



**STATE PENSION REVIEW BOARD OF TEXAS
BOARD MEETING**

AGENDA

Thursday, January 24, 2019 – 10:00 AM

State Office of Administrative Hearings Room 402

William P. Clements Building

300 W. 15th Street, Austin, TX 78701

The Board may deliberate and take action on any of the following items:

1. Meeting called to order
2. Roll call of Board members
3. **TAB 1** Discuss and consider approval of the October 4, 2018 Board meeting minutes – Chair McGee
4. Receive update on plans for addressing funding shortfalls – Chair McGee
 - A. **TAB 2** City of Fort Worth and Fort Worth Employees Retirement Fund
 - B. City of Galveston and Galveston Employees' Retirement Plan for Police
5. Actuarial Committee – Discuss and consider the following matters – Keith Brainard
 - A. **TAB 3A** Actuarial Valuation Report – Kenny Herbold
 - B. **TAB 3B** Public retirement system reporting and compliance, including noncompliant retirement systems under Section 801.209 of the Texas Government Code – Bryan Burnham
 - C. **TAB 3C** Update on the retirement systems subject to the Funding Soundness Restoration Plan (FSRP) requirement, including compliance – Reece Freeman
 - D. **TAB 3D** Interim Study on Funding Policies for Fixed-Rate Plans – Mariah Miller and Ashley Rendon
 - E. **TAB 3E** Update on online pension dashboard – Anumeha Kumar
6. Education and Research Committee – Discuss and consider the Minimum Educational Training (MET) Program for trustees and system administrators pursuant to Section 801.211 of the Texas Government Code, including the following – Judge Cable

- A. **TAB 4A** Receive update on MET compliance reporting – Joey Evans
 - B. **TAB 4B** Receive update on evaluation of PRB MET courses
- 7. **TAB 5** Contribution and benefit decision-making for Texas public retirement systems – Anumeha Kumar
- 8. Legislative Committee – Discuss and consider the following items –Keith Brainard
 - A. 86th Legislature, including the following – Anumeha Kumar
 - i. **TAB 6A** House Committee on Pensions Interim Report to the 86th Texas Legislature
 - ii. **TAB 6B** Senate State Affairs Committee Interim Report to the 86th Texas Legislature
 - iii. **TAB 6C** PRB 86th Legislature Bill Status Report
 - B. **TAB 6D** Guide to Public Retirement Systems in Texas for the 86th Legislature – Anumeha Kumar
- 9. Review and discuss report from the Executive Director on the following matters – Anumeha Kumar
 - A. **TAB 7** Updated Fiscal Year 2019 Operating Budget
 - B. Filing of 2018 personal financial statements
 - C. Update on staffing changes
- 10. Annual Committee assignments – Chair McGee
- 11. Board member training on Open Meetings Act and Legislative Session – Assistant AG Counsel Craig Pritzlaff
- 12. Call for future PRB agenda items
- 13. Date and location of next PRB meeting
- 14. Invitation for public comment
- 15. Adjournment

NOTE: Persons with disabilities who plan to attend this meeting and who may need special assistance are requested to contact Ms. Sheryl Perry 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. The Board may go into executive/closed session regarding any item on the agenda if permitted under the Open Meetings Act, Texas Government Code Annotated, Chapter 551.

TAB 1

Pension Review Board

October 4, 2018

Minutes

1. Meeting called to order (0:05)

The third and final meeting of 2018 of the Pension Review Board began on Thursday, October 4, 2018 at 11:05 AM in the Capitol Extension, Committee Room E1.012, 1400 N. Congress Avenue, Austin, Texas 78701.

2. Roll call of Board members (0:10)

Board Members Present

Chair Josh McGee

Keith Brainard

Andrew Cable

Marcia Dush

Rossy Fariña-Strauss

Stephanie Leibe

Ernest Richards

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

3. Discuss and consider Board administrative matters, including the following items – Chair McGee (0:28)

A. Consider approval of the June 14, 2018 Board meeting minutes (0:33)

Chair McGee entertained a motion to suspend the reading of the minutes of the PRB meeting held March 1, 2018 and to approve them as circulated.

Motion made by Marcia Dush and seconded by Keith Brainard.

Motion Approved Unanimously

B. Recognition of outgoing Board Member (01:09)

Chair McGee read a resolution for Mr. J. Robert Massengale, recognizing him for his 10 years of service.

Mr. Massengale stated that it was an honor and privilege to serve on the Pension Review Board.

Ms. Kumar stated that it has been a pleasure to have worked with Mr. Massengale, and he will be deeply missed.

Chair McGee opened the floor for public comment.

Mr. Jeff Litchfield expressed his gratitude towards Mr. Massengale and thanked him for his influence.

Mr. Brainard mentioned that Mr. Massengale has been a source of stability and wisdom on the board and stated that it has been a joy serving on the board with him.

C. Introduction of new Board Member (7:06)

Chair McGee introduced Ms. Rossy Fariña-Strauss and welcomed her to the Board.

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4. Actuarial Committee – Discuss and consider the following matters – Keith Brainard (7:53)

A. Intensive actuarial review of Irving Firemen's Relief & Retirement Fund (8:12)

Mr. Herbold gave an overview of the Irving Firemen's Relief & Retirement Fund and reminded the Board that the review was delayed, as it was originally to be reviewed in the summer based on the December 31, 2015 actuarial valuation. He added that the PRB was waiting for an updated actuarial valuation as well as an actuarial audit, which was received, but not in time to include the update into the review.

Mr. Herbold stated that the new valuation lowered the assumed investment return from 8.25% to 7.5%, and also lowered the assumptions for payroll growth and inflation. He stated that the main risks that were raised in the review, despite the changes, were essentially the same.

Mr. Herbold stated that the primary risks were the significant deferred retirement option plan (DROP) account, as the account represents 30% of total assets and the guaranteed interest rate tied to the assumed rate of return. He noted potential concern for assets not achieving the guaranteed rate of return, and potential for members to pull out assets over a short period.

Mr. Brainard asked Mr. Herbold to summarize the changes in the recently received actuarial valuation. Mr. Herbold stated that they lowered some assumptions and the impact of the changes increased the amortization period to infinity, which will make the plan subject to a revised funding soundness restoration plan (FSRP).

Mr. Brainard asked City of Irving and Irving Fire plan representatives to provide their testimony. Representatives included Mr. John Crider, plan actuary, Tony Harvey, Board Chairman, and Mr. Jeff Litchfield, Chief Financial Officer of the City of Irving.

Mr. Litchfield stated that he serves as a member of the Irving Fire Board, and he felt the PRB's report and review provided good historical information that will help moving forward. He stated that he agreed with the findings of the review, and will consider the recommendations.

He pointed out that the City of Irving focuses greatly on pensions due to neighboring cities handling pension issues. He stated that since 2011, both the member and City contributions have increased, and based on the increases, the City anticipated the lowered assumed rate of return to provide for a 40-50 year amortization period, but was surprised that it went to infinite.

Mr. Litchfield stated that he could not give concrete plans for the future, but the next meeting of the audit and finance committee would be on October 17, where he would share the PRB's report and start discussions with the committee.

Mr. Litchfield thanked the Board for the delay of review, as it would have been based on the 2015 actuarial valuation, and they would not have known that the next valuation would show an infinite amortization period. He stated that the City is very supportive of the fund, and that there should be no hindrance to work out a plan.

Mr. Brainard asked Mr. Harvey and Mr. Crider if they had any prepared remarks.

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Mr. Harvey mentioned that the intensive actuarial review did not catch the Fire Board off guard. He stated that the firefighters have been working on the issues since 2011, when the firefighters increased their contributions; he added that the City has also increased its contribution.

Mr. Harvey agreed with the review that the DROP is a major issue with the fund, but he stated that because of the State's Constitutional benefit protection law, they were under the impression that they could not change that. He noted that the plan is waiting on court decisions concerning the Dallas Police & Fire Pension System to see if they can change the DROP interest rate. He mentioned that the plan was also waiting on the actuarial valuation to see what actions they should take.

Mr. Harvey stated that the plan had a tier two election that addressed the length of the DROP participation, DROP interest, and other factors, which ultimately failed. He stated that he felt the decision was due to lack of education of the members. He stated that the Board is focusing on educating its members before coming to another vote on plan changes and adding a second tier. He stated that the intensive review helps the Irving Fire Board and they will consider the recommendations and will use the review as an opportunity to educate their members.

Mr. Crider added that since it is a reverse DROP, every time a dollar of drop is paid out, the unfunded actuarial accrued liability decreases by about the same amount. He stated that the reverse DROP can be viewed as an optional form of payment.

Chair McGee thanked the representatives for their attendance and stated that he appreciated their dedication to addressing the problem and the steps being taken. He acknowledged the increased contributions from both parties.

He stated that the plan's issues are fixable and encouraged the plan and City to take action as soon as possible, even if it is a small action that builds to something bigger later.

Chair McGee noted that DROP programs are meant to fix a problem where workers want to work longer than retirement age. He added that DROPs need to be implemented in a way that they do not cause financial issues.

Ms. Dush suggested the plan use a Monte Carlo simulation where the payouts of the DROP are anticipated based on raising interest rates.

Mr. Brainard acknowledged the changes made to the plan and expressed his appreciation to the representatives.

Chair McGee emphasized the need to address the issues sooner rather than later and encouraged the plan to review fees and asset allocation.

Mr. Brainard asked how often services are bid for investment and actuarial consultants. Mr. Harvey stated that since he has been on the Board, they have never bid for services.

Ms. Dush inquired as to whether NASRA has model RFPs. Mr. Brainard stated that he could make some available if needed.

Ms. Kumar stated that the staff could reach out to other plans for examples of RFPs and make them available.

B. Update on intensive actuarial reviews of the following systems – Kenny Herbold (52:20)

i. Longview Firemen's Relief & Retirement Fund (52:42)

Mr. Herbold stated that the review noted that Longview Fire has a good working relationship with their city. He stated that they implemented a plan in 2012 to address potential issues, which increased contributions, created a new benefit tier, and modified asset allocation. Mr. Herbold stated that despite the changes made to the plan, there are still a number of concerns.

Mr. Herbold explained the changes made to the report since the Actuarial Committee meeting. He stated that in addition to the changes requested from the Committee, the Fund also asked to work with staff to make some clarifying and technical changes. He explained a chart that included a comparison of Longview's asset allocation to various capital market assumptions.

Chair McGee recommended that staff include the chart in Longview Fire's final report.

Mr. Brainard asked whether Longview Fire has taken any action based on the report. Ms. Kumar stated that she was not aware of any action, however staff worked closely with the Fund, and the Fund understands the concerns that the board has raised.

ii. Orange Firemen's Relief & Retirement Fund (1:07:10)

Mr. Herbold explained that Orange Fire was reviewed at the September Actuarial Committee meeting. He stated that it is similar to other plans that have been reviewed.

Mr. Herbold stated that their actual returns have not met their assumed rate of returns, and that they've had one of the highest expense ratios in their peer groups. He suggested that they take a closer look at their consultant fees and peer group analysis to see if they are paying more than their peer group.

Chair McGee stated that the peer group comparison shows that Orange Fire has an expense ratio around 1.38%, which is particularly high. He commented on the investment consultant, who services Orange Fire and many of the peers in the group that have the highest expense. He noted that this is an area that the Board should keep an eye on and that plans above 1% should put additional scrutiny on consultant fees.

Mr. Brainard echoed Chair McGee's concerns and stated that it is incumbent on each plan to ask their investment consultant to justify the additional fees that they are charging. He asked whether Orange Fire made any changes as a result of the PRB's report.

Ms. Kumar stated that the Orange Fire pension board discussed the recommendations included in the review and have laid out a concrete action plan to address and try to implement some of those plans. She added that the plan has been interacting with staff and expressed clear interest to take these

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recommendations seriously and moving forward, to make necessary changes, including reviewing the consultants that they hire.

C. Adoption of published 2018 intensive actuarial reviews (1:13:09)

Mr. Brainard recommended that the Board consider adopting the seven reviews completed by the PRB in 2018.

Chair entertained a motion to adopt all seven intensive actuarial reviews for publication in the agency's 2018 Biennial Report, incorporating changes agreed upon by the Board and any technical changes to the Irving, Orange, and Longview Fire reviews.

Motion made by Marcia Dush, seconded by Keith Brainard.

Motion Approved Unanimously

Mr. Brainard commended the staff on their work on the reviews, noting the template and work that goes into the reviews. Chair McGee echoed Mr. Brainard's remarks and stated that the reaction from plans and sponsors has been fantastic. He added that since the process was started, the amount of collaboration and ability to work together has improved.

Ms. Kumar thanked the Chair and Vice Chair and stated that staff has been trying to follow up with the systems that have been reviewed as well, and have heard from some of the systems that they view the reviews positively.

D. Actuarial Valuation Report – Kenny Herbold (1:16:17)

Mr. Herbold stated that there were not significant changes since the last PRB meeting. He stated that the assumed rates of return have lowered, and funded ratio average improved slightly. He added that the dollar amount of unfunded liabilities did rise. Mr. Herbold noted that there are now 99 plans, with six recently registered.

E. Update on Teacher Retirement System's investment return assumption change – Kenny Herbold (1:18:30)

Mr. Herbold stated that the presentation in the meeting packet was from the GRS presentation that was given at the recent TRS Board meeting. He stated that the Board chose to lower the assumed rate of return to 7.25%, so the unfunded liabilities increased and funded ratio dropped. He added that in order for the system to have a 30-year amortization period, they would need to increase current contributions by 1.82%, or an immediate lump sum of approximately \$786 million per year.

Mr. Herbold noted that TRS has requested an additional \$1.4 billion as a special item in their appropriations request.

Mr. Brainard stated that TRS accounts for more than half of the money of the people in the state, in terms of public pension plans, so it is worth watching what they do. Also, he stated that it is extraordinary that they dropped their return assumption by 75 basis points.

Chair McGee stated that in the past, TRS has reported an open amortization period. He asked whether it would be the same for the recommended increase, keeping them at 30 years (open).

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Mr. Herbold stated that the plan is fixed rate, so the amortization period is recalculated at each valuation. He added that in order to make benefit improvements, they are required to have an amortization period of 31 years or less after the benefit improvements are taken into account.

F. Staff update on Funding Soundness Restoration Plan for Fort Worth Employees Retirement Fund – Anumeha Kumar (1:23:33)

Ms. Kumar stated that at the June meeting, the System and City provided a timeline for the city council to vote on pension reforms. She stated that a vote was scheduled to be held on September 18, however, they lost a police officer in the line of duty, and because of that, the vote was delayed. Ms. Kumar stated that they are unsure of when they will vote, however, the City has informed staff that they are trying to schedule that sometime before the end of the year.

The Board asked that staff invite the System and City to the next PRB meeting.

G. Public retirement system reporting and compliance, including the following items: (1:25:49)

i. Update on FSRP requirement – Reece Freeman (1:25:58)

Mr. Freeman gave the update of the funding soundness restoration plan report, noting that Galveston Fire's FSRP was recently received, showing a decreased amortization period given the changes.

He stated four plans were immediately subject to the FSRP requirement, and no plans have come off the list since the last PRB meeting.

ii. Noncompliant retirement systems under Section 801.209 of the Texas Government Code, including Northeast Medical Center Hospital Retirement Plan – Reece Freeman and Ashley Rendon (1:29:37)

Mr. Freeman stated that there are 99 total plans, and two plans have been non-compliant over 60 days.

Ms. Rendon stated that the representative sent the required reports for fiscal year 2017, and they are working on getting information together to begin the 2018 required reports. She explained that the plan has been non-compliant for several years, but due to the plan being closed and frozen, as well as updates in PRB statute and GASB requirements, the plan fell out of compliance.

Ms. Kumar added that the system was excused from the meeting due to the fact that staff received required reports.

Ms. Rendon explained that Nacogdoches County Hospital is beginning the process of producing the required reports.

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H. Discuss and consider the following Interim studies and possible recommendations:
(1:35:10)

i. Pooling Assets for Small Plans – Kenny Herbold (1:35:23)

Mr. Herbold stated that in November the board requested staff to look into the potential benefits of small plans pooling their assets. He stated that staff looked at the last ten years of investment return data and expense ratios.

He stated that staff found that on a risk-adjusted basis, larger plans are performing better than smaller plans. He added that there is a significant difference for investment expense and administrative expense ratios; as plan size goes up, those ratios go down. He stated that there is certainly the potential for benefits associated with pooling assets.

Mr. Herbold stated that staff also identified some models found in the US and Canada: investment management only, and investment management and administration.

Mr. Brainard noted that there are a large number of small plans in the state, and many of those plans are paying over 1% a year on investment management expenses. He stated that a lot of the plans face a tough road, and the current model does not serve the smaller plans well.

Ms. Kumar stated that when staff conducted the study and looked at different modeling exercises, they wanted to illustrate and quantify the idea that there are potential savings to be realized if the idea is pursued further. She added that this study is just a first step.

Mr. Brainard asked for clarification on the recommendation in the study. Mr. Herbold stated that staff has identified some potential benefits to pooling assets, is a good first step, and warrants further study.

Mr. Richards asked about needed authorization by the state.

Mr. Brainard stated that his understanding was that doing this would require legislation.

Ms. Dush stated that she would like to see further work done to make sure that the appropriate statistical tests have been completed. She added that even if all the smaller plans pooled assets, she still did not think it was enough to provide sufficient economies of scale.

Ms. Kumar stated that the motion is requesting the Board to allow staff to further work with the Board Chair, Vice Chair and Board Actuary to fine tune the review.

Chair entertained a motion to adopt the recommendations of the interim study and direct staff to work with the Board Chair and Vice Chair to finalize the report for publication in the agency's 2018 Biennial Report pursuant to Government Code 801.202 and 801.203.

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Motion made by Keith Brainard and seconded by Judge Andrew Cable.

Motion Approved Unanimously

ii. Funding Policies for Fixed Rate Plans – Michelle Kranes (1:51:10)

Ms. Kranes gave a high level overview on the funding policies for fixed rate plans study. She stated that approximately 80% of Texas plans have a fixed rate funding structure.

She stated that the study attempts to directly engage the notion that fixed rate plans do not need funding policies. Ms. Kranes stated that ideally, funding policies could allow systems to look at mechanisms and put into place a written plan. She stated that staff talked to systems and heard them talk about the benefits of a funding policy.

Ms. Kranes explained the benefits of a funding policy, including transparency, funding discipline, and governance.

Chair McGee asked about the timing of the final paper. Ms. Kumar stated that staff was hoping to recommend the study for adoption at the January PRB meeting. She added that the study could then be included as an addendum to the Biennial Report to the Legislature.

5. Education and Research Committee – Receive update on Minimum Educational Training (MET) Program – Judge Cable (1:59:01)

A. MET compliance reporting – Joey Evans and Michelle Kranes (1:59:15)

Mr. Evans stated that as of the date of the report, all systems are compliant with the PRB-2000 requirement.

B. Copyright of PRB MET courses – Joey Evans and Michelle Kranes (2:00:07)

Ms. Kranes stated that the staff secured copyright on the online courses in February.

Mr. Brainard stated that this is information that the staff prepared and that it was very good. He asked if staff could share the evaluations with the Board.

6. Legislative Committee – Discuss and consider the following items – Chair McGee (2:01:28)

A. 85th Legislature interim charges and committee hearing updates (2:01:38)

Ms. Kumar stated that the upcoming House Pensions Committee hearing was scheduled for October 12 in Houston. The Committee asked the staff to provide updates on general pension health as well as updates on the Houston plans.

Chair McGee asked staff to provide the presentation to the Board.

B. 2017-2018 Biennial Report (2:03:15)

Ms. Kumar stated that staff will be working on the Biennial Report to include the PRB's activities over the last two years and incorporate recommendations to the Legislature and Governor, and Lieutenant Governor.

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C. 2018 TEXPERS Summer Educational Forum (2:04:19)

Ms. Kumar stated that the Summer Educational Forum was held in August. She added that staff was requested to provide a presentation with regards to unfunded liabilities.

Ms. Dush thanked TEXPERS, stating that she found them to be very open and welcome.

7. Review and discuss report from the Executive Director on the following matters: (2:05:33)

A. Staff update (2:05:42)

Ms. Kumar introduced the new Research Specialist, Mariah Miller, and stated that staff is fortunate to have her. She also updated the Board that there are two vacant positions: the Investment Analyst is no longer with the agency and staff is currently interviewing for a Research Specialist.

B. Agency budget hearing (2:07:03)

Ms. Kumar stated that the hearing was in August and was attended by the LBB and Governor's Office. She stated that Chair McGee attended to represent the Board, and that the hearing went well.

C. Report on End of Fiscal Year 2018 Operating Budget (2:07:35)

Ms. Kumar stated that the agency was within the appropriated budget, using 99% of the appropriation.

D. Approval of Fiscal Year 2019 Operating Budget (2:07:41)

Ms. Kumar stated that the budget is in line with general appropriations line items.

Chair entertained a motion to approve the Fiscal Year 2019 Operating Budget as presented.

Motion made by Keith Brainard and seconded by Stephanie Leibe.

Motion Approved Unanimously

8. Call for future PRB agenda items (2:11:14)

Mr. Brainard asked that staff prepare a brief summation for the Board and its stakeholders on governance of public retirement plans in Texas concerning governing structures pertaining to benefits and financing structures.

Chair McGee also noted the Board would also discuss the fixed rate funding policy paper at the next meeting.

9. Date and location of next PRB meeting – TBD (2:12:14)

Chair McGee stated that the next meeting will be in January, but the Board still needs to be polled for a date. He stated that since session will have begun, the agency also needs to find a location for the meeting.

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10. Invitation for public comment (2:12:45)

Mr. Paul Brown, President of TEXPERS, thanked the Chairman and Board and expressed appreciation for attendance at the recent Educational Forum. He stated that TEXPERS has formed a committee concerning RFPs and would work with the PRB staff on that.

He stated that TEXPERS represents 80 of the plans under PRB purview. He stated that over 40 plans are small TLFFRA funds. He encouraged staff to get the plans' opinion on the asset pooling study.

Mr. William Gates, Chairman of Lufkin Fire Pension Fund, asked that the asset pooling topic not be approached lightly. He stated that they would encourage staff to attend TLFFRA meetings and go through an extreme and detailed process.

Mr. David Stacy, Midland Fire, stated thanked staff for attempting to quantify a long known issue for small plans. He pointed out that over 10 years ago, the Fire Fighters' Pension Commissioner brought the topic up as a viable condition, but unfortunately the office staff did not have the ability to take on technical and legal issues that it raised.

He stated that one of the things that the agency does is develop legislative recommendations and would like the Board to recognize that pooling assets is not likely to happen during this Legislative Session.

Mr. Tony Robinson, Amarillo Fire thanked the Board and staff and recognized that the minimum educational training runs very smoothly and is a great baseline. He recognized John Crider for the service he has provided and education given to plans on actuarial information.

Chair McGee reopened agenda item 4.H.i, and stated that the Board fully agrees that the pooling of assets interim study is a first step. He added that the topic will be researched properly and that he does not anticipate any movement on this topic this session other than an additional study. He stated that the Board's intention is aligned with a lot of comments that have been heard.

11. Adjournment (2:23:13)

Chair McGee adjourned the meeting at 12:30 PM.

In Attendance

PRB Staff

Wes Allen
Eusebio Arizpe
Bryan Burnham
Joey Evans
Reece Freeman
Kenny Herbold
Michelle Kranes
Anumeha Kumar
Mariah Miller
Ashley Rendon

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Guests

Michael Trainer – San Antonio Police Pensioners Association
Paul Brown – TEXPERS
Ben Marts – Odessa Firefighters Relief & Retirement Fund
Travis Jones – Odessa Firefighters Relief & Retirement Fund
Tony Robinson – Amarillo Firefighters Relief & Retirement Fund
Dan Wattles – TMRS
Tom Harrison – TCDRS
Jason McElvaney – TCDRS; Fort Worth Retirement
Bob May
Pat Haggerty – El Paso Fire & Police Pension Fund
Kenneth Oliver – TMRS
Tony Harvey – Irving Fire
John Crider – John Crider Consulting Agency
Jeff Litchfield – Irving Fire; City of Irving
Micah Johnson – Irving Fire
Joe Gimenez – G3 Public Relations
William Gates – Lufkin Fire Fund
David Stacy – Midland Firemen's Relief and Retirement Fund
David Keller
Eddie Solis – TEXPERS
Eloise Raphel – Houston Firefighters' Relief and Retirement Fund
Katy Fallon Brown – LBB
Tyler Grossman – El Paso Fire & Police Pension Fund
Max Patterson – TEXPERS
Pattie Featherston – Austin Police Retirement System
Chuck Campbell – Jackson Walker LLP
Jarod Love – Houston Firefighters Relief and Retirement Fund

Chair Josh McGee

TAB 2



Pension Reform Update

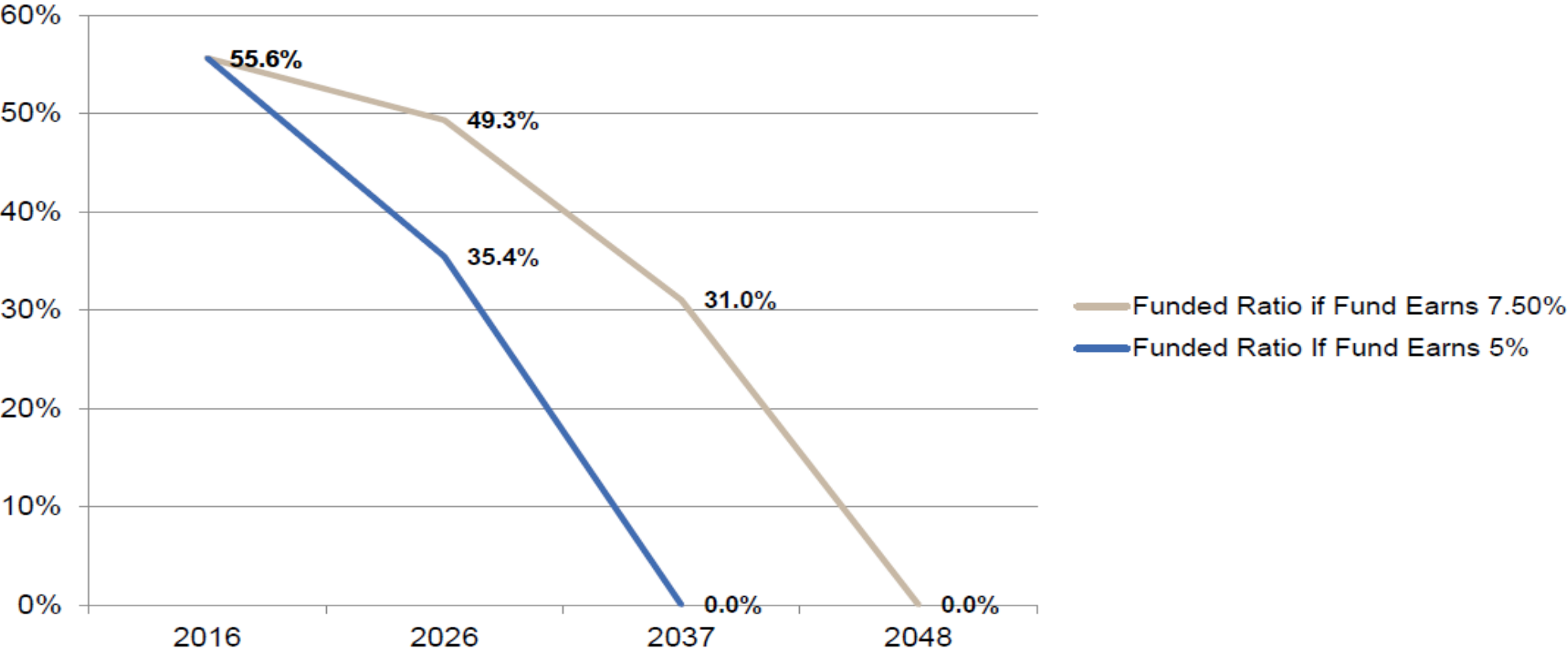
December 11, 2018

City Council Work Session

David Cooke
City Manager

Consequences of Status Quo

Projected Funded Ratios: No Additional Changes



	City Manager's Compromise Proposal (10.2%)
Increased City Contribution	4.5% (in exchange for support of modified COLA reduction for existing retirees and past service)
Changes to Benefits/ Eligibility	3.1% <ul style="list-style-type: none"> • Replace 2% simple and Ad Hoc COLAs with 1% simple COLA • Current retirees only with at least 25 YOS retain 2% COLA on first \$30,000 of benefit • Eliminate COLA for future service • Eliminate service credit for future accruals of major medical and sick leave • Establish minimum retirement age (55) for future service of Fire and General employees
Increased Employee Contributions	2.6% <ul style="list-style-type: none"> • General: 1.1% + 0.7% (<i>Blue Service</i>) • Fire: 3.8% • Police: 3.8% + 0.9% (<i>25 and out</i>) • Commence employee contribution increases May 1, 2019 and phase in over two years for Fire and three years for Police

The Latest Proposal

Current Proposal (10.3%)	
Increased City Contributions	<p>4.5%</p> <p><u>Contingent</u> on successful employee vote</p>
Changes to Benefits/Eligibility	<p>2.9%</p> <ul style="list-style-type: none"> • Eliminate COLA for future service effective 7/20/2019 (1.0%) • Retain current 2% simple COLA or ad hoc for service through 7/19/2019 for members who are retired or entered DROP by 1/1/2021, including early retirement • Convert COLA of remaining active, eligible employees for service through 7/19/2019 to a variable COLA based on Fund performance (1.6%) • Eliminate service credit for future accruals of major medical and sick leave (.3%) <p><u>Contingent</u> upon successful employee vote:</p> <ul style="list-style-type: none"> • Six-year DROP upon successful employee vote (0%)
Increased Employee Contributions (subject to employee vote)	<p>2.9%</p> <ul style="list-style-type: none"> • General: 1.1% + 0.7% (<i>Blue Service</i>) (.5%) • Police/Fire: 3.8% (1.9%) • Police 25 & out: 0.6% (.2%) • Commence employee contribution increases summer 2019 and phase in over two years for Fire and three years for Police (-.1%) • Employee contributions restored for all overtime (.4%)

Details

- **Minimum retirement age of 55** applies only to General employees hired since July 2011; removed for Fire and future service of Generals
- **Extension of DROP** is contingent upon successful vote and additional year is only available after 7/20/2019 when all changes become effective
 - Impact on expiring DROP members before that date subject to review of IRS rules
- All **vested terminations** revert to variable COLA unless they begin drawing retirement by 1/1/2021

Variable COLA

CONDITIONS:

- No variable COLA if auto risk-sharing contribution increases are still in effect
- Thereafter, Board may, with Council ratification, award lifetime COLA or 13th check if:
 - Actuarially Determined Contribution (ADC) equal to or less than fixed contributions for last 2 years based on actuarial and market value of assets
 - Full cost of benefit is funded
 - Minimum financial criteria met:
 - Thirty-year closed amortization beginning in 2018
 - Discount rate is consistent with the average reported by two independent sources agreed to by the City and the Board
- Increase in any single year may not exceed 4% increase of base pension

RESULT:

- Current employees with blue service who do not DROP or retire by 1/1/2021 are unlikely to ever receive a COLA
- Fund returns would need to consistently be 9-10% in order for a COLA to be triggered

Risk Sharing

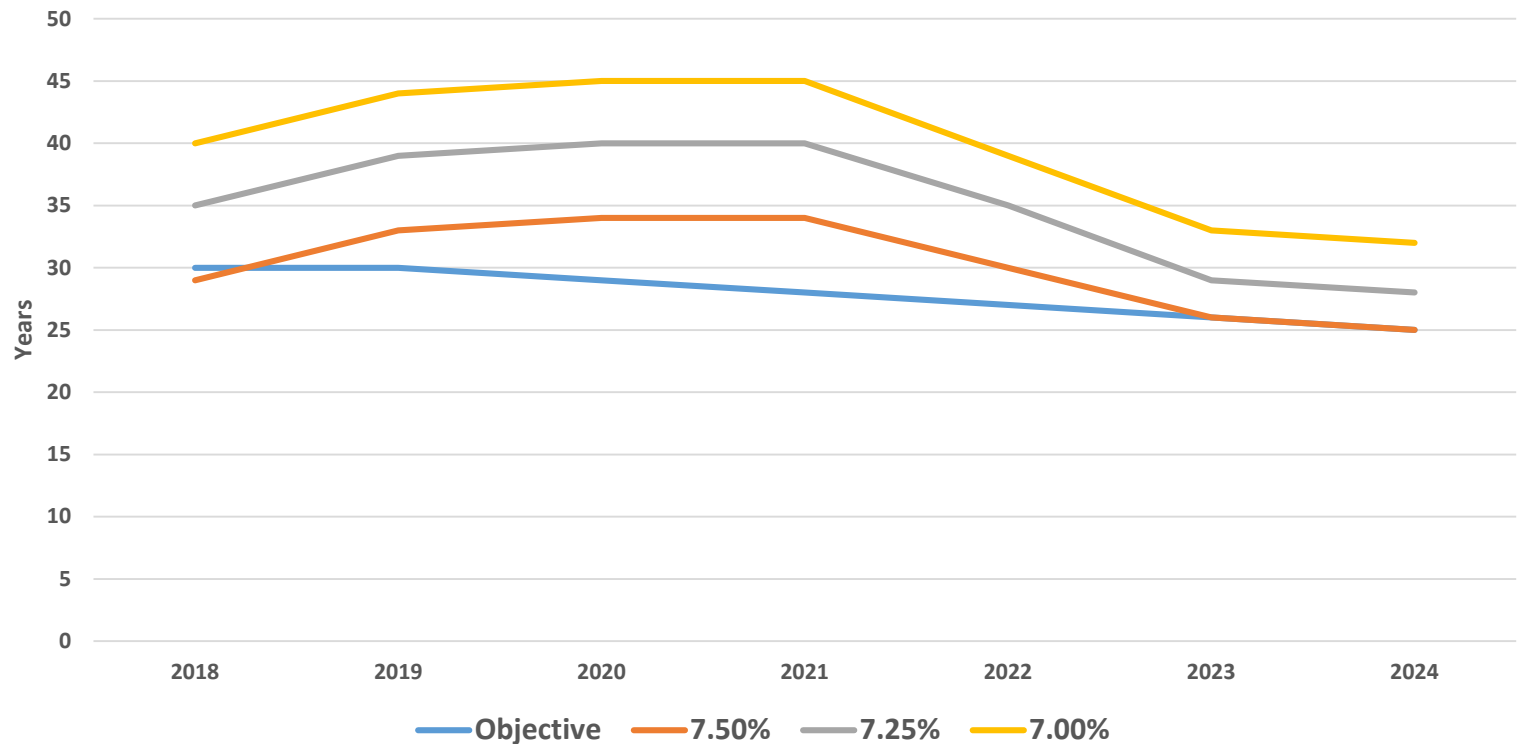
Additional changes to be automatically implemented if required:

- Not sooner than the first pay period of calendar year 2022 (following the valuations for calendar years 2019 and 2020), **if the contribution is less than the ADC** for two consecutive years based on the actuarial valuation with minimum financial criteria:
 - Thirty-year closed amortization beginning in 2018
 - Discount rate consistent with the average reported by two independent sources agreed to by the City and the Board
- **The City and employee contributions will be increased** as required to meet up to 2% of pay in one year or 4% of pay in total in a 60%/40% proportion (City/employee)
- **Increases may be unilaterally reduced** by City Council, without approval of members, if two consecutive actuarial valuations indicate the ADC will be met without those contributions
- If maximum contribution increase has been applied and the following actuarial valuation indicates the actual contribution is still insufficient, the City Council must consider **additional benefit reductions**

Results

- Objective: Amortize unfunded liabilities over a declining 30 years beginning in 2019
- No investment return assumed in 2018; all assumptions assumed to be met after 2018
- **Auto adjust feature of 4% of pay additional contributions kicks in 50% effective pay period 1 of calendar year 2022 and the remainder effective pay period 1 of calendar year 2023**

Estimated Amortization Periods at Different Investment Return Assumptions after Proposed Changes and Automatic Adjust Feature



Contributions

	Current	7/20/2019 (retroactive to PP1 of calendar year 2019 for City)	First pay period of Calendar Year 2020	First pay period of Calendar Year 2021	Risk Trigger: First pay period of Calendar Year 2022	Risk Trigger First pay period of Calendar Year 2023
General	8.25%	9.35 - 10.05% (1.1% + .7% blue)			10.15 – 10.85% (.8%)	10.95 – 11.65% (.8%)
Police	8.73%	10.53% (1.8%)	12.53% (2%)	13.13% (.6%)	13.93% (.8%)	14.73% (.8%)
Fire	8.25%	10.05% (1.8%)	12.05% (2%)		12.85% (.8%)	13.65% (.8%)
Tax Payers	19.74 – 20.46%	24.24 – 24.96% (4.5%)			25.44 – 26.16% (1.2%)	26.64 – 27.36% (1.2%)

Schedule

Date	Action
January 7 – February 1 (4 weeks)	Employee and Retiree Meetings
February 4 – February 22 (3 weeks)	Contribution Election
February 27	ERF Board certifies election results
March 5 (tentative)	Joint ERF Board – City Council Meeting



QUESTIONS



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Facts & Statistics:

Fort Worth Employees' Retirement Fund

The Fort Worth Employees' Retirement Fund is a defined benefit retirement plan, established by City Ordinance in 1945. All active full-time employees of the City of Fort Worth are covered by the plan, including police, fire and general city employees.

The following statistics were reported as of December 2018:

Membership:

- 6,618 active employees
 - 4,021 general employees
 - 1,688 police employees (Civil Service)
 - 909 fire employees (Civil Service)
- 4,374 retirees
- 445 vested terminated members

Current contributions:

- General employees and Civil Service firefighters currently contribute 8.25% of their salaries to the pension fund
- Civil Service police contribute 8.74% of their salaries to the pension fund
- The city contributes just under 20% of total salary to the pension fund

The current pension benefit formula for all employees:

- High five years' average salary x years of credited service x 2.5% (when age plus years of service equal 80)
- Employees had a different benefit formula, depending on their employee group, for service rendered prior to the benefit reductions instituted by the City of Fort Worth between November 2010 and October 2014

Average gross monthly benefit per benefit recipient (retirees are not entitled to Social Security benefits unless earned through other employment):

- \$3,984 for retirees
- \$2,213 for disabled members
- \$1,987 for survivors, including dependent children

Funding: (From the 2017 Actuarial Valuation)

- Plan is 57.8% funded on an actuarial basis
- Unfunded liability is \$1.668 billion
- Funding period is infinite



Continued on back page



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WWW.FWRETIREMENT.ORG

Asset Allocation:

	Current	Target
• High Growth	22.67%	22.00%
• Growth	43.06%	44.00%
• Capital Preservation	15.10%	15.00%
• Diversification	9.91%	10.00%
• Inflation	7.75%	8.00%
• Liquidity	1.26%	1.00%
• Liquidating Investments	0.26%	0.00%
• Total Fund	100.00%	100.00%



Investment Returns:

- Total Fund assets of \$2.23 billion as of Nov. 30, 2018

Trailing Returns (through Nov. 30, 2018)

Market Value	Year-to-Date	1-Year	3 -Year	5-Year	10 -Year	Since Inception (1983)
\$2.23 billion	-0.19%	0.68%	6.87%	5.52%	8.43%	8.49%
<i>Returns are net of fees.</i>						



Board of Trustees:

- 13 members; two-year staggered terms
- 7 elected by Retirement Fund membership
- 6 appointed by the Fort Worth City Council

Board Leadership:

Todd Cox, Chair/Place 2 (Active/ Lieutenant, Fort Worth Fire Department)

Rick Van Houten, Vice Chair/Place 1 (Active/Sergeant, Fort Worth Police Department)



Board Members:

Place 1: Rick Van Houten (Active/Police Department)

Place 2: Todd Cox (Active/Fire Department)

Place 3: Loraine Coleman (Active/Performance and Budget Department)

Place 4: Andrea Wright (Active/Public Events)

Place 5: Tom Lewis (Retired/Fire Department)

Place 6: Kevin Foster (Retired/Police Department)

Place 7: Marsha Anderson (Retired/General Employees)

Place 8: Jesús Payán (Appointed)

Place 9: Jarod Cox (Appointed)

Place 10: Steve Litke (Appointed)

Place 11: Vacant (Appointed)

Place 12: Vacant (Appointed)

Place 13: Kevin Gunn (Interim CFO, City of Fort Worth)



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City Pension Modifications

Fort Worth Employees' Retirement Fund

On December 11, 2018, the Fort Worth City Council voted to amend benefits under the retirement ordinance with a proposed effective date of July 20, 2019. These changes would include:

- Elimination of the COLA for future service, except for those who retire or enter the DROP by December 31, 2020;
- Implementation of a variable COLA for remaining active employees based on Fund performance;
- City Contributions increase by 4.5%, police civil service employee contributions increase by 4.4%, fire civil service employee contributions increase by 3.8%, general employee contributions increase by 1.1% plus an additional .7% for Blue service* (for a specific period – the length of each member's Blue service);
- Addition of contributions paid by employees on overtime worked (only the City contributed on overtime previously);
- Extend the DROP from five to six years;
- Elimination of service credit for future accruals of major medical leave and civil service sick leave;
- Implement automatic risk-sharing for contribution increases, not sooner than 2022 if the valuations for the preceding two calendar years show the contribution is less than the Actuarial Determined Contribution (ADC);
- Employee contribution changes require a 50% plus one favorable vote to become effective.

