natural resources	<ul style="list-style-type: none">• Private equity• Domestic stocks• International stocks• Emerging market stocks• Equity mutual funds	<ul style="list-style-type: none">• Municipal bonds• Corporate bonds• US Treasuries > 1 yr.• Treasury inflation-protected securities• Private credit• Fixed income mutual funds	<ul style="list-style-type: none">• Hedge funds• Venture capital• Derivatives

***Staff recommends requiring all fees listed as “Alternatives/Other” be detailed in a footnote or separate schedule.**

² <https://www.gfoa.org/securities-lending-transactions-financial-statements>

3. Reporting Structure: Direct and Indirect Fees and Commissions

Management Fees

Direct investment management fees can include fees paid to managers from the group trust and fees netted from returns at the fund level. Fees netted from returns are amounts withheld from investment returns by managers, which may or may not be disclosed to the retirement system.

Staff recommends requiring plans to distinguish between fees paid from the trust fund and fees netted against returns.

Performance Fees/Profit-sharing/Carried Interest

Performance Fees (profit-sharing/carried interest) are arrangements paid to the manager as financial incentives based on the investment returns earned by the fund. Some of the larger systems in Texas report this information, however, it is usually in supplemental schedules.

Additionally, the Institutional Limited Partners Association (ILPA), a trade association for institutional limited partners in the private equity asset class, believes that limited partners should press their general partners for more transparency.³

Staff recommends requiring plans to report performance fees such as carried interest and profit-sharing.

The following provides an example of these levels of reporting from a CAFR received by the PRB.

Investment Manager Fees for the Period Ended June 30, 2018					
Asset Class	Fees Paid from The pension Trust Fund			Fees Netted Against Returns	
	Market Value of Assets Under Mgmt.	Mgmt. Fees	Performance Fees	Mgmt. Fees	Performance Fees/Carried Interest
Global Equity					
<i>Public Equity</i>					
USA	\$ 26,620,336,663	\$ 25,948,282	\$ 7,898,402	\$ 15,112,927	\$ 25,810,860
Non-US Developed	\$ 20,143,129,906	\$ 14,970,985	\$ 20,240,205	\$ 18,073,824	\$ 43,075,888
Emerging Markets	\$ 13,827,302,571	\$ 25,854,357	\$ 10,801,254	\$ 5,592,407	\$ 2,188,634
Directional Hedge Funds	\$ 5,993,811,349	\$ 1,261,454	\$ -	\$ 53,331,951	\$ 58,411,340
Total Public Equity	\$ 66,584,580,489	\$ 68,035,078	\$ 38,939,861	\$ 92,111,109	\$ 129,486,722
Private Equity	\$ 19,935,350,059	\$ -	\$ -	\$ 175,065,412	\$ 202,218,680
Total Global Equity	\$ 86,519,930,548	\$ 68,035,078	\$ 38,939,861	\$ 267,176,521	\$ 331,705,402
Stable Value					
US Treasuries	\$ 16,392,299,986	\$ 2,523,353	\$ 1,005,537	\$ -	\$ -
Absolute Return	\$ 3,377,655,425	\$ 1,023,551	\$ 407,878	\$ 5,847,976	\$ 3,801,837
Stable Value Hedge Funds	\$ 6,508,116,503	\$ -	\$ -	\$ 91,052,734	\$ 68,150,312
Cash	\$ 507,646,555	\$ -	\$ -	\$ -	\$ -
Total Stable Value	\$ 26,785,718,469	\$ 3,546,904	\$ 1,413,415	\$ 96,900,710	\$ 71,952,149

³ "ILPA Principles." Who We Are, Institutional Limited Partners Association, ilpa.org/ilea-principles/

Brokerage Commissions/Transaction Costs

Some Texas plans report the highest brokerage commissions paid to execute transactions (on a per share basis).

Example:

Table 7 Broker Commissions for the Fiscal Year Ended August 31, 2018		
Brokerage Firm	Shares Traded	Commissions Paid*
Merrill Lynch	425,008,579,873 \$	7,960,246
Goldman Sachs Group, Inc.	14,506,696,802,199	6,875,383
JPMorgan Chase	922,637,675,354	5,460,817
Morgan Stanley	640,678,818,911	5,229,646
Citigroup	8,841,439,800,825	4,597,836
Credit Suisse Group	1,610,976,824,883	3,566,278
Deutsche Bank AG	168,802,637,664	2,929,066
UBS AG	507,419,931,844	2,355,038
Barclays	24,684,070,799	1,949,329
Bank of New York Mellon	3,056,389,551	1,912,130
Summary of remaining 248 brokerage firms	3,016,040,155,331	21,996,741
Total	30,667,441,687,233 \$	64,832,510

**Commissions paid per share is less than \$0.01.*

Staff recommends requiring plans to report brokerage commissions by asset class.