Changes to contributions, DROP extension, and automatic risk-sharing are contingent upon the employee contribution increase being voted into place during a February 2019 election. Assuming a successful election, contributions increases will be phased in over a 3-year period and the City of Fort Worth contributions will be retroactive to January 2019.

**Blue service – credited years of service under the three percent (3%) multiplier and the 3-year average compensation including overtime earnings.*



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January 18, 2019

Mr. Todd Cox
Board Chairman
Fort Worth Employees' Retirement Fund
3801 Hulen Street, Suite 101
Fort Worth, TX 76107
Todd.Cox@fwretirement.org

Re: Assessment of the City's Pension Modifications Adopted on December 11, 2018

Dear Mr. Cox:

As requested, we have estimated the impact of the pension modifications and proposed contribution changes to the Employees' Retirement Fund of the City of Fort Worth (FWERF) adopted by the Fort Worth City Council on December 11, 2018. This letter will describe the modifications, summarize the impact of the modifications, and outline the assumptions and methods used in the estimates.

This letter is intended to satisfy Sections 5.07 and 5.09 of Article 6243i of the Texas Revised Civil Statutes which require an actuarial analysis of amendments to Municipality and member contributions to FWERF.

Summary of Modifications

This analysis is based on our understanding of the modifications detailed in the formal ordinance amending Article I of Chapter 2.5 "Employees' Retirement Fund," of the Code of the City of Fort Worth (2015). The modifications included the following elements:

Changes to Benefits Enacted by the Fort Worth City Council on December 11, 2018

1. Eliminate the COLA on the portion of the benefit associated with future service for current COLA-eligible (Tier 1) active members, effective July, 2019,
2. Eliminate COLAs applicable to active employees and deferred vested employees who have not retired or entered DROP on or before January 1, 2021,
3. Establish a Variable COLA for Tier 1 members who have not retired nor entered DROP on or before January 1, 2021, which can be granted in instances where plan funding meets the funding requirements of the Ordinance and the Variable COLA is approved by both the FWERF Board of Trustees and the City Council,
4. Eliminate future accruals of major medical and excess sick leave toward service and Final Average Compensation (FAC),

Additional Changes to Contributions and Benefits Subject to Approval by the Members

5. Increase the member contribution rate by 1.1% of pay for all General Employees, effective July, 2019,
6. Increase the member contribution rate by an additional 0.7% of pay for a period equal to the period of blue service for each individual General Employee, effective July, 2019,
7. Increase the member contribution rate by 1.8% of pay for all Police Officers and Firefighters, effective July, 2019, and an additional 2.0% of pay, effective January, 2020,
8. Increase the member contribution rate by an additional 0.6% of pay for all Police Officers, effective January, 2021,
9. Include overtime in the calculation of member contributions, effective July, 2019,
10. Increase the City contribution rate by 4.50% of pay, effective January, 2019,
11. Extend maximum DROP period to six years, and
12. Establish certain automatic risk-sharing contribution increases when plan funding is not meeting the funding requirements of the Ordinance.

Summary of Results

It is our understanding that the City and the Pension Task Force utilized a 7.50% investment return assumption as a margin for risk when developing proposed modifications to FWERF. As a result, we have assessed the impact of the pension modifications using an investment return assumption of 7.50%. A further discussion of risk margin, the investment return assumption, and the upcoming experience study is included later in this letter in the section titled "Setting Expectations for the Future." This section presents the most reasonable expectations for future actuarial valuation results based on all of the factors known at this time.

The following table presents the results of the projected December 31, 2018 actuarial valuation results using a 7.75% investment return assumption as well as a 7.50% investment return assumption. The table also includes the impact of the pension modifications using a 7.50% investment return assumption.

Projected December 31, 2018 Valuation Results

	Current Plan	Current Plan	Pension Modifications
Discount Rate	7.75%	7.50%	7.50%
Ultimate Contribution Rates (prior to risk-sharing)			
• Members*	8.41%	8.41%	11.75%
• City	19.99%	19.99%	24.49%
Additional Revenue from Blue Service General Employee Contributions Expected in Year 1	N/A	N/A	\$780,000
Total Normal Cost Rate*	12.70%	13.49%	12.69%
UAAL (millions)	\$1,733.8	\$1,850.5	\$1,709.5
Funded Ratio	56.8%	55.2%	57.1%
Funding Period**	Infinite	Infinite	29 years
30-Year ADEC**	28.44%	30.02%	24.02%
Year UAAL Eliminated***	Not Applicable	Not Applicable	2050

* Underlying payroll basis for member contributions and normal cost rate also increased by approximately 5.7% due to the inclusion of overtime

** Based on new statutory contribution rates and zero liability for future Ad Hoc and Variable COLAs

*** Incorporating risk-sharing contribution increases and payment of Ad Hoc COLAs

Unless noted in the remaining sections of this letter, our estimates are based on the same assumptions, methods, procedures and data as the December 31, 2017 actuarial valuation, including assuming an actual investment return of 7.75% for 2018.

Effect of Higher Member Contributions

Members contribute a portion of their compensation to FWERF for their entire career. When member contribution rates are increased, the future benefits payable from FWERF increase as the members now have higher accumulated contribution balances that must ultimately be distributed. As a result, FWERF will experience a modest increase in Actuarial Accrued Liability and normal cost as a result of the increase in member contribution rates; however, these increases are far outweighed by the value of the increased contributions to the plan over time.

Withdrawal of Member Contributions

Based on the current valuation assumptions, all vested terminations are assumed to leave their contributions on deposit with FWERF and wait to commence the deferred annuity. With the proposed increase in the member contributions and the elimination of the COLA for certain members, it is more likely that a member's accumulated contribution balance at termination will have a greater economic value to the member than waiting for the deferred annuity. As a result, we have modified the assumption for withdrawal of member contributions. Specifically, members terminating with a vested

benefit are assumed to choose the most valuable option available to them at the time of termination: (i) an immediate refund of the member's contributions, or (ii) leaving the member's contributions on deposit and receiving a deferred annuity.

Include Overtime in the Calculation of Member Contributions

The pension modifications will require all active members to contribute on overtime earnings. As a result, Tier 2 members will contribute on overtime earnings but overtime earnings will not be included in the determination of their benefit. Additionally, the City will continue to contribute on earnings that exclude overtime for Tier 2 members.

Major Medical and Sick Leave Conversions

In certain circumstances, members are currently allowed to convert unused major medical and sick leave to service at retirement. The current valuation assumptions include a load to account for these leave conversions. Specifically, future retirement benefits are loaded by the following percentages: 3.75% for General Employees, 2.00% for Police Officers, and 2.50% for Firefighters.

The enacted pension modifications include the elimination of future accruals of major medical and sick leave toward service and FAC. In order to incorporate this modification, current members with 20 years of service are assumed to have a fully-accrued leave balance (i.e., their benefits are loaded by the full percentage stated above). For current members with less than 20 years of service, the load percentage is phased out based on the member's current service. For example, a General Employee with currently 10 years of service will have their retirement benefit loaded by 1.75% (or, one-half of 3.50%). Future members will not have any load applied to their retirement benefits.

Maintaining COLA Eligibility

The pension modifications dictate that Tier 1 members who retire or enter DROP on or before January 1, 2021 will maintain their eligibility for the current COLA provisions. This type of provision will likely cause a significant number of employees to retire or enter DROP earlier than anticipated in order to maintain the 2% automatic COLA. This approach could also put a significant strain on City staffing as well as reduce the anticipated savings from the plan changes as more people retire or enter DROP on or before January 1, 2021 to lock in the more valuable benefits.

We have assumed that 100% of active members that reach the eligibility for Normal Retirement between December 31, 2017 and December 31, 2020 (approximately 500 members) will enter DROP and participate in DROP the same period of time currently assumed in the actuarial valuation (i.e., three years for General Employees and four years for Police Officers and Firefighters). Additionally, we have assumed that 100% of active members that worked beyond Normal Retirement without entering DROP as of December 31, 2017 (approximately 100 members) will retire prior to January 1, 2021. Finally, we have assumed that all Vested Terminated Members who are eligible for the automatic 2% COLA and will reach age 50 prior to January 1, 2021 (approximately 150 members) will commence their benefit at the earlier of Normal Retirement and January 1, 2021.

Actuarially Determined Contribution (ADC)

Certain aspects of the pension modifications rely on whether the current fixed contributions to the fund meet the ADC outlined in the Ordinance. In general, the Ordinance defines the ADC as a contribution “based on a closed 30-year funding of unfunded liabilities.” For purposes of this analysis, we have assumed that the ADC is the sum of the normal cost, the assumed administrative expenses, and an amount necessary to eliminate the UAAL over a closed 30-year period beginning on December 31, 2018 with the goal of eliminating the UAAL by December 31, 2048. In this context, the ADC is the sum of the anticipated member contributions and the City contributions. This provision makes no allowance for how to handle potentially large, new experience losses that occur in the few years before 2048. Based on a true “closed” methodology, any new loss would have to be fully paid for in a very short period of time and could create an unmanageable amount of volatility in the contribution rate.

For purposes of the automatic risk-sharing contribution increases, the Ordinance indicates that the investment return assumption used to determine the ADC must be “consistent with the average of rates reported by two independent sources that are agreed to by the City and the Fund”. For purposes of the Variable COLAs, the Ordinance indicates that COLAs and 13th checks cannot be granted if the investment return assumption determined by the FWERF Board is “higher than the average of the assumed rates of return as reported by two independent sources that have been agreed to by the City and the Board.” Additionally, the ADC must be determined based on the Actuarial Value of Assets as well as the Market Value of Assets. These are subtle differences in the description of the ADC but they could lead to slightly different amounts over time.

Since the City and the members contribute on a different payroll basis, it would not be accurate to add the City and member contribution rates together. As a result, we may still focus on the Actuarially Determined Employer Contribution (ADEC) for purposes of reporting required contribution rates so it is clear which payroll basis is being considered. However, the ADEC will simply be determined as the projected ADC less the anticipated member contributions.

Independent Sources of Investment Return Assumptions

The description of the ADC in the Ordinance for Variable COLAs and the automatic risk-sharing contribution increases both refer to a comparison of FWERF’s investment return assumption to rates of return reported by two independent sources which must be agreed to by the City and the FWERF Board.

To our knowledge, there have been no formal discussions about which independent sources will be selected. However, examples of two possible sources could include: (1) the National Association of State Retirement Administrators (NASRA) Public Fund Survey, and (2) the Wilshire Consulting Report on City & County Retirement Systems. For reference, the most recent NASRA report was published in November, 2018 and indicated that the median investment return assumption in their survey was 7.38%. Similarly, the most recent Wilshire report was published in September, 2018 and indicated that the median investment return assumption in their survey was 7.25%. We would like to point out that both of these sources are already below the 7.50% used in this analysis and are on a downward trend.

Automatic Risk-Sharing Contribution Increases

If the anticipated contributions from the members and the City are less than the ADC for two consecutive years, the City and member contributions will be increased as required to meet the ADC with 60% of the increases allocated to the City and the remaining 40% allocated to the members. The annual increase in the total contribution rate will be capped at 2% of pay and the aggregate increase will be capped at 4% of pay. These increases cannot commence prior to January 1, 2022.

The City Council can lower the risk-sharing contributions if some or all of the risk-sharing contributions are no longer needed to meet the ADC for two consecutive years. Such reductions will be allocated 40% to the members and 60% to the City.

Based on a 7.50% investment return assumption and assuming a positive investment return for 2018, it is anticipated that the risk-sharing contributions will commence on January 1, 2029 at approximately 0.02% of pay for the City. The risk-sharing contributions will increase as a percentage pay until they reach 2.25% of pay in the year 2048. After 2048, the risk-sharing contributions are no longer expected to be necessary to meet the ADC. This slow increase occurs because the Ad Hoc COLA provisions begin to grant COLAs to retirees as the funding period declines. The Ad Hoc COLAs increase the UAAL which pushes the actuarially determined contribution rates up, even for new active members. An alternative would be to advance recognize the potential future Ad Hoc COLAs in the determination of the ADC, which would create a more level pattern of contributions, but would also create more Ad Hoc COLA liabilities.

This projection assumes that an investment return assumption of 7.50% would be considered “consistent with the average of rates reported by two independent sources that are agreed to by the City and the Fund”. The examples identified in the prior section would suggest that the average of these two independent rates would be approximately 7.32%.

Variable COLAs

The FWERF Board may, with Council ratification, award a lifetime COLA or 13th check to COLA-eligible members who have not retired or entered DROP on or before January 1, 2021 as long as the ADC is less than the anticipated contributions for two consecutive years. COLAs awarded in any single year may not exceed a 4% increase of base pension. Additionally, no Variable COLA can be awarded if the risk-sharing contributions are still in effect.

Based on a 7.50% investment return assumption and assuming a positive investment return for 2018, it is anticipated that Variable COLAs could be awarded beginning in 2049 once the risk-sharing contributions are no longer necessary. The current analysis assumes that no Variable COLAs are awarded in the future.

It should be noted that the Variable COLAs cannot be granted if the investment return assumption is “higher than the average of the assumed rates of return as reported by two independent sources that

have been agreed to by the City and the Board.” If this determination was made in 2019, it is unlikely that the 7.50% investment return assumption would meet this criterion.

Legacy Ad Hoc COLAs

Following the enactment of the pension modifications, certain members will still be eligible to receive Ad Hoc COLAs in the future as long as the amortization period of FWERF is less than 28 years. These Ad Hoc COLAs are not subject to the same restrictions as the Variable COLAs noted above. Specifically, the Ad Hoc COLA can still be paid if the ADC outlined in the Ordinance is not being met and if the risk-sharing contributions are in effect. However, the risk-sharing contributions cannot be used in determining the amortization period for granting an Ad Hoc COLA.

Based on a 7.50% investment return assumption and assuming a positive investment return for 2018, it is anticipated that these Ad Hoc COLAs will be paid on an annual basis beginning in 2020. The projected annuity payments eligible for the Ad Hoc COLA are approximately \$16 million in 2020 and remain at that level (prior to any actual COLAs granted) for approximately 10 years. After that time, the projected annuity payments slowly start to decrease, slipping beneath \$10 million in 2044 and beneath \$5 million in 2054.

It is assumed that the annual determination of the funding period for purposes of granting the Ad Hoc COLA will not incorporate any liability for the possibility that future Ad Hoc COLAs may be granted.

Impact of Actual Investment Return for 2018

Based on early indications, the FWERF fund will experience a negative investment return of -3.78% for the 2018 calendar year which could eventually increase the UAAL by more than \$265 million.

Based on a 7.50% investment return assumption, an additional \$265 million increase in the UAAL due to actual investment returns in 2018 would have the following effect on the results of this analysis:

Funding Period**	42 years
30-Year ADEC**	27.63% of pay
Risk-Sharing Contributions	1.2% of pay for the City in 2022, 2.4% in 2023, paid through 2050
Variable COLAs	Could be awarded beginning in 2051
Legacy Ad Hoc COLAs	Will be paid on an annual basis beginning in 2029
Year UAAL Eliminated***	2052

Based on the current method for developing the Actuarial Value of Assets, it will take a few years before the full impact of the anticipated \$265 million actuarial investment loss will be incorporated into the actuarial valuation results. However, the results stated above illustrate the ultimate impact on FWERF assuming no future actuarial gains will emerge to offset the 2018 actuarial investment loss.

Setting Expectations for the Future – Actual Investment Returns and Actuarial Assumptions

As plan modifications are considered, it is prudent to also consider the impact of design modifications based on alternate assumptions. Plan design modifications that are sustainable under multiple sets of assumptions are more likely to be a permanent solution going forward. Additionally, it is our understanding that the City and the Pension Task Force utilized a 7.50% investment return assumption as a margin for risk when developing proposed modifications to FWERF.

The risk margin included in the City's analysis is an important step in building a sustainable package of modifications. An actuarial experience study will be conducted prior to the completion of the December 31, 2018 actuarial valuation. Based on current market expectations, the upcoming experience study may find that the most appropriate assumption for future investment returns is less than 7.50%. Additionally, recently published mortality tables for public employees indicate that the current mortality assumption for FWERF may also need to be updated as part of the upcoming experience study.

To illustrate the possible impact of updated assumptions resulting from the upcoming experience study, we have also determined the results of this analysis based on the combination of a 7.25% investment return assumption, updated mortality tables, an anticipated increase in the UAAL of \$265 million due to actual investment returns in 2018, and the pension modifications:

Funding Period**	61 years
30-Year ADEC**	30.80% of pay
Risk-Sharing Contributions	1.2% of pay for the City in 2022, 2.4% in 2023, paid through 2059
Variable COLAs	Could be awarded beginning in 2060
Legacy Ad Hoc COLAs	Will be paid on an annual basis beginning in 2039
Year UAAL Eliminated***	2061

For the results where the investment return assumption is lowered from 7.75%, only the nominal investment return was lowered. When the investment return assumption is reviewed during the upcoming experience study, we will also consider changes to the other economic assumptions (e.g., inflation, salary increases, payroll growth, etc.). This estimate also incorporates the recently published PubG-2010 mortality table with generational mortality improvements in accordance with the ultimate mortality improvement rates from the most recently published MP scale.

Impact of Pension Modifications if Members do not Approve Contribution Increases

As previously stated, the majority of the changes to benefits were formally enacted by the Fort Worth City Council on December 11, 2018. However, the changes to contributions will only take effect if they are approved by the members.

Based on a 7.50% investment return assumption and assuming a positive investment return for 2018, the formally enacted changes to benefits would provide the following impact on the projected December 31, 2018 actuarial valuation results without the increases in contributions:

UAAL (millions)	\$1,703.1
Funding Period**	Infinite
30-Year ADEC**	27.86% of pay

Since the UAAL is not expected to be eliminated in this situation, Ad Hoc and Variable COLAs would not be expected to be paid at any point in the future.

Summary

Based on our analysis, the pension modifications to FWERF outlined in the Ordinance result in an initial funding period of 29 years as of December 31, 2018. Once the provisions for risk-sharing contributions and Ad Hoc COLAs are reflected, the UAAL is projected to be eliminated in 2050 based on an investment return assumption of 7.50% and a positive investment return for 2018. When the analysis is performed based on a 7.25% investment return assumption, updated mortality tables, and reflecting the anticipated actual investment returns for 2018, the UAAL is expected to be eliminated in 2061. Additionally, the City and the members will be required to contribute the maximum risk-sharing contributions from 2022 through 2059.

Certification

All of our work conforms with generally accepted actuarial principles and practices, and to the Actuarial Standards of Practice issued by the Actuarial Standards Board. In my opinion, our calculations also comply with the requirements of, where applicable, the Internal Revenue Code and ERISA.

The signing actuary is independent of the plan sponsor. He is an Enrolled Actuary, a Fellow of the Society of Actuaries, and a Member of the American Academy of Actuaries, and meets the Qualification Standards of the American Academy of Actuaries. Finally, the undersigned is experienced in performing valuations for large public retirement systems.

Sincerely,
Gabriel, Roeder, Smith & Company



R. Ryan Falls, FSA, EA, MAAA
Senior Consultant

cc: Ms. Benita Falls Harper
Interim Executive Director/General Counsel
Fort Worth Employees' Retirement Fund



TAB 3A

Actuarial Valuation Report

January 24, 2019

Summary of Key Statistics

Assets and Liabilities

	Current Effective Date	Prior Effective Date
Funded Ratio	77.5%	79.1%
Market Value of Assets (MVA)	\$ 281,240,399,927	\$ 261,126,177,857
Actuarial Value of Assets (AVA)	\$ 277,783,804,152	\$ 262,723,012,268
Actuarial Accrued Liability (AAL)	\$ 358,547,304,286	\$ 331,935,611,061
Unfunded Actuarial Accrued Liability (UAAL = AAL - AVA)	\$ 80,763,500,134	\$ 69,212,598,793

Plan Amortization Periods

	Current Effective Date	Prior Effective Date
Infinite	6	5
>= 40 years, but not infinite	16	15
> 30 years, < 40 years	13	14
> 25 years, <= 30 years	18	23
>= 10 years, <= 25 years	30	29
> 0 years, < 10 years	9	7
0 years	7	3
Total Plans Registered	99	96

Plan Discount Rates

	Current Effective Date	Prior Effective Date
> 8.00%	0	2
8.00%	9	17
> 7.50%, < 8.00%	25	24
7.50%	20	22
> 7.00%, < 7.50%	19	12
7.00%	14	10
< 7.00%	12	9
Total Plans Registered	99	96

	Current Effective Date	Prior Effective Date
Mean	7.37%	7.49%
Standard Deviation	0.47%	0.48%
Median	7.50%	7.50%
Liability Weighted Mean	7.31%	7.73%
Liability Weighted Median	7.25%	8.00%

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Actuarial Valuation Report
January 24, 2019

Plan Name	Plan Status (1)	Current Actuarial Valuation								Prior Actuarial Valuation		
		Effective Date	Discount Rate	Effective Amort Period (2)	Funded Ratio %	Market Value of Assets (MVA)	Actuarial Value of Assets (AVA)	Unfunded Actuarial Accrued Liability (UAAL = AAL - AVA)	UAAL as % of Payroll	Effective Date	Prior Effective Amort Period (2)	Funded Ratio %
Employees Retirement System of Texas	Active	8/31/2018	7.50%	Infinite	70.2	\$ 27,753,334,784	\$ 27,359,943,116	\$ 11,629,320,446	169.13%	8/31/2017	Infinite	70.1
Fort Worth Employees' Retirement Fund	Active	12/31/2017	7.75%	Infinite	57.8	\$ 2,323,717,570	\$ 2,288,265,169	\$ 1,668,459,190	362.26%	12/31/2016	Infinite	58.5
Law Enforcement & Custodial Officer Sup. Ret. Fund	Active	8/31/2018	7.50%	Infinite	65.6	\$ 966,827,735	\$ 953,054,283	\$ 499,603,514	29.66%	8/31/2017	Infinite	66.0
Irving Firemen's Relief & Retirement Fund	Active	12/31/2017	7.50%	Infinite	71.6	\$ 213,960,011	\$ 207,493,775	\$ 82,260,569	252.13%	12/31/2015	46.5	74.9
Wichita Falls Firemen's Relief & Retirement Fund	Active	1/1/2018	7.75%	Infinite	57.7	\$ 51,317,643	\$ 51,317,643	\$ 37,628,438	316.54%	1/1/2017	49.4	62.5
University Park Firemen's Relief & Retirement Fund	Closed	12/31/2016	7.50%	Infinite	44.0	\$ 9,448,371	\$ 10,146,879	\$ 12,936,513	387.63%	1/1/2015	53.7	45.8
Beaumont Firemen's Relief & Retirement Fund	Active	12/31/2016	8.00%	104.0	67.5	\$ 102,435,664	\$ 109,972,497	\$ 52,869,076	274.69%	12/31/2014	39.1	72.7
Teacher Retirement System of Texas	Active	8/31/2018	7.25%	87.0	76.9	\$ 154,568,901,833	\$ 154,050,930,573	\$ 46,165,375,254	102.69%	8/31/2017	32.2	80.5
Orange Firemen's Relief & Retirement Fund	Active	1/1/2017	7.75%	69.3	49.9	\$ 8,154,674	\$ 8,154,674	\$ 8,199,175	336.03%	1/1/2015	58.2	57.4
Judicial Retirement System of Texas Plan Two	Active	8/31/2018	7.50%	69.0	91.7	\$ 453,379,786	\$ 447,077,710	\$ 40,693,836	50.82%	8/31/2017	63.0	90.8
Harlingen Firemen's Relief & Retirement Fund	Active	9/30/2017	7.75%	59.1	66.1	\$ 31,224,379	\$ 31,224,379	\$ 16,040,541	248.99%	12/31/2015	Infinite	63.1
Marshall Firemen's Relief & Retirement Fund	Active	12/31/2016	7.75%	56.4	42.0	\$ 7,712,228	\$ 7,712,228	\$ 10,641,648	398.51%	12/31/2014	43.2	46.4
Cleburne Firemen's Relief & Retirement Fund	Active	12/31/2016	7.25%	49.6	65.4	\$ 21,323,149	\$ 22,290,500	\$ 11,784,247	277.79%	12/31/2014	27.3	65.3
Odessa Firemen's Relief & Retirement Fund	Active	1/1/2018	7.75%	47.1	43.1	\$ 45,718,416	\$ 45,868,667	\$ 60,600,337	510.60%	1/1/2017	46.5	45.1
Dallas Employees' Retirement Fund	Active	12/31/2017	7.75%	47.0	82.3	\$ 3,601,612,000	\$ 3,601,612,000	\$ 776,232,000	184.26%	12/31/2016	47.0	80.4
Dallas Police & Fire Pension System-Combined Plan	Active	1/1/2018	7.25%	45.0	47.7	\$ 2,103,345,471	\$ 2,151,039,343	\$ 2,354,397,842	680.39%	1/1/2017	44.0	49.4
Plainview Firemen's Relief & Retirement Fund	Active	12/31/2017	7.50%	44.8	37.7	\$ 6,154,425	\$ 6,219,603	\$ 10,290,086	517.48%	12/31/2015	31.6	37.3
Midland Firemen's Relief & Retirement Fund	Active	12/31/2015	8.00%	44.7	65.8	\$ 80,942,385	\$ 87,000,390	\$ 45,268,692	264.77%	1/1/2014	59.1	66.8
Amarillo Firemen's Relief & Retirement Fund	Active	12/31/2017	7.50%	43.5	81.5	\$ 171,845,402	\$ 165,443,481	\$ 37,625,269	185.69%	12/31/2015	34.5	81.8
Paris Firefighters' Relief & Retirement Fund	Active	12/31/2016	7.50%	41.9	35.6	\$ 4,764,272	\$ 5,331,317	\$ 9,626,478	373.34%	12/31/2014	26.1	42.7
McAllen Firemen's Relief & Retirement Fund	Active	10/1/2016	7.75%	41.4	69.1	\$ 44,759,055	\$ 48,260,416	\$ 21,571,433	187.25%	10/1/2014	29.0	70.8
Longview Firemen's Relief & Retirement Fund	Active	12/31/2017	8.00%	40.2	46.1	\$ 43,004,267	\$ 43,004,267	\$ 50,377,694	389.47%	12/31/2016	50.7	45.5
Conroe Fire Fighters' Retirement Fund	Active	12/31/2017	7.75%	39.0	62.0	\$ 25,239,676	\$ 25,874,512	\$ 15,839,009	179.50%	12/31/2015	31.4	61.5
Brownwood Firemen's Relief & Retirement Fund	Active	12/31/2017	7.25%	38.6	45.0	\$ 4,158,090	\$ 4,165,427	\$ 5,085,187	263.23%	12/31/2015	36.1	44.6
Greenville Firemen's Relief & Retirement Fund (3)	Active	12/31/2016	8.00%	38.0	47.7	\$ 12,728,162	\$ 13,695,526	\$ 15,021,872	387.00%	12/31/2014	70.4	48.9
Big Spring Firemen's Relief & Retirement Fund	Active	1/1/2017	8.00%	36.2	54.9	\$ 10,399,250	\$ 11,033,641	\$ 9,078,736	241.05%	1/1/2015	28.7	54.8
Galveston Employees' Retirement Plan for Police (4)	Active	1/1/2018	7.50%	35.5	39.3	\$ 20,544,158	\$ 20,791,726	\$ 32,059,111	284.11%	1/1/2017	48.7	42.1
Austin Police Retirement System	Active	12/31/2017	7.70%	35.0	65.8	\$ 769,474,743	\$ 779,484,342	\$ 405,532,952	236.47%	12/31/2016	27.3	66.2
Lubbock Fire Pension Fund	Active	12/31/2016	7.75%	33.5	72.6	\$ 176,016,821	\$ 194,664,263	\$ 73,353,115	240.47%	1/1/2015	27.6	75.5

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Actuarial Valuation Report
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Plan Name	Plan Status (1)	Current Actuarial Valuation								Prior Actuarial Valuation		
		Effective Date	Discount Rate	Effective Amort Period (2)	Funded Ratio %	Market Value of Assets (MVA)	Actuarial Value of Assets (AVA)	Unfunded Actuarial Accrued Liability (UAAL = AAL - AVA)	UAAL as % of Payroll	Effective Date	Prior Effective Amort Period (2)	Funded Ratio %
Lufkin Firemen's Relief & Retirement Fund (5)	Active	12/31/2016	7.50%	33.1	46.7	\$ 14,335,797	\$ 15,146,513	\$ 17,317,158	346.11%	12/31/2014	40.6	43.5
Irving Supplemental Benefit Plan	Active	1/1/2018	6.75%	32.0	72.5	\$ 59,743,544	\$ 60,464,787	\$ 22,945,738	22.88%	1/1/2017	26.0	72.2
Fort Worth Employees' Retirement Fund Staff Plan	Active	12/31/2017	7.75%	32.0	77.2	\$ 4,768,637	\$ 4,533,706	\$ 1,340,754	84.74%	12/31/2016	27.0	76.5
Abilene Firemen's Relief & Retirement Fund	Active	10/1/2017	8.00%	31.9	55.7	\$ 57,456,309	\$ 59,425,441	\$ 47,286,729	341.79%	10/1/2015	31.5	56.6
San Angelo Firemen's Relief & Retirement Fund	Active	12/31/2017	7.90%	31.3	64.9	\$ 66,618,737	\$ 66,067,685	\$ 35,702,196	291.10%	12/31/2015	38.5	65.7
El Paso Police Pension Fund	Active	1/1/2018	7.75%	30.5	78.3	\$ 870,658,507	\$ 843,966,894	\$ 233,937,349	284.50%	1/1/2016	33.0	81.1
Houston Firefighters' Relief & Retirement Fund	Active	7/1/2017	7.00%	30.0	80.5	\$ 4,025,090,000	\$ 3,883,807,000	\$ 943,914,000	349.94%	7/1/2016	31.0	80.6
Austin Employees' Retirement System	Active	12/31/2017	7.50%	30.0	68.3	\$ 2,650,438,116	\$ 2,592,460,631	\$ 1,205,362,672	191.34%	12/31/2016	31.0	67.5
CPS Energy Pension Plan (6)	Active	1/1/2017	7.25%	30.0	80.8	\$ 1,450,150,734	\$ 1,500,740,708	\$ 357,128,342	140.47%	1/1/2016	30.0	84.8
Port of Houston Authority Retirement Plan	Closed	8/1/2018	6.75%	30.0	98.4	\$ 184,287,781	\$ 184,287,781	\$ 2,973,899	9.81%	8/1/2017	30.0	95.1
Houston Police Officers' Pension System	Active	7/1/2018	7.00%	29.0	79.4	\$ 5,486,613,000	\$ 5,128,835,000	\$ 1,335,037,000	304.53%	7/1/2017	30.0	78.3
Houston Municipal Employees Pension System	Active	7/1/2018	7.00%	29.0	57.7	\$ 2,988,864,000	\$ 2,874,585,000	\$ 2,107,423,000	335.41%	7/1/2017	30.0	56.4
Corsicana Firemen's Relief & Retirement Fund	Active	12/31/2016	7.00%	28.9	53.1	\$ 8,344,317	\$ 9,225,595	\$ 8,135,345	211.44%	12/31/2014	24.2	53.5
Temple Firemen's Relief & Retirement Fund	Active	9/30/2016	7.75%	28.4	75.1	\$ 39,838,918	\$ 42,274,104	\$ 14,003,032	164.97%	9/30/2014	23.0	77.2
Atlanta Firemen's Relief & Retirement Fund	Active	12/31/2016	7.40%	28.4	82.1	\$ 3,744,867	\$ 3,954,272	\$ 860,536	136.63%	12/31/2014	36.2	81.9
El Paso Firemen's Pension Fund	Active	1/1/2018	7.75%	28.0	77.8	\$ 601,790,721	\$ 581,448,450	\$ 166,117,632	265.17%	1/1/2016	26.0	79.2
University Health System Pension Plan	Active	1/1/2016	7.00%	28.0	66.4	\$ 267,492,612	\$ 284,433,717	\$ 144,221,782	45.23%	1/1/2015	29.0	68.9
Laredo Firefighters Retirement System	Active	9/30/2016	7.90%	28.0	59.3	\$ 126,305,204	\$ 134,249,115	\$ 87,733,185	263.00%	9/30/2014	29.8	59.7
Texas City Firemen's Relief & Retirement Fund	Active	12/31/2016	7.75%	28.0	50.4	\$ 14,412,583	\$ 15,853,841	\$ 15,620,735	301.18%	12/31/2014	31.6	54.4
Sweetwater Firemen's Relief & Retirement Fund	Active	12/31/2016	8.00%	27.5	70.0	\$ 7,826,879	\$ 8,437,694	\$ 3,617,210	229.12%	12/31/2014	58.8	69.0
Galveston Firefighter's Relief & Retirement Fund	Active	12/31/2017	7.75%	26.8	69.2	\$ 44,651,640	\$ 44,330,845	\$ 19,767,545	248.42%	12/31/2016	Infinite	68.0
Dallas Co. Hospital Dist. Retirement Income Plan	Active	1/1/2018	7.25%	26.0	73.4	\$ 972,042,912	\$ 955,566,842	\$ 346,043,801	54.70%	1/1/2017	27.0	73.8
Tyler Firemen's Relief & Retirement Fund	Active	12/31/2017	7.50%	25.5	76.2	\$ 70,141,881	\$ 69,570,894	\$ 21,757,655	188.81%	12/31/2015	21.6	75.9
Waxahachie Firemen's Relief & Retirement Fund	Active	10/1/2016	7.00%	25.4	66.9	\$ 14,201,159	\$ 14,201,159	\$ 7,039,421	164.84%	10/1/2014	24.3	68.9
Houston MTA Workers Union Pension Plan	Closed	1/1/2018	6.75%	25.0	66.3	\$ 277,357,388	\$ 267,444,642	\$ 136,271,506	144.74%	1/1/2017	26.0	65.2
San Antonio Metropolitan Transit Retirement Plan	Active	10/1/2016	7.50%	25.0	63.0	\$ 246,002,425	\$ 245,943,565	\$ 144,269,692	143.75%	10/1/2015	26.0	60.4
Houston MTA Non-Union Pension Plan	Active	1/1/2018	6.75%	25.0	65.6	\$ 176,017,259	\$ 171,626,913	\$ 90,132,507	215.78%	1/1/2017	26.0	63.8
Texas Emergency Services Retirement System	Active	8/31/2018	7.75%	24.0	83.4	\$ 115,863,894	\$ 114,668,709	\$ 22,845,636	N/A	8/31/2016	30.0	80.2
Galveston Wharves Pension Plan	Closed	1/1/2017	7.25%	24.0	73.3	\$ 11,839,852	\$ 11,839,852	\$ 4,320,705	162.45%	1/1/2016	25.0	78.9

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Plan Name	Plan Status (1)	Current Actuarial Valuation								Prior Actuarial Valuation		
		Effective Date	Discount Rate	Effective Amort Period (2)	Funded Ratio %	Market Value of Assets (MVA)	Actuarial Value of Assets (AVA)	Unfunded Actuarial Accrued Liability (UAAL = AAL - AVA)	UAAL as % of Payroll	Effective Date	Prior Effective Amort Period (2)	Funded Ratio %
Corpus Christi Fire Fighters' Retirement System	Active	12/31/2016	7.75%	23.1	62.1	\$ 133,901,631	\$ 141,141,270	\$ 85,995,868	265.57%	12/31/2014	23.1	61.4
Killeen Firemen's Relief & Retirement Fund	Active	9/30/2016	7.75%	22.8	69.7	\$ 35,342,830	\$ 37,418,102	\$ 16,234,675	114.49%	9/30/2014	29.5	66.5
San Benito Firemen Relief & Retirement Fund	Active	9/30/2017	7.50%	21.8	60.7	\$ 3,503,753	\$ 3,503,753	\$ 2,270,845	152.30%	12/31/2015	21.7	60.5
Capital MTA Retirement Plan for Bargaining Unit Employees	Frozen	1/1/2018	7.25%	21.0	51.9	\$ 33,199,580	\$ 32,305,890	\$ 29,935,904	N/A	1/1/2017	22.0	51.7
Capital MTA Retirement Plan for Administrative Employees (7)	Active	1/1/2017	6.75%	20.0	72.6	\$ 23,811,865	\$ 24,254,758	\$ 9,145,527	39.56%	1/1/2016	20.0	77.1
Sweeny Community Hospital	Closed	1/1/2018	7.00%	20.0	85.8	\$ 3,579,168	\$ 3,365,560	\$ 555,574	56.39%	1/1/2017	12.0	89.8
Employees of Brownsville Navigation District	Active	1/1/2017	6.17%	19.8	52.8	\$ 4,344,648	\$ 4,622,909	\$ 4,132,058	102.83%	N/A	N/A	N/A
Lower Colorado River Authority Retirement Plan	Closed	1/1/2018	7.25%	19.0	74.0	\$ 424,481,299	\$ 431,262,582	\$ 151,642,744	137.21%	1/1/2017	20.0	73.8
Texas Municipal Retirement System (8)	Active	12/31/2017	6.75%	18.8	87.4	\$ 28,649,374,617	\$ 27,813,135,331	\$ 3,997,991,175	62.51%	12/31/2016	19.7	86.3
Port Arthur Firemen's Relief & Retirement Fund	Active	12/31/2015	8.00%	18.3	78.0	\$ 43,469,930	\$ 45,290,253	\$ 12,792,922	160.73%	1/1/2014	17.0	77.4
El Paso City Employees' Pension Fund	Active	9/1/2016	7.50%	17.0	79.2	\$ 723,103,443	\$ 749,026,818	\$ 196,745,280	125.85%	9/1/2014	11.0	77.1
Dallas/Fort Worth Airport Board Retirement Plan	Active	1/1/2018	7.25%	17.0	82.4	\$ 494,836,396	\$ 481,740,742	\$ 102,655,640	189.77%	1/1/2017	18.0	80.3
Dallas/Fort Worth Airport Board DPS Retirement Plan	Active	1/1/2018	7.25%	17.0	77.7	\$ 184,751,568	\$ 179,918,008	\$ 51,647,165	172.12%	1/1/2017	18.0	75.6
Austin Fire Fighters Relief & Retirement Fund	Active	12/31/2017	7.70%	17.0	88.3	\$ 953,798,227	\$ 916,931,534	\$ 121,186,551	137.39%	12/31/2016	16.2	88.3
Harris County Hospital District Pension Plan (9)	Closed	1/1/2018	7.00%	16.9	75.5	\$ 686,870,468	\$ 662,693,501	\$ 215,600,523	126.91%	1/1/2017	17.8	74.4
Denison Firemen's Relief & Retirement Fund	Active	12/31/2017	7.50%	15.8	77.3	\$ 17,725,070	\$ 17,524,049	\$ 5,159,287	155.45%	12/31/2015	27.1	74.4
Texarkana Firemen's Relief & Retirement Fund	Active	12/31/2017	7.75%	15.0	86.3	\$ 34,819,005	\$ 35,250,649	\$ 5,584,452	123.72%	12/31/2015	16.3	87.4
Denton Firemen's Relief & Retirement Fund	Active	12/31/2017	6.75%	14.6	82.1	\$ 85,388,283	\$ 84,410,626	\$ 18,435,302	104.60%	12/31/2015	31.6	80.8
Weslaco Firemen's Relief & Retirement Fund	Active	9/30/2016	7.25%	14.1	68.5	\$ 9,186,148	\$ 9,440,473	\$ 4,334,628	111.07%	9/30/2014	15.9	69.2
Brazos River Authority Retirement Plan	Frozen	3/1/2018	6.50%	14.0	66.4	\$ 20,434,799	\$ 20,867,108	\$ 10,579,730	N/A	3/1/2017	15.0	68.2
DART Employees' Defined Benefit Retirement Plan & Trust	Closed	10/1/2016	6.75%	12.4	76.5	\$ 168,333,813	\$ 168,727,902	\$ 51,734,500	279.10%	10/1/2014	30.0	74.3
Texas County & District Retirement System (8)	Active	12/31/2017	8.00%	12.3	89.1	\$ 30,000,370,381	\$ 28,975,651,686	\$ 3,564,247,486	53.38%	12/31/2016	13.5	88.4
Galveston Employees' Retirement Fund	Active	12/31/2017	7.25%	11.6	79.6	\$ 51,550,288	\$ 50,978,100	\$ 13,081,058	51.03%	12/31/2016	13.4	78.5
Dallas Police & Fire Pension System-Supplemental (7)	Active	1/1/2018	7.25%	10.0	51.5	\$ 17,805,153	\$ 17,805,153	\$ 16,744,953	1742.77%	1/1/2017	10.0	52.9
Northeast Medical Center Hospital Retirement Plan (7)	Frozen	7/1/2017	7.50%	10.0	83.6	\$ 9,578,580	\$ 9,578,580	\$ 1,875,840	N/A	7/1/2016	10.0	78.2
San Antonio Fire & Police Pension Fund	Active	1/1/2018	7.25%	9.9	90.3	\$ 3,196,529,718	\$ 3,196,529,718	\$ 341,700,790	107.20%	1/1/2017	13.1	87.9
Nacogdoches County Hospital District Retirement Plan	Active	7/1/2015	7.25%	9.8	84.3	\$ 45,399,274	\$ 45,060,230	\$ 8,399,156	27.94%	7/1/2014	20.0	82.7
Guadalupe-Blanco River Authority	Closed	1/1/2017	7.00%	8.7	84.9	\$ 26,632,375	\$ 29,165,967	\$ 5,182,613	78.26%	1/1/2016	8.8	85.7
Colorado River Municipal Water Dist. Pension Trust (9)	Active	1/1/2018	6.25%	7.4	93.8	\$ 10,060,151	\$ 10,060,151	\$ 670,995	17.70%	1/1/2017	9.1	89.9

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Corpus Christi Regional Transportation Authority	Active	1/1/2018	7.50%	6.0	98.3	\$ 36,440,324	\$ 36,440,324	\$ 628,913	5.89%	1/1/2017	7.0	93.2
Northwest Texas Healthcare System Retirement Plan	Frozen	10/1/2016	7.50%	5.0	73.0	\$ 19,960,895	\$ 20,437,567	\$ 7,556,760	N/A	10/1/2015	6.0	69.2
JPS Pension Plan - Tarrant County Hospital District	Active	10/1/2016	7.25%	4.8	93.6	\$ 217,773,105	\$ 216,601,199	\$ 14,762,412	6.90%	N/A	N/A	N/A
Travis County ESD #6 Firefighter's Relief & Retirement Fund	Active	12/31/2017	7.00%	3.3	87.2	\$ 19,688,064	\$ 19,010,963	\$ 2,790,432	48.27%	12/31/2015	5.8	71.6
Guadalupe Regional Medical Center	Active	1/1/2018	7.00%	3.0	98.4	\$ 71,386,345	\$ 68,044,619	\$ 1,097,419	4.33%	1/1/2017	9.0	94.4
Plano Retirement Security Plan	Active	12/31/2017	7.00%	0.0	100.8	\$ 148,516,307	\$ 144,040,464	\$ (1,131,618)	-0.77%	12/31/2015	19.0	99.2
Citizens Medical Center	Active	3/1/2018	7.25%	0.0	107.1	\$ 105,550,707	\$ 101,520,687	\$ (6,752,729)	-12.15%	3/1/2017	17.0	99.5
The Woodlands Firefighters' Retirement System	Active	1/1/2018	7.00%	0.0	106.0	\$ 32,217,888	\$ 32,217,888	\$ (1,819,206)	-15.28%	1/1/2017	2.7	98.6
Arlington Employees Deferred Income Plan	Active	7/1/2017	5.00%	0.0	108.0	\$ 2,838,158	\$ 2,838,158	\$ (211,065)	-6.07%	7/1/2016	0.0	107.9
Refugio County Memorial Hospital District Retirement Plan	Frozen	11/1/2017	7.00%	0.0	111.1	\$ 2,227,940	\$ 2,227,940	\$ (222,034)	-6.93%	11/1/2016	0.0	102.3
Anson General Hospital	Frozen	7/1/2016	7.50%	0.0	119.9	\$ 1,853,797	\$ 1,902,152	\$ (315,345)	-111.63%	N/A	N/A	N/A
El Paso Firemen & Policemen's Pension Staff Plan	Active	1/1/2018	7.75%	0.0	113.1	\$ 419,843	\$ 397,086	\$ (46,068)	-6.31%	1/1/2016	0.0	282.9
Grand Totals:					77.5%	\$ 281,240,399,927	\$ 277,783,804,152	\$ 80,763,500,134				79.1%

Notes

- (1) Plan status indicates whether a plan is active (admitting new hires), closed to new hires (but still accruing benefits), or frozen (not accruing benefits).
- (2) The effective amortization period is the time it would take to theoretically eliminate the UAAL assuming no future gains or losses and taking into account both the plan's stated and historical contribution policy.
- (3) Current amortization period reflects an employer contribution increase to 17.30% of payroll as of October 1, 2017 and an increase to 19.30% effective October 1, 2018.
- (4) Current amortization period reflects an employer contribution increase to 14.83% of payroll as of February 17, 2018.
- (5) This valuation reflects a 10-year reduction in the amortization period associated with a change in actuarial consulting firms. The new actuary and the PRB were unable to determine the reason for the reduction without more detailed information and discussion with the prior actuarial firm.
- (6) Prior amortization period is based on an open amortization funding policy. The system has adopted a closed 30 year amortization funding policy effective January 1, 2017.
- (7) Reported amortization period is based on an open amortization funding policy. The PRB is working with the plan to calculate an effective amortization period.
- (8) Amortization period is calculated using system-wide aggregate UAAL and payroll amounts.
- (9) Amortization period is calculated by the PRB.

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**AV Supplemental Report
January 24, 2019**

Plan Name	Fiscal Year End	Discount Rate	(a) Total Pension Liability (TPL) (1)	(b) Fiduciary Net Position (2)	(a) - (b) Net Pension Liability (NPL) (3)	(b) / (a) NPL Funded Ratio %	NPL at Discount Rate -1% (4)	NPL -1% Funded Ratio %	10 Year Net Return (5)
Abilene Firemen's Relief & Retirement Fund	9/30/2017	8.00%	\$ 107,969,265	\$ 57,456,309	\$ 50,512,956	53.2	\$ 61,662,207	48.2	4.40%
Amarillo Firemen's Relief & Retirement Fund	12/31/2017	8.00%	\$ 198,510,985	\$ 171,845,402	\$ 26,665,583	86.6	\$ 49,975,724	77.5	7.33%
Anson General Hospital	6/30/2017	7.50%	\$ 1,583,235	\$ 1,931,984	\$ (348,749)	122.0	\$ (201,439)	111.6	4.27%
Arlington Employees Deferred Income Plan	6/30/2017	5.00%	\$ 2,627,093	\$ 2,838,158	\$ (211,065)	108.0	\$ 51,872	98.2	3.53%
Atlanta Firemen's Relief & Retirement Fund	12/31/2017	7.40%	\$ 5,041,947	\$ 4,146,144	\$ 895,803	82.2	\$ 1,514,277	73.2	4.83%
Austin Employees' Retirement System	12/31/2017	7.50%	\$ 3,797,823,303	\$ 2,650,438,116	\$ 1,147,385,187	69.8	\$ 1,608,628,290	62.2	6.03%
Austin Fire Fighters Relief & Retirement Fund	12/31/2017	7.70%	\$ 1,038,800,829	\$ 953,798,227	\$ 85,002,602	91.8	\$ 189,653,027	83.4	6.54%
Austin Police Retirement System	12/31/2017	7.70%	\$ 1,189,590,940	\$ 769,474,743	\$ 420,116,197	64.7	\$ 553,553,243	58.2	2.82%
Beaumont Firemen's Relief & Retirement Fund	12/31/2017	6.37%	\$ 194,564,104	\$ 115,620,710	\$ 78,943,394	59.4	\$ 96,081,614	54.6	4.85%
Big Spring Firemen's Relief & Retirement Fund	12/31/2017	7.75%	\$ 21,381,101	\$ 11,681,447	\$ 9,699,654	54.6	\$ 12,490,778	48.3	5.01%
Brazos River Authority Retirement Plan	2/28/2018	6.50%	\$ 31,145,443	\$ 20,434,799	\$ 10,710,644	65.6	\$ 13,853,812	59.6	5.62%
Brownwood Firemen's Relief & Retirement Fund	12/31/2017	7.40%	\$ 9,033,572	\$ 4,158,090	\$ 4,875,482	46.0	\$ 6,005,511	40.9	4.34%
CPS Energy Pension Plan	12/31/2017	7.25%	\$ 1,933,840,120	\$ 1,627,840,308	\$ 305,999,812	84.2	\$ 529,380,290	75.5	6.98%
Capital MTA Retirement Plan for Administrative Employees	12/31/2017	5.48%	\$ 45,157,623	\$ 30,010,195	\$ 15,147,428	66.5	\$ 22,379,800	57.3	6.75%
Capital MTA Retirement Plan for Bargaining Unit Employees	12/31/2017	7.25%	\$ 62,241,794	\$ 33,199,579	\$ 29,042,215	53.3	\$ 34,832,013	48.8	5.52%
Citizens Medical Center	2/28/2018	7.25%	\$ 95,695,017	\$ 105,541,328	\$ (9,846,311)	110.3	\$ 3,520,724	96.8	6.81%
Cleburne Firemen's Relief & Retirement Fund	12/31/2017	7.25%	\$ 34,846,159	\$ 22,879,830	\$ 11,966,329	65.7	\$ 15,792,696	59.2	6.81%
Colorado River Municipal Water Dist. Pension Trust	12/31/2017	6.25%	\$ 10,409,919	\$ 10,060,151	\$ 349,768	96.6	\$ 1,256,080	88.9	5.90%
Conroe Fire Fighters' Retirement Fund	12/31/2017	7.75%	\$ 44,950,736	\$ 25,239,678	\$ 19,711,058	56.1	\$ 25,866,464	49.4	2.22%
Corpus Christi Fire Fighters' Retirement System	12/31/2017	7.75%	\$ 235,067,829	\$ 148,732,822	\$ 86,335,007	63.3	\$ 111,209,746	57.2	6.05%
Corpus Christi Regional Transportation Authority	12/31/2017	7.50%	\$ 37,069,237	\$ 36,440,324	\$ 628,913	98.3	\$ 4,915,965	88.1	7.05%
Corsicana Firemen's Relief & Retirement Fund	12/31/2017	7.00%	\$ 17,417,975	\$ 8,969,762	\$ 8,448,213	51.5	\$ 10,770,715	45.4	3.40%
DART Employees' Defined Benefit Retirement Plan & Trust	9/30/2017	6.75%	\$ 225,254,000	\$ 180,355,000	\$ 44,899,000	80.1	\$ 67,609,000	72.7	4.53%
Dallas Co. Hospital Dist. Retirement Income Plan	12/31/2017	7.00%	\$ 1,340,176,000	\$ 971,851,000	\$ 368,325,000	72.5	\$ 542,278,000	64.2	5.29%
Dallas Employees' Retirement Fund	12/31/2017	7.75%	\$ 4,377,844,000	\$ 3,612,260,000	\$ 765,584,000	82.5	\$ 1,281,029,000	73.8	6.22%
Dallas Police & Fire Pension System-Combined Plan	12/31/2017	7.25%	\$ 4,497,347,000	\$ 2,103,345,000	\$ 2,394,002,000	46.8	\$ 2,886,444,000	42.2	0.90%
Dallas Police & Fire Pension System-Supplemental	12/31/2017	7.25%	\$ 33,670,000	\$ 17,805,000	\$ 15,865,000	52.9	\$ 18,826,000	48.6	0.90%
Dallas/Fort Worth Airport Board DPS Retirement Plan	12/31/2017	7.25%	\$ 231,565,000	\$ 184,752,000	\$ 46,813,000	79.8	\$ 81,888,000	69.3	6.00%
Dallas/Fort Worth Airport Board Retirement Plan	12/31/2017	7.25%	\$ 584,398,000	\$ 494,836,000	\$ 89,562,000	84.7	\$ 171,074,000	74.3	6.00%
Denison Firemen's Relief & Retirement Fund	12/31/2017	7.75%	\$ 23,680,533	\$ 17,725,070	\$ 5,955,463	74.9	\$ 8,506,006	67.6	4.31%
Denton Firemen's Relief & Retirement Fund	12/31/2017	6.75%	\$ 100,805,212	\$ 85,388,283	\$ 15,416,929	84.7	\$ 28,094,849	75.2	6.23%
El Paso City Employees' Pension Fund	8/31/2017	7.50%	\$ 975,995,580	\$ 776,552,623	\$ 199,442,957	79.6	\$ 314,936,769	71.1	6.07%
El Paso Firemen & Policemen's Pension Staff Plan (6)	12/31/2017	7.75%	\$ 166,874	\$ 419,843	\$ (252,969)	251.6	\$ (238,569)	231.6	7.88%
El Paso Firemen's Pension Fund	12/31/2017	7.75%	\$ 729,333,910	\$ 601,790,721	\$ 127,543,189	82.5	\$ 230,816,871	72.3	5.80%
El Paso Police Pension Fund	12/31/2017	7.75%	\$ 1,041,430,981	\$ 870,658,507	\$ 170,772,474	83.6	\$ 320,321,963	73.1	5.80%
Employees Retirement System of Texas	8/31/2018	5.69%	\$ 47,944,310,000	\$ 27,753,330,000	\$ 20,190,980,000	57.9	\$ 26,609,730,000	51.1	7.02%
Fort Worth Employees' Retirement Fund	9/30/2017	5.13%	\$ 5,354,699,800	\$ 2,270,521,836	\$ 3,084,177,964	42.4	\$ 3,917,920,564	36.7	3.91%
Fort Worth Employees' Retirement Fund Staff Plan	9/30/2017	7.75%	\$ 5,697,981	\$ 4,526,754	\$ 1,171,227	79.4	\$ 2,132,617	68.0	3.91%

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**AV Supplemental Report
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Plan Name	Fiscal Year End	Discount Rate	(a) Total Pension Liability (TPL) (1)	(b) Fiduciary Net Position (2)	(a) - (b) Net Pension Liability (NPL) (3)	(b) / (a) NPL Funded Ratio %	NPL at Discount Rate -1% (4)	NPL -1% Funded Ratio %	10 Year Net Return (5)
Galveston Employees' Retirement Fund	12/31/2017	7.25%	\$ 64,059,158	\$ 51,550,290	\$ 12,508,868	80.5	\$ 19,616,180	72.4	5.30%
Galveston Employees' Retirement Plan for Police	12/31/2017	7.50%	\$ 52,850,837	\$ 20,544,158	\$ 32,306,679	38.9	\$ 38,706,487	34.7	4.58%
Galveston Firefighter's Relief & Retirement Fund	12/31/2017	7.75%	\$ 64,396,034	\$ 44,651,640	\$ 19,744,394	69.3	\$ 27,069,655	62.3	4.36%
Galveston Wharves Pension Plan	12/31/2017	7.25%	\$ 16,109,828	\$ 13,743,739	\$ 2,366,089	85.3	\$ 3,948,074	77.7	5.89%
Greenville Firemen's Relief & Retirement Fund	12/31/2017	8.00%	\$ 29,772,184	\$ 13,844,060	\$ 15,928,124	46.5	\$ 19,066,938	42.1	5.28%
Guadalupe Regional Medical Center	12/31/2017	7.25%	\$ 69,706,167	\$ 71,386,345	\$ (1,680,178)	102.4	\$ 7,715,397	90.2	6.68%
Guadalupe-Blanco River Authority	12/31/2017	7.00%	\$ 35,638,477	\$ 30,638,650	\$ 4,999,827	86.0	\$ 8,872,787	77.5	4.55%
Harlingen Firemen's Relief & Retirement Fund	9/30/2017	7.75%	\$ 49,561,531	\$ 31,224,379	\$ 18,337,152	63.0	\$ 24,462,121	56.1	5.06%
Harris County Hospital District Pension Plan	12/31/2017	7.00%	\$ 866,805,000	\$ 686,312,000	\$ 180,493,000	79.2	\$ 282,215,000	70.9	6.60%
Houston Firefighters' Relief & Retirement Fund	6/30/2018	7.25%	\$ 4,815,054,000	\$ 4,170,354,000	\$ 644,700,000	86.6	\$ 1,145,879,000	78.4	6.11%
Houston MTA Non-Union Pension Plan	12/31/2017	6.75%	\$ 260,941,732	\$ 176,017,259	\$ 84,924,473	67.5	\$ 108,868,624	61.8	5.30%
Houston MTA Workers Union Pension Plan	12/31/2017	6.75%	\$ 387,009,780	\$ 277,357,388	\$ 109,652,392	71.7	\$ 152,050,118	64.6	5.50%
Houston Municipal Employees Pension System	6/30/2017	7.00%	\$ 4,959,510,179	\$ 2,602,664,718	\$ 2,356,845,461	52.5	\$ 2,910,597,622	47.2	5.78%
Houston Police Officers' Pension System	6/30/2018	7.00%	\$ 6,745,438,000	\$ 5,486,614,000	\$ 1,258,824,000	81.3	\$ 2,006,434,000	73.2	6.30%
Irving Firemen's Relief & Retirement Fund	12/31/2017	8.25%	\$ 276,271,733	\$ 213,960,011	\$ 62,311,722	77.4	\$ 80,778,269	72.6	5.88%
Irving Supplemental Benefit Plan	12/31/2017	6.75%	\$ 83,410,525	\$ 59,743,544	\$ 23,666,981	71.6	\$ 35,201,964	62.9	3.47%
JPS Pension Plan - Tarrant County Hospital District	9/30/2017	7.25%	\$ 254,315,214	\$ 257,037,806	\$ (2,722,592)	101.1	\$ 27,724,614	90.3	5.50%
Judicial Retirement System of Texas Plan Two	8/31/2018	7.50%	\$ 487,770,000	\$ 453,380,000	\$ 34,390,000	92.9	\$ 81,920,000	84.7	7.02%
Killeen Firemen's Relief & Retirement Fund	9/30/2017	7.75%	\$ 56,504,748	\$ 39,884,563	\$ 16,620,185	70.6	\$ 24,575,794	61.9	4.30%
Laredo Firefighters Retirement System	9/30/2017	7.90%	\$ 235,965,683	\$ 141,983,274	\$ 93,982,409	60.2	\$ 124,038,500	53.4	4.15%
Law Enforcement & Custodial Officer Sup. Ret. Fund	8/31/2018	4.48%	\$ 2,149,920,000	\$ 966,830,000	\$ 1,183,090,000	45.0	\$ 1,534,180,000	38.7	7.02%
Longview Firemen's Relief & Retirement Fund	12/31/2017	8.00%	\$ 91,224,973	\$ 44,353,523	\$ 46,871,450	48.6	\$ 57,337,880	43.6	3.17%
Lower Colorado River Authority Retirement Plan	12/31/2017	7.25%	\$ 582,905,000	\$ 424,805,000	\$ 158,100,000	72.9	\$ 215,463,000	66.3	5.70%
Lubbock Fire Pension Fund	12/31/2017	7.75%	\$ 279,206,404	\$ 194,854,312	\$ 84,352,092	69.8	\$ 117,123,499	62.5	4.77%
Lufkin Firemen's Relief & Retirement Fund	12/31/2017	7.50%	\$ 33,997,069	\$ 16,444,542	\$ 17,552,527	48.4	\$ 21,308,265	43.6	4.68%
Marshall Firemen's Relief & Retirement Fund	12/31/2017	7.75%	\$ 19,482,991	\$ 8,526,909	\$ 10,956,082	43.8	\$ 13,377,049	38.9	5.22%
McAllen Firemen's Relief & Retirement Fund	9/30/2017	7.50%	\$ 75,091,715	\$ 49,459,309	\$ 25,632,406	65.9	\$ 39,339,224	55.7	4.17%
Midland Firemen's Relief & Retirement Fund	12/31/2016	8.00%	\$ 140,416,713	\$ 82,664,948	\$ 57,751,765	58.9	\$ 73,087,109	53.1	3.88%
Nacogdoches County Hospital District Retirement Plan	6/30/2016	7.25%	\$ 54,032,779	\$ 43,662,691	\$ 10,370,088	80.8	\$ 17,084,017	71.9	5.22%
Northeast Medical Center Hospital Retirement Plan	6/30/2017	7.40%	\$ 11,541,883	\$ 9,578,580	\$ 1,963,303	83.0	\$ 2,908,555	76.7	4.42%
Northwest Texas Healthcare System Retirement Plan	9/30/2017	7.50%	\$ 27,662,566	\$ 21,800,110	\$ 5,862,456	78.8	\$ 8,240,100	72.6	4.21%
Odessa Firemen's Relief & Retirement Fund	12/31/2017	5.32%	\$ 138,601,961	\$ 45,717,252	\$ 92,884,709	33.0	\$ 111,980,327	29.0	3.76%
Orange Firemen's Relief & Retirement Fund	12/31/2017	7.75%	\$ 16,625,932	\$ 9,021,894	\$ 7,604,038	54.3	\$ 9,304,157	49.2	4.60%
Paris Firefighters' Relief & Retirement Fund	12/31/2017	7.50%	\$ 15,057,006	\$ 4,790,010	\$ 10,266,996	31.8	\$ 11,851,541	28.8	2.85%
Plainview Firemen's Relief & Retirement Fund	12/31/2017	7.50%	\$ 16,509,689	\$ 6,154,425	\$ 10,355,264	37.3	\$ 12,245,562	33.4	2.88%
Plano Retirement Security Plan	12/31/2017	7.00%	\$ 142,908,846	\$ 148,516,307	\$ (5,607,461)	103.9	\$ 15,731,003	90.4	6.78%
Port Arthur Firemen's Relief & Retirement Fund	12/31/2017	8.00%	\$ 62,105,142	\$ 49,890,603	\$ 12,214,539	80.3	\$ 18,285,842	73.2	5.98%
Port of Houston Authority Retirement Plan	7/31/2017	6.75%	\$ 187,270,165	\$ 176,993,428	\$ 10,276,737	94.5	\$ 32,682,603	84.4	6.15%

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**AV Supplemental Report
January 24, 2019**

Plan Name	Fiscal Year End	Discount Rate	(a) Total Pension Liability (TPL) (1)	(b) Fiduciary Net Position (2)	(a) - (b) Net Pension Liability (NPL) (3)	(b) / (a) NPL Funded Ratio %	NPL at Discount Rate -1% (4)	NPL -1% Funded Ratio %	10 Year Net Return (5)
Refugio County Memorial Hospital District Retirement Plan	10/31/2017	7.00%	\$ 2,005,996	\$ 2,227,940	\$ (221,944)	111.1	\$ 36,221	98.4	4.07%
San Angelo Firemen's Relief & Retirement Fund	12/31/2016	7.90%	\$ 101,449,191	\$ 60,206,802	\$ 41,242,389	59.3	\$ 53,980,253	52.7	6.34%
San Antonio Fire & Police Pension Fund	12/31/2017	7.25%	\$ 3,545,800,000	\$ 3,196,529,000	\$ 349,271,000	90.1	\$ 852,393,000	78.9	4.80%
San Antonio Metropolitan Transit Retirement Plan (7)	9/30/2017	7.50%	\$ 404,782,117	\$ 275,334,600	\$ 129,447,517	68.0	\$ 172,125,240	61.5	N/A
San Benito Firemen Relief & Retirement Fund	9/30/2016	7.50%	\$ 5,648,797	\$ 2,987,515	\$ 2,661,282	52.9	\$ 3,444,335	46.4	0.94%
Sweeny Community Hospital	12/31/2017	7.25%	\$ 3,701,761	\$ 3,579,168	\$ 122,593	96.7	\$ 451,023	88.8	6.53%
Sweetwater Firemen's Relief & Retirement Fund	12/31/2017	8.00%	\$ 12,589,045	\$ 8,547,172	\$ 4,041,873	67.9	\$ 5,480,666	60.9	4.91%
Teacher Retirement System of Texas	8/31/2017	8.00%	\$ 179,336,534,819	\$ 147,361,922,120	\$ 31,974,612,699	82.2	\$ 53,902,879,534	73.2	5.81%
Temple Firemen's Relief & Retirement Fund	9/30/2017	7.75%	\$ 58,704,181	\$ 42,702,404	\$ 16,001,777	72.7	\$ 22,752,871	65.2	4.17%
Texarkana Firemen's Relief & Retirement Fund	12/31/2017	7.75%	\$ 40,835,101	\$ 34,819,005	\$ 6,016,096	85.3	\$ 10,393,624	77.0	5.73%
Texas City Firemen's Relief & Retirement Fund	12/31/2017	7.75%	\$ 32,546,628	\$ 16,117,766	\$ 16,428,862	49.5	\$ 20,147,558	44.4	4.22%
Texas County & District Retirement System (8)	12/31/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.55%
Texas Emergency Services Retirement System	8/31/2018	7.75%	\$ 137,514,345	\$ 115,863,894	\$ 21,650,451	84.3	\$ 43,026,103	72.9	7.42%
Texas Municipal Retirement System (8)	12/31/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.56%
The Woodlands Firefighters' Retirement System (6)	12/31/2017	7.00%	\$ 30,264,889	\$ 32,286,791	\$ (2,021,902)	106.7	\$ 3,066,912	91.3	9.12%
Travis County ESD #6 Firefighter's Relief & Retirement Fund (6)	12/31/2017	7.00%	\$ 22,330,737	\$ 19,688,064	\$ 2,642,673	88.2	\$ 7,440,934	72.6	7.55%
Tyler Firemen's Relief & Retirement Fund	12/31/2017	7.65%	\$ 91,152,749	\$ 70,141,881	\$ 21,010,868	76.9	\$ 30,721,770	69.5	5.54%
University Health System Pension Plan	12/31/2017	7.00%	\$ 491,923,670	\$ 363,779,588	\$ 128,144,082	74.0	\$ 186,401,039	66.1	6.16%
University Park Firemen's Relief & Retirement Fund	12/31/2017	7.50%	\$ 23,512,116	\$ 9,686,942	\$ 13,825,174	41.2	\$ 16,541,522	36.9	3.62%
Waxahachie Firemen's Relief & Retirement Fund	9/30/2017	7.00%	\$ 22,419,448	\$ 15,817,088	\$ 6,602,360	70.6	\$ 9,588,178	62.3	4.80%
Weslaco Firemen's Relief & Retirement Fund	9/30/2017	7.25%	\$ 15,131,432	\$ 10,429,381	\$ 4,702,051	68.9	\$ 7,054,339	59.7	2.59%
Wichita Falls Firemen's Relief & Retirement Fund	12/31/2017	4.83%	\$ 121,933,825	\$ 51,447,622	\$ 70,486,203	42.2	\$ 88,560,972	36.7	5.81%

Grand Totals: **\$ 284,937,575,588 \$ 215,599,926,153 \$ 69,337,649,435 75.7% \$ 104,712,319,450 67.3%**

Notes

- (1) Total Pension Liability is the actuarial accrued liability calculated in accordance with GASB 67, as reported in the system's Annual Financial Report.
- (2) Fiduciary Net Position is the market value of assets as of the Fiscal Year End, as reported in the system's Annual Financial Report.
- (3) Net Pension Liability is measured as the Total Pension Liability less the amount of the pension plan's Fiduciary Net Position.
- (4) Net Pension Liability measured using a discount rate 1% lower than the stated discount rate.
- (5) 10 Year Net Return (gross return net of investment expenses) as reported for the Fiscal Year on the PRB-1000 Investment Returns and Assumptions Report.
- (6) The plan is less than 10 years old; return is calculated since date of inception.
- (7) A 10 Year Net Return was not available from this plan.
- (8) Plan is an Agent Multiple Employer Defined Benefit Plan and is not subject to the majority of GASB 67 reporting requirements.

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Contribution Report
January 24, 2019

Plan Name	Plan Status (1)	Fiscal Year End	Covered Payroll	(a) Total NC (% of Pay) (2), (3)	(b) EE Cont (% of Pay) (3)	(c) = (a) - (b) ER Normal Cost (% of Pay) (3)	(d) Amort Pmt (% of Pay) (3)	(e) = (c) + (d) ER Rec Cont (% of Pay) (3), (4)	(f) Actual ER Cont (% of Pay) (5)	Actual ER Cont Type	(f) / (e) Percent of Rec Cont Paid
Abilene Firemen's Relief & Retirement Fund	Active	9/30/2017	\$ 13,200,135	15.62%	13.20%	2.42%	17.27%	19.69%	19.25%	Fixed	98%
Amarillo Firemen's Relief & Retirement Fund	Active	12/31/2017	\$ 19,822,841	23.80%	13.00%	10.80%	9.42%	20.22%	19.58%	Fixed	97%
Anson General Hospital	Frozen	6/30/2017	\$ 282,481	20.66%	4.00%	16.66%	-16.89%	-0.23%	0.00%	Actuarial	N/A
Arlington Employees Deferred Income Plan	Active	6/30/2017	\$ 3,736,300	5.62%	3.00%	2.62%	-0.72%	1.90%	1.63%	Actuarial	86%
Atlanta Firemen's Relief & Retirement Fund	Active	12/31/2017	\$ 635,815	18.58%	13.00%	5.58%	7.42%	13.00%	14.64%	Fixed	113%
Austin Employees' Retirement System	Active	12/31/2017	\$ 615,814,344	18.01%	8.00%	10.01%	9.60%	19.61%	18.03%	Fixed	92%
Austin Fire Fighters Relief & Retirement Fund	Active	12/31/2017	\$ 87,266,236	28.20%	18.70%	9.50%	8.85%	18.35%	22.05%	Fixed	120%
Austin Police Retirement System	Active	12/31/2017	\$ 164,899,985	21.72%	13.00%	8.72%	11.85%	20.57%	21.31%	Fixed	104%
Beaumont Firemen's Relief & Retirement Fund	Active	12/31/2017	\$ 19,424,704	18.93%	15.13%	3.80%	16.37%	20.17%	15.11%	Fixed	75%
Big Spring Firemen's Relief & Retirement Fund	Active	12/31/2017	\$ 3,879,000	13.85%	13.00%	0.85%	11.69%	12.54%	12.59%	Fixed	100%
Brazos River Authority Retirement Plan (6)	Frozen	2/28/2018	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Actuarial	100%
Brownwood Firemen's Relief & Retirement Fund	Active	12/31/2017	\$ 1,847,760	14.65%	8.00%	6.65%	14.65%	21.30%	20.00%	Fixed	94%
CPS Energy Pension Plan	Active	12/31/2017	\$ 240,763,422	14.59%	5.00%	9.59%	9.48%	19.07%	19.15%	Actuarial	100%
Capital MTA Retirement Plan for Administrative Employees	Active	12/31/2017	\$ 23,551,457	8.78%	0.00%	8.78%	1.80%	10.58%	13.19%	Actuarial	125%
Capital MTA Retirement Plan for Bargaining Unit Employees (6)	Frozen	12/31/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Actuarial	167%
Citizens Medical Center	Active	2/28/2018	\$ 58,274,773	8.67%	3.93%	4.74%	0.05%	4.79%	4.98%	Actuarial	104%
Cleburne Firemen's Relief & Retirement Fund	Active	12/31/2017	\$ 4,508,831	21.33%	13.00%	8.33%	17.51%	25.84%	22.42%	Other	87%
Colorado River Municipal Water Dist. Pension Trust	Active	12/31/2017	\$ 3,635,925	10.31%	0.00%	10.31%	4.92%	15.23%	13.61%	Actuarial	89%
Conroe Fire Fighters' Retirement Fund	Active	12/31/2017	\$ 8,474,517	19.21%	13.24%	5.97%	10.31%	16.28%	15.00%	Fixed	92%
Corpus Christi Fire Fighters' Retirement System	Active	12/31/2017	\$ 31,581,550	15.91%	13.10%	2.81%	17.97%	20.78%	20.78%	Fixed	100%
Corpus Christi Regional Transportation Authority	Active	12/31/2017	\$ 9,773,977	10.26%	0.00%	10.26%	5.74%	16.00%	14.16%	Actuarial	88%
Corsicana Firemen's Relief & Retirement Fund	Active	12/31/2017	\$ 3,916,319	15.73%	14.00%	1.73%	12.27%	14.00%	14.15%	Fixed	101%
DART Employees' Defined Benefit Retirement Plan & Trust	Closed	9/30/2017	\$ 15,642,000	7.40%	0.02%	7.38%	34.40%	41.78%	63.93%	Actuarial	153%
Dallas Co. Hospital Dist. Retirement Income Plan	Active	12/31/2017	\$ 632,669,000	6.06%	4.50%	1.56%	2.99%	4.55%	4.41%	Actuarial	97%
Dallas Employees' Retirement Fund	Active	12/31/2017	\$ 410,913,000	22.05%	13.32%	8.73%	13.13%	21.86%	14.35%	Other	66%
Dallas Police & Fire Pension System-Combined Plan	Active	12/31/2017	\$ 346,037,000	19.14%	9.37%	9.77%	37.48%	47.25%	36.50%	Fixed	77%
Dallas Police & Fire Pension System-Supplemental	Active	12/31/2017	\$ 916,000	31.87%	8.79%	23.08%	374.34%	397.42%	226.75%	Actuarial	57%
Dallas/Fort Worth Airport Board DPS Retirement Plan	Active	12/31/2017	\$ 27,840,000	23.53%	7.00%	16.53%	14.83%	31.36%	31.36%	Actuarial	100%
Dallas/Fort Worth Airport Board Retirement Plan	Active	12/31/2017	\$ 55,850,000	17.89%	0.00%	17.89%	19.99%	37.88%	37.87%	Actuarial	100%

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**Contribution Report
January 24, 2019**

Plan Name	Plan Status (1)	Fiscal Year End	Covered Payroll	(a) Total NC (% of Pay) (2), (3)	(b) EE Cont (% of Pay) (3)	(c) = (a) - (b) ER Normal Cost (% of Pay) (3)	(d) Amort Pmt (% of Pay) (3)	(e) = (c) + (d) ER Rec Cont (% of Pay) (3), (4)	(f) Actual ER Cont (% of Pay) (5)	Actual ER Cont Type	(f) / (e) Percent of Rec Cont Paid
Denison Firemen's Relief & Retirement Fund	Active	12/31/2017	\$ 3,344,313	15.92%	12.00%	3.92%	11.08%	15.00%	15.00%	Fixed	100%
Denton Firemen's Relief & Retirement Fund	Active	12/31/2017	\$ 17,007,857	21.91%	12.60%	9.31%	9.02%	18.33%	17.52%	Other	96%
El Paso City Employees' Pension Fund	Active	8/31/2017	\$ 161,026,109	12.19%	8.95%	3.24%	7.17%	10.41%	15.73%	Fixed	151%
El Paso Firemen & Policemen's Pension Staff Plan	Active	12/31/2017	\$ 505,502	11.25%	10.00%	1.25%	10.00%	11.25%	10.42%	Actuarial	93%
El Paso Firemen's Pension Fund	Active	12/31/2017	\$ 62,828,632	21.29%	15.28%	6.01%	14.83%	20.84%	18.78%	Fixed	90%
El Paso Police Pension Fund	Active	12/31/2017	\$ 84,260,634	23.05%	13.89%	9.16%	14.46%	23.62%	18.11%	Fixed	77%
Employees Retirement System of Texas (7)	Active	8/31/2018	\$ 6,811,925,525	13.95%	9.50%	4.45%	9.26%	13.71%	11.66%	Fixed	85%
Fort Worth Employees' Retirement Fund	Active	9/30/2017	\$ 447,488,158	11.28%	8.00%	3.28%	21.79%	25.07%	19.98%	Fixed	80%
Fort Worth Employees' Retirement Fund Staff Plan	Active	9/30/2017	\$ 1,507,141	14.39%	8.25%	6.14%	5.08%	11.22%	15.74%	Fixed	140%
Galveston Employees' Retirement Fund	Active	12/31/2017	\$ 25,308,650	9.45%	6.00%	3.45%	5.55%	9.00%	8.99%	Fixed	100%
Galveston Employees' Retirement Plan for Police	Active	12/31/2017	\$ 11,432,183	10.97%	12.00%	-1.03%	18.48%	17.45%	12.58%	Fixed	72%
Galveston Firefighter's Relief & Retirement Fund	Active	12/31/2017	\$ 7,799,971	19.87%	16.00%	3.87%	18.12%	21.99%	14.00%	Fixed	64%
Galveston Wharves Pension Plan	Closed	12/31/2017	\$ 2,659,786	5.79%	0.00%	5.79%	15.31%	21.10%	21.14%	Actuarial	100%
Greenville Firemen's Relief & Retirement Fund	Active	12/31/2017	\$ 4,167,480	16.71%	16.30%	0.41%	21.14%	21.55%	16.93%	Fixed	79%
Guadalupe Regional Medical Center	Active	12/31/2017	\$ 25,486,937	8.85%	4.00%	4.85%	1.65%	6.50%	7.53%	Other	116%
Guadalupe-Blanco River Authority	Closed	12/31/2017	\$ 6,279,213	5.02%	0.00%	5.02%	11.10%	16.12%	17.00%	Other	105%
Harlingen Firemen's Relief & Retirement Fund	Active	9/30/2017	\$ 6,213,613	18.02%	13.00%	5.02%	15.97%	20.99%	14.83%	Fixed	71%
Harris County Hospital District Pension Plan	Closed	12/31/2017	\$ 173,272,000	3.89%	0.00%	3.89%	12.93%	16.82%	16.99%	Actuarial	101%
Houston Firefighters' Relief & Retirement Fund	Active	6/30/2018	\$ 260,345,000	27.60%	10.50%	17.10%	19.70%	36.80%	31.88%	Actuarial	87%
Houston MTA Non-Union Pension Plan	Active	12/31/2017	\$ 43,479,995	7.93%	0.00%	7.93%	18.08%	26.01%	26.01%	Actuarial	100%
Houston MTA Workers Union Pension Plan	Closed	12/31/2017	\$ 103,245,714	4.34%	0.00%	4.34%	12.33%	16.67%	14.93%	Actuarial	90%
Houston Municipal Employees Pension System	Active	6/30/2017	\$ 604,895,264	6.92%	2.76%	4.16%	27.65%	31.81%	30.18%	Actuarial	95%
Houston Police Officers' Pension System	Active	6/30/2018	\$ 412,786,000	24.36%	10.50%	13.86%	17.91%	31.77%	214.92%	Actuarial	676%
Irving Firemen's Relief & Retirement Fund	Active	12/31/2017	\$ 32,264,107	18.53%	12.00%	6.53%	12.48%	19.01%	16.75%	Fixed	88%
Irving Supplemental Benefit Plan	Active	12/31/2017	\$ 100,135,456	3.34%	2.50%	0.84%	1.27%	2.11%	2.08%	Other	99%
JPS Pension Plan - Tarrant County Hospital District	Active	9/30/2017	\$ 213,963,351	5.61%	1.00%	4.61%	2.14%	6.75%	6.75%	Actuarial	100%
Judicial Retirement System of Texas Plan Two	Active	8/31/2018	\$ 78,772,445	20.57%	7.43%	13.14%	3.28%	16.42%	15.94%	Fixed	97%
Killeen Firemen's Relief & Retirement Fund	Active	9/30/2017	\$ 14,410,555	16.00%	11.00%	5.00%	8.55%	13.55%	13.00%	Fixed	96%
Laredo Firefighters Retirement System	Active	9/30/2017	\$ 34,061,980	19.96%	15.00%	4.96%	17.46%	22.42%	20.10%	Fixed	90%

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**Contribution Report
January 24, 2019**

Plan Name	Plan Status (1)	Fiscal Year End	Covered Payroll	(a) Total NC (% of Pay) (2), (3)	(b) EE Cont (% of Pay) (3)	(c) = (a) - (b) ER Normal Cost (% of Pay) (3)	(d) Amort Pmt (% of Pay) (3)	(e) = (c) + (d) ER Rec Cont (% of Pay) (3), (4)	(f) Actual ER Cont (% of Pay) (5)	Actual ER Cont Type	(f) / (e) Percent of Rec Cont Paid
Law Enforcement & Custodial Officer Sup. Ret. Fund	Active	8/31/2018	\$ 1,689,590,272	2.11%	0.50%	1.61%	1.56%	3.17%	1.55%	Other	49%
Longview Firemen's Relief & Retirement Fund	Active	12/31/2017	\$ 12,329,307	14.00%	16.92%	-2.92%	24.19%	21.27%	17.36%	Fixed	82%
Lower Colorado River Authority Retirement Plan	Closed	12/31/2017	\$ 112,700,000	5.84%	0.00%	5.84%	10.27%	16.11%	20.31%	Actuarial	126%
Lubbock Fire Pension Fund	Active	12/31/2017	\$ 31,754,899	22.20%	12.43%	9.77%	12.78%	22.55%	21.72%	Other	96%
Lufkin Firemen's Relief & Retirement Fund	Active	12/31/2017	\$ 5,122,197	16.85%	14.20%	2.65%	21.26%	23.91%	23.02%	Fixed	96%
Marshall Firemen's Relief & Retirement Fund	Active	12/31/2017	\$ 2,738,929	16.39%	14.00%	2.39%	22.00%	24.39%	18.87%	Fixed	77%
McAllen Firemen's Relief & Retirement Fund	Active	9/30/2017	\$ 11,524,569	15.53%	11.00%	4.53%	9.95%	14.48%	13.00%	Fixed	90%
Midland Firemen's Relief & Retirement Fund	Active	12/31/2016	\$ 16,135,387	24.27%	13.20%	11.07%	13.66%	24.73%	22.20%	Fixed	90%
Nacogdoches County Hospital District Retirement Plan	Active	6/30/2016	\$ 30,057,297	4.56%	2.91%	1.65%	2.66%	4.31%	5.66%	Other	131%
Northeast Medical Center Hospital Retirement Plan (6)	Frozen	6/30/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Actuarial	100%
Northwest Texas Healthcare System Retirement Plan (6)	Frozen	9/30/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Other	100%
Odessa Firemen's Relief & Retirement Fund	Active	12/31/2017	\$ 12,504,900	15.06%	18.00%	-2.94%	27.94%	25.00%	20.33%	Fixed	81%
Orange Firemen's Relief & Retirement Fund	Active	12/31/2017	\$ 2,373,912	12.76%	12.00%	0.76%	18.49%	19.25%	14.04%	Fixed	73%
Paris Firefighters' Relief & Retirement Fund	Active	12/31/2017	\$ 2,719,967	9.54%	15.00%	-5.46%	20.43%	14.97%	12.00%	Fixed	80%
Plainview Firemen's Relief & Retirement Fund	Active	12/31/2017	\$ 2,028,514	12.84%	14.00%	-1.16%	26.50%	25.34%	25.04%	Fixed	99%
Plano Retirement Security Plan	Active	12/31/2017	\$ 142,526,560	3.56%	0.00%	3.56%	0.06%	3.62%	3.62%	Actuarial	100%
Port Arthur Firemen's Relief & Retirement Fund	Active	12/31/2017	\$ 9,410,130	14.92%	13.00%	1.92%	11.94%	13.86%	13.87%	Other	100%
Port of Houston Authority Retirement Plan	Closed	7/31/2017	\$ 30,210,365	13.07%	0.00%	13.07%	3.99%	17.06%	31.78%	Actuarial	186%
Refugio County Memorial Hospital District Retirement Plan	Frozen	10/31/2017	\$ 3,234,547	0.00%	0.00%	0.00%	0.00%	0.00%	1.85%	Actuarial	N/A
San Angelo Firemen's Relief & Retirement Fund	Active	12/31/2016	\$ 11,068,691	19.48%	14.20%	5.28%	18.41%	23.69%	20.23%	Fixed	85%
San Antonio Fire & Police Pension Fund	Active	12/31/2017	\$ 308,101,000	24.31%	12.32%	11.99%	7.17%	19.16%	24.64%	Fixed	129%
San Antonio Metropolitan Transit Retirement Plan	Active	9/30/2017	\$ 67,512,908	8.54%	4.17%	4.37%	10.01%	14.38%	19.71%	Actuarial	137%
San Benito Firemen Relief & Retirement Fund	Active	9/30/2016	\$ 1,040,275	13.61%	12.00%	1.61%	9.46%	11.07%	15.87%	Fixed	143%
Sweeny Community Hospital	Closed	12/31/2017	\$ 1,244,699	5.39%	0.00%	5.39%	3.91%	9.30%	9.30%	Actuarial	100%
Sweetwater Firemen's Relief & Retirement Fund	Active	12/31/2017	\$ 1,580,254	21.86%	17.00%	4.86%	13.14%	18.00%	18.00%	Fixed	100%
Teacher Retirement System of Texas	Active	8/31/2017	\$ 42,111,120,273	10.05%	7.70%	2.35%	5.59%	7.94%	7.99%	Fixed	101%
Temple Firemen's Relief & Retirement Fund	Active	9/30/2017	\$ 8,540,580	20.57%	15.00%	5.57%	10.40%	15.97%	15.21%	Fixed	95%
Texarkana Firemen's Relief & Retirement Fund	Active	12/31/2017	\$ 4,229,844	22.68%	13.50%	9.18%	10.32%	19.50%	19.87%	Fixed	102%
Texas City Firemen's Relief & Retirement Fund	Active	12/31/2017	\$ 5,107,869	12.77%	16.00%	-3.23%	18.59%	15.36%	16.00%	Fixed	104%

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Contribution Report
January 24, 2019

Plan Name	Plan Status (1)	Fiscal Year End	Covered Payroll	(a) Total NC (% of Pay) (2), (3)	(b) EE Cont (% of Pay) (3)	(c) = (a) - (b) ER Normal Cost (% of Pay) (3)	(d) Amort Pmt (% of Pay) (3)	(e) = (c) + (d) ER Rec Cont (% of Pay) (3), (4)	(f) Actual ER Cont (% of Pay) (5)	Actual ER Cont Type	(f) / (e) Percent of Rec Cont Paid
Texas County & District Retirement System	Active	12/31/2017	\$ 6,676,520,194	13.54%	6.77%	6.77%	4.63%	11.40%	12.33%	Actuarial	108%
Texas Emergency Services Retirement System (6)	Active	8/31/2018	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Other	115%
Texas Municipal Retirement System	Active	12/31/2017	\$ 6,188,490,343	15.03%	6.62%	8.41%	4.83%	13.24%	13.55%	Actuarial	102%
The Woodlands Firefighters' Retirement System	Active	12/31/2017	\$ 11,153,108	22.67%	12.00%	10.67%	0.26%	10.93%	12.03%	Fixed	110%
Travis County ESD #6 Firefighter's Relief & Retirement Fund	Active	12/31/2017	\$ 5,842,505	21.84%	20.00%	1.84%	17.36%	19.20%	19.20%	Fixed	100%
Tyler Firemen's Relief & Retirement Fund	Active	12/31/2017	\$ 11,474,800	20.53%	13.50%	7.03%	12.47%	19.50%	20.96%	Fixed	107%
University Health System Pension Plan	Active	12/31/2017	\$ 331,014,376	4.09%	2.00%	2.09%	4.59%	6.68%	7.34%	Actuarial	110%
University Park Firemen's Relief & Retirement Fund	Closed	12/31/2017	\$ 3,159,841	18.13%	10.48%	7.65%	22.05%	29.70%	18.29%	Fixed	62%
Waxahachie Firemen's Relief & Retirement Fund	Active	9/30/2017	\$ 4,112,117	18.19%	12.00%	6.19%	8.36%	14.55%	15.41%	Other	106%
Weslaco Firemen's Relief & Retirement Fund	Active	9/30/2017	\$ 3,967,317	13.65%	12.00%	1.65%	6.31%	7.96%	12.30%	Fixed	155%
Wichita Falls Firemen's Relief & Retirement Fund	Active	12/31/2017	\$ 11,254,785	14.69%	13.00%	1.69%	18.20%	19.89%	12.54%	Fixed	63%

Notes

- (1) Plan status indicates whether a plan is active (admitting new hires), closed to new hires (but still accruing benefits), or frozen (not accruing benefits).
- (2) Normal Cost includes any explicit provisions for administrative expenses.
- (3) Values may differ from that reported by the system due to differences in timing and/or rounding. For systems that do not indicate the fiscal year associated with this value (or the requisite valuation has not been provided to the PRB), they are based on the most recently reported valuation date on or before the beginning of the fiscal year.
- (4) Recommended Contribution needed for the system to achieve and maintain an amortization period that does not exceed 30 years, in accordance with Texas Code §802.101(a).
- (5) Actual contribution rate is determined as the employer contributions made to the plan during the fiscal year divided by the covered payroll shown. This may differ from the plan's stated contribution rate due to differences between actual and assumed covered payroll.
- (6) Covered payroll is not reported for this plan.
- (7) Plan calculates a recommended contribution based on a 31-year amortization period.

TAB 3B

Public Retirement System Compliance and Reporting As of January 16, 2019

Compliance

	Current Board Meeting	Previous Board Meeting
Non-Compliant Plans	7	22
Compliant Plans	92	77
Total Plans Registered	99	99

Summary of Plans Non-Compliant over 60 Days

Plan Type	Current Board Meeting	Previous Board Meeting
Defined Benefit	3	2

Total Net Assets – Based on most recent financial reports

	Current Board Meeting	Previous Board Meeting
Total Net Assets	\$281,842,873,570	\$271,611,937,119

Amortization Periods

Plan Amortization Periods	Current Board Meeting	Previous Board Meeting
Infinite	6	6
>= 40 years, but not infinite	16	15
> 30 years < 40 years	13	16
> 25 years <= 30 years	18	18
>= 10 years <= 25 years	30	29
> 0 Years < 10 years	9	9
0 years	7	6
Total Plans Registered	99	99

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Plans Non-Compliant over 60 Days

In accordance with 801.209(b) of the Texas Government Code, this list includes all plans who have not submitted one or more of the following reports to the Texas Pension Review Board by the 60th day after the date the reports are due: annual financial, membership, and investment returns and assumptions report (*PRB-1000*).

Fiscal Year	Retirement System	Due Date
2017	Nacogdoches County Hospital District Retirement Plan	1/27/2018
2017	San Benito Firemen Relief & Retirement Fund	4/29/2018
2017	Midland Firemen's Relief & Retirement Fund	7/30/2018

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STATE PENSION REVIEW BOARD OF TEXAS

Total Net Assets

List of the total net assets of all active plans based on the most recent financial report received.

Plan Name	Report Date	Net Assets
Teacher Retirement System of Texas	8/31/2018	\$154,568,901,833
Texas County & District Retirement System	12/31/2017	\$30,000,370,381
Texas Municipal Retirement System	12/31/2017	\$28,649,374,617
Employees Retirement System of Texas	8/31/2018	\$27,753,334,784
Houston Police Officers' Pension System	6/30/2018	\$5,486,614,000
Houston Firefighters' Relief & Retirement Fund	6/30/2018	\$4,170,353,965
Dallas Employees' Retirement Fund	12/31/2017	\$3,612,260,000
San Antonio Fire & Police Pension Fund	12/31/2017	\$3,196,529,000
Houston Municipal Employees Pension System	6/30/2018	\$2,988,864,278
Austin Employees' Retirement System	12/31/2017	\$2,650,458,116
Fort Worth Employees' Retirement Fund	9/30/2017	\$2,270,521,836
Dallas Police & Fire Pension System-Combined Plan	12/31/2017	\$2,103,345,471
CPS Energy Pension Plan	12/31/2017	\$1,627,840,308
Dallas County Hospital District Retirement Income Plan	12/31/2017	\$971,851,000
Law Enforcement & Custodial Officer Supplemental Retirement Fund	8/31/2018	\$966,827,735
Austin Fire Fighters Relief & Retirement Fund	12/31/2017	\$953,798,227
El Paso Police Pension Fund	12/31/2017	\$870,658,507
El Paso City Employees' Pension Fund	8/31/2017	\$776,552,623
Austin Police Retirement System	12/31/2017	\$769,474,743
Harris County Hospital District Pension Plan	12/31/2017	\$686,312,249
El Paso Firemen's Pension Fund	12/31/2017	\$601,790,721
Dallas/Fort Worth Airport Board Retirement Plan	12/31/2017	\$494,836,000
Judicial Retirement System of Texas Plan Two	8/31/2018	\$453,379,786
Lower Colorado River Authority Retirement Plan	12/31/2017	\$424,805,000

Plan Name	Report Date	Net Assets
University Health System Pension Plan	12/31/2017	\$363,779,588
Houston MTA Workers Union Pension Plan	12/31/2017	\$277,357,388
San Antonio Metropolitan Transit Retirement Plan	9/30/2017	\$275,334,600
JPS Pension Plan - Tarrant County Hospital District	9/30/2017	\$257,037,806
Irving Firemen's Relief & Retirement Fund	12/31/2017	\$213,960,011
Lubbock Fire Pension Fund	12/31/2017	\$194,854,312
Dallas/Fort Worth Airport Board DPS Retirement Plan	12/31/2017	\$184,752,000
DART Employees' Defined Benefit Retirement Plan & Trust	9/30/2017	\$180,355,000
Port of Houston Authority Retirement Plan	7/31/2017	\$176,993,428
Houston MTA Non-Union Pension Plan	12/31/2017	\$176,017,259
Amarillo Firemen's Relief & Retirement Fund	12/31/2017	\$171,845,402
Corpus Christi Fire Fighters' Retirement System	12/31/2017	\$148,732,822
Plano Retirement Security Plan	12/31/2017	\$148,516,307
Laredo Firefighters Retirement System	9/30/2017	\$141,983,274
Texas Emergency Services Retirement System	8/31/2018	\$115,863,894
Beaumont Firemen's Relief & Retirement Fund	12/31/2017	\$115,620,710
Retirement Plan for Citizens Medical Center	2/28/2018	\$105,541,329
Denton Firemen's Relief & Retirement Fund	12/31/2017	\$85,388,283
Midland Firemen's Relief & Retirement Fund	12/31/2016	\$82,664,948
Retirement Plan for Guadalupe Regional Medical Center	12/31/2017	\$71,386,345
Tyler Firemen's Relief & Retirement Fund	12/31/2017	\$70,141,881
San Angelo Firemen's Relief & Retirement Fund	12/31/2016	\$60,206,802
Irving Supplemental Benefit Plan	12/31/2017	\$59,743,544
Abilene Firemen's Relief & Retirement Fund	9/30/2017	\$57,456,309
Galveston Employees' Retirement Fund	12/31/2017	\$51,550,290
Wichita Falls Firemen's Relief & Retirement Fund	12/31/2017	\$51,447,622
Port Arthur Firemen's Relief & Retirement Fund	12/31/2017	\$49,890,603
McAllen Firemen's Relief & Retirement Fund	9/30/2017	\$49,459,309
Odessa Firemen's Relief & Retirement Fund	12/31/2017	\$45,717,250
Galveston Firefighter's Relief & Retirement Fund	12/31/2017	\$44,651,640
Longview Firemen's Relief & Retirement Fund	12/31/2017	\$44,353,523
Nacogdoches County Hospital District Retirement Plan	6/30/2016	\$43,662,691

Plan Name	Report Date	Net Assets
Temple Firemen's Relief & Retirement Fund	9/30/2017	\$42,702,404
Killeen Firemen's Relief & Retirement Fund	9/30/2017	\$39,884,563
Corpus Christi Regional Transportation Authority	12/31/2017	\$36,440,324
Texarkana Firemen's Relief & Retirement Fund	12/31/2017	\$34,819,005
Capital MTA Retirement Plan for Bargaining Unit Employees	12/31/2017	\$33,199,579
The Woodlands Firefighters' Retirement System	12/31/2017	\$32,286,791
Harlingen Firemen's Relief & Retirement Fund	9/30/2017	\$31,224,379
Guadalupe-Blanco River Authority	12/31/2017	\$30,638,650
Capital MTA Retirement Plan for Administrative Employees	12/31/2017	\$30,010,195
Conroe Fire Fighters' Retirement Fund	12/31/2017	\$25,239,678
Cleburne Firemen's Relief & Retirement Fund	12/31/2017	\$22,879,830
Northwest Texas Healthcare System Retirement Plan	9/30/2017	\$21,800,110
Galveston Employees' Retirement Plan for Police	12/31/2017	\$20,544,157
Brazos River Authority Retirement Plan	2/28/2018	\$20,434,799
Travis County ESD #6 Firefighter's Relief & Retirement Fund	12/31/2017	\$19,688,064
Dallas Police & Fire Pension System-Supplemental	12/31/2017	\$17,805,153
Denison Firemen's Relief & Retirement Fund	12/31/2017	\$17,725,070
Lufkin Firemen's Relief & Retirement Fund	12/31/2017	\$16,444,542
Texas City Firemen's Relief & Retirement Fund	12/31/2017	\$16,117,766
Waxahachie Firemen's Relief & Retirement Fund	9/30/2017	\$15,817,088
Greenville Firemen's Relief & Retirement Fund	12/31/2017	\$13,844,060
Galveston Wharves Pension Plan	12/31/2017	\$13,743,739
Big Spring Firemen's Relief & Retirement Fund	12/31/2017	\$11,681,447
Weslaco Firemen's Relief & Retirement Fund	9/30/2017	\$10,429,381
Colorado River Municipal Water District Defined Benefit Retirement P	12/31/2017	\$10,060,151
University Park Firemen's Relief & Retirement Fund	12/31/2017	\$9,686,944
Northeast Medical Center Hospital Retirement Plan	6/30/2017	\$9,578,580
Orange Firemen's Relief & Retirement Fund	12/31/2017	\$9,021,894
Corsicana Firemen's Relief & Retirement Fund	12/31/2017	\$8,969,762
Sweetwater Firemen's Relief & Retirement Fund	12/31/2017	\$8,547,174
Marshall Firemen's Relief & Retirement Fund	12/31/2017	\$8,526,909
Plainview Firemen's Relief & Retirement Fund	12/31/2017	\$6,154,425

Plan Name	Report Date	Net Assets
Paris Firefighters' Relief & Retirement Fund	12/31/2017	\$4,790,010
Fort Worth Employees' Retirement Fund Staff Plan	9/30/2017	\$4,526,754
Brownwood Firemen's Relief & Retirement Fund	12/31/2017	\$4,158,090
Atlanta Firemen's Relief & Retirement Fund	12/31/2017	\$4,146,145
Retirement Plan for Sweeny Community Hospital	12/31/2017	\$3,579,168
San Benito Firemen Relief & Retirement Fund	9/30/2016	\$2,987,515
Arlington Employees Deferred Income Plan	6/30/2017	\$2,838,158
Refugio County Memorial Hospital District Retirement Plan	10/31/2017	\$2,227,940
Retirement Plan for Anson General Hospital	6/30/2017	\$1,931,984
El Paso Firemen & Policemen's Pension Staff Plan and Trust	12/31/2017	\$419,843
TOTAL		\$281,842,873,570

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PRB

Texas
Pension
Review
Board

Joshua B. McGee
Chair

Keith Brainard
Vice Chair

Andrew W. Cable

Marcia Dush

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October 26, 2018

ATTN: City Council
City of Irving
825 W Irving Blvd
Irving, TX 75060

This letter is in regard to the non-compliance of Irving Firemen's Relief & Retirement Fund with state reporting requirements under Chapter 802 of the Texas Government Code.

The Pension Review Board (PRB) has previously notified the plan that the 2017 annual reports for Irving Firemen's Relief & Retirement Plan were due on 7/30/2018. Chapter 802 of the Texas Government Code requires that annual plan reports are due to the PRB no later than 210 days after the end of your fiscal year. This plan has informed the PRB that they are working to submit their annual reports as soon as the reports become available.

Irving Firemen's Relief & Retirement Fund's Annual Financial Report is overdue by 60 days; hence, in accordance with Section 801.209(b) of the Texas Government Code, the plan has been included on the *List of Plans Non-Compliant Over 60 Days* posted on the PRB website.

Continued failure to submit the required report to the PRB could result in Irving Firemen's Relief & Retirement Fund being placed on an upcoming Board agenda for formal discussion as a non-compliant plan. Additionally, the Board has the option under Chapter 802 of the Texas Government Code to issue subpoenas to those non-compliant plans who do not file their reports in a timely manner.

Once the plan submits the report and becomes compliant, the PRB will remove its name from the non-compliant list and we will send a compliance letter to the plan.

The PRB appreciates your attention to this matter. If you have any questions regarding this letter or would like to appear before the Board, please let me know.

Sincerely,

Anumeha Kumar
Executive Director
State Pension Review Board
(800) 213-9425
(512) 463-1736

cc: Irving Firemen's Relief & Retirement Fund

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Texas Pension Review Board

Joshua B. McGee
Chair

Keith Brainard
Vice Chair

Andrew W. Cable

Marcia Dush

Rossy Fariña-Strauss

Stephanie V. Leibe

Ernest Richards, Esq.

November 21, 2018

ATTN: City Council
City of Irving
825 W Irving Blvd
Irving, TX 75060

This letter is in regard to the Irving Firemen's Relief & Retirement Fund's non-compliant status letter sent on October 26, 2018.

The Pension Review Board (PRB) has received the 2017 annual reports required for compliance from the Irving Firemen's Relief & Retirement Fund. The plan has been removed from the *List of Plans Non-Compliant Over 60 Days* posted on the PRB's website.

At this time, Irving Firemen's Relief & Retirement Fund is compliant with state reporting requirements under Sections 802.102, 802.103, 802.104 and 802.108 of the Texas Government Code.

Sincerely,

Anumeha "Anu" Kumar
Executive Director

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Executive Director
State Pension Review Board
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cc: Irving Firemen's Relief & Retirement Fund

TAB 3C

Systems Immediately Subject to and At Risk of FSRP Formulation Requirement

The FSRP requirement is triggered for retirement systems that have had amortization periods over 40 years for three consecutive annual actuarial valuations, or two consecutive actuarial valuations if the systems conduct the valuations every two or three years.

The at-risk systems' most recent actuarial valuation shows an amortization period that exceeds 40 years but does not yet trigger the FSRP requirement.

Systems Immediately Subject to FSRP Formulation Requirement							
Plan Name	Amort Period	Date of AV	Amort Period	Date of AV	Amort Period	Date of AV	FSRP Due Date
Fort Worth Employees' Retirement Fund	72.5	12/31/2015	Infinite	12/31/2016	Infinite	12/31/2017	1/15/2017
University Park Firemen's Relief & Retirement Fund – REVISED FSRP ¹	81.3	12/31/2012	53.7	1/1/2015	Infinite	12/31/2016	10/23/2018
Harlingen Firemen's Relief & Retirement Fund – REVISED FSRP ¹	66.6	12/31/2013	Infinite	12/31/2015	59.1	9/30/2017	10/30/2018
Wichita Falls Firemen's Relief & Retirement Fund – REVISED FSRP ¹	43.7	1/1/2016	49.4	1/1/2017	Infinite	1/1/2018	2/11/2019
Irving Firemen's Relief & Retirement Fund – REVISED FSRP ¹	63.4	1/1/2014	46.5	12/31/2015	Infinite	12/31/2017	4/17/2019
Systems at Risk of FSRP- <u>Not Yet Subject to FSRP Requirement</u>							
Amarillo Firemen's Relief & Retirement Fund	28.8	1/1/2014	34.5	12/31/2015	43.5	12/31/2017	N/A
Beaumont Firemen's Relief & Retirement Fund	49.6	12/31/2012	39.1	12/31/2014	104.0	12/31/2016	N/A
Cleburne Firemen's Relief & Retirement Fund	34.1	12/31/2012	27.3	12/31/2014	49.6	12/31/2016	N/A
Longview Firemen's Relief & Retirement Fund	37.9	12/31/2015	50.7	12/31/2016	40.2	12/31/2017	N/A
McAllen Firemen's Relief & Retirement Fund	43.9	9/30/2012	29.0	10/1/2014	41.4	10/1/2016	N/A
Paris Firefighters' Relief & Retirement Fund	29.2	1/1/2013	26.1	12/31/2014	41.9	12/31/2016	N/A
Plainview Firemen's Relief & Retirement Fund	31.4	12/31/2013	31.6	12/31/2015	44.8	12/31/2017	N/A

¹Texas Government Code Section 802.2015(d) requires plans to formulate a revised FSRP if the system conducts an actuarial valuation showing that the system's amortization period exceeds 40 years, and the previously formulated FSRP has not been adhered to.

Progress Report on Previously Submitted FSRPs

The following plans have previously formulated an FSRP. The table below outlines their progress towards the FSRP requirement.

Systems Still Working Towards Meeting the 40-Year Amortization Period Requirement						
Plan Name	FSRP Trigger		Current Progress ¹		Goal Year ²	Update Required
	Am Period	Date	Am Period	Date		
Odessa Firemen's Relief & Retirement Fund	Infinite	1/1/2016	47.1	1/1/2018	2026	2/2019
Midland Firemen's Relief & Retirement Fund	59.1	1/1/2014	44.7	12/31/2015	2026	5/2019
Dallas Employees' Retirement Fund	Infinite	12/31/2015	47.0	12/31/2017	2026	7/2019
Dallas Police & Fire Pension System - Combined Plan	44.0	1/1/2017	45.0	1/1/2018	2027	9/2019
Greenville Firemen's Relief & Retirement Fund – REVISED FSRP	55.0	12/31/2016	38.0 ³	12/31/2016	2026	1/2020
Orange Firemen's Relief & Retirement Fund – REVISED FSRP	69.3	1/1/2017	47.0	1/1/2017	2026	2/2020
Marshall Firemen's Relief & Retirement Fund	56.4	12/31/2016	46.5 ⁴	12/31/2016	2026	3/2020
Systems that Have Submitted Post-FSRP Actuarial Valuations Showing Amortization Period Below 40 Years						
Galveston Employees' Retirement Plan for Police	55.1	1/1/2014	35.3	1/1/2018	N/A	N/A
Galveston Firefighter's Relief & Retirement Fund – REVISED FSRP	Infinite	12/31/2016	26.8	12/31/2017	N/A	N/A

¹ Based on the most recent valuation or FSRP.

² The year in which a plan must reach an amortization period of 40 years or less.

³ The amortization period reflects estimates of actions that occurred after the valuation date. Plans will be removed from the list if a subsequent valuation reflects an amortization period of 40 years or less.

⁴ The amortization period does not consider already approved assumption changes that will likely result in the plan being out of compliance with the FSRP when the plan completes its December 31, 2018 actuarial valuation.

TAB 3D

Interim Study:

Funding Policies for Fixed-Rate Pension Plans

January 2019

DRAFT



PENSION REVIEW BOARD

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Executive Summary

Despite a nearly 10-year bull market following the 2008 market downturn, the unfunded liabilities of many public retirement systems both across the country and in Texas continue to rise. In 2012, the Governmental Accounting Standards Board (GASB) issued statement 68, which requires plan sponsors to report a pension plan's funded status on their balance sheets.¹ This change has brought increased scrutiny from credit rating agencies, with pension debt and related costs directly impacting sponsors' bond ratings and therefore the cost of borrowing money.

Today, volatile investment markets, dampened future market projections, and lower mortality rates are placing additional pressure on retirement systems' ability to reduce their unfunded liabilities. Given these pressures, strong funding policies are a necessity for public pensions to help ensure that over time unfunded liabilities do not continue to grow but rather are reduced or eliminated. In addition, solid funding policies can help assure rating agencies that pension debt is being proactively managed.²

Recognizing the many challenges facing Texas plans and in accordance with its *Pension Funding Guidelines*, the Texas Pension Review Board (PRB or the Board) at its November 16, 2017 meeting directed staff to research and identify the role that funding policies could play in helping plans meet their funding objectives.³ The Board asked staff to focus on how systems with fixed-rate contribution structures could benefit from adopting funding policies. Contributions to fixed-rate plans do not automatically adjust to address negative experience like those plans that are funded using actuarially determined contributions. Fixed-rate plans make up nearly 75% of Texas public pension plans. The PRB conducted this interim study as part of the agency's mandate to include recommendations of any legislation relating to public retirement systems that the Board finds advisable through its Biennial Report to the Legislature and Governor.

Staff began by analyzing the contribution structures of Texas plans and comparing the average funded ratios over time. The average funded ratio of systems with actuarially determined contributions (ADCs) was higher overall than that of fixed-rate systems and has reversed its decline after the 2008 financial crisis, while fixed-rate systems' average funded ratio has continued a downward trajectory. Staff then reviewed funding policies from Texas systems as well as systems in other states and evaluated the benefits of adopting those policies. Finally, staff worked to identify essential components that a sound funding policy should include as well as various approaches that could be provided as examples for Texas systems.

As a result of the study, the PRB recommends that all Texas public retirement systems, including fixed-rate plans, adopt and maintain a written funding policy that fully funds the plan over as brief a period as possible, as recommended in the *PRB Pension Funding Guidelines*. The funding period should be a finite, or closed, period, and the funding policy should be established in conjunction with the plan sponsor if possible. The PRB staff is available to provide technical assistance to systems throughout the process.

¹ Pension Standards for State and Local Governments. *Governmental Accounting Standards Board*. www.gasb.org/jsp/GASB/Page/GASBSectionPage&cid=1176163528472

² Example: Houston, Texas' credit rating from Moody's Investors Service was upgraded after pension reforms, including the establishment of a funding policy. "City of Houston, Texas Rating Action: Moody's Assigns Aa3 to Houston's POBs; Stable Outlook." Moody's Investors Service. November 29, 2017.

³ *PRB Pension Funding Guidelines* can be found in Appendix A.

Introduction

As of January 2019, there were 99 actuarially funded defined benefit plans registered with the PRB. They included multi-billion-dollar statewide plans, large municipal plans, local firefighter plans, and special district plans such as hospital districts and transportation authorities. Their total net assets were approximately \$272 billion, and total membership was more than 2.7 million members.

The Texas Pension Review Board is mandated to oversee all Texas public retirement systems, both state and local, to monitor their actuarial soundness and compliance with state law. The agency's mission is to provide the state of Texas with the necessary information and recommendations to ensure that its public retirement systems, whose combined assets total in the multi-billions, are financially sound, benefits are equitable, the systems are properly managed, tax expenditures for employee benefits are kept to a minimum while still providing for those employees; and to expand the knowledge and education of administrators, trustees, and members of Texas public pension funds.

State law establishes the PRB's core duties, which include recommending policies, practices, and legislation to public retirement systems and appropriate governmental entities. In November 2017, the Board directed staff to research and identify the role that funding policies could play in helping plans meet their funding objectives. In particular, the Board asked staff to focus on how systems with fixed-rate contribution structures could benefit from adopting funding policies, in line with the PRB *Pension Funding Guidelines* which recommend that retirement systems should adopt a funding policy.

The study is organized as follows. Section I discusses Texas pension plans' contribution structure, which is predominantly comprised of systems that receive an annual contribution that is a fixed percentage of payroll. Section II discusses the unique challenges presented by fixed-rate contribution structures. Section III presents ways adopting a funding policy can help address some of these challenges. Section IV details the necessary components of a strong funding policy, and Section V provides examples of funding policies adopted by plans with fixed-rate contribution structures. The paper concludes with the recommendation that all plans, including fixed-rate plans, should adopt a funding policy, in conjunction with their sponsor whenever possible.

What is a Funding Policy?

Three Pension Funding Goals, Explained

Benefit security: sufficient assets will be available to pay all benefits when they come due.

Contribution stability: low volatility in contributions from year to year, helping employers maintain budgetary stability.

Intergenerational equity: each generation of taxpayers bear the cost of benefits for the employees who provide services to those taxpayers, rather than deferring those costs to future taxpayers.

For the purposes of this paper, a funding policy is considered a written statement of guiding principles and strategy to fully fund the long-term costs of promised benefits.⁴

A funding policy helps a system achieve the three fundamental goals of public pension funding: benefit security, contribution stability, and intergenerational equity.⁵ While different pension plans and their governmental sponsors may prioritize these goals differently, the funding policy should strive to balance the three goals so that member benefits are secure, employers and members 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 workers.

The fundamental equation governing pension financing is $C+I=B+E$.⁶ The inputs to the pension fund are contributions and investment income, while outputs from the fund are benefits and expenses (administrative costs and investment fees). Therefore, these are the four levers that may be adjusted to affect overall plan financing.⁷ A funding policy should establish a clear link between all four components to ensure the equation balances and the pension's long-term health is sound. If contributions are fixed, then other components such as benefits must be flexible to bring the equation back into balance to address any negative experience.

The Fundamental Equation of Pension Plan Financing

$$(C)ontributions + (I)nvestments = (B)enefits + (E)xpenses$$

I. Public Pension Contribution Structures

Pension funding approaches can be conceptualized in two basic categories:

Actuarially Determined Contribution

An actuarially determined contribution (ADC) structure requires the payment of an ADC rate. GASB defines ADC as the target or recommended contribution to a defined benefit plan, determined in conformity with Actuarial Standards of Practice (ASOPs), standards set forth and maintained for

⁴ Link, Jim et al. Implementing a Pension Funding Plan. GFOA 108th Annual Conference. May 18-21, 2014. Slide 19.

⁵ *Issue Brief: Objectives and Principles for Funding Public Sector Pension Plans*. American Academy of Actuaries. February 2014, p. 3.

⁶ For more information on the $C+I=B+E$ equation, please see the PRB's white paper, *Understanding the Basics of Actuarial Methods*.

⁷ Benefit modifications are generally constrained for many systems which operate within a legal framework that prevents decreases in benefit levels for past accrued service.

professional actuaries by the Actuarial Standards Board. In this paper, the ADC is defined as the cost of benefits earned by workers in the current year (the normal cost) plus an amortization payment calculated over a closed period on any unfunded liability.

Funding according to the ADC satisfies the pension funding goals of retirement security and intergenerational equity, as long as actuarial assumptions and the amortization period are reasonable, because the ADC calculation balances the fundamental equation of pension financing discussed above. ADC contribution structures inherently adjust to the plan's changing funded status to maintain the overall trajectory towards fully funding benefit promises. However, this responsiveness to realized plan cost can result in contribution volatility and create budgetary challenges for plan sponsors. Contribution volatility under ADC funding can be mitigated using a number of smoothing techniques either on the inputs (e.g., asset smoothing) or the outputs (e.g., direct contribution rate smoothing), as well as establishing other cost containment methods.

ADC Contribution Structure Examples

CPS Energy of San Antonio – As of 2017, CPS Energy's funding policy requires payment of an annually calculated ADC that amortizes the existing unfunded liability over a closed, 30-year period with future gains/losses amortized over their own closed, 30-year period (i.e. a layered amortization approach).

TMRS/TCDRS – Texas has two agent multiple-employer retirement systems: Texas Municipal Retirement System (TMRS) and Texas County & District Retirement System (TCDRS). Combined, these two systems have over 1,400 participating employers, which consist of municipalities, counties and special districts. Both systems have statutory requirements and established funding policies that require the participating employers to fund the ADC for their plans each year. Both funding policies define the actuarial cost method, the asset smoothing method and the amortization policy that is used to determine the ADC for each participating employer. They also utilize a level percent-of-pay basis with a layered approach where different amortization bases are established and amortized over varying periods in accordance with several factors. For example, both amortization policies have stricter funding requirements for underfunded plans (closed, layered approach) versus overfunded plans (open amortization approach) and have shorter amortization periods for benefit enhancements than actuarial gains and losses.^{8,9}

Tennessee (local plans) – In 2014, Tennessee passed a bill to require political subdivisions with pension plans that are not part of the Tennessee Consolidated Retirement System to adopt funding policies. The funding policies must include a statement that the political subdivision's budget shall include funding of at least 100% of the ADC, which is defined as the normal cost plus amortization of the unfunded liability to the extent that one exists for a particular year. The policy must also specify the maximum amortization period over which any unfunded liabilities will be paid.

⁸ "Actuarial Funding Policy." Texas Municipal Retirement System, 31 Dec. 2015, www.tmrs.com/down/board/12-31-2015%20Actuarial%20Funding%20Policy.pdf.

⁹ "TCDRS Funding Policy." Texas County & District Retirement System, 25 June 2015, https://www.tcdrs.org/governance/tcdrs%20funding%20policy_2015.pdf

Non-Actuarially Determined Contribution

Fixed-Rate Funding

Nearly 75% of Texas plans have fixed contribution rates. Under a fixed-rate funding structure, the contribution rate is a set percentage of payroll specified in statute/ordinance or local bargaining agreements rather than the ADC. As such, a fixed-rate contribution does not change from valuation to valuation unless proactive steps are taken. Such contribution structures do not inherently adjust to cover liability losses or gains and may not reflect the plan's expected cost. Thus, fixed-rate contributions may not be sufficient to move toward the goal of full funding. This is especially true when a plan experiences significant actuarial or investment losses.

While contributions based on a fixed percentage of pay provide the highest degree of contribution stability in the short-term, this approach increases the likelihood of not achieving the other two goals, retirement security and intergenerational equity. Without close monitoring and pro-active adjustment of the fixed contribution rate, the amount contributed to the plan may not be adequate, resulting in a poorly funded plan which provides for a lower degree of benefit security and defers necessary contributions, placing the burden of funding current plan costs on future plan members and taxpayers through increased contributions and/or benefit reductions.

Other

In Texas, a small number of firefighter plans peg their sponsor contribution to the rate at which the city contributes to its municipal employees plan within the Texas Municipal Retirement System (TMRS). Such an approach can be problematic because the contribution rate for the municipal plan, while actuarially determined for that plan, has no bearing on the actual cost of the firefighter plan in cases where there is a different benefit structure.

II. Challenges Associated with Fixed-Rate Contributions

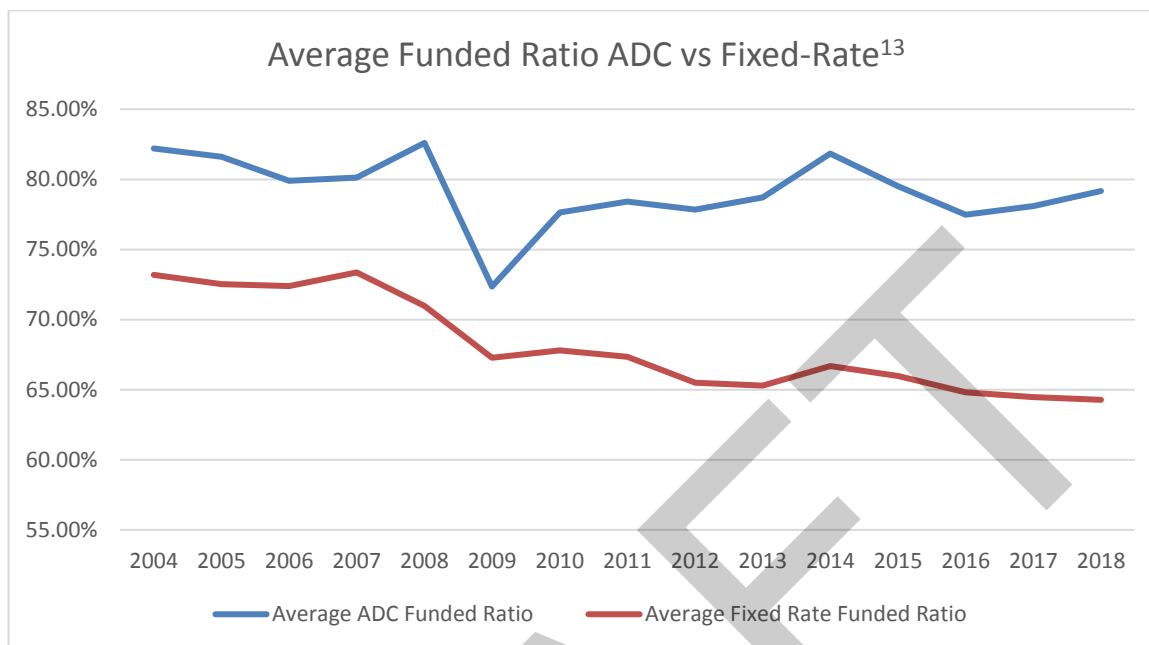
As discussed above, by definition, a fixed-rate contribution plan does not automatically respond to plan experience deviating from actuarial assumptions. Fixed-rate funding approaches may ensure that contributions do not swing dramatically from year to year, and thereby allow sponsors to plan ahead for budgetary reasons. However, they also may bear little to no relation to the actual cost of plan benefits, leaving plans more vulnerable to sharp increases in unfunded liability, therefore requiring future contribution increases and benefit reductions.¹⁰

Comparison of Funded Ratios by Contribution Structure

Over the last 15 years, information provided to the PRB shows that the average funded ratio for ADC-funded plans has been higher than that of plans with fixed-rate contribution structures. While ADC-funded plans' funded ratios appear to have stabilized since 2008-09, funded ratios for fixed-rate plans on average have continued to fall, indicating a much higher degree of difficulty recovering from the market crisis of 2008. Plans with "Other" contribution structures or which have recently changed

¹⁰ Link, Jim, et al. "Implementing a Pension Funding Plan." *GFOA 108th Annual Conference*. May 18-21, 2014. Slide 13.

contribution type were omitted from this analysis. The complete data behind the line graph below may be found in Appendix B.



Potential Future Impact of the Fixed-Rate Funding Approach

The PRB has expressed concern regarding the fiscal health of fixed-rate contribution plans and the broader effects of increased unfunded liabilities on a plan and its sponsor.

- The graph above shows that the average funded ratio of fixed-rate contribution plans has been declining despite experiencing over nine years of a bull market. Flat or negative market returns will only worsen these ratios and must be anticipated.
- In recent years, key actuarial assumptions, such as the investment return assumption, have failed to match actual plan experience, and fixed contribution rates are not flexible enough to quickly respond to the resulting funding shortfalls.
- Contributions consistently lower than the ADC can result in long-term negative amortization where annual contributions are insufficient to cover the current year's cost plus *just the interest* on the plan's unfunded liability. Thus, no progress is made toward paying off the unfunded liability, which continues to grow as the unpaid interest compounds over time, and contribution increases and/or benefit reductions will ultimately be required (jeopardizing the goals of contribution stability and retirement security). Negative amortization runs contrary to the pension prefunding concept and the goal of intergenerational equity in which the current generation pays for its own future benefits.

¹¹ Chart does not include closed/frozen plans, plans with "other" contribution structures, or plans with known contribution structure changes in the past 15 years.

- Life expectancy generally is increasing and the soon-to-be-completed Society of Actuaries Survey of Public Pension Mortality indicates both public safety and teacher pension liabilities should be even higher as a result of retirees living longer.
- Pension liabilities are increasingly considered by credit rating agencies, putting at risk a sponsoring governmental entity's ability to issue debt cost-effectively.

III. Benefits of a Funding Policy for Fixed-Rate Plans

Benefits of a Funding Policy

All plans, regardless of size or funding type, benefit from having written funding policies. If a plan is receiving a fixed-rate contribution rather than one based on an ADC, a funding policy is even more crucial since contributions do not adjust to changes in the realized cost of the plan. Going back to the fundamental equation, $C+I=B+E$, if (C)ontributions are fixed, other components in the equation must be flexible for the pension financing equation to balance, and therefore, for a plan's financing framework to be sound.

The funding policy should address how and under what circumstances contribution and (B)enefit levels will be adjusted to bridge any gaps between actuarial expectations and actual experience over time. The policy should be closely linked to (I)ntestment and (E)xpense policies. The funding policy should be jointly developed by the plan's governing board and the sponsoring governmental entity. A funding policy of this nature can provide a roadmap to full funding and increase transparency by clearly setting forth the steps to be taken under different experience scenarios such that plan members, policymakers, taxpayers and other stakeholders are aware in advance of such action being taken. The following section discusses the specific benefits of adopting a strong, forward-looking funding policy.

Governance. Just the act of developing a funding policy is likely to benefit a plan because the process requires the governing board to ask itself fundamental questions regarding its current funding approach and future funding goals.¹² For example, boards should discuss questions such as, "How do we define full funding?" and "Under what funding conditions should benefit enhancements be made? Should a cost-of-living adjustment (COLA), benefit enhancement, or reduction in employer contribution ever occur when the plan is not fully funded?"¹³ These conversations allow the board to openly discuss funding approaches and establish what mechanisms they, as plan fiduciaries, are comfortable adopting to guide the plan through both positive and negative experience.¹⁴

Funding Discipline. A funding policy memorializes the retirement system's funding goals and helps provide increased discipline regarding funding decisions.¹⁵ When facing stakeholder pressure for benefit enhancements, a written funding policy can help trustees by shifting the conversation away from the merits of the potential benefit increase to whether or not such an increase can be implemented within

¹² "Guideline No. 7 Pension Plan Funding Policy Guidelines." *Canadian Association of Pension Supervisory Authorities*. 2011.

¹³ Interview with City of Austin Employees' Retirement System, Executive Director and Deputy Director, July 10, 2018, Austin, TX.

¹⁴ Link, Jim, et al. "Implementing a Pension Funding Plan." *GFOA 108th Annual Conference*. May 18-21, 2014. Slide 57.

¹⁵ "Guideline No. 7 Pension Plan Funding Policy Guidelines." *Canadian Association of Pension Supervisory Authorities*. 2011.

the parameters of the system's funding policy.¹⁶ For example, although a board may desire to grant a cost-of-living adjustment, a funding policy might state that such action may not be considered if the plan's funded status would dip below a specific level after the COLA, thereby ensuring continued progress towards the plan's stated funding goals. A funding policy may also support funding discipline on the employer contribution side by laying out the specific circumstances under which contributions would need to be increased or decreased.

Downside Protection and Transparency. Downside protections include specific steps to be taken under adverse conditions, such as policies that spread downside risk equitably. Some examples include tying employer and employee contributions to investment returns, requiring consideration of benefit adjustments given certain conditions, etc. Including downside protection provisions in a funding policy can allow plans to make necessary corrections quickly and smoothly to protect against economic downturns because such plans have been adopted in advance through a transparent process. Even just the process of developing downside protections can be beneficial because it allows governing boards to carefully consider how to respond to market declines or other contingencies ahead of time, rather than in a crisis state.

In the absence of a written, formal risk-sharing plan developed in advance, de facto risk-sharing ultimately occurs through ad-hoc changes that often disproportionately affect certain groups of employees or taxpayers.¹⁷ In contrast, a formal cost- or risk-sharing policy can distribute unexpected cost increases between taxpayers and employees in a predetermined, fair and transparent manner.¹⁸ Thus, a written funding policy can help make clear ahead of time to pension trustees, plan members, tax payers and other stakeholders the role that these various groups will play in absorbing the risk involved in public pension structures.

Sponsor Credit Ratings. Governments closely monitor their credit ratings since these ratings directly impact borrowing costs. Underfunded pensions contribute to a state or local government's overall liabilities and can have a negative impact on its bond ratings, increasing the entity's borrowing costs.¹⁹ Credit rating agencies particularly consider funding ratios and risks associated with the plan when determining a local government's credit rating.²⁰ A funding policy can help assure rating agencies that pension liabilities are being proactively managed, leading to an improvement in credit rating.^{21,22}

IV. Funding Policy Components

As previously discussed, the primary purpose of a funding policy is to help plans meet the three goals of intergenerational equity, contribution stability, and benefit security. The following components should

¹⁶ Interview with City of Austin Employees' Retirement System, Executive Director and Deputy Director, July 10, 2018, Austin, TX.

¹⁷ "NASRA Issue Brief: Shared-Risk in Public Retirement Plans." NASRA. June 2014, p. 2.

¹⁸ *Cost-Sharing Features of State Defined Benefit Pension Plans: Distributing Risk Can Help Preserve Plans' Fiscal Health*. The Pew Charitable Trusts. January 2017, p. 1.

¹⁹ "How Do Public Pension Plans Impact Credit Ratings?" *Aon Hewitt Retirement & Investment*. December 2017, p. 2.

²⁰ "Local Government Pension Analysis Special Report". *Fitch Ratings*. April 8, 2013. p. 1.

²¹ "How Do Public Pension Plans Impact Credit Ratings?" *Aon Hewitt Retirement & Investment*. December 2017, p. 2.

²² "City of Houston, Texas Rating Action: Moody's Assigns Aa3 to Houston's POBs; Stable Outlook." Moody's Investors Service. November 29, 2017.

be featured in a comprehensive funding policy to ensure a plan is achieving the three goals or is at least on the path to doing so:

Establishing Clear and Concrete Funding Objectives

Perhaps the most important element of a funding policy is to establish the funding objectives of the retirement system. Funding policies should aim to achieve full funding of benefit promises and should include a specific funded ratio and amortization period target, such as achieving 100% funding over a closed 10-25-year period. Plans should consider establishing different amortization bases for gains and losses (frequently referred to as layered amortization).

Selecting Actuarial Methods

The primary 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 included in a funding policy for a fixed-rate plan include the actuarial cost method, the asset-smoothing method and the amortization policy.

Actuarial Cost Method

An actuarial cost method is a procedure for allocating the actuarial present value of projected benefits to time periods, usually in the form of an actuarial accrued liability (AAL) and normal cost (NC).²³ In other words, the cost method determines when pension liabilities are accrued on the plan's books as workers earn benefits. At minimum, the funding policy should address the desired goals and purpose of the cost method if it does not also specify the exact cost method to be used. 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. 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 the assumed termination or retirement.

Asset Smoothing Method

Asset smoothing techniques can help keep contributions stable and more predictable over time. A five-year smoothing period where 20% of any gain or loss is recognized in each subsequent year is typically used in Texas. Corridors may be added to the smoothing period to keep asset values closer to the market value. 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.

Amortization Policy

The unfunded liability is the actuarial accrued liability (AAL) less the actuarial value of plan assets. An amortization method determines the timing and pattern of contributions to pay off the unfunded liability.²⁴ A fixed-rate contribution structure does not have an explicit amortization method; instead, the effective amortization period is a by-product of the expected contributions and plan experience. Creating an amortization policy provides an opportunity for fixed-rate plans to discuss an appropriate funding period, including the impact of benefit enhancements as well as the degree and length of any

²³ ASOP No. 4

²⁴ Actuarial Standard of Practice (ASOP) No. 4 Measuring Pension Obligations and Determining Pension Plan Costs or Contributions

negative amortization period. Negative amortization occurs when contributions are insufficient to cover the cost of benefits accrued and the interest accrued on the unfunded liability during the year. Plans must consider how negative amortization affects the total contribution requirements over the long-term as an important part of their amortization policy.

Developing a Roadmap to Achieve Funding Objectives

Funding policies should provide a clear plan detailing how the stated funding goals will be met. Methods a plan can use to ensure they stay on track may include the following.

Target Contribution Rates

The first step for a fixed-rate plan to monitor its funding progress is to establish a target contribution rate, in consultation with the plan's actuary, that is designed to achieve the stated funding goals, but that also reacts to the changing condition of the plan. The Conference of Consulting Actuaries Public Plans Community recommends that a pension plan's current, fixed contribution rate should be compared to the ADC.²⁵ As the current fixed-rate contribution rate moves away from the ADC, plans will need to begin to take steps to mitigate the differences.

Benefit and Contribution Change Parameters

Funding policies 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. For example, a funding policy might state that benefit enhancements can be made only if the funded ratio would remain at a certain level after the increase or contribution reductions may only occur if a minimum amortization period is maintained.

Contribution Smoothing

The asset smoothing methods discussed briefly above are one approach to try to smooth the volatility inherent in an ADC. In addition to or instead of smoothing the inputs into the calculation (such as assets), funding policies may utilize contribution smoothing to directly achieve this result. Contribution smoothing is an approach that limits the amount the required contribution increases or decreases from one year to the next by setting rules around when and how much the actual contribution will change based on changes in the ADC.

Adopting Actions to Address Actual Experience that Diverges from Assumptions

Funding policies develop predetermined policies for how a plan should respond to both positive and negative experiences that are different than the plan's assumptions. 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. 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.²⁶

²⁵ Conference of Consulting Actuaries Public Plans Community. "Actuarial Funding Policies and Practices for Public Pension Plans." October 2014, p. 6.

²⁶ Brainard, Keith, and Alex Brown. *Shared-Risk in Public Retirement Plans*. National Association of State Retirement Administrators, June 9, 2014, *Shared-Risk in Public Retirement Plans*.

According to $C+I=B+E$, costs can be shared between parties by altering either contribution rates or benefit levels. On the contribution side, funding policies can include provisions governing how contribution increases will be used to make up for unexpected costs. A funding policy should outline when it is appropriate for employer or employee contributions, or both, to be increased or decreased. Caps or limits may be placed on contribution changes to limit volatility, which provides the employer with some assurance of future costs. A cap or limit may, however, also necessitate adjustment in benefit levels. A contribution corridor may be used, which is an acceptable

Risk-Sharing – Defined

Risk- or cost-sharing refers to the distribution of risks across employers and employees.²⁶ Risk-sharing prevents one party from bearing all the risk in a pension funding policy. For example, if investment returns are not as high as projected, the associated costs will need to be covered by additional contributions or benefit reductions. Risk-sharing would prevent one party (i.e., only the employees or employer) from being responsible for bearing the entire cost.

range in the deviation of the actual contribution rate from the target contribution rate. For example, the Houston pension plans' reform package created a corridor around the target contribution rate to help limit the ongoing overall cost increases of the plans. The plans and the City are required to take corrective action, including negotiating benefit reductions, if the actual contribution falls outside of the corridor.

A funding policy may also establish when benefit adjustments will occur, if necessary, to balance the fundamental equation. For example, a policy may include provisions prescribing when COLAs may occur or stipulating that they can be granted only if the plan's financial condition will not be affected. Caps may also be placed on maximum COLAs, or COLAs can be tied to inflation, to manage plan costs. For instance, both the City of Austin Employees' Retirement System and the South Dakota Retirement System's target a 120% funded ratio for consideration of benefit improvement recommendations.

Contributions and benefits can also be made variable upon certain factors such as investment returns or funded levels. For example, Pennsylvania has tied employee contribution levels to investment returns, while Wisconsin's State Retirement system has tied benefits to investment performance.²⁸ The South Dakota Retirement System requires the Board to submit a report to the Governor and Legislature specifying recommendations for corrective action, including benefit changes, if its fixed, statutory contributions fall short of actuarial funding requirements, or if the fair value funded ratio is under 100%.²⁹ The Maine Public Employee Retirement System also has tied COLAs to investment returns.³⁰

Experiences may sometimes deviate from the assumptions in a positive way, leaving the plan with an unanticipated increase in assets. A funding policy should have provisions in place to specify how both positive and negative experience will be addressed. For example, 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.

²⁷ Brainard, Keith, and Alex Brown. *Shared-Risk in Public Retirement Plans*. National Association of State Retirement Administrators, June 9, 2014, *Shared-Risk in Public Retirement Plans*, p. 2.

²⁸ Ibid.

²⁹ Codified Laws of South Dakota, Chapter 3-12-122;

http://sdlegislature.gov/Statutes/Codified_Laws/DisplayStatute.aspx?Type=Statute&Statute=3-12-122

³⁰ "Summary: PLD Plan Changes." *Maine Public Employees Retirement System*, www.maineopers.org/Pensions/PLD%202018-Summary.htm.

V. Funding Policies Examples

Many pension plans across the United States have already adopted a funding policy, including several within the state of Texas. Highlighted below are two examples of funding policies from Texas plans and one example from outside the state. The featured funding policies are all from fixed-rate plans. Two are written policies adopted by the plans, while one was placed in state law. However, they all contain components to help guide the plan towards achieving benefit security, intergenerational equity, and contribution stability.

Houston Pension Plans

In 2017, the 85th Texas Legislature enacted Senate Bill 2190, which created a contribution corridor for all three City of Houston pension plans – Houston Firefighters’ Relief & Retirement Fund (HFRRF), Houston Municipal Employees’ Pension System (HMEPS), and Houston Police Officers Pension System (HPOPS).³¹ Prior to the reform legislation, HFRRF contributions were set in its governing statute, and HMEPS and HPOPS contributions were established through meet and confer agreements with the City of Houston. The bill established a statutory funding policy that set a target contribution rate for the City based on the ADC and developed a corridor around the City’s target contribution rate. Should the annually calculated contribution move outside the corridor, which encompasses rates equal to +/- 5% of the target rate (projected midpoint), certain steps must be taken, highlighted in the excerpt below.

“If a Risk Sharing Valuation Study determines the City Contribution Rate differs from the Midpoint, in most cases, steps are taken to bring the Rate back toward the Midpoint. In a falling-cost environment, gains are used to accelerate the payoff of unfunded liabilities or reduce the interest rate. In a rising-cost environment, adjustments are made to the amortization period, employee contributions, or benefits to reduce the City Contribution Rate.”

- *City of Houston HMEPS Pension Reform Cost Analysis*. Retirement Horizons Incorporated, 2017, *City of Houston HMEPS Pension Reform Cost Analysis*, p. 10.

City of Austin Employee Retirement System

The City of Austin developed a supplemental funding plan for the City of Austin Employee Retirement System (COAERS) in 2005, which was amended in 2010.³² In 2014, COAERS’ board of trustees adopted a funding policy that built upon the supplemental funding plan. Highlights from the COAERS funding policy include:

- The first priority is to sufficiently fund the plan to pay the promised benefits to current and future generations.
- A COLA may be adjusted when:
 - the adjustment can be financially supported;

³¹ A summary of the funding policies for the three City of Houston pension plans is in Appendix C.

³² A copy of COAERS’ funding policy is in Appendix D.

- the funded ratio of the plan is greater than or equal to 80% after incorporating the COLA;
 - the amortization period is 20 years or less after incorporating the COLA; and
 - the actual employer contribution rate is greater than or equal to the ADC but no more than 18% after incorporating the COLA.
- 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.
 - All other benefit enhancements will be considered only when: a) annual COLA adjustments are built in to funding assumptions; b) the funded ratio will be at least 120% after the enhancement; and c) the actuarially determined employer contribution rate is less than or equal to the statutory employer contribution rate.

South Dakota Retirement System

The South Dakota Retirement System (SDRS), while not a Texas plan, is a fixed-rate plan with a solid funding policy and a long track record of remaining fully-funded or nearly so. The SDRS funding policy is a written document put forth by their Board of Trustees which incorporates elements in its statute.³³

SDRS' Funding and System Management Policy is divided into three major sections: Funding Objectives, Consideration of Benefit Improvements, and Required Corrective Action Recommendations.³⁴ SDRS requires a fair value funded ratio of over 120% before considering any benefit improvements and must retain a funded ratio of over 120% after fully funding a benefit improvement. Per South Dakota statute, SDRS requires that an annual funding report be submitted to the South Dakota Governor and Retirement Laws committee.³⁵

Per state statute and its own funding policy, SDRS is dedicated to keeping its plan well-funded. Should the funded ratio of the fund fall below 100% or if the fixed contribution rates are not sufficient to meet the actuarial requirement, the retirement system is required to detail in their annual report what corrective actions it will take. In 2016, SDRS lowered several key actuarial assumptions, including the investment return assumption. After incorporating those changes, SDRS determined it would not meet its funding policy objectives without corrective action, and the board recommended legislative changes to bring the system back into actuarial balance. These changes included modifying the COLA design to reflect a lower rate of expected inflation and changing the compensation definitions and calculations to reduce the effect of large, late-career pay increases.³⁶

³³ *The South Dakota Perspective on Public Employee Retirement Benefits and the South Dakota Retirement System (SDRS)*. South Dakota Retirement System, sdrs.sd.gov/docs/SDPerspective.pdf.

³⁴ A copy of SDRS' 2017 revised funding and system management policy is located in Appendix E.

³⁵ Codified Laws of South Dakota, Chapter 3-12-122;

http://sdlegislature.gov/Statutes/Codified_Laws/DisplayStatute.aspx?Type=Statute&Statute=3-12-122

³⁶ Managing SDRS for Sustainability. South Dakota Retirement System. December 2016. Slide 26, <https://sdrs.sd.gov/docs/ManagingSDRSforSustainability.pdf>

Conclusion and Recommendation

A contribution structure that requires the payment of an ADC is best suited to achieve the three primary goals of benefit security, contribution stability, and intergenerational equity. Contribution volatility associated with paying an ADC can be mitigated through contribution smoothing and other methods. Fixed-rate contribution structures necessitate strong funding policies with flexible mechanisms to make up for the inflexibility of contributions.

A pension funding policy should be designed to guide retirement systems to full funding and to help them achieve the three goals. A funding policy also should include clear and concrete funding objectives, the actuarial methods to be used, and a pathway to achieve the stated funding goals. Additionally, the funding policy should outline how the plan will address setbacks that occur when experience diverges from actuarial assumptions or assumption changes result in losses.

The PRB recommends that all Texas public retirement systems, including fixed-rate plans, adopt and maintain a written funding policy that fully funds the plan over as brief a period as possible, as recommended in the *PRB Pension Funding Guidelines*. The funding period should be a finite, or closed, period. The funding policy should be established in conjunction with the plan sponsor whenever possible and should work together with a plan's other policies such as benefit and investment policies. The PRB staff is available to provide guidance to plans as they develop their funding policies.

Appendix A – PRB Pension Funding Guidelines

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Pension Review Board
Pension Funding Guidelines
(Adopted 01/26/17; Effective 06/30/17)

The purpose of the Pension Review Board's Pension Funding Guidelines is to provide guidance to public retirement systems and their sponsoring governmental entities in meeting their long-term pension obligations. The Guidelines are intended to foster communication between plans and their sponsors as they determine a reasonable approach to responsible funding, whether the contribution rate is fixed or actuarially determined.

Public retirement systems should develop a funding policy, the primary objective of which is to fund the obligations over a time frame that ensures benefit security while balancing the additional, and sometimes competing, goals of intergenerational equity and a stable contribution rate.

1. The funding of a pension plan should reflect all plan obligations and assets.
2. The allocation of the normal cost portion of the contributions should be level or declining as a percentage of payroll over all generations of taxpayers, and should be calculated under applicable actuarial standards.
3. Funding of the unfunded actuarial accrued liability should be level or declining as a percentage of payroll over the amortization period.
4. Actual contributions made to the plan should be sufficient to cover the normal cost and to amortize the unfunded actuarial accrued liability over as brief a period as possible, but not to exceed 30 years, with 10 - 25 years being the preferable target range.* For plans that use multiple amortization layers, the weighted average of all amortization periods should not exceed 30 years.* Benefit increases should not be adopted if all plan changes being considered cause a material increase in the amortization period and if the resulting amortization period exceeds 25 years.
5. The choice of assumptions should be reasonable, and should comply with applicable actuarial standards.
6. Retirement systems should monitor, review, and report the impact of actual plan experience on actuarial assumptions at least once every five years.

*Plans with amortization periods that exceed 30 years as of 06/30/2017 should seek to reduce their amortization period to 30 years or less as soon as practicable, but not later than 06/30/2025.

Appendix B – Retirement Systems by Contribution Type

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Retirement Systems by Contribution Type

Plan Name	Actual ER Cont Type	Effective Date	Effective Amort Period	Funded Ratio %	ER Rec Cont	Actual ER Cont	Percent of Rec Cont Paid
University Health System Pension Plan	Actuarial	1/1/2016	28.0	66.4	6.14%	5.82%	95%
Dallas Co. Hospital Dist. Retirement Income Plan	Actuarial	1/1/2017	27.0	73.8	4.89%	4.58%	94%
Houston MTA Non-Union Pension Plan	Actuarial	1/1/2017	26.0	63.8	23.74%	23.86%	101%
San Antonio Metropolitan Transit Retirement Plan	Actuarial	10/1/2015	26.0	60.4	14.90%	18.58%	125%
Texas Municipal Retirement System	Actuarial	12/31/2016	19.7	86.3	12.63%	13.05%	103%
Plano Retirement Security Plan	Actuarial	12/31/2015	19.0	99.2	3.62%	3.12%	86%
Dallas/Fort Worth Airport Board DPS Retirement Plan	Actuarial	1/1/2017	18.0	75.6	30.71%	30.71%	100%
Dallas/Fort Worth Airport Board Retirement Plan	Actuarial	1/1/2017	18.0	80.3	37.49%	37.49%	100%
Texas County & District Retirement System	Actuarial	12/31/2016	13.5	88.4	11.19%	12.10%	108%
Colorado River Municipal Water Dist. Pension Trust	Actuarial	1/1/2017	9.1	89.9	13.34%	13.54%	101%
Corpus Christi Regional Transportation Authority	Actuarial	1/1/2017	7.0	93.2	11.16%	16.38%	147%
Employees Retirement System of Texas	Fixed	8/31/2017	Infinite	70.1	10.12%	11.51%	114%
Fort Worth Employees' Retirement Fund	Fixed	12/31/2017	Infinite	57.8	25.07%	19.98%	80%
Galveston Firefighter's Relief & Retirement Fund	Fixed	12/31/2016	Infinite	68.0	17.64%	14.00%	79%
Law Enforcement & Custodial Officer Sup. Ret. Fund	Fixed	8/31/2017	Infinite	66.0	2.51%	1.59%	63%
Beaumont Firemen's Relief & Retirement Fund	Fixed	12/31/2016	104.0	67.5	20.17%	15.00%	74%
Orange Firemen's Relief & Retirement Fund	Fixed	1/1/2017	69.3	49.9	19.86%	14.00%	70%
Judicial Retirement System of Texas Plan Two	Fixed	8/31/2017	63.0	90.8	16.63%	15.81%	95%
Harlingen Firemen's Relief & Retirement Fund	Fixed	9/30/2017	59.1	66.1	15.60%	18.07%	116%
Marshall Firemen's Relief & Retirement Fund	Fixed	12/31/2016	56.4	42.0	22.50%	19.05%	85%
Longview Firemen's Relief & Retirement Fund	Fixed	12/31/2016	50.7	45.5	26.84%	17.11%	64%
Cleburne Firemen's Relief & Retirement Fund	Fixed	12/31/2016	49.6	65.4	23.50%	24.40%	104%
Wichita Falls Firemen's Relief & Retirement Fund	Fixed	1/1/2017	49.4	62.5	17.27%	12.35%	72%
Galveston Employees' Retirement Plan for Police	Fixed	1/1/2017	48.7	42.1	16.46%	12.00%	73%
Odessa Firemen's Relief & Retirement Fund	Fixed	1/1/2018	47.1	43.1	25.00%	20.33%	81%
Midland Firemen's Relief & Retirement Fund	Fixed	12/31/2015	44.7	65.8	24.73%	22.20%	90%
Dallas Police & Fire Pension System-Combined Plan	Fixed	1/1/2017	44.0	49.4	79.03%	32.68%	41%
Paris Firefighters' Relief & Retirement Fund	Fixed	12/31/2016	41.9	35.6	12.00%	12.00%	100%
McAllen Firemen's Relief & Retirement Fund	Fixed	10/1/2016	41.4	69.1	13.00%	13.50%	104%
San Angelo Firemen's Relief & Retirement Fund	Fixed	12/31/2015	38.5	65.7	23.69%	20.23%	85%
Greenville Firemen's Relief & Retirement Fund	Fixed	12/31/2016	38.0	47.7	22.20%	16.43%	74%
Big Spring Firemen's Relief & Retirement Fund	Fixed	1/1/2017	36.2	54.9	12.54%	13.80%	110%
Brownwood Firemen's Relief & Retirement Fund	Fixed	12/31/2015	36.1	44.6	21.30%	20.00%	94%
Amarillo Firemen's Relief & Retirement Fund	Fixed	12/31/2015	34.5	81.8	20.22%	18.99%	94%
Lubbock Fire Pension Fund	Fixed	12/31/2016	33.5	72.6	21.73%	21.73%	100%
Lufkin Firemen's Relief & Retirement Fund	Fixed	12/31/2016	33.1	46.7	25.72%	21.98%	85%
El Paso Police Pension Fund	Fixed	1/1/2016	33.0	81.1	26.45%	18.16%	69%
Irving Firemen's Relief & Retirement Fund	Fixed	12/31/2015	33.0	74.9	19.01%	15.65%	82%
Teacher Retirement System of Texas	Fixed	8/31/2017	32.2	80.5	7.94%	7.99%	101%
Plainview Firemen's Relief & Retirement Fund	Fixed	12/31/2015	31.6	37.3	28.12%	24.68%	88%
Abilene Firemen's Relief & Retirement Fund	Fixed	10/1/2015	31.5	56.6	19.69%	13.20%	67%
Conroe Fire Fighters' Retirement Fund	Fixed	12/31/2015	31.4	61.5	16.28%	15.00%	92%
Austin Employees' Retirement System	Fixed	12/31/2016	31.0	67.5	19.84%	18.04%	91%
Corsicana Firemen's Relief & Retirement Fund	Fixed	12/31/2016	28.9	53.1	14.00%	14.00%	100%
Atlanta Firemen's Relief & Retirement Fund	Fixed	12/31/2016	28.4	82.1	13.64%	14.68%	108%
Temple Firemen's Relief & Retirement Fund	Fixed	9/30/2016	28.4	75.1	15.97%	15.21%	95%
Laredo Firefighters Retirement System	Fixed	9/30/2016	28.0	59.3	22.42%	20.10%	90%
Texas City Firemen's Relief & Retirement Fund	Fixed	12/31/2016	28.0	50.4	16.43%	16.00%	97%
Sweetwater Firemen's Relief & Retirement Fund	Fixed	12/31/2016	27.5	70.0	19.76%	16.52%	84%
Austin Police Retirement System	Fixed	12/31/2016	27.3	66.2	22.49%	20.96%	93%
Denison Firemen's Relief & Retirement Fund	Fixed	12/31/2015	27.1	74.4	15.00%	15.00%	100%
El Paso Firemen's Pension Fund	Fixed	1/1/2016	26.0	79.2	21.81%	18.79%	86%
Waxahachie Firemen's Relief & Retirement Fund	Fixed	10/1/2016	25.4	66.9	14.92%	15.33%	103%
Corpus Christi Fire Fighters' Retirement System	Fixed	12/31/2016	23.1	62.1	20.78%	20.78%	100%
Killeen Firemen's Relief & Retirement Fund	Fixed	9/30/2016	22.8	69.7	13.00%	13.13%	101%
San Benito Firemen Relief & Retirement Fund	Fixed	12/31/2015	21.7	60.5	11.07%	15.87%	143%

Retirement Systems by Contribution Type

Plan Name	Actual ER Cont Type	Effective Date	Effective Amort Period	Funded Ratio %	ER Rec Cont	Actual ER Cont	Percent of Rec Cont Paid
El Paso City Employees' Pension Fund	Fixed	9/1/2016	17.0	79.2	10.41%	15.73%	151%
Texarkana Firemen's Relief & Retirement Fund	Fixed	12/31/2015	16.3	87.4	19.50%	19.50%	100%
Austin Fire Fighters Relief & Retirement Fund	Fixed	12/31/2016	16.2	88.3	19.13%	18.33%	96%
Weslaco Firemen's Relief & Retirement Fund	Fixed	9/30/2016	14.1	68.5	7.96%	12.30%	155%
San Antonio Fire & Police Pension Fund	Fixed	1/1/2017	13.1	87.9	18.22%	24.64%	135%
Galveston Employees' Retirement Fund	Fixed	12/31/2017	11.6	79.6	9.00%	9.01%	100%

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Appendix C – Houston Plans’ Corridors: Rising Cost/Falling Cost Scenarios

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Houston Plans – Rising Cost Scenario

HFRRF – Municipal Contribution Rate When Estimated Municipal Contribution Rate Lower than Corridor Midpoint, Authorization for Certain Adjustments (Sec 13E)	
If funded ratio is less than 90%	Municipal Contribution Rate = Corridor Midpoint
If funded ratio is equal to or greater than 90%	<p>If municipal contribution rate is equal to or greater than the minimum contribution rate</p> <p style="text-align: center;">Estimated contribution rate = Municipal Contribution Rate</p> <hr/> <p>If municipal contribution rate is less than the minimum contribution rate for corresponding fiscal year</p> <p style="text-align: center;">Municipal Contribution Rate = Minimum Contribution Rate Achieved in accordance with subsection c.</p> <p>SUBSECTION c (Adjustments):</p> <ul style="list-style-type: none"> • First, adjust AVA to = MVA, if making adjustment causes municipal contribution rate to increase • Second, under written agreement (not later than April 30 before the first day of the next fiscal year), reduce assumed rate of return • Third, under written agreement (not later than April 30), prospectively restore all or part of any benefit reductions or reduce increased employee contributions, in each case made after the year 2017 effective date • Fourth, accelerate the payoff year of the existing liability loss layers, including the legacy liability, by accelerating the oldest liability loss layers first, to an amortization period that is not less than 10 years from the first day of the fiscal year beginning 12 months after the date of the risk sharing valuation study in which the liability loss layer is first recognized.
If funded ratio is equal to or greater than 100%	<ul style="list-style-type: none"> • All existing liability layers, including the legacy liability, are considered fully amortized and paid • The applicable fiscal year is the payoff year for the legacy liability • For each fiscal year subsequent, the corridor midpoint shall be determined as provided by Section 13C(g) of the article
If funded ratio is greater than 100%	<p>In a written agreement between the municipality and the fund, the fund may reduce member contributions or increase pension benefits if, as a result of the action:</p> <ul style="list-style-type: none"> • the funded ratio is not less than 100 percent, and • the municipal contribution rate is not more than the minimum contribution rate

Houston Plans – Rising Cost Scenario

HPOPS – City Contribution Rate When Estimated City Contribution Rate Lower than Corridor Midpoint, Authorization for Certain Adjustments (Sec 9D)	
If funded ratio is less than 90%	City Contribution Rate = Corridor Midpoint
If funded ratio is equal to or greater than 90%	<p>If city contribution rate is equal to or greater than the minimum contribution rate</p> <p style="text-align: center;">Estimated contribution rate = City Contribution Rate</p> <hr/> <p>If city contribution rate is less than the minimum contribution rate for corresponding fiscal year</p> <p>City Contribution Rate = Minimum Contribution Rate Achieved in accordance with Subsection (c).</p> <p>Subsection (c) (Adjustments):</p> <ul style="list-style-type: none"> • First, adjust AVA to = MVA, if making adjustment causes city contribution rate to increase • Second, under written agreement (not later than April 30 before the first day of the next fiscal year), reduce assumed rate of return • Third, under written agreement (not later than April 30), prospectively restore all or part of any benefit reductions or reduce increased employee contributions, in each case made after the year 2017 effective date • Fourth, accelerate the payoff year of the existing liability loss layers, including the legacy liability, by accelerating the oldest liability loss layers first, to an amortization period that is not less than 10 years from the first day of the fiscal year beginning 12 months after the date of the RSVS in which the liability loss layer is first recognized.
If funded ratio is equal to or greater than 100%	<ul style="list-style-type: none"> • All existing liability layers, including the legacy liability, are considered fully amortized and paid • The applicable fiscal year is the payoff year for the legacy liability • For each fiscal year subsequent, the corridor midpoint shall be determined as provided by Section 9B(g) of the article
If funded ratio is greater than 100%	<p>In a written agreement between the city and the board, the fund may reduce member contributions or increase pension benefits if, as a result of the action:</p> <ul style="list-style-type: none"> • the funded ratio is not less than 100 percent, and • the municipal contribution rate is not more than the minimum contribution rate

Houston Plans – Rising Cost Scenario

HMEPS – City Contribution Rate When Estimated City Contribution Rate Lower than Corridor Midpoint, Authorization for Certain Adjustments (Sec 8E)	
If funded ratio is less than 90%	City Contribution Rate = Corridor Midpoint
If funded ratio is equal to or greater than 90%	<p>If city contribution rate is equal to or greater than the minimum contribution rate</p> <p style="text-align: center;">Estimated Contribution Rate = City Contribution Rate</p> <hr/> <p>If city contribution rate is less than the minimum contribution rate for corresponding fiscal year</p> <p>City Contribution Rate = Minimum Contribution Rate achieved in accordance with subsection c.</p> <p>Subsection (c) (Adjustments):</p> <ul style="list-style-type: none"> • First, adjust AVA to = MVA, if making adjustment causes city contribution rate to increase • Second, under written agreement (not later than April 30), prospectively restore all or part of any benefit reductions or reduce increased employee contributions, in each case made after the year 2017 effective date • Third, accelerate the payoff year of the legacy liability by offsetting the remaining legacy liability by the amount of the new liability loss layer, provided that during the accelerated period the city will continue to pay the city contribution amount as scheduled in the initial RSVS • Fourth, accelerate the payoff year of existing liability loss layers, excluding the legacy liability, by accelerating the oldest liability loss layers first, to an amortization period not less than 20 years from the first day of the fiscal year beginning 12 months after the date of the RSVS in which the liability loss layer is first recognized • Fifth, under a written agreement (not later than the 30th day before the first day of the next fiscal year), the city and pension board may agree to reduce the assumed rate of return
If funded ratio is equal to or greater than 100%	<ul style="list-style-type: none"> • All existing liability layers, including the legacy liability, are considered fully amortized and paid • The city contribution amount may no longer be included in the city contribution under 8A • The city and the pension system may mutually agree to change assumptions in a written agreement
If funded ratio is greater than 100%	<p>In a written agreement between the city and the board, the fund may reduce member contributions or increase pension benefits if, as a result of the action:</p> <ul style="list-style-type: none"> • the funded ratio is not less than 100 percent, and • the city contribution rate is not more than the minimum contribution rate

Houston Plans – Falling Cost Scenario

HFRRF – Municipal Contribution Rate When Estimated Municipal Contribution Rate Equal to or Greater than Corridor Midpoint, Authorization for Certain Adjustments (Sec 13F)	
If estimated municipal contribution rate is less than or equal to maximum contribution rate	Estimated Municipal Contribution Rate = Municipal Contribution Rate
If municipal contribution rate is greater than maximum contribution rate for corresponding fiscal year	<p>Municipal Contribution Rate = Corridor Midpoint Achieved in accordance with Subsection (c).</p> <p>Subsection (c) (Adjustments):</p> <ul style="list-style-type: none"> • First, if payoff year of the legacy liability was accelerated previously (falling cost scenario), extend the payoff year of existing liability loss layers, by extending the most recent loss layers first, to a payoff year not later than 30 years for the first day of the fiscal year beginning 12 months after the date of the RSVS in which the liability loss layer first recognized • Second, adjust AVA to current MVA, if making the adjustment causes the municipal contribution rate to decrease
If municipal contribution rate after adjustment by Subsection (c) is greater than the third quarter line rate	<p>Municipal Contribution Rate = Third Quarter Line Rate</p> <ul style="list-style-type: none"> • To the extent necessary to comply with the statute, the City and System shall enter into a written agreement to increase member contributions and make other benefit or plan changes not otherwise prohibited by applicable federal law or regulations • If an agreement is not reached on/before April 30 before the first day of the next fiscal year, before the start of the next fiscal year to which the municipal contribution rate would apply, the board, to the extent necessary to set the municipal contribution rate equal to the third quarter line, shall: <ul style="list-style-type: none"> ○ Increase member contributions and decrease cost-of-living adjustments; ○ Increase normal retirement age; or ○ Any combination of the two
If municipal contribution rate remains greater than corridor midpoint in the third fiscal year after adjustments	<p>In third fiscal year, Municipal Contribution Rate = Corridor Midpoint achieved in accordance with Subsection (g).</p> <p>Subsection (g):</p> <p>Municipal contribution rate must be set at corridor midpoint by:</p> <ul style="list-style-type: none"> • In RSVS for third fiscal year, adjust AVA to MVA, if making the adjustment causes the municipal contribution rate to decrease

Houston Plans – Falling Cost Scenario

	<ul style="list-style-type: none"> • Under written agreement between City and board: <ul style="list-style-type: none"> ○ Increase member contributions ○ Make any other benefit or plan changes not otherwise prohibited by applicable federal law or regulations • If an agreement is not reached on/before April 30 before the first day of the next fiscal year, before the start of the next fiscal year, the board, to the extent necessary to set the municipal contribution rate equal to the corridor midpoint, shall: <ul style="list-style-type: none"> ○ Increase member contributions and decrease cost-of-living adjustments; ○ Increase normal retirement age; or ○ Any combination of the two
HPOPS – City Contribution Rate When Estimated City Contribution Rate Equal to or Greater Than Corridor Midpoint, Authorization for Certain Adjustments (Sec 9F)	
If estimated City contribution rate is less than or equal to maximum contribution rate	Estimated City Contribution Rate = City Contribution Rate
If City contribution rate is greater than maximum contribution rate for corresponding fiscal year	<p>City Contribution Rate = Corridor Midpoint achieved in accordance with Subsection (c).</p> <p>Subsection (c) (Adjustments):</p> <ul style="list-style-type: none"> • First, if payoff year of the legacy liability was accelerated previously (falling cost scenario), extend the payoff year of existing liability loss layers, by extending the most recent loss layers first, to a payoff year not later than 30 years for the first day of the fiscal year beginning 12 months after the date of the RSVS in which the liability loss layer first recognized • Second, adjust AVA to current MVA, if making the adjustment causes the city contribution rate to decrease
If city contribution rate after adjustment by Subsection (c) is greater than the third quarter line rate	<p>City Contribution Rate = Third Quarter Line Rate</p> <ul style="list-style-type: none"> • To the extent necessary to comply with the statute, the City and board shall enter into a written agreement to increase member contributions and make other benefit or plan changes not otherwise prohibited by applicable federal law or regulations • If an agreement is not reached on/before April 30 before the first day of the next fiscal year, before the start of the next fiscal year to which the city contribution rate would apply, the board, to the extent necessary to set the city contribution rate equal to the third quarter line, shall:

Houston Plans – Falling Cost Scenario

	<ul style="list-style-type: none"> ○ Increase member contributions and decrease cost-of-living adjustments; ○ Increase normal retirement age; or ○ Any combination of the two
If city contribution rate remains greater than corridor midpoint in the third fiscal year after adjustments	<p>In third fiscal year, City Contribution Rate = Corridor Midpoint achieved in accordance with Subsection (g).</p> <p>Subsection (g): City contribution rate must be set at corridor midpoint by:</p> <ul style="list-style-type: none"> • In RSVS for third fiscal year, adjust AVA to MVA, if making the adjustment causes the city contribution rate to decrease • Under written agreement between City and board: <ul style="list-style-type: none"> ○ Increase member contributions ○ Make any other benefit or plan changes not otherwise prohibited by applicable federal law or regulations • If an agreement is not reached on/before April 30 before the first day of the next fiscal year, before the start of the next fiscal year, the board, to the extent necessary to set the city contribution rate equal to the corridor midpoint, shall: <ul style="list-style-type: none"> ○ Increase member contributions and decrease cost-of-living adjustments; ○ Increase normal retirement age; or ○ Any combination of the two
HMEPS – City Contribution Rate When Estimated City Contribution Rate Equal to or Greater Than Corridor Midpoint, Authorization for Certain Adjustments (Sec 8F)	
If estimated City contribution rate is less than or equal to maximum contribution rate	Estimated City Contribution Rate = City Contribution Rate
If City contribution rate is greater than maximum contribution rate for corresponding fiscal year	<p>City Contribution Rate = Corridor Midpoint achieved in accordance with Subsection (c).</p> <p>Subsection (c) (Adjustments):</p> <ul style="list-style-type: none"> • First, adjust AVA to current MVA, if making the adjustment causes the city contribution rate to decrease • Second, if payoff year of the legacy liability was accelerated previously (falling cost scenario), <ul style="list-style-type: none"> ○ extend the payoff year of the legacy liability by the amount of the new liability gain layer to a maximum amount

Houston Plans – Falling Cost Scenario

	<ul style="list-style-type: none"> ○ during extended period, the city shall continue to pay the city contribution amount for the extended period • Third, if the payoff year of a liability loss layer other than legacy liability was previously accelerated(falling cost scenario), extend the payoff year of existing liability loss layers, excluding legacy liability, by extending the most recent loss layers first, to a payoff year not later than 30 years from the first day of the fiscal year beginning 12 months after the date of the RSVS in which the liability loss layer first recognized
If city contribution rate after adjustment by Subsection (c) is greater than the third quarter line rate	<p style="text-align: center;">City Contribution Rate = Third Quarter Line Rate</p> <ul style="list-style-type: none"> • To the extent necessary to comply with the statute, the City and board shall enter into a written agreement to increase member contributions and make other benefit or plan changes not otherwise prohibited by applicable federal law or regulations • Gains resulting from adjustments made as the result of a written agreement may not be used as a direct offset against the city contribution amount in any fiscal year • If an agreement is not reached on/before the 30th day before the first day of the next fiscal year, before the start of the next fiscal year to which the city contribution rate would apply, the board, to the extent necessary to set the city contribution rate equal to the third quarter line, shall: <ul style="list-style-type: none"> ○ Increase member contributions and decrease cost-of-living adjustments; ○ Increase normal retirement age
If city contribution rate remains greater than corridor midpoint in the third fiscal year after adjustments	<p>In third fiscal year, City Contribution Rate = Corridor Midpoint achieved in accordance with Subsection (h).</p> <p>Subsection (h): City contribution rate must be set at corridor midpoint by:</p> <ul style="list-style-type: none"> • In RSVS for third fiscal year, adjust AVA to MVA, if making the adjustment causes the city contribution rate to decrease • Under written agreement between City and board: <ul style="list-style-type: none"> ○ Increase member contributions ○ Make any other benefit or plan changes not otherwise prohibited by applicable federal law or regulations • If an agreement is not reached on/before the 30th day before the first day of the next fiscal year, before the start of the next fiscal year, the board, to the extent necessary to set the city contribution rate equal to the corridor midpoint, shall: <ul style="list-style-type: none"> ○ Increase member contributions ○ decrease cost-of-living adjustments

Appendix D – COAERS Funding Policy

DRAFT



**City of Austin Employees' Retirement System
Board Approved Policy**


Policy: F-2

Subject: Funding Policy and Guidelines

Review Committee: Benefits & Services Committee

Date Implemented: November 25, 2014

Date Updated:

Signature of Chair: 
Sam Jones

City of Austin Employees' Retirement System Funding Policy and Guidelines

I. PURPOSE AND SCOPE

This Funding Policy establishes appropriate actuarial methodologies and memorializes the long-term funding goals for COAERS. COAERS is formally adopting certain baseline actuarial measurements to provide guidance for actuarial valuations performed on and after December 31, 2013. The Board of Trustees has also used this opportunity to establish guidelines to ensure that the Plan is well funded into the future and specifies under what conditions benefit enhancements will be considered by the Board of Trustees.

II. DEFINITIONS

“Board of Trustees” means the Board of Trustees of the City of Austin Employees Retirement System as defined by Vernon's Ann.Texas Civ.St. Art. 6243n.

“Funding period” means the length of time required to eliminate the Plan's unfunded liability.

“Cost of living adjustment” means an adjustment which is added to the current monthly payment of the retirement annuities, pensions, or allowances of each retired member and beneficiary to help counteract the erosion of purchasing power caused by inflation.

“Funded ratio” means the value of a Plan's assets, expressed as a percentage of the plan's actuarial liability

“Actuarial value of plan assets” means the Plan's assets determined in accordance with the Asset Valuation Method outlined in Section III of this Policy.

“Actuarial liability” means the actuarial accrued liability determined in accordance with the Actuarial Cost Method outlined in Section III of this Policy.

“Unfunded liability” means the actuarial liability in excess of the actuarial value of plan assets.

“Plan” means the City of Austin Employees' Retirement System and the provisions found in Vernon's Ann.Texas Civ.St. Art. 6243n.

“Actuarially determined employer contribution rate” means the employer's periodic contribution to the Plan which is required to properly fund the Plan, which should be sufficient to eliminate the unfunded liability over a period not to exceed 25 years (based on the Texas Pension Review Board's Guidelines for Actuarial Soundness).

“Statutory employer contribution rate” means the employer contribution rate as defined by Vernon's Ann.Texas Civ.St. Art. 6243n, which is currently eight percent (8%) of base compensation.

“Actual employer contribution rate” means the actual employer contribution paid by the City of Austin currently under the Amended Supplemental Funding Plan or by agreement.

“Benefit enhancement” means any change to the promised benefits for retired, active, vested, and nonvested members of the City of Austin Employees Retirement System which increases the actuarially determined employer contribution rate, or increases the amortization period, or decreases the funded ratio of the Plan. Examples include, but are not limited to: benefit formula multiplier increases; reductions in eligibility for benefits, or lump-sum additional benefit payments to retired members or beneficiaries.

III. ACTUARIAL METHODS FOR VALUATIONS

The Board of Trustees has adopted the following actuarial methods for the purposes of actuarial valuations occurring on and after December 31, 2013 and for plan funding purposes:

- A. Asset Valuation Method - Five year Smoothing with Direct Offset of Gains/(Losses) and 20% Soft Corridor,
- B. Actuarial Cost Method – Entry Age Normal (Individual), and
- C. Funding Period – Determined based on an open group projection.

IV. STATEMENT OF PRIORITIES

The first obligation of the Board of Trustees is to fund the Plan sufficiently to preserve the ability to reliably pay benefits promised under the Plan to current and future generations. However, the Board believes that an ideal benefit design should include annual cost of living adjustments to help counteract the erosion of purchasing power caused by inflation. Other benefit enhancements should be considered only after cost-of-living adjustments have been incorporated and only if the actuarially determined employer contribution rate is less than or equal to the statutory employer contribution rate.

V. GUIDELINES FOR FUTURE COST OF LIVING ADJUSTMENTS

The Board of Trustees believes that it is best to consider supporting cost of living adjustments only when the following conditions exist:

- A. The adjustment can be financially supported on a regular, periodic basis preferably on an annual basis but no less frequently than every five years.

- B. The funded ratio of the Plan is greater than or equal to 80% after incorporating the cost of living adjustment, assuming it to be regular and periodic; and
- C. The amortization period for unfunded liabilities is less than or equal to 20 years after incorporating the cost of living adjustments, assuming it to be regular and periodic; and
- D. The actual employer contribution rate is greater than or equal to the actuarially determined contribution rate but not more than 18% after incorporating the cost of living adjustments, assuming it to be regular and periodic.

VI. GUIDELINES FOR FUTURE REDUCTIONS IN EMPLOYER CONTRIBUTION RATES

The Board of Trustees believes that it is best to consider supporting a reduction in the actual employer contribution rate only when the following conditions exist:

- A. Annual cost of living adjustments are built into funding assumptions; and
- B. The funded ratio will remain greater than or equal to 105% subsequent to any reduction in the actual employer contribution rate.

The actual employer contribution rate should not go down by more than 1% of pay per year.

VII. GUIDELINES FOR FUTURE BENEFIT ENHANCEMENTS

For all other benefit enhancements not specifically mentioned above, the Board of Trustees believes that it is best to support such enhancements only when the following conditions exist:

- A. Annual cost of living adjustments are built into funding assumptions; and
- B. The funded ratio is equal to or greater than 120% after incorporating the benefit enhancement, and
- C. The actuarially determined employer contribution rate is less than or equal to the statutory employer contribution rate.

VIII. AMENDED SUPPLEMENTAL FUNDING PLAN

- A. This Policy is to be implemented consistently with City of Austin Resolution No. 20100913-008 as known as the Amended Supplemental Funding Plan.
- B. So long as the Amended Supplemental Funding Plan remains in effect, any future benefit enhancements or cost of living adjustments otherwise permitted under the Plan's governing documents will require recommendation from the City Manager and approval by the City Council. Any such recommendation by the City Manager should include a projection and actuarial analysis by the COAERS and its actuaries of the effect of the requested enhancement or adjustment on the Plan and the level of employer contributions to the Plan, including projections under scenarios simulating volatile market returns.

IX. EMPLOYEE CONTRIBUTIONS

In order to fund the Plan, regular full-time employee members may increase the employee contribution rate by a majority vote of all such members voting at an election to consider an increase in contributions.

X. MONITORING AND EVALUATION

- A. The Board of Trustees and its actuary will monitor the Plan's progress towards the guidelines in this Policy.
- B. If a cost of living adjustment is provided, future cost of living adjustments are not necessarily guaranteed and are subject to meeting the guidelines in this Policy, the process for reviewing cost of living adjustments established by the Amended Supplemental Funding Plan, and other factors that the Board of Trustees and the City of Austin may choose to consider.

Appendix E – South Dakota Retirement System Funding and System Management Policy

DRAFT

SDRS FUNDING AND SYSTEM MANAGEMENT POLICIES

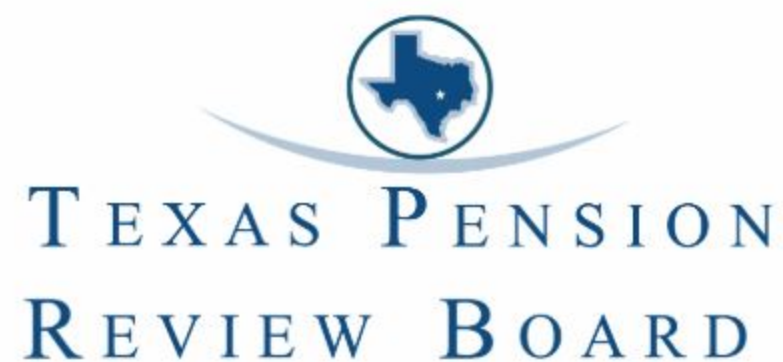
– Managing SDRS Based on Fixed, Statutory Contributions –

FUNDING OBJECTIVES	CONSIDERATION OF BENEFIT IMPROVEMENTS	REQUIRED CORRECTIVE ACTION RECOMMENDATIONS
<ul style="list-style-type: none"> • A Fair Value Funded Ratio (Fair Value of Assets ÷ Actuarial Accrued Liability*) of 100% or more • A fully funded system with no Unfunded Liabilities under the Entry Age Normal Cost method • Actuarially determined benefits that are variable and can be supported by fixed, statutory contributions 	<ul style="list-style-type: none"> • A Fair Value Funded Ratio of over 120% is required before considering benefit improvement recommendations • The cost to fully fund the recommended benefit improvement is also limited to the net accumulated actuarial investment gains and losses, with gains recognized over a five-year period and losses recognized immediately • After fully funding the cost of the benefit improvement, the Fair Value Funded Ratio must be at least 120% and all funding objectives must continue to be met • Proposed benefit improvement must be consistent with both the Board's long-term benefit goals and sound public policy with regard to retirement practices 	<ul style="list-style-type: none"> • The annual report to Governor and Retirement Laws Committee will include corrective action recommendations if SDRS does not meet both of the following conditions: <ul style="list-style-type: none"> ○ Fixed, statutory contributions sufficient to meet the actuarial requirement, and ○ Fair Value Funded Ratio of 100% or more • The report shall include recommendations for the circumstances and timing for any benefit changes, contribution changes or any other corrective action, or any combinations of actions to improve the funding conditions

The Entry Age Normal cost method is used to calculate Normal Cost and Actuarial Liability

*The Actuarial Accrued Liability and Normal Cost at each July 1 will be based on the baseline COLA assumption or the restricted maximum COLA, as applicable under the SDRS variable COLA structure

TAB 3E



Texas Public Pension Data Center

There are 99 actuarially funded defined benefit public pension plans registered with the PRB. The total membership of these public retirement systems is more than 2.6 million active and retired members, and the total net assets of the plans are approximately \$271 billion. The 99 plans include:

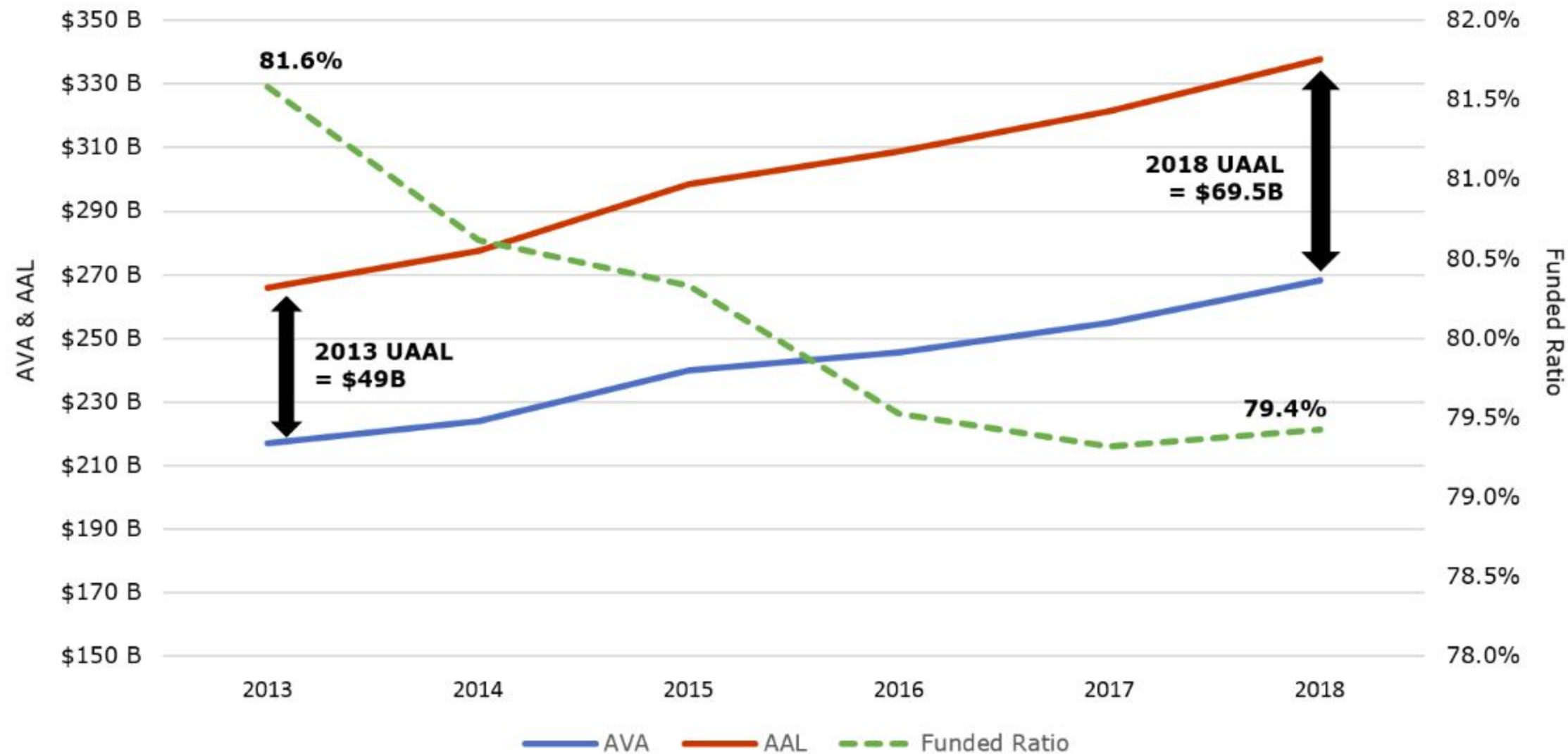
- 7 statewide plans including 2 cash balance plans that municipalities, counties and districts may join
- 17 major municipal plans including 14 in state law and 3 in local ordinance
- 42 local firefighter plans organized under the Texas Local Firefighters Retirement Act
- 33 local plans administered by special purpose districts or as supplemental plans

These retirement plans report data to the PRB in annual financial reports, actuarial valuations and other studies, and investment and membership reports. This data center presents the reported information by plan and comparatively by plan type and asset group. The following graphs summarize some of the key indicators of financial health for Texas public pensions in the aggregate.

Actuarial

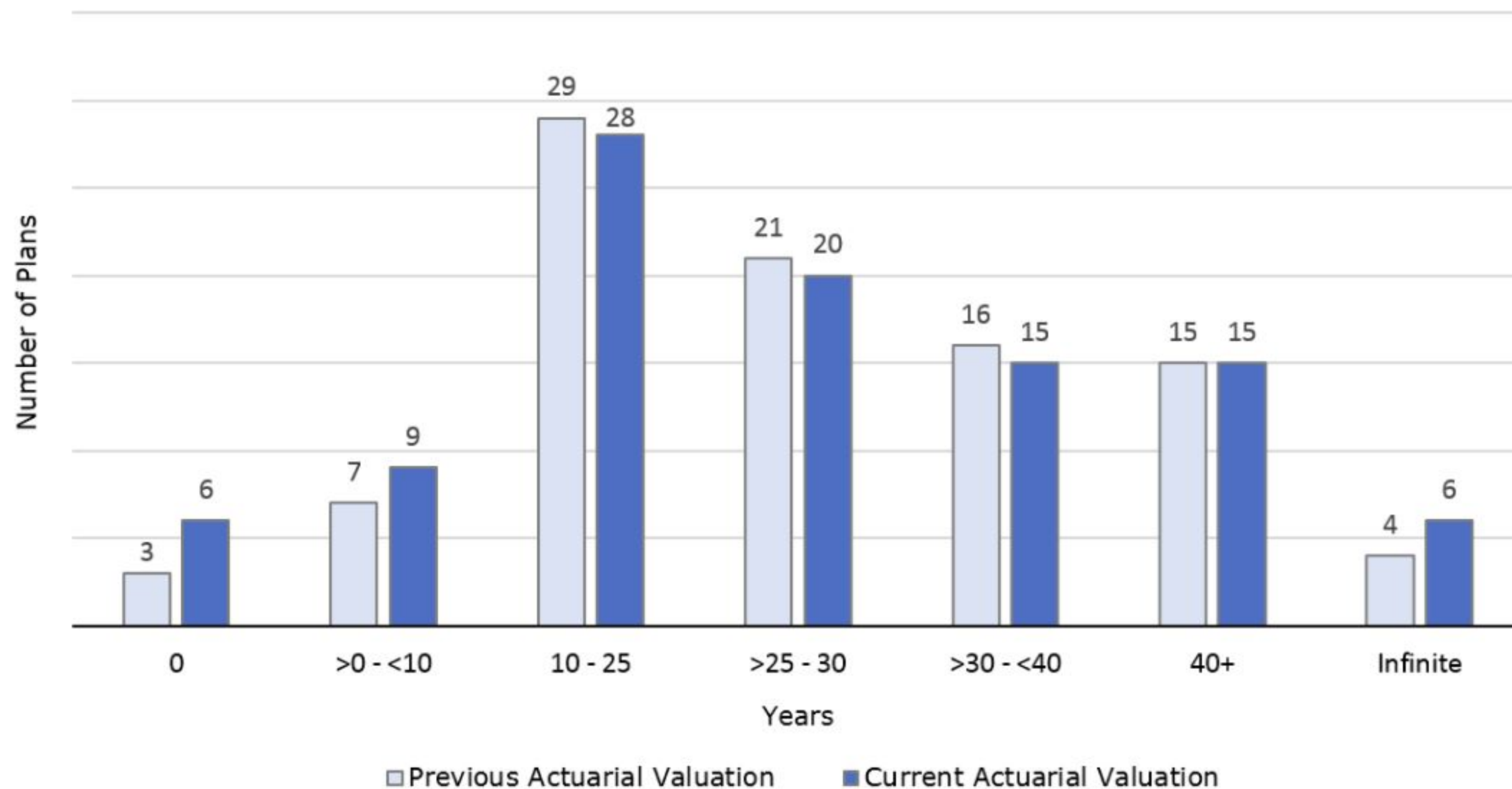
Since 2013, the overall unfunded accrued actuarial liability (UAAL), which is the difference between the actuarial value of assets (AVA) and accrued actuarial liability (AAL), has steadily increased. The aggregate funded ratio, in turn, has decreased over time.

Actuarial Asset-Liability and Funded Ratio Trends



A plan's amortization period is the time it would theoretically take to fully fund any unfunded liability (UAAL) or fully recognize a surplus. The PRB Pension Funding Guidelines establish a maximum amortization period of not more than 30 years with a preferred target range of 10 to 25 years. More than half of the plans have current amortization periods within 30 years.

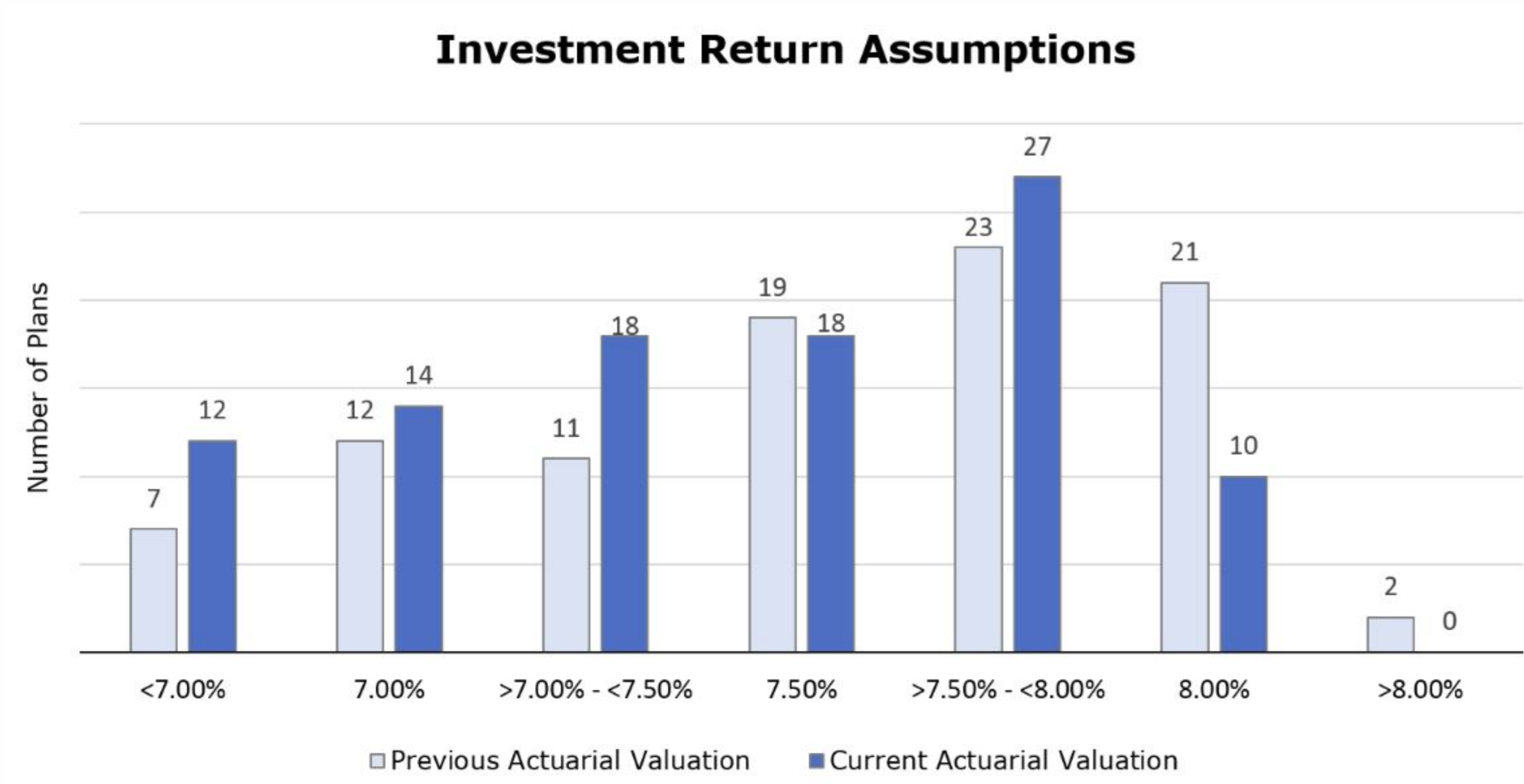
Amortization Periods



Amortization periods are reported in actuarial valuations, which are conducted by Texas plans at least every 3 years according to law. Amortization periods displayed are from the most recent and previous valuations received by the PRB as of December 2018.

Investments

The investment return assumption is a key actuarial assumption which directly impacts a plan's liability calculation and contribution requirement. A higher return assumption leads to a lower liability calculation and therefore lower contribution requirement and vice versa. In response to projected market conditions and actual plan experience, retirement systems have reduced return assumptions in recent years. The average investment return assumption for Texas systems is currently 7.40%. The national average is 7.36% (NASRA, February 2018).



Return assumptions are reported in actuarial valuations, which are conducted by Texas plans at least every 3 years according to law. Return assumptions displayed are from the most recent and previous valuations received by the PRB as of December 2018.

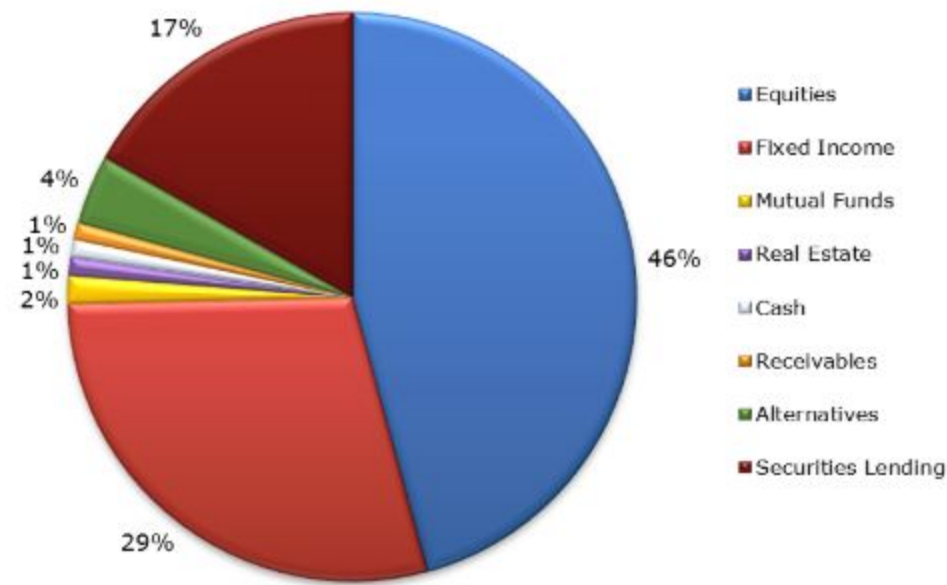
In the past year, Texas plans have generated positive net returns. However, unweighted average returns have been below their assumed rates of return over the past three to ten years. Any market volatility can result in plan investment returns that are greater or less than their long-term averages.

Average Actual Investment Returns					
Plan Type	1-Year	3-Year	10-Year	Long-Term	Assumed Return
Statewide	12.81%	5.97%	5.82%	12.98%	7.50%
Municipal	13.30%	5.64%	4.89%	7.82%	7.40%
Local Firefighter	13.09%	5.26%	4.58%	6.62%	7.60%
District/Supplemental	12.61%	6.33%	5.47%	6.80%	7.00%
All	12.93%	5.74%	5.01%	6.90%	7.40%

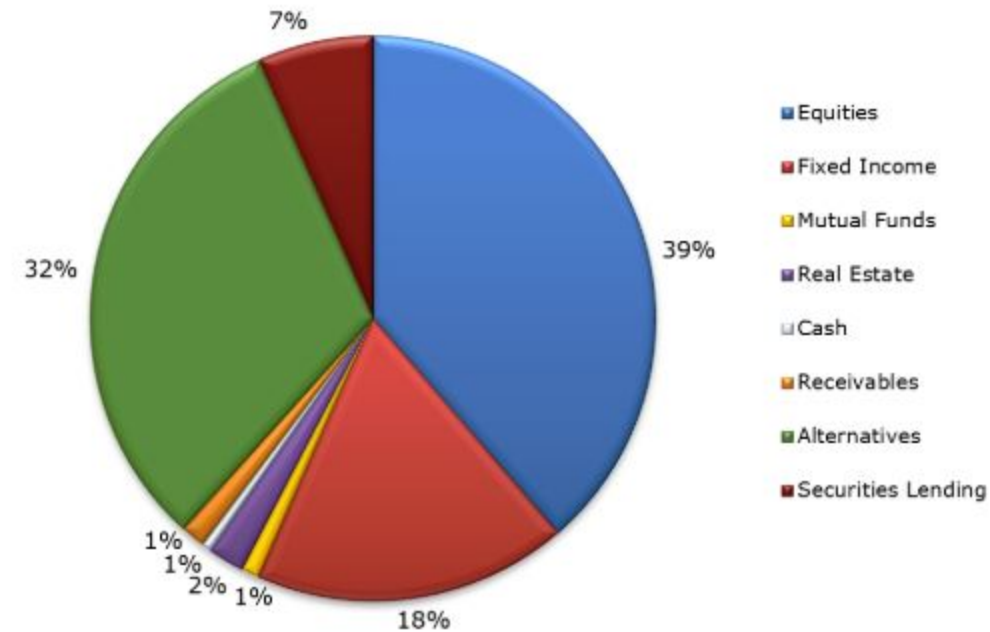
Figures obtained from the most recent fiscal year-end investment return and assumptions reports. Long-term return is 30 years or longest term available. All figures are net of fees.

Plans' asset allocations changed between 2007 and 2017, most notably, in the growth of alternative investments from 4% of total assets in 2007 to 32% in 2017. Alternative investments generally include hedge funds, private equity, commodities, foreign currency, venture capital, derivatives, and other instruments.

Asset Allocation 2007



Asset Allocation 2017





Plan

Abilene Firemen's Relief & Retirement Fund

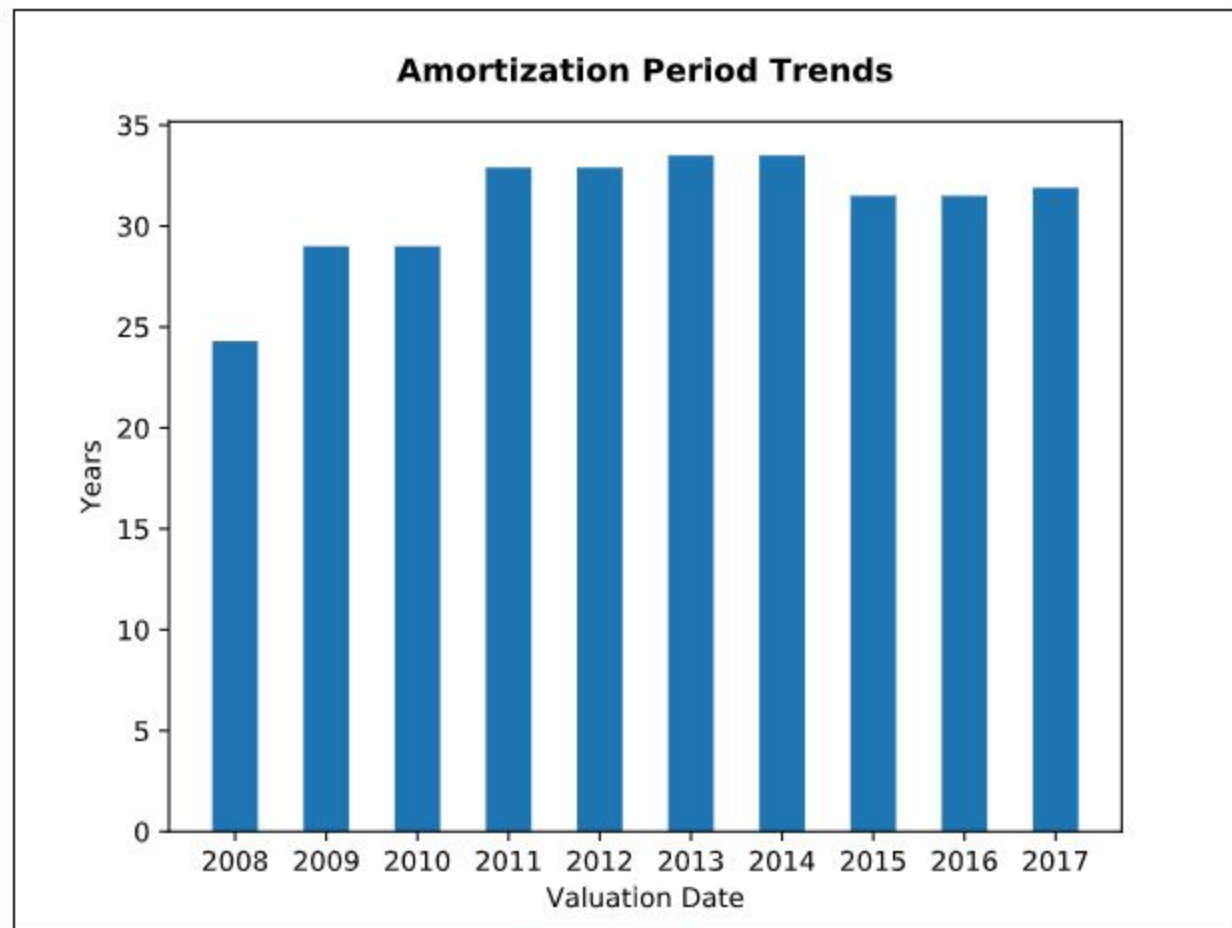
Abilene Firemen's Relief & Retirement Fund

Abilene Firemen's Relief & Retirement Fund was created under the Texas Local Fire Fighters Retirement Act (TLFFRA). The Act provides general guidelines for fund management, including some investment restrictions, but leaves administration, plan design, contributions, and specific investments to each system's local board. Systems operating under TLFFRA are entirely locally funded and each have their own local boards of trustees governed by state statute.

Membership	Total Net Assets	Social Security	Contributions	Contribution Type
Active: 181 Annuitant: 191	\$57,456,309	No	Employee: 13.20 % Employer: 19.25 %	Fixed

Actuarial

A retirement system's effective amortization period is defined by the PRB as the time it would theoretically take to fully fund the system's unfunded actuarial accrued liability (UAAL), if any exists. The effective amortization period assumes no future gains or losses and factors in both the plan's stated and historical contribution policy. The calculation is done at each actuarial valuation which is conducted every year or every two years.

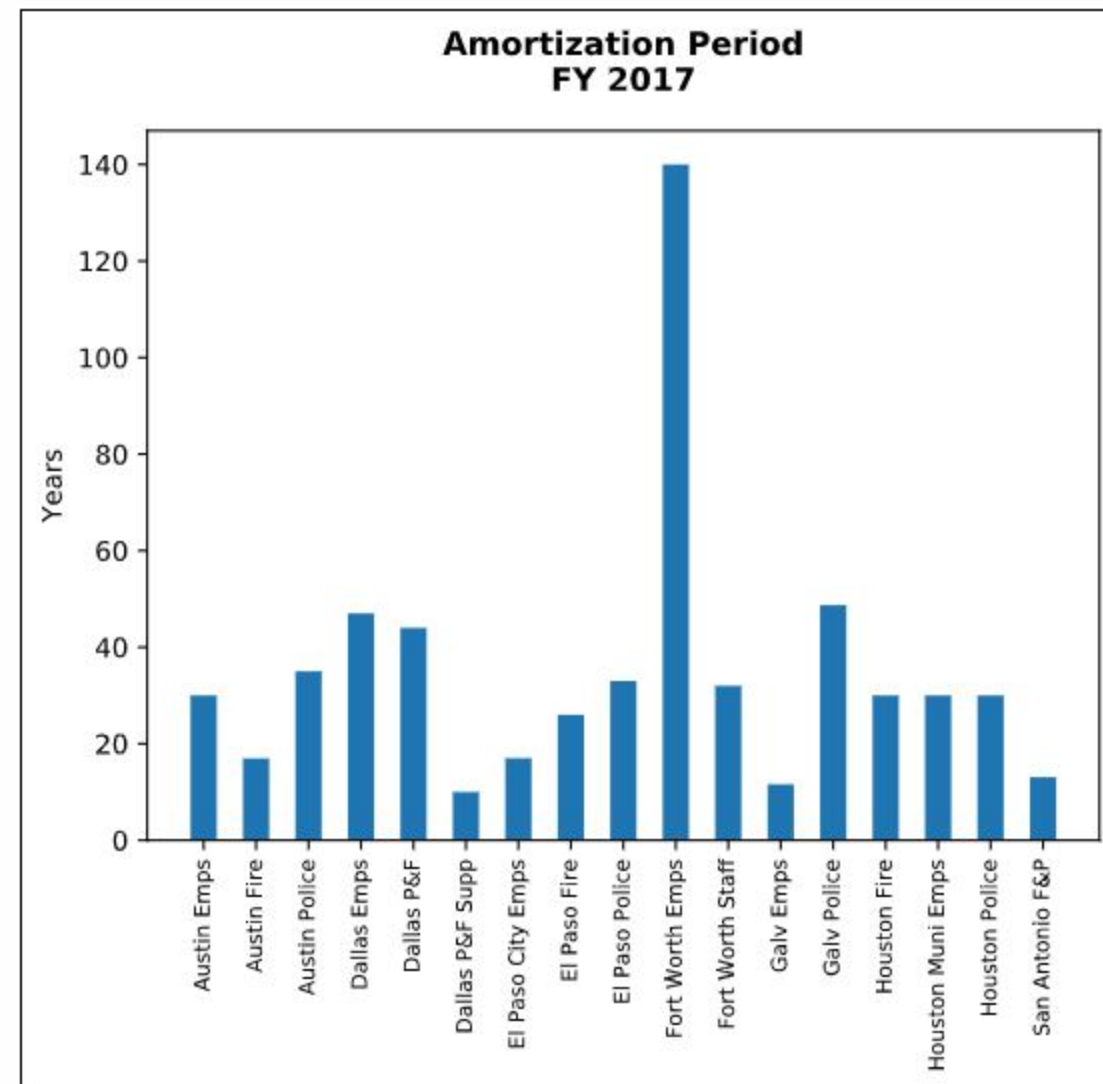


[Download Data](#)

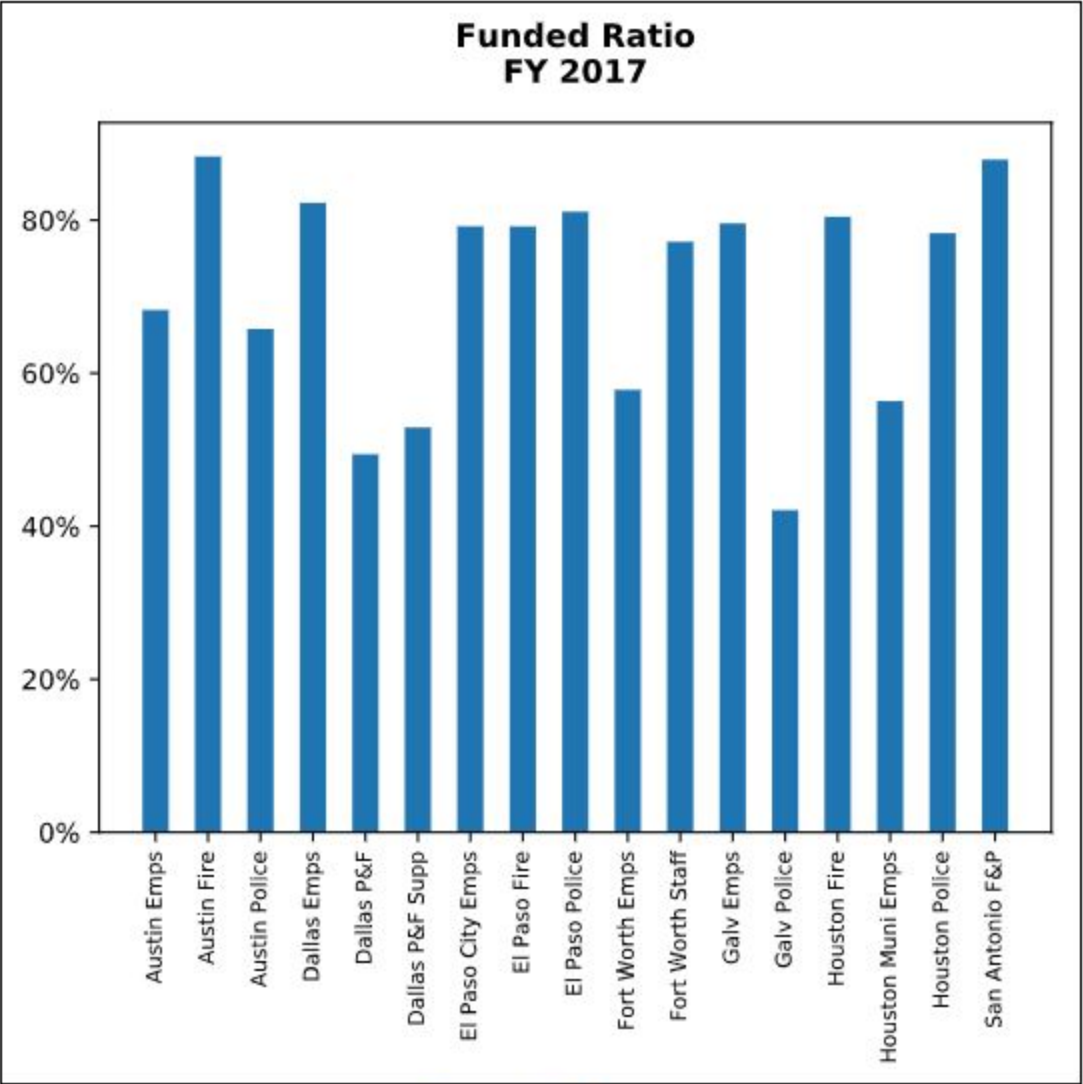
Municipal FY 2017

Actuarial

A retirement system's effective amortization period is defined by the PRB as the time it would theoretically take to fully fund the system's unfunded actuarial accrued liability (UAAL). The reported amortization period takes into account the plan's amortization policy and contribution history. The chart displays Municipal retirement systems' effective amortization periods for the selected fiscal year.

[Download Data](#)

A retirement system's funded ratio is the percentage of its actuarial accrued liability that are funded by its actuarial value of assets. In the graph, funded ratios of Municipal retirement systems are shown for the selected fiscal year.



[Download Data](#)

TAB 4A

Minimum Educational Training (MET) Program Public Retirement System Reporting as of January 10, 2019

Below is a summary of systems' reporting compliance with the Minimum Educational Training (MET) Program. The MET Program has two compliance requirements: (1) system administrators and trustees must complete the required training hours and (2) systems must report their trustees' and administrator's completed hours of training. The following report shows only the systems' submission of required MET reporting. Trustees' and system administrators' compliance with required training hours was reported in the PRB's 2018 *Biennial Report to the Legislature* in November 2018.

Minimum Educational Training Program Form (PRB-2000)

	Current Board Meeting	Previous Board Meeting
Compliant Systems	82	86
Non-Compliant Systems	6	0
Total Systems	88	86

Summary of Plans Non-Compliant over 60 Days

	Current Board Meeting	Previous Board Meeting
PRB-2000	6	0

Plans Non-Compliant over 60 Days: Minimum Educational Training Program

In accordance with 801.209(b) of the Texas Government Code, this list includes all plans which have not submitted the required Minimum Educational Training Program Form (PRB-2000) to the State Pension Review Board by the 60th day after the date the report is due.

Year	Retirement System	Due Date
2018	DART Employees' Defined Benefit Retirement Plan & Trust	10/1/2018
2018	Harris County Hospital District Pension Plan	10/1/2018
2018	McAllen Firemen's Relief & Retirement Fund	10/1/2018
2018	Northeast Medical Center Hospital Retirement Plan	10/1/2018
2018	Refugio County Memorial Hospital District Retirement Plan	10/1/2018
2018	University Health System Pension Plan	10/1/2018

TAB 4B

PRB Online Course Surveys

At the October 4, 2018 PRB meeting, the Board requested performance evaluation satisfaction rates from the PRB online course evaluations. To provide this information, the PRB staff reviewed course evaluation survey responses, which are provided to participants at the end of each online course.

As of January 16, 2019, the PRB has received 44 surveys for the 7 online training courses. **The overall satisfaction for all PRB online courses was 84%.** There have been over 1,900 course completions of the PRB online courses, which makes for a survey response rate of 2.2%.

The following table shows overall satisfaction percentage by course.

Course Name	Number of Surveys Received	Overall Satisfaction
Actuarial Matters	6	100%
Benefits Administration	16	81%
Ethics	5	80%
Fiduciary Matters	4	100%
Governance	5	80%
Investments	1	100%
Risk Management	7	71%

The course evaluation asks participants how the agency can improve the course. Below are a few suggestions from evaluation participants.

Actuarial Matters

- More examples for clarity.
- Perhaps having some audio to go with the reading. It is sometimes easier to follow when someone is pacing the presentation or if someone has problems with the font size of the document.

Benefits Administration

- Make sure the cert. is printable.
- Why can't I select "print certificate on iPad and it prints? It goes to screen that talks about using control codes to print. I can't print the certificate!
- Update program so Google Chrome can print certificates.
- There is no image to print a certificate

Fiduciary Matters

- The certificate didn't open (or print) on my computer, it only showed a small icon that said "Click to enable Adobe Flash Payer" which didn't open when clicked.

Governance

- Course was good but final quiz questions were confusing especially asking for all or none of the above. Also, one question focused more on a statute number than substantive governance policy.

Risk Management

- I have now taken 4 of the courses online. I received an email for the first 2, but not the last 2 - Ethics and Risk Assessment - which I passed. This is troubling to me that I do not have the proper documentation and there was no email follow-up. I cannot recommend this to others unless this is handled properly.

TAB 5

Contribution and Benefit Decision-Making for Texas Public Retirement Systems

Retirement System	Governing Statute	Employer Contributions	Employee Contributions	Benefit Increases	Benefit Reductions	Constitutional Benefit Protection (Article 66)
Statewide						
Employees Retirement System of Texas	Government Code Title 8, Subtitle B Chapters 811-815	Determined by Legislature, with a constitutional minimum of six percent and a maximum of 10 percent of the aggregate compensation paid to members. In an emergency, as determined by the Governor, the Legislature may appropriate such additional sums as are actuarially determined to be required to fund benefits authorized by law.	Determined by Legislature, but may not be less than six percent of current compensation, per the Texas Constitution.	Determined by Legislature.	Determined by Legislature.	No
Judicial Retirement System of Texas Plan Two	Government Code Title 8, Subtitle B Chapters 836-840	Determined by Legislature.	Determined by Legislature.	Determined by Legislature.	Determined by Legislature.	No
Law Enforcement & Custodial Officer Supplemental Retirement Fund	Government Code Title 8, Subtitle B Chapters 811-815	Determined by Legislature.	Determined by Legislature.	Determined by Legislature.	Determined by Legislature.	No
Teacher Retirement System of Texas	Government Code Title 8, Subtitle C Chapters 821-825	Determined by Legislature, with a constitutional minimum of six percent and a maximum of 10 percent of the aggregate compensation paid to members. In an emergency, as determined by the Governor, the Legislature may appropriate such additional sums as are actuarially determined to be required to fund benefits authorized by law.	Determined by Legislature, but may not be less than six percent of current compensation, per the Texas Constitution.	Determined by Legislature.	Determined by Legislature.	No

Contribution and Benefit Decision-Making for Texas Public Retirement Systems

Retirement System	Governing Statute	Employer Contributions	Employee Contributions	Benefit Increases	Benefit Reductions	Constitutional Benefit Protection (Article 66)
Statewide						
Texas County & District Retirement System	Government Code Title 8, Subtitle F Chapters 841-845	Determined annually by the actuary and approved by the TCDRS board of trustees.	Determined by employer (participating counties and districts), within statutory guidelines based on plan options selected.	Determined by employer (participating counties and districts), within statutory guidelines.	Determined by employer (participating counties and districts), within statutory guidelines.	No
Texas Emergency Services Retirement System	Government Code Title 8, Subtitle H Chapters 861-865	TESRS board of trustees, by rule, determines minimum, and may determine maximum, contribution rate per member to be contributed by local governments of participating departments (after consultation with the actuary to make the system actuarially sound). State contributes amount necessary for actuarial soundness, not to exceed maximum set in governing statute.	No employee contribution.	Determined by board of trustees.	Determined by board of trustees; however, changes to benefit formula not allowed for pension system annuitants.	No
Texas Municipal Retirement System	Government Code Title 8, Subtitle G Chapters 851-855	Determined annually by the actuary and approved by the TMRS board of trustees.	Determined by employer (participating cities), within statutory guidelines based on plan options selected.	Determined by employer (participating cities), within statutory guidelines.	Determined by employer (participating cities), within statutory guidelines.	No

Contribution and Benefit Decision-Making for Texas Public Retirement Systems

Retirement System	Governing Statute	Employer Contributions	Employee Contributions	Benefit Increases	Benefit Reductions	Constitutional Benefit Protection (Article 66)
Municipal						
Austin Employees' Retirement System	V.T.C.S., Article 6243n	Determined by governing statute. City council may authorize additional contributions to the system.	Determined by governing statute. Active members may increase their contributions by a majority vote of all such members.	Determined by governing statute; any modifications require legislative action. COLAs must be recommended by actuary, city manager, authorized by retirement board, and approved by city council.	Retirement allowance and benefit payable are subject to adjustments to ensure actuarial soundness as approved by the actuary and adopted by board of trustees. Annuities already accrued may not be reduced.	Yes
Austin Fire Fighters Relief and Retirement Fund	V.T.C.S., Article 6243e.1	Determined by governing statute. City council may authorize additional contributions to the system.	Determined by governing statute. Active members may increase their contributions by a majority vote of all such members.	Determined by governing statute, but the board of trustees with approval of the board's actuary may change the service retirement benefit multiplier for certain member groups.	Determined by governing statute, but the board of trustees with approval of the board's actuary may change service retirement benefit multiplier for certain member groups. Board also allowed to make DROP-related changes and prorated reduction in benefit payments if funds become insufficient.	Yes. Also, system's governing statute does not allow for a change in service retirement benefit multiplier if it reduces a member's benefit accrued before the date of the change.

Contribution and Benefit Decision-Making for Texas Public Retirement Systems

Retirement System	Governing Statute	Employer Contributions	Employee Contributions	Benefit Increases	Benefit Reductions	Constitutional Benefit Protection (Article 66)
Municipal						
Austin Police Retirement System	V.T.C.S., Article 6243n-1	Determined by governing statute. City council may authorize additional contributions to the system.	Determined by governing statute. Members by majority vote may increase or decrease contributions with a minimum set in statute.	Increase in retirement benefit multiplier allowed by the governing statute if approved by the board's actuary and adopted by the board of trustees as a board rule for all present, retired and new members.	Decrease in retirement benefit multiplier allowed by the governing statute if approved by the board's actuary, adopted by the board of trustees as a board rule, present members' vested interest before the effective date of the change is not reduced, and annuity payments are not reduced. The governing statute also allows the board of trustees to eliminate Retro DROP.	Yes
Dallas Employees' Retirement Fund	Dallas City Code, Chapter 40A	Determined by City Ordinance	Determined by City Ordinance	Determined by City Ordinance	Determined by City Ordinance	Yes
Dallas Police & Fire Pension System-Combined Plan	V.T.C.S., Article 6243a-1	Determined by the legislature, or by a majority vote of city voters, or by written agreement between the City and the Plan with at least a 2/3 vote of all trustees, provided that a change may not increase the amortization period. Any reduction requires approval of at least 2/3 vote of all trustees.	Determined by the legislature. Any increase requires approval of at least 2/3 vote of all trustees.	Plan can be amended by the legislature or by a 2/3 vote of all trustees with certain amortization period-related restrictions. Any change requires a review by the Pension Review Board.	Plan can be amended by the legislature or by 2/3 vote of all trustees with certain amortization period-related restrictions. Any change requires a review by the Pension Review Board.	Yes

Contribution and Benefit Decision-Making for Texas Public Retirement Systems

Retirement System	Governing Statute	Employer Contributions	Employee Contributions	Benefit Increases	Benefit Reductions	Constitutional Benefit Protection (Article 66)
Municipal						
Dallas Police and Fire Pension System-Supplemental	V.T.C.S., Article 6243a-1	Determined by the legislature or by a majority vote of city voters.	Determined by the legislature or by a majority vote of city voters.	Members of the system may amend the plan including benefit provisions.	Members of the system may amend the plan including benefit provisions. Amendments should not deprive a member from benefits that have become fully vested or nonforfeitable.	Yes
El Paso City Employees' Pension Fund	El Paso City Code, Title II, Chapter 2.64	Determined by City Ordinance	Determined by City Ordinance	Determined by City Ordinance	Determined by City Ordinance	Yes
El Paso Firemen's Pension Fund	V.T.C.S., Article 6243b	Determined by city voters; however, governing statute allows city council to increase or decrease city contribution rate dependent on whether the current rate is sufficient as determined by the actuary.	Determined by the board of trustees; however, governing statute allows employee contribution rate to change if the city contribution rate is changed by city council.	Board of trustees may modify benefits prospectively and retroactively, if approved by an actuary; by a majority of active members; and either by the city council or by city voters through charter referendum. Retroactive change can only increase benefits. Certain amortization period-related restrictions apply.	Board may modify benefits prospectively. Retroactive change can only increase benefits.	Yes
El Paso Police Pension Fund	V.T.C.S., Article 6243b	Determined by city voters; however, governing statute allows city council to increase or decrease city contribution rate dependent on whether the current rate is sufficient as determined by the actuary.	Determined by the board of trustees; however, governing statute allows employee contribution rate to change if the city contribution rate is changed by city council.	Board of trustees may modify benefits prospectively and retroactively, if approved by an actuary; by a majority of active members; and either by the city council or by city voters through charter referendum. Retroactive change can only increase benefits. Certain amortization period related restrictions apply.	Board may modify benefits prospectively. Retroactive changes can only increase benefits.	Yes

Contribution and Benefit Decision-Making for Texas Public Retirement Systems

Retirement System	Governing Statute	Employer Contributions	Employee Contributions	Benefit Increases	Benefit Reductions	Constitutional Benefit Protection (Article 66)
Municipal						
Fort Worth Employees' Retirement Fund	V.T.C.S., Article 6243i	Board of trustees or city council is authorized to decrease municipal contribution rate based on a special election and procedures outlined in the governing statute; however, only the city council may increase the contributions.	Determined by the board or city council based on a special election and procedures outlined in the governing statute.	Board of trustees may propose benefit increases that must be approved by city council.	City council is authorized to make benefit reductions with 90 days notice to the board.	Yes
Fort Worth Employees' Retirement Fund Staff Plan	V.T.C.S., Article 6243i	Board of trustees or city council is authorized to decrease municipal contribution rate based on a special election and procedures outlined in the governing statute; however, only the city council may increase the contributions.	Determined by the board or city council based on a special election and procedures outlined in the governing statute.	Board of trustees may propose benefit increases that must be approved by city council.	City council is authorized to make benefit reductions with 90 days notice to the board.	Yes
Galveston Employees Pension Plan for Police	V.T.C.S., Article 6243p	Determined by municipality based on the advice of the fund's actuary in accordance with the governing statute.	Determined by board of trustees in accordance with the governing statute.	Board is authorized to make benefit increases, with approval of a majority of the members of the fund.	Board of trustees is authorized to make benefit modifications.	No
Galveston Employees' Retirement Fund	Galveston City Code, Part II, Chapter 28	Determined by the city council.	Determined by the city council.	Board of trustees is authorized to make amendments to the plan.	Board of trustees is authorized to make amendments to the plan.	No

Contribution and Benefit Decision-Making for Texas Public Retirement Systems

Retirement System	Governing Statute	Employer Contributions	Employee Contributions	Benefit Increases	Benefit Reductions	Constitutional Benefit Protection (Article 66)
Municipal						
Houston Firefighter's Relief & Retirement Fund	V.T.C.S., Article 6243e.2(1)	Determined by the corridor mechanism outlined in the governing statute. Pension board and the city jointly determine the target contribution rate and the corridor around the target rate. The target rate must remain within the corridor, but once the plan is 100% funded, the rate can be lowered.	Determined by the corridor mechanism outlined in the governing statute. Based on whether the city's contribution rate is lower or greater than the target rate and funded ratio thresholds of less than, equal to or greater than 90% or 100%, the city and the pension board can/shall enter into a written agreement to increase/decrease the member contribution rate.	Determined by the corridor mechanism outlined in the governing statute. If the city's contribution rate is lower than the target rate and based on funded ratio targets of equal to or greater than 90% or 100%, the city and the pension board may enter into a written agreement to make benefit modifications.	Determined by the corridor mechanism outlined in the governing statute. If the city's contribution rate is equal or greater than the target rate, the city and the pension board shall enter into a written agreement to make benefit modifications.	No. However, the governing statute states that neither the city nor the pension board can make any unilateral changes to the pension plan.
Houston Municipal Employees Pension System	V.T.C.S., Article 6243h	Determined by the corridor mechanism outlined in the governing statute. Pension board and the city jointly determine the target contribution rate and the corridor around the target rate. The target rate must remain within the corridor, but once the plan is 100% funded, the rate can be lowered.	Determined by the corridor mechanism outlined in the governing statute. Based on whether the city's contribution rate is lower or greater than the target rate and funded ratio thresholds of less than, equal to or greater than 90% or 100%, the city and the pension board can/shall enter into a written agreement to increase/decrease the member contribution rate.	Determined by the corridor mechanism outlined in the governing statute. If the city's contribution rate is lower than the target rate and based on funded ratio targets of equal to or greater than 90% or 100%, the city and the pension board may enter into a written agreement to make benefit modifications.	Determined by the corridor mechanism outlined in the governing statute. If the city's contribution rate is equal or greater than the target rate, the city and the pension board shall enter into a written agreement to make benefit modifications.	No. However, the governing statute states that neither the city nor the pension board can make any unilateral changes to the pension plan.

Contribution and Benefit Decision-Making for Texas Public Retirement Systems

Retirement System	Governing Statute	Employer Contributions	Employee Contributions	Benefit Increases	Benefit Reductions	Constitutional Benefit Protection (Article 66)
Municipal						
Houston Police Officers Pension System	V.T.C.S., Article 6243g-4	Determined by the corridor mechanism outlined in the governing statute. Pension board and the city jointly determine the target contribution rate and the corridor around the target rate. The target rate must remain within the corridor, but once the plan is 100% funded, the rate can be lowered.	Determined by the corridor mechanism outlined in the governing statute. Based on whether the city's contribution rate is lower or greater than the target rate and funded ratio thresholds of less than, equal to or greater than 90% or 100%, the city and the pension board can/shall enter into a written agreement to increase/decrease the member contribution rate.	Determined by the corridor mechanism outlined in the governing statute. If the city's contribution rate is lower than the target rate and based on funded ratio targets of equal to or greater than 90% or 100%, the city and the pension board may enter into a written agreement to make benefit modifications.	Determined by the corridor mechanism outlined in the governing statute. If the city's contribution rate is equal or greater than the target rate, the city and the pension board shall enter into a written agreement to make benefit modifications.	No. However, the governing statute states that neither the city nor the pension board can make any unilateral changes to the pension plan.
San Antonio Fire & Police Pension Fund	V.T.C.S., Article 6243o	Determined by governing statute. Modifications require legislative action.	Determined by governing statute. Modifications require legislative action.	Determined by governing statute. Modifications require legislative action.	Determined by governing statute. Modifications require legislative action.	No. However, the governing statute states that municipal contribution and retirement annuities are a part of the compensation for services rendered to the municipality and makes the statute a contract of employment.

Contribution and Benefit Decision-Making for Texas Public Retirement Systems

Governing Statute	Employer Contributions	Employee Contributions	Benefit Increases	Benefit Reductions	Constitutional Benefit Protection (Article 66)
Local Firefighter Plans (TLFFRA)					
V.T.C.S., Article 6243e	Minimum employer contribution rate is determined by TLFFRA statute, but governing body of a municipality by ordinance can adopt a contribution rate higher than statutory rate.	TLFFRA statute authorizes the members of each fund to determine their contribution rates by voting.	TLFFRA statute allows the board of trustees to make prospective benefit modifications. The change must first be approved by 1) an eligible actuary selected by the board and 2) a majority of the participating members of the retirement system voting by secret ballot. For more information, please see TLFFRA Statute, Section 7 (Modifications of Benefits and Eligibility).	TLFFRA statute allows the board of trustees to make prospective benefit modifications after the change is approved by a board actuary and by a majority of the participating members of the system voting on the change. However, changes cannot deprive a member, retiree, or an eligible survivor of a right to receive vested accrued benefits.	Yes, except for cities that have opted out. Also, under the TLFFRA statute, board of trustees is authorized to reduce benefit payments proportionately if money available to pay benefits is insufficient to pay the full amount. The board may only reduce benefit payments for the time necessary.
LIST OF PAID AND PART-PAID TLFFRA SYSTEMS					
Abilene Firemen's Relief & Retirement Fund	Harlingen Firemen's Relief & Retirement Fund	Port Arthur Firemen's Relief and Retirement Fund			
Amarillo Firemen's Relief & Retirement Fund	Irving Firemen's Relief & Retirement Fund	San Angelo Firemen's Relief and Retirement Fund			
Atlanta Firemen's Relief & Retirement Fund	Killeen Firemen's Relief & Retirement Fund	San Benito Firemen's Pension Fund			
Beaumont Firemen's Relief & Retirement Fund	Laredo Firefighters Retirement System	Sweetwater Firemen's Relief & Retirement Fund			
Big Spring Firemen's Relief & Retirement Fund	Longview Firemen's Relief & Retirement Fund	Temple Firemen's Relief & Retirement Fund			
Brownwood Firemen's Relief and Retirement Fund	Lubbock Fire Pension Fund	Texarkana Firemen's Relief & Retirement Fund			
Cleburne Firemen's Relief & Retirement Fund	Lufkin Firemen's Relief & Retirement Fund	Texas City Firemen's Relief & Retirement Fund			
Conroe Fire Fighters' Retirement Fund	Marshall Firemen's Relief & Retirement Fund	The Woodlands Firefighters' Retirement System			
Corpus Christi Fire Fighters' Retirement System	McAllen Firemen's Relief & Retirement Fund	Travis Cty ESD #6 Firemen's Relief & Retirement Fund			
Corsicana Firemen's Relief & Retirement Fund	Midland Firemen's Relief and Retirement Fund	Tyler Firemen's Relief & Retirement Fund			
Denison Firemen's Relief & Retirement Fund	Odessa Firemen's Relief & Retirement Fund	University Park Firemen's Relief & Retirement Fund			
Denton Firemen's Relief and Retirement Fund	Orange Firemen's Relief & Retirement Fund	Waxahachie Firemen's Relief & Retirement Fund			
Galveston Firefighter's Relief & Retirement Fund	Paris Firefighters' Relief & Retirement Fund	Weslaco Firemen's Relief & Retirement Fund			
Greenville Firemen's Relief and Retirement Fund	Plainview Firemen's Relief and Retirement Fund	Wichita Falls Firemen's Relief & Retirement Fund			

Contribution and Benefit Decision-Making for Texas Public Retirement Systems

Governing Statute	Employer Contributions	Employee Contributions	Benefit Increases	Benefit Reductions	Constitutional Benefit Protection (Article 66)
Special District/Supplemental Plans (Chapter 810)					
Texas Government Code, Chapter 810	Determined by the political entity.	Determined by the political entity.	Determined by the political entity.	Determined by the political entity.	Yes, unless political entity has opted out.
LIST OF RETIREMENT SYSTEMS ENABLED BY CHAPTER 810					
Arlington Employees Deferred Income Plan		El Paso Firemen & Policemen's Pension Staff Plan and Trust		Northwest Texas Healthcare System Retirement Plan	
Brazos River Authority Retirement Plan		Galveston Wharves Pension Plan		Plano Retirement Security Plan	
Capital Metro Retirement Plan for Admin Employees		Guadalupe-Blanco River Authority		Port of Houston Authority Retirement Plan	
Capital Metro Retirement Plan for Bargaining Units		Harris County Hospital District Pension Plan		Refugio Co. Memorial Hosp. Dist. Retirement Plan	
City Public Service of San Antonio Pension Plan		Houston MTA Non-Union Pension Plan		Retirement Plan for Anson General Hospital	
Colorado River Municipal Water Dist. Pension Trust		Houston MTA Workers Union Pension Plan		Retirement Plan for Citizens Medical Center	
Corpus Christi Regional Transportation Authority		Irving Supplemental Benefit Plan		Retirement Plan for Employees of Brownsville Navigation District	
Dallas Co. Hospital Dist. Retirement Income Plan		JPS Pension Plan - Tarrant County Hospital District		Retirement Plan for Guadalupe Regional Medical Center	
Dallas/Fort Worth Airport Board Retirement Plan		Lower Colorado River Authority Retirement Plan		Retirement Plan for Sweeny Community Hospital	
Dallas/Ft. Worth Airport Board DPS Retirement Plan		Nacogdoches County Hosp. District Retirement Plan		San Antonio Metropolitan Transit Retirement Plan	
DART Employees' Defined Benefit Retirement Plan & Trust		Northeast Medical Center Hospital Retirement Plan		University Health System Pension Plan	

TAB 6A



INTERIM REPORT *to the 86th Texas Legislature*



HOUSE COMMITTEE ON PENSIONS

November 2018

**HOUSE COMMITTEE ON PENSIONS
TEXAS HOUSE OF REPRESENTATIVES
INTERIM REPORT 2018**

**A REPORT TO THE
HOUSE OF REPRESENTATIVES
86TH TEXAS LEGISLATURE**

**DAN FLYNN
CHAIRMAN**

**COMMITTEE CLERK
MADISON ALBRECHT**



Committee On
Pensions

November 30, 2018

Dan Flynn
Chairman

P.O. Box 2910
Austin, Texas 78768-2910

The Honorable Joe Straus
Speaker, Texas House of Representatives
Members of the Texas House of Representatives
Texas State Capitol, Rm. 2W.13
Austin, Texas 78701

Dear Mr. Speaker and Fellow Members:

The Committee on Pensions of the Eighty-fifth Legislature hereby submits its interim report including recommendations and drafted legislation for consideration by the Eighty-sixth Legislature.

Respectfully submitted,

Dan Flynn

Roberto Alonzo

Rafael Anchia

Dan Huberty

Justin Rodriguez

Dennis Paul

Cole Hefner

Roberto Alonzo
Vice-Chairman

Members: Rafael Anchia, Dan Huberty, Justin Rodriguez, Dennis Paul, Cole Hefner

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Interim Charges

Charge 1.

Oversight of Local Pensions

Review the state's oversight of pension systems and study the effectiveness of corrective mechanisms, including the Funding Soundness Restoration Plan and Pension Review Board Funding Guidelines. Make recommendations to enhance state oversight and to maintain or achieve soundness among local pension systems.

Charge 2.

Governance and Oversight of State Retirement Systems

Evaluate the governance structures, including investment oversight, of the Employee Retirement System (ERS), Teacher Retirement System (TRS), Texas Municipal Retirement System, Texas County and District Retirement System, and Texas Emergency Services Retirement System. Identify best practices and make recommendations to strengthen oversight within the systems.

Charge 3:

Health Insurance

Review and evaluate health incentive programs within the group benefit programs at ERS and TRS. Identify best practices among similar programs and barriers to implementation. Make recommendations for achieving further savings through existing and/or new programs.

Charge 4.

Committee Jurisdiction and Legislation

Monitor the agencies and programs under the Committee's jurisdiction and oversee the implementation of relevant legislation passed by the 85th Legislature.

Introduction

The Texas House Rules for the 85th Legislature state that the House Committee on Pensions is made up of 7 members with jurisdiction over all matters pertaining to: benefits or participation in benefits of a public retirement system and the financial obligations of a public retirement system; and the following state agencies: The Texas Emergency Services Retirement System, the Board of Trustees of the Teacher Retirement System, the Board of Trustees of the Employees Retirement System, the Board of Trustees of the Texas County and District Retirement System, the Board of Trustees of the Texas Municipal Retirement System, and the State Pension Review Board.

At the beginning of the 85th Legislative Session, Speaker Joe Straus appointed Chair Dan Flynn, Vice-Chair Roberto Alonzo, Representative Rafael Anchia, Representative Dan Huberty, Representative Justin Rodriguez, Representative Dennis Paul, and Representative Cole Hefner to the House Committee on Pensions.

During the 85th regular legislative session, 45 House Bills and 10 Senate Bills were referred to the House Committee on Pensions. Nine public hearings were conducted to consider the legislation on February 27th, March 13th, March 27th, April 3rd, April 10th, April 17th, April 24th, May 1st, and May 16th, 2017. The committee then favorably voted to send 25 bills to the Calendars Committee for consideration by the full House of Representatives. 14 of those bills passed the House and 10 were passed by the Senate, signed by the governor and are now effective as state law. Among the bills enacted into law are the pension oversight laws to save the Dallas Police and Fire Pension System as well the Houston police, municipal, and fire pension plans. Others included Sunset Review legislation for the Employees Retirement System of Texas, clean up bills for the Teacher Retirement System of Texas, provisions for the participation in the Texas Municipal Retirement System, and repealing obsolete laws in state pensions. During the 85th 1st Called Special Session, the committee was referred four bills and conducted a hearing on August 9th, 2017 to consider the legislation.

Over the interim, the committee held two public hearings on May 10th and October 12th, 2018 to consider the four interim charges.

Overview

While improvements continue to be made, the public pensions across Texas and throughout the United States are in need of continued oversight and reform to ensure that benefits remain available for current and future retirees while protecting taxpayer investments in these systems. Growing unfunded liabilities pose a risk to the financial stability and solvency of the retirement systems, the cities, and the state of Texas. When systems are at risk, credit ratings are reduced signaling decreased financial stability which contributes to rising bond and interest rates for the municipality. While the state economy is thriving, the growing unfunded liabilities present a risk of long-term solvency for current systems if no changes are made. As of the October 4th, 2018 Actuarial Valuation Report produced by the Texas Pension Review Board, the Unfunded Actuarial Accrued Liabilities totaled more \$69.4 billion,¹ though some estimates put this number as high as nearly \$80 billion once calculations take into account recently lowered discount rates for statewide systems. These unfunded liabilities grew significantly from 2011 when the Unfunded Actuarial Accrued Liabilities totaled \$41 billion, therefore nearly doubling in the past seven years. Additionally, during this same period, the Funded Ratio decreased from 82.93% to 79.43%.²

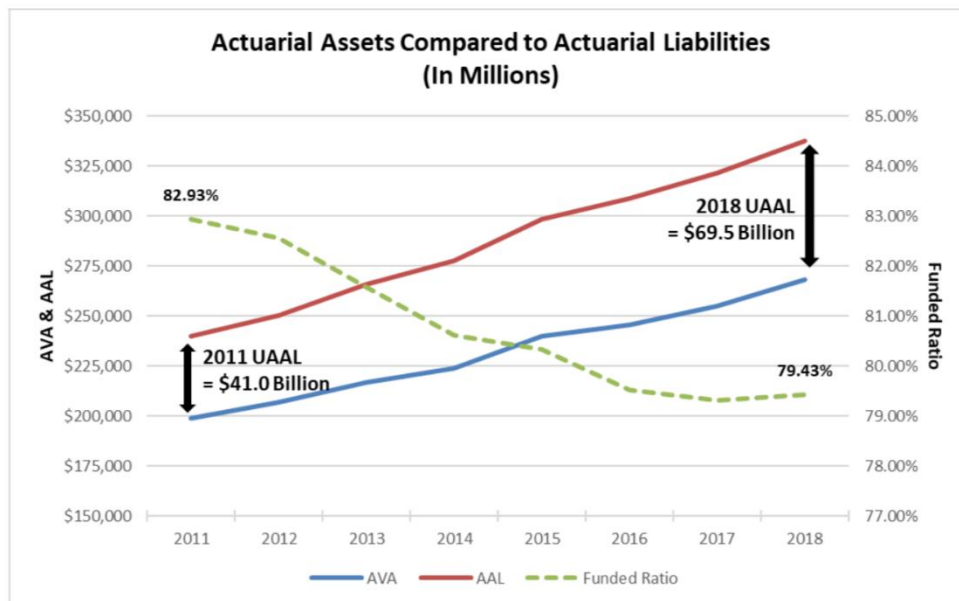
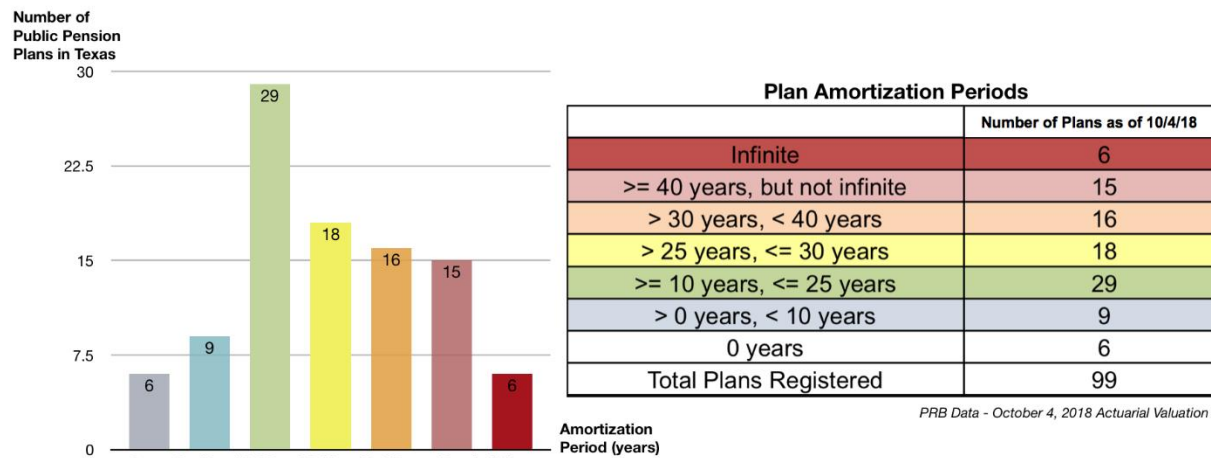


Chart utilizes information received by the PRB current through the dates listed.

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Currently out of the 99 registered defined benefit plans across Texas, 6 plans have an infinite amortization period, 15 plans have an amortization period that is between 40 and 104 years, and an additional 16 plans have an amortization period of 30-40 years. As of the last PRB Actuarial Valuation, only 62 of the 99 plans in Texas have an amortization period of less than 30 years.⁴



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Changes have been made over time, both within the systems and at the statewide level, to reduce these unfunded liabilities including efforts to raise retirement ages, increase employer and employee contributions, create new tiers for new hires, eliminate or change deferred retirement option programs (DROP), and eliminate automatic cost of living adjustments (COLA's). These changes are necessary to adequately fund the system while ensuring that unsustainable benefits are not continued at a detriment to the plan's long-term solvency.

Charge 1.
Oversight of Local Pensions

Review the state's oversight of pension systems and study the effectiveness of corrective mechanisms, including the Funding Soundness Restoration Plan and Pension Review Board Funding Guidelines. Make recommendations to enhance state oversight and to maintain or achieve soundness among local pension systems.

Local Pension Oversight

While local pension systems are operated by a board of trustees and local laws, these plans are also subject to state-wide laws and oversight by the Texas Legislature and the Texas Pension Review Board. In order to provide appropriate guidance, information, and oversight, there have been multiple mechanisms put into place to instruct systems and provide transparency to the public to ensure the continued soundness of local systems.

In addition to oversight exercised by the Texas Legislature in providing guidance, standards, and reform for failing systems, the Texas Pension Review Board provides the continual review, resources, and reporting to inform the individual systems as well as the legislature and governor. The responsibilities of the PRB include conducting reviews of all public retirement systems in Texas, recommending policies practices and legislation to systems and their sponsoring governments, conducting intensive studies of problems facing public retirement systems, providing technical assistance, and reporting to the governor and legislature each biennium.

Resources and Transparency

Minimum Education Training Program

The Minimum Education Training Program (MET) was created by the Texas Pension Review Board after the passage of HB 13 during the 83rd Legislature in 2013 which established section 801.2011 of the government code directing the PRB to administer an educational training program for trustees and administrators.⁶ The training requirement further expanded through SB 220 which required training to meet the specific needs of TLFFRA trustees in small and medium plans.⁷

In February 2016, the PRB published the ‘Curriculum Guide for Minimum Educational Training’ detailing the content requirements and objectives for the curriculum topics of each training areas. The seven required core content areas are fiduciary matters, governance, ethics, investments, actuarial matters, benefits administration, and risk management. Current trustees have one year to complete the 7 hours of core training with additional continuing education every two years with required completion of 4 hours in courses of core or non-core training.⁸ Continuing Education (CE) training can be made up of core training content or non-core training to include: compliance, legal and regulatory matters, pension accounting, custodial issues, plan administration, Texas Open Meetings Act, and the Texas Public Information Act. The MET program is required to be completed by new and continuing trustees and administrators to ensure a basic understanding of the core topics relating to public pensions in Texas.⁹

While training may be provided by MET accredited sponsors or through individual courses approved by the board, the Pension Review Board also created an online version of the MET through which all seven core training components are offered through interactive slides and follow up questions to test material comprehension. These online courses were designed and created by Pension Review Board staff, and copyright for the program was secured in early 2018.

Interim Reports and Studies

A report on the status of Texas public pensions is published by the Pension Review Board each biennium before the legislative session to provide information and recommendations to policymakers and retirement systems as well as updates on research and developments. Additionally, February of the Legislative session, the PRB publishes the updated Guide to Public Retirement

Systems in Texas which serves as a valuable primer to describe PRB guidelines, financial, benefit, and investment summaries, as well as details of many of the retirement systems across Texas. Additionally, 3-4 times a year at each board meeting, the PRB reports on the current status of the public retirement systems across Texas with the Actuarial Valuation Report as well as the Funding Sounding Restoration Plan Report. Additionally, a current list of plans non-compliant in either their reporting or MET requirements is provided. Other reports produced by the PRB include the February 2018 TLFFRA Pension Report, and the 85th Legislative Session Summary on Pension Legislation Passed. Currently, the Pension Review Board is developing research and legislative recommendations on two issues: funding policies for fixed rate pension plans and asset pooling for smaller pension plans.

Online Pension Dashboard

The Public Pension Search Tool hosted on the Comptroller's website using data reported to the Pension Review Board provides current, historical, and comparative data on Texas defined benefit plans. It includes information on both state and local pension plans, and searches can be done to review information individually by pension name or groups of systems can be viewed comparatively and ranked by key indicators. Selecting a plan provides additional details on investment returns, asset values, funded ratio, unfunded liabilities, contribution rates, plan membership, and expenses.¹⁰

System Oversight

Pension Review Board Guidelines

One of the duties of the Pension Review Board is to recommend policies, practices, and legislation to public retirement systems and their sponsoring governmental entity. These PRB guidelines were written to recommend the best practices for plan design and funding guidelines.

Effective June 2017, the new Pension Review Board Funding Guidelines recommend that the actual contributions to the plan should be sufficient to cover the normal cost and to amortize the unfunded actuarial accrued liability in a target period of 10-25 years but not to exceed 30 years. Additionally, benefit increases should not be adopted if plan changes would cause the amortization period to exceed 25 years. Current plans with amortization periods over 30 years should seek to reduce their amortization period as soon as practicable but no later than 6/30/2025. Along with the recommended reduction in amortization period, the PRB recommends that both the funding of the unfunded actuarial accrued liability and the allocation of the normal cost portion of contributions should be level or declining as a percentage of payroll allocation over time.¹¹

In June 2018, the Pension Review Board adopted the PRB Principles of Retirement Plan Design. Recognizing that a secure, sustainable retirement is vital and that benefits should be protected through sound plan design and adequate funding, these principles were created to guide systems and government entities on how to structure retirement plans. The listed principles include that public employers should offer a retirement benefit with mandatory participation, employers and employees should share the cost, and benefits should be designed to place employees on the path to financial security.¹² Additionally, retirement plan assets should be pooled and professionally invested while governance should represent the interest of all stakeholders, respect fiduciary standards, and be publicly accountable. The PRB considers these key ideas to be guiding principles for public systems because retirement benefits are critical elements of employee compensation, recruitments, and retention while the prudent design and financial management of these benefits are necessary to maintain budgetary stability to provide essential services.¹³

Funding Soundness Restoration Plan

The Funding Soundness Restoration Plan was developed in the 84th legislative session through HB 3310. This legislation established that retirement systems which receive several consecutive actuarial valuations with an amortization period over 40 years, trigger a requirement to jointly formulate a Funding Soundness Restoration Plan with the system board and sponsoring entity to be submitted to the Pension Review Board within six months. The established Funding Soundness Restoration plan must reduce the amortization period to 40 within ten years and updates must be reported to PRB every two years.¹⁴

Currently, 15 systems have submitted FSRPs. Of those, two systems have successfully gotten below 40 years, ten systems are working towards 40 years, and three systems are developing a revised plan since the initial FSRP was not met. One system, the Fort Worth Employees Retirement Fund, has been subject to the FSRP requirement since January 2017 but has not yet submitted their required FSRP.¹⁵ Six additional systems will be subject to the FSRP requirement if the next actuarial valuation shows an amortization period over 40 years.

Intensive Actuarial Reviews

In line with the duty to conduct intensive studies of potential or existing problems threatening the actuarial soundness of public retirement systems, the Pension Review Board established a selection and review process to identify and analyze at-risk systems. This review process involves the PRB conducting Intensive Actuarial Reviews of specific retirement systems facing potential risks threatening their long-term stability. Key metrics that are analyzed include amortization period, funded ratio, UAAL as a percent of payroll, assumed rate of return, payroll growth rate, actual contributions as a percent of actuarially determined contributions, DROP balance as a percent of fiduciary net position, and non-investment cash flow as a percent of fiduciary net position.¹⁶ By providing a background on the plan, detailing a risk analysis, funding levels, and discussing the investment experience and asset allocation, the PRB offers information on key metrics and concerns that systems should address. Recommendations are then made for plans to adopt a funding policy that requires payment of an actuarially determined contribution to fully fund the plan in 30 years or less and continually review and update actuarial assumptions. Adopting a formal risk/cost sharing network is recommended to reduce uncertainty and set a plan for modifying benefit and contribution levels in changing economic conditions. Concerning investments, the PRB recommends an in-depth study of risk based on current asset allocations and monitoring investment performance to reevaluate based on investment experience. The review process also includes an invitation for sponsors and systems to provide a written response to be included in the final report as well as a request to discuss the review at the Pension Review Board meeting. This allows a continued dialogue as well as a chance for PRB staff and board members to provide recommendations and guidance for continued improvement.

The Pension Review Board has completed 7 Intensive Actuarial Reviews in 2018. Beginning in January, the PRB addressed Galveston Employees' Retirement Plan for Police and Greenville Firemen's Relief and Retirement Fund. Continuing in April, Beaumont Firemen's Relief and Retirement Fund and Marshall Firemen's Relief and Retirement Fund were completed. In October 2018, the PRB finished three more systems, Longview Firemen's Relief and Retirement Fund, Orange Firemen's Relief and Retirement Fund, and Irving Firemen's Relief and Retirement Fund.

Strengths and Limitations of the Oversight Mechanisms

Current oversight of local systems has been largely successful; however, there are limitations which should be addressed. While many current systems operate successfully by following general guidelines and ultimately most systems do seek to comply, without enforcement mechanisms, there lacks a method to compel noncompliant systems to act. The methods currently enacted through guidelines and resources provide adequate information and suggestions however without requirements enforced by law, there can be a significant delay with systems taking sufficient action to remedy the problems. With a legislature only meeting every two years, much damage can be done in a local system before there is a chance for adequate intervention. The changes in PRB Funding Guidelines are necessary to keep Texas standards in line with accepted practices. While there is a phase in with systems having until 2025 to make these reductions, this committee will continue to observe these plans carefully to ensure systems across Texas are moving in the right direction to decrease amortization periods while reducing the unfunded actuarial accrued liability.

While the Funding Soundness Restoration Plan has been shown to motivate systems to work together with plan sponsors to bring down the amortization period, limitations of FSRP include a lack of enforcement and well as a long implementation timeline. Currently, while systems are required to submit a plan within six months, there is nothing compelling them to do so. Because systems have ten years to get below the 40 year amortization period, some plans that have an amortization period of less than 50 years wouldn't necessarily have to make any reductions at all. Additionally, because the new PRB guidelines recommend systems have a target amortization period of 10-25 years but not to exceed 30 years, by allowing this extra 20 year leeway, the impacted plans are not moving as quickly as necessary to make necessary adjustments and many plans outside of PRB guidelines may take several more valuations before becoming subject to FSRP requirements.

The introduction of the Intensive Actuarial Review process has been shown to be an informative resource both to local systems looking to make plan changes as well as for legislative oversight purposes. These reviews provide valuable insight both in regards to the specific plan itself as well as offer examples to systems facing similar concerns. Providing these conclusions and recommendations to the systems offer an additional perspective on what is most critical and allow observers to better understand the concerns and possible solutions. While the current limitation is the number of Intensive Actuarial Reviews that can be conducted due to the extensive time and individual analysis required, this committee would be interested in the expansion of this program to assist a greater number of systems.

Recommendations

Additional legislation that could bolster the current Funding Soundness Restoration Plan would require a lower amortization period threshold to trigger FSRP requirements while requiring the FSRP goal to be in line with current PRB guidelines. The FSRPs submitted would require a reduction in the amortization period with a scaled timeline based on the current amortization period. Therefore, plans with an infinite or 100 year amortization periods would have a longer time to achieve their goal than a system currently at 40 or 50 years. This would require plans to act sooner and design their funding plans to be more in line with industry standards and PRB guidelines.

Additionally, increased funding is necessary to provide the Pension Review Board with additional staff and resources to analyze and research many of these failing systems. Through creating suggestions for faltering systems and general recommendations for success, the PRB provides necessary information to both local systems and the state legislators seeking to make improvements. In order to continue and expand the research and analysis currently available, additional resources would provide the necessary support for increased intensive actuarial reviews, additional studies, and in-depth state-wide analysis of the current problems facing public pensions. Because the issues facing public pensions are growing, in Texas and across the nation, the state cannot afford to stand by if additional changes can be made now to limit the impact of future problems.

Charge 2.

Governance and Oversight of State Retirement Systems

Evaluate the governance structures, including investment oversight, of the Employee Retirement System (ERS), Teacher Retirement System (TRS), Texas Municipal Retirement System, Texas County and District Retirement System, and Texas Emergency Services Retirement System. Identify best practices and make recommendations to strengthen oversight within the systems.

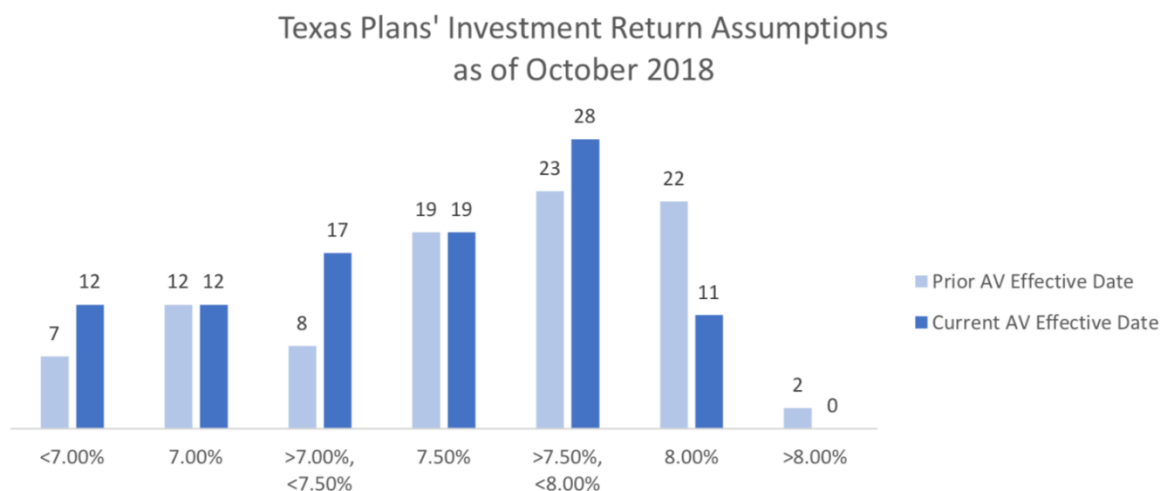
Statewide Retirement Systems

Currently, Texas state-wide retirement systems have a varied investment portfolio, with strong investment returns ranging from 9.54% to 14.7% last year. However, both the three year and ten year returns average below the assumed rate of return. Additionally, the funded ratio and high actuarial assumptions continue to cause concerns amongst the systems. Most prominently, ERS and TRS have been watched closely as a result of the change in the assumed rate of return. Even if systems that appear to be doing well, strong governance will need to continue working to allocate investments accordingly and change the assumed rate of return as necessary to prevent unnecessary investment losses or unrealistic predictions.

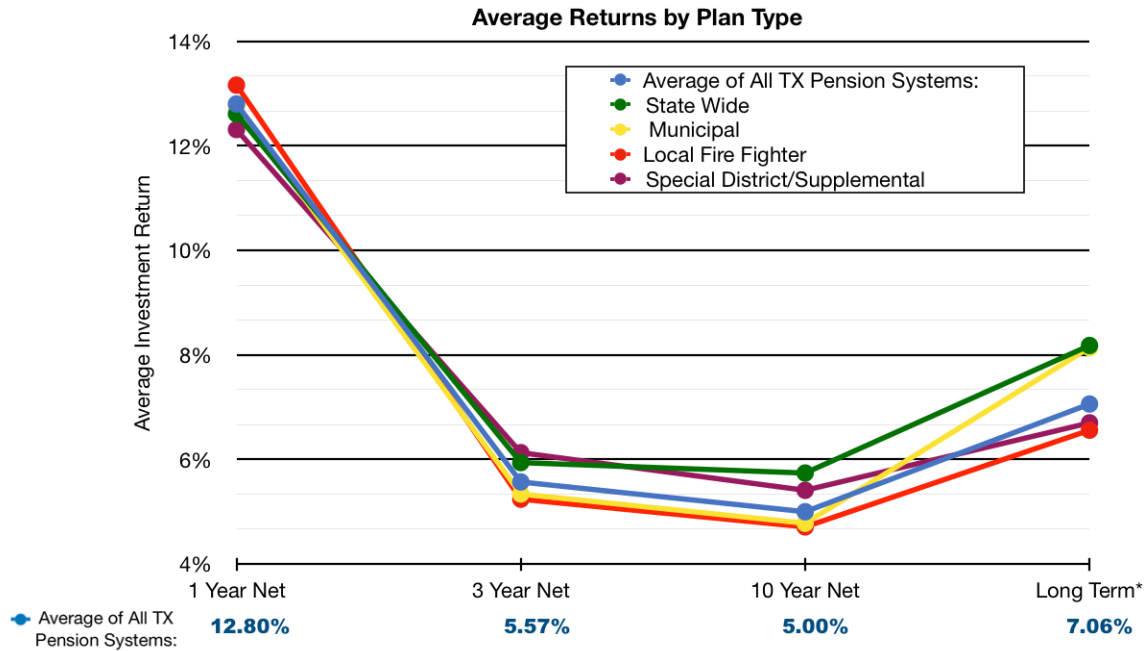
Investment Allocation and Fees

Looking at public pension plans across the nation, a September 2018 report by The PEW Charitable Trusts found that retirement systems' allocations to alternatives investments have increased greatly in recent years, increasing from 11% of the portfolio in 2006 to 26% of the portfolio in 2016.¹⁷ While at times has been a successful strategy, it has also proven to be a greater risk and higher cost on plans.

Another concern is the increased fees associated with investments. While some higher fees lead to an adequate increase in investment returns, others fail to sufficiently make up for that cost. Nationwide, reported fees have increased from an average of 0.26% in 2006 to 0.33% in 2016, though this varies widely across the various systems. Amongst the 73 largest systems in the country, over \$9.2 billion were paid in fees and investment expenses in 2016.¹⁸ It is critical for trustees to consider the effectiveness of current investments by asset class while considering the management fees involved.



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While these systems have a potential for better returns, higher risk alternative and equity investments also have an increased vulnerability due to the market volatility. Public sector pensions continue to have returns fall short compared to the actuarial assumptions creating an increased gap in funding.

Assumed Rate of Return

Nationwide, the assumed rate of return in both Texas systems and nationally have continued to be reduced. Currently, the average investment return assumption for Texas systems is 7.40% this is compared to nationally with an average of 7.36%²⁰ and as these numbers decrease, this trend is expected to continue in the future.

Actuarial experience studies are required to be conducted every five years for public retirement systems with assets over \$100 million. These are done to determine if actual plan behavior, provisions, and investment returns have matched assumptions. In response to changing market conditions and actual plan experience, retirement systems across the country have reduced their return assumption in recent years, and this is expected to continue. The assumed rate of return is an assumption with a direct impact on the liability measurement of a plan. These higher return assumptions, while optimistic at best, serve to underestimate the liability of the plan, therefore, underfunding the plans and causing instability in the future once the returns are not achieved if the recommended contributions are not raised accordingly.

Earlier this year, both ERS and TRS completed an experience study during which both systems decreased the inflation assumption, updated their mortality tables, adjusted the salary growth, retirement rate, and termination rate assumptions, and recommended a lower nominal investment return assumption. The TRS Actuarial Experience Study recommended a 7.25% and provided a

table showing the probability of achieving these projections over the 10-year and 30-year expected rate of returns. In this table it showed a 7.25% return as a 48.9% probability for the next 10 years, and 51.6% for the next 30 years. After reviewing their respective Actuarial Experience Studies, both TRS and ERS chose to lower their assumed rate of return to 7.25% for the Teacher Retirement System and 7.5% for the Employees Retirement System. The trends nationwide show a decreasing assumed rate of return, and retirement systems should not delay these changes based on concerns of the impact that it will have on funded ratio or amortization period. While initially, these changes do cause the unfunded liabilities to increase substantially, ultimately, this is a necessary change to bring the future outlook of the plan closer in line with the likely investment outcome going forward so that contributions and benefits can be addressed as needed.

Average Returns by Plan Type				
Plan Type	1-Year Net	3-Year Net	10-Year Net	Long-Term Net*
Statewide	12.61%	5.94%	5.74%	8.18%
Municipal	12.76%	5.34%	4.78%	8.14%
Local Fire Fighter	13.16%	5.24%	4.71%	6.56%
Special District/Supplemental	12.31%	6.13%	5.41%	6.70%
All	12.80%	5.57%	5.00%	7.06%

According to the most recent fiscal year-end Investment Returns and Assumptions Report.

**Long-term return is 30 years or longest term available between 11-30 years that plans reported to the PRB.*

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Recommendations

The committee recommends that systems look closely at the assumed rates of return as well as investment allocations to ensure that both are the most realistic that can be expected while not unnecessarily risky. This is the responsibility of the board and trustees are asked to evaluate this critical factors carefully to protect these funds in a changing market.

Additional oversight of investment practices and performance by independent evaluators to review the systems' investments could be a valuable tool to ensure that best practices are followed and to protect the funds of employees and retirees throughout the state.

Charge 4.

Committee Jurisdiction and Legislation

Monitor the agencies and programs under the Committee's jurisdiction and oversee the implementation of relevant legislation passed by the 85th Legislature.

Legislative Oversight of the 85th Session

During the 85th Legislature, ten committee bills were signed into law, the two most impactful being HB 3158 and SB 2190, to save and reform the Dallas and Houston retirement systems. After months of negotiations between the plans, the cities, and the employee associations, these laws worked to establish a sustainable future and create long-term solvency for the systems going forward to ensure support for our police, fire, and municipal employees. Without intervention, the unfunded liabilities would have continued to increase at an unsustainable level and the Dallas Police and Fire Pension System would have run out of funds within a decade. While no entity received everything they wanted, sacrifices were made on all sides to develop an equitable outcome for both taxpayers and employees.

H.B. 3158: Dallas Police and Fire Pension System

After unanimous votes in the House and Senate, HB 3158 was signed into law by the governor on May 31, 2017. This law made necessary changes to the Dallas Police and Fire Pension System board composition and governance, increased contribution rates for the city and employees, reduced benefits, and modified the Deferred Retirement Option Plan (DROP) to improve the plan's long-term sustainability.

Changes to the Dallas Police and Fire Pension System through H.B. 3158

In regards to board composition and governance, HB 3158 established that 6 of the 11 board trustees are selected by the mayor in consultation with the city council, 3 are selected by a nominations committee made up of employee associations, and 2 trustees, 1 who is a current or former police officer and another who is a current or former firefighter, elected by their respective members.⁴² Additionally, board trustees may not be an elected 37 official and are required to have financial, accounting, business, investment, budgeting, real estate, or actuarial expertise to establish a professional board. All board members are required to complete trustee training as well as annually receive a training manual created by the executive director. These training materials are to cover the following: laws governing the pension systems' operations, programs, rules, and budget of the pension system, scope and limitations of the board's rulemaking authority, recent audit of the pension system, laws relating to open meetings, public information, administrative procedure, and conflicts of interest, laws relating to trustee duties including the board's fiduciary duty, relevant code of ethics and applicable policies, and financial training regarding the risks of alternative investments. While 6 out of 11 trustees are required for most board actions, the law requires a two-thirds vote of the full board (8 out of 11 trustees) to take the following actions: reduce the city contribution rate, increase the member contribution rate, lower benefits, or create an alternative benefit plan.⁴³

For the investment process, the board is required to establish an investment advisory committee, composed of investment professional and board member to make recommendations to the board. Additionally, all alternative investments, considered other than traditional assets including private equity funds, private real estate transactions, hedge funds, and infrastructure, must be approved by a two-thirds vote of the board.

Benefit changes made decrease the multiplier for all members to 2.5% for future service and increase the normal retirement age to 58 years for all members. The final average salary is now calculated by the highest 60 months for Tiers 1 and 2, and highest 36 months for Tier 3 while the

maximum retirement annuity is lowered from 96% to 90% of the final average salary. The cost of living adjustment was changed to ad-hoc, based on the investment return for the previous five-year period minus 5%, paid only if the system remains over 70% funded. Any changes to increase these benefits can only be made by a two-thirds vote of the board if it is determined that the change will not cause the amortization period to exceed 25 years as confirmed by the Pension Review Board.

Regarding potential future changes to plan structure, the DPFPS board was required to conduct an evaluation by January 1, 2018, to study the impact of establishing one or more alternative benefit plans such as a defined contribution or hybrid plan for new members subject to the following requirements. An alternative benefit plan for new employees may only be established by a two-thirds vote of the board if the pension system's actuary determines (validated by the PRB) that those changes to the pension system will continue compliance with requirements for amortization period and funding as established by Chapter 802 and not cause the amortization period of the system to exceed 35 years.

Lump-sum distributions from the Deferred Retirement Option Program (DROP) were immediately stopped with exceptions for hardships and minimum annual distributions. The new interest rate applied to the funds held by current DROP participants is equivalent to a similar length Treasury note and members who begin participation in DROP after September 1st, 2017, do not accrue interest. The board was tasked with developing annuitization tables based on life expectancy and establishing a schedule for DROP funds to become available to members. If any lump-sum distributions were paid in violation of the bill, prior to August 31st, 2017, the legislative changes would be null and void.

The law changes employee contributions from 8.5% to 13.5%. The City contribution changes from 27.5% to 34.5%. Through the end of 2024, the City contribution is based on a fixed percentage of pay (subject to a minimum dollar floor) plus a flat dollar contribution amount. Prior to July 1, 2024 the Pension review board will select an actuary to be hired by the DPFPS board to perform an analysis to conclude whether the plan meets the current Pension Review Board pension funding guidelines and the actuary will submit recommended changes to the board by October 1, 2024, regarding member and city contributions, and benefits. The board will then adopt changes, taking into account the recommendations of the independent actuary.

Current Implementation Status of H.B. 3158

The Dallas Police and Fire Pension System's implementation of HB 3158 seems to be progressing on schedule with two dozen legislative requirements successfully implemented. Following most provisions taking effect September 1st, the new board was fully seated as of October 12, 2017. By November 2017, the DROP program was annuitized with set interest rates and mortality tables, and the board also tightened the hardship rules and processed the option of DROP revocation. The board's ethics, governance, and conflict of interest policies have been revised as of 12/14/2017.⁴⁴

Regarding investments, DPFPS has sold \$300 million in real estate and illiquid assets and is working to move to a simpler asset allocation for liquid assets while carefully evaluating private assets. This previous investment portfolio proved challenging with difficulties faced in the value and liquidity prospects of their private portfolio. Nearly half of the system's \$2.1 billion of assets were illiquid which tend to be high cost along with other limitations. The current real estate holdings are complex and illiquid and while not suitable for a public pension fund, the board is working to reduce those holdings without a fire sale to avoid unnecessary losses. The board is also making changes to eliminate high-cost alternative investments with large investment fees.⁴⁵ With a focus on reducing costs, lower fees were negotiated with current managers while high cost managers were eliminated. The 2018 budget is \$2 million lower than last year, and they have also replaced their prior investment consultant with another firm further reducing associated fees.⁴⁶

The board and staff have worked in a continual effort to educate members on benefit changes as a result of this legislation and will continue to do so through public meetings, presentations, and mailings.

Throughout the implementation and future changes, the Pension Review Board is tasked with reviewing potential benefit changes or alternative plans to ensure compliance with amortization period requirements. Additionally, the PRB is required to select an independent actuary to perform an analysis based on the systems Jan 2024 actuarial valuation. Based on that analysis, the DPFPS will adopt a funding plan based on funding and amortization period requirements which will then be reported to the legislature.

Current Impact to the Dallas Police and Fire Pension System as a result of H.B. 3158:

While there is still significant progress to be made, the Dallas Police and Fire Pension System is back on the right track. As a result of HB 3158, unfunded liabilities were reduced by nearly a billion dollars and the current amortization period is now 44 years compared to the previous infinite amortization period.

	Before HB 3158	After HB 3158
Amortization Period	Infinite	44 years
Funded Ratio	40.2%	49.4%
Unfunded Actuarially Accrued Liability (UAAL)	3,206,255,505	2,209,380,724

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Continued Challenges

Despite the board efforts in shifting investments, achieving the 7.25% assumed rate of return continues to be a struggle given the largely illiquid portfolio with many poor performing assets which have faltered in recent years with the 10 year return at 1.4%.⁴⁸ As the board has more time to reallocate assets and successfully invest in the coming years, those changes will need to improve further as they work to exceed previous investment returns.

Beyond investments, concerns of underfunding continue to be a critical factor in future calculations. In the Dallas Police and Fire Pension Systems' January 2018 Actuarial Valuation and Review, Segal identified significant issues to include current assumptions based on the City's Hiring Plan and payroll growth. During the first two years, valuation payroll is \$32.5 million less than city projections. While there is currently a floor on City contribution levels in place through 2024, beginning in 2025 continuing at 34.5% of computation pay will impact the projections to become fully funded if these discrepancies between the actual and projected payroll.⁴⁹ Additionally, as the departments have fewer employees on the payroll, not only are city contributions down, employee contributions are short as well. Annualizing current employee contributions over a 12 month period, employee contributions will be short \$3 million during the first year.⁵⁰ While the January 2018 AV projects the full funding date as 2063, it also warns that these discrepancies in payroll will have a significant impact over time because investment returns alone cannot close the funding gap.⁵¹

While none of these issues can be solved overnight, it is critical to have diligence in future oversight to ensure the continued improvement of investments as well as the adequate funding through city and employee contributions. The Dallas Police and Fire Pension System has come so far and seems to be on the right track we will all work together to continue overcoming past problems to support the pensions of Dallas first responders and their families.

S.B. 2190: Houston Firefighters' Relief & Retirement Fund, Houston Police Officers' Pension System, and Houston Municipal Employees Pension System

After months of negotiation between the City of Houston and the three pension systems, SB 2190 successfully passed the both the House and Senate with over 2/3rds vote before being signed by the Governor on May 31, 2017, taking effect July 1, 2017. This bill made changes to the three Houston pension systems, to reduce benefits, increase employee contributions, outline funding policies, codify actuarial assumptions, and require employer contributions through the implemented cost corridor. These changes in funding policy, the issuance of pension obligation bonds, and reduced benefits together reduced the three systems unfunded liabilities by over \$3 billion and implemented a 30 year closed amortization period.

Changes to the Houston Pensions Systems as a result of SB 2190:

The bill establishes a funding policy that created a target contribution rate known as a corridor midpoint with 5% above and below serving as the corridor's minimum and maximum to determine the potential range of city contributions. The corridor was established through the initial risk sharing valuation study (RSVS) and will not change. Annually, a separate RSVS is prepared by the systems and the City to establish contribution rates. If the city and system's estimated contribution rates differ by more than 2%, actuaries must reconcile the rates but if it can't be reconciled then the arithmetic average will be used to determine the city's contribution rate.

Additionally, the bill adds reporting requirements for each of the systems, requiring that each of the systems conduct an actuarial experience study at least once every four years and an investment audit at least once every three years. SB 2190 sets in statute the maximum assumed rate of return for each of the plans at 7.0%. While the retirement systems and the City may enter into a written agreement to offer an alternative plan if both parties consider it appropriate, the respective boards are required to close the existing plans to new entrants and establish a separate cash balance plan for new hires if the plan's funded ratio falls below the required levels. For HFRRF and HPOPs, the minimum funded ratio is at or above 65% after June 30, 2021, while for HMEPS the minimum funded ratio is at or above 60% after June 30, 2027.

Specific to Houston Municipal Employees Pension System, increased employee contributions are set on a scale based on the various employee groups. The bill continues to allow a COLA but changes have been made for a future COLA equal to 50% of the 5-year net investment return minus 2% less than the assumed rate of return, to be not less than 0% or greater than 2%. Additionally, modified DROP (for groups A & B) is set with interest based on a rolling 5-year net investment return with COLAs credited after 62 years old.

The changes to Houston Police Officers' Pension System included increased employee contributions from 9% and 10.2% to 10.5% for all members. It also changed retirement eligibility for members sworn in after 10/9/2004 to use the Rule of 70. The COLA was modified to be 5-year smoothed return minus 5% with a minimum of 0% and a maximum of 4%, that included a 3-year freeze for members under 70 years old. Modifications to the DROP plan will eliminate entrants after 2027 and stop future COLA's from after 7/1/2017 from being credited to the account. The DROP interest rate is now 65% of the 5-year compounded average investment return with a 2.5% minimum and participation is limited to 20 years with no recalculation of the annuity at DROP exit.

For the Houston Firefighters' Relief & Retirement Fund, employee contributions were increased from 9% to 10.5%. Made changes to the benefit formula for current members and created a second tier for new hires that modified the final average salary calculation, retirement eligibility, benefit calculation, and termination benefit. Implemented a 3-year COLA freeze for members under 70 with a COLA modified based on a 5-year smoothed return minus 4.75% with a minimum of 0% and a maximum of 4% beginning at age 55. There is a modified interest credit

with no COLAs or member contributions credited to DROP, while the DROP program is eliminated for new hires.

Changes as a result of SB 2190	HFRRF		HPOPS		HMEPS	
	Before	After	Before	After	Before	After
Funded Ratio	78.80%	81.95%	69.01%	78.24%	43.56%	55.46%
Accrued Actuarial Liability (AAL)	\$5,189,396,000	\$4,551,412,000	\$6,894,274,000	\$6,081,391,000	\$5,509,951,000	\$4,734,999,000
Actuarial Value of Assets (AVA)	\$4,089,047,000	\$3,729,670,000	\$4,758,079,000	\$4,758,079,000	\$2,400,023,000	\$2,625,896,000
Unfunded Actuarial Accrued Liabilities (UAAL)	\$1,100,349,000	\$821,742,000	\$2,136,195,000	\$1,323,312,000	\$3,109,928,000	\$2,109,103,000
Employer Contribution	52.20%	30.60%	52.96%	31.77%	39.22%	27.84%

Pension Review Board SB 2190 Impact, October 2018 Presentation to the House Committee on Pensions

Implementation and Effect of SB 2190

Before, legislative changes were made, the City of Houston estimated a net pension liability of approximately \$8.21 billion. After taking effect, July 1, 2018, the legislation reduced this liability to approximately \$5.1 billion.⁵²

In the Fall of 2017, each of the three pension systems and the city completed their risk sharing valuation study to determine the city's contribution for FY 2018 and set the corridor to establish the upper and lower bounds for the city contribution rate over the next 30 years. The initial RSVS was completed in 2017. Because the differences between the city and the system's calculations for HMEPS and HPOPS was less than 2% of the projected payroll, the system's calculations were used to establish corridor midpoints for future years. Because for HFRRF the differences each year were greater than 2%, the arithmetic means of the city and system calculations were used to establish the corridor midpoints.

While previously the City of Houston had underfunded the pensions, since the reform, the City paid the full actuarially required payments for the 30-year closed amortization period, \$178.7 million for HMEPS, \$143.2 million for HPOPS, and \$83.6 million for HFRRF for a total of \$405.5 million.⁵³

In December 2017, the City and Systems finalized reports to lay out the city contribution rates for FY 2019 and the city has budgeted a total of \$408.9 million. All three rates are well within the corridor rates and represent a modest increase over the prior year which is significantly lower than previous year to year increases of \$18 million and \$40 million.⁵⁴

On November 7th, 2017, voters approved a referendum on the pension obligation bonds by 77% of the vote. This authorized the City of Houston to issue \$1.01 billion in pension obligation bonds in December 2017, to pay \$750 million into the HPOPS and \$250 million into the HMEPS to account for past required contributions that were underfunded.⁵⁵

Based on the City of Houston's Comprehensive Annual Financial Report released December 2017, as of the end of the City's fiscal year in June 2017, the city's finances have gone from a

\$95 million deficit to exceeding liabilities by \$1.855 billion a net increase of \$1.91 billion primarily as a result of decreasing pension liabilities.⁵⁶

Regarding the systems investment returns, the results are above the discount rate for each of the systems. For the fiscal year 2017, HMEPS had a 12.7% return on investments and in fiscal year 2018 had a 9.3% return. The five-year net investment return as of the end of fiscal year 2018 is 8.6%.⁵⁷ For the Houston Police Officers' Pension System the investment rate of return has been 16.8% and 10.3% respectively.⁵⁸ Since 2016, the HPOPS 53 funded ratio has gone from 78.2% to an upward trending 79.3%. The Houston Firefighters' Relief & Retirement Fund received a rate of return of 12.01% in 2017 and 8.27% in 2018.⁵⁹

Impact of the Legislation and Ongoing Challenges

While benefit cuts were necessary to fully fund the plan and make reform changes, it did cause an unintended consequence of an increase in retirements. 162 Houston Firefighters retired while the legislation was being discussed and in the last 2 years 115 younger firefighters have left the department and taken refunds of their contributions which is twice the average of the previous 13 years.⁶⁰ Over 380 Houston Police Officers have retired, twice the number of officers in a typical year.⁶¹ This has impacted a Police department already short 1,500 to 2,000 officers while recruiting across the nation has been difficult as retirement outpaces recruitment. The recent vote on Houston Prop B to implement pay parity for firefighters may have consequences in pension reform as well. While all of the numbers are still being worked out and additional changes may occur, the initial projections done by the City Comptrollers office has put the cost at over \$100 million per year. If this additional cost does trigger restructuring or layoffs across the city, that could have an impact on the pension systems, though that actuarial assessment has yet to be conducted.

Recommendations

While the legislation passed into law during the 85th session has made significant strides to improve pension systems in both Houston and Dallas, the work is not yet done. The Dallas Police and Fire Pension System Board still has work to do in order to increase the investment rate of return to meet their assumptions and replace previous poor investments. The Houston systems will continue to be monitored as potential budget constraints are faced to ensure that the three systems continue to be adequately funded. This committee will continue to observe both cities and their pension systems for their continued improvement over time especially as key actuarial valuations and risk sharing valuation studies are conducted. The Pension Review Board will continue to be overseeing these reports as required by legislation to notify the legislature of any failure of compliance.

Beyond these cities, there continue to be future concerns of local plans across Texas facing increasing worse financial positions with growing unfunded liabilities, increasing amortization periods, out of control DROP, and actual investment returns well below the discount rate. As the economic times change, no longer can systems afford the level of benefits previously offered. Automatic COLAs, low retirement ages, DROP accounts providing high interest rates, and contributions that are insufficient to fund the plan are all serious considerations that need to be addressed in failing systems. Cities and systems need to be willing to work together in a spirit of

shared sacrifice to solve their own problems. If it can't be done at the local level, just as in past cases, the legislature will step in to enforce reform as necessary to protect the future soundness of retirement systems across the state.

Conclusion

Texas pensions may at first glance face a grim outlook, but ultimately there is nothing that can't be solved with the commitment of state and local leaders to save these plans for the future. This committee is going to work to ensure the actuarial soundness of our state's pensions in order to maintain the benefits as much as possible in a changing economic outlook. The stability of pensions isn't as secure as it once was years ago, therefore unfulfilled promises cannot continue to be made. There are significant shared sacrifices that will need to be made, on all sides, to continue saving our failing pensions because this is not something that can rest on one entity alone. Taxpayers cannot solely be the ones responsible for footing the bill, but neither can the burden fall only on our public servants. While we are committed to stopping the bleeding across the state to protect our state's employees and economy, there will not be a state bailout of municipal pensions. State legislators are the mediators, the negotiators, the intermediaries, and if necessary, the enforcers, but not the ones who are going to write a check to cover the cost of a failing local system. Our pension systems and cities across the state need to step up and take responsibility, to make the hard choices and think about the future before the problems continue to grow.

Endnotes

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- ² Pension Review Board, October 12, 2018 Presentation to the Pensions Committee
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- ⁶ New Educational Training Requirements for Trustees and Administrators PRB October 23, 2013
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- ¹¹ Pension Review Board, Pension Funding Guidelines, 1/26/2017
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- ¹⁵ Systems Immediately Subject to and At Risk of FSRP Formulation Requirement, Pension Review Board, October 4, 2018 Report
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- ²² ERS Presentation to the Senate Finance Committee, Sept 11 2018
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- ²⁹ ERS Report August 2018 Consumer Directed HealthSelect and High Deductible Health Plan Analysis
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- ³¹ ERS Report August 2018 Consumer Directed HealthSelect and High Deductible Health Plan Analysis
- ³² ERS Report August 2018 Consumer Directed HealthSelect and High Deductible Health Plan Analysis
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- ⁵⁰ Dallas Police and Fire Pension System Written Testimony, 5/10/18 Pensions Committee Hearing
- ⁵¹ Dallas Police and Fire Pension Systems' January 2018 Actuarial Valuation and Review, Segal

Consulting

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⁵³ City of Houston Testimony to the House Committee on Pension 10/12/2018, Mayor Turner

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⁵⁷ Houston Municipal Employees Pension System, Sherry Mose Testimony to the House Committee on Pensions, 10/12/2018

⁵⁸ Houston Police Officers' Pension System, Terry Bratton Testimony to the House Committee on Pensions, 10/12/2018

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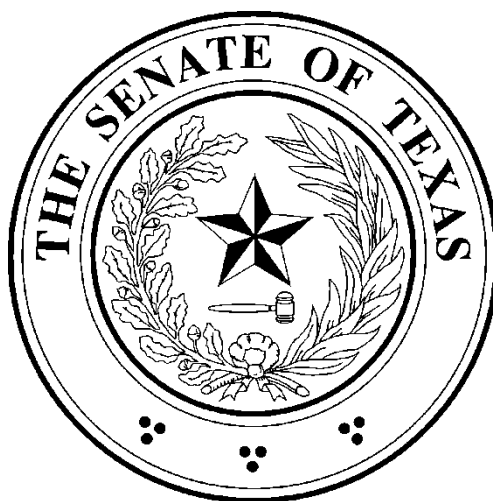
⁶⁰ Houston Firefighters' Relief & Retirement Fund Testimony to the House Committee on Pensions, 10/12/2018

⁶¹ Houston Police Officers' Pension System, Terry Bratton Testimony to the House Committee on Pensions, 10/12/2018

TAB 6B

Senate Committee on State Affairs

Interim Report to the 86th Legislature



December 2018

SENATOR JOAN HUFFMAN, CHAIR
SENATOR BRYAN HUGHES, VICE CHAIR



SENATE COMMITTEE ON STATE AFFAIRS

SENATOR BRIAN BIRDWELL
SENATOR BRANDON CREIGHTON
SENATOR CRAIG ESTES
SENATOR EDDIE LUCIO
SENATOR JANE NELSON
SENATOR CHARLES SCHWERTNER
SENATOR JUDITH ZAFFIRINI

The Honorable Dan Patrick
Lieutenant Governor of Texas
Texas State Capitol
Austin, Texas 78701

Dear Lieutenant Governor Patrick:

The Senate Committee on State Affairs of the Eighty-Fifth Legislature hereby submits its interim report including findings and recommendations for consideration by the Eighty-Sixth Legislature.

Respectfully submitted,

A handwritten signature in cursive script, reading "Joan Huffman", enclosed within a rectangular box.

Senator Joan Huffman, Chair

A handwritten signature in cursive script, reading "Bryan Hughes", enclosed within a rectangular box.

Senator Bryan Hughes, Vice-Chair

A handwritten signature in cursive script, reading "Brian Birdwell", enclosed within a rectangular box.

Senator Brian Birdwell

A handwritten signature in cursive script, reading "Brandon Creighton", enclosed within a rectangular box.

Senator Brandon Creighton

A handwritten signature in cursive script, reading "Craig Estes", enclosed within a rectangular box.

Senator Craig Estes

A handwritten signature in cursive script, reading "Eddie Lucio, Jr.", enclosed within a rectangular box.

Senator Eddie Lucio

A handwritten signature in cursive script, reading "Jane Nelson", enclosed within a rectangular box.

Senator Jane Nelson

A handwritten signature in cursive script, reading "C. Schwertner", enclosed within a rectangular box.

Senator Charles Schwertner

A handwritten signature in cursive script, reading "Judith Zaffirini", enclosed within a rectangular box.

Senator Judith Zaffirini

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Interim Charges

The Senate State Affairs Committee is charged with conducting a thorough and detailed study of the following issues, and preparing recommendations, when appropriate, to address problems or issues that are identified.

1. **Natural Disaster Government Interaction:** Review the interaction between federal, state, and local agencies in charge of responding to natural disasters. Examine emergency situation operations, including evacuation routes and procedures, and the efficient use of Disaster Recovery Centers. Make recommendations to ensure emergency management officials have the tools and authority necessary to promptly and appropriately respond to disaster areas and alert citizens to potential threats.
2. **Natural Disaster Source of Information:** Study and make recommendations on the benefit of the state maintaining a single, web-based source of comprehensive information that outlines the State Emergency Operations during times of disaster.
3. **Price Gouging:** Review the Attorney General's efforts related to price gouging and identify existing issues with current law, if any, that could be remedied to further protect Texans during times of disaster.
4. **Looting Crimes:** Review laws related to looting crimes. Examine whether current penalties and enhancements are sufficient to deter looting crimes during disaster.
5. **Second Amendment:** Review local ordinances imposed on sellers and venues that affect a person's rights under the Second Amendment of the United States Constitution. Examine state and local regulations and restrictions regarding the carrying of weapons during a natural disaster. Make recommendations on whether any legislation is needed to address the regulatory barriers to the full exercise of the Second Amendment rights of citizens.
6. **Pensions:** Examine and assess public pension systems in Texas. Specifically, review and assess: (1) the different types of retirement plans; (2) the actuarial assumptions used by retirement systems to value their liabilities and the consequences of amending those assumptions; (3) retirement systems' investment practices and performance; and (4) the adequacy of financial disclosures including asset returns and fees. Make recommendations to ensure public pension system retirees' benefits are preserved and protected.
7. **Attorney General Jurisdiction:** Examine the Attorney General's jurisdiction on issues of alleged violations of state laws regarding abortion and multi-jurisdictional human trafficking cases. Make recommendations to ensure uniform enforcement across the state.
8. **Court Fees:** Examine the structure of court fees and make recommendations to ensure statutory filing fees and court costs are appropriate and justified. Provide recommendations for proper agency oversight of fee collection.

Senate Committee on State Affairs Interim Hearings

October 25, 2017, *Senate Chamber*

The Committee took invited and public testimony on Charge Nos. 1 & 2.

January 31, 2018, *Texas State University*

The Committee took invited and public testimony on Charge No. 9.

February 21, 2018, *Senate Chamber*

The Committee took invited and public testimony on Charge Nos. 7 & 10.

April 4, 2018, *Senate Chamber*

The Committee took invited and public testimony on Charge Nos. 6, 11(1), 11(2) & 11(3).

September 10, 2018, *Senate Chamber*

The Committee took invited and public testimony on Charge Nos. 3, 4 & 8.

Charge No. 6

***Pensions:** Examine and assess public pension systems in Texas. Specifically, review and assess (1) the different types of retirement plans; (2) the actuarial assumptions used by retirement systems to value their liabilities and the consequences of amending those assumptions; (3) retirement systems' investment practices and performance; and (4) the adequacy of financial disclosures including asset returns and fees. Make recommendations to ensure public pension system retirees' benefits are preserved and protected.*

Background

A public pension, or retirement, system is an entity established by a state or local government to administer retirement benefits. Pension systems typically are created by statute or legal code and governed by a board of trustees. This board is ultimately responsible for overseeing the collection of contributions and the payment of benefits. Additionally, most boards are responsible for providing oversight of the investment of assets. Public pension systems can administer one or more pension plans.

Public pension funds hold and manage large sums of money—more than \$10 trillion for the United States' largest 1,000 retirement plans.¹¹⁹ These assets are held in trust for millions of retired public employees and their surviving family members, and for millions more working employees in state and local government. In 2016, there were 1.4 million police officers, firefighters and other first responders employed by state and local governments across the United States.¹²⁰ This is just a small fraction of the public employees working around the country.

In Texas, the Pension Review Board (PRB) oversees all Texas public retirement systems, both state and local, in regard to their actuarial soundness and compliance with state law. The PRB's mission is to provide the State of Texas with the necessary information and recommendations to ensure that Texas' public retirement systems are financially sound, benefits are equitable, the systems are properly managed, and tax expenditures for employee benefits are kept to a minimum while still providing for those employees. The PRB is also charged with expanding the knowledge and education of administrators, trustees, and members of Texas public pension funds.¹²¹ The PRB's responsibilities include:

- Conducting a continuing review of all public retirement systems within the state, compiling and comparing information about benefit structures, financing, and administration of systems;
- Conducting intensive studies of existing or potential problems that weaken the actuarial soundness of public retirement systems;
- Insuring the equitable distribution of promised benefits to members of public retirement systems while maximizing the efficient use of tax dollars;
- Providing information and technical assistance to public retirement systems, their members,

¹¹⁹ Rob Kozlowski, *Largest U.S. Retirement Funds Set Record at \$10.3 Trillion in Assets*, PENSIONS & INVESTMENTS (Feb. 5, 2018), <http://www.pionline.com/article/20180205/PRINT/180209922/largest-us-retirement-funds-set-record-at-103-trillion-in-assets>.

¹²⁰ *Pensions Charge: Hearing Before the S. Comm. on State Affairs*, 2018 Leg., 85th Interim (Tex. 2018) (written testimony by Nat'l Inst. on Ret. Sec.).

¹²¹ *Texas Pension Review Board*, TEX. PENSION REVIEW BD., <http://www.prb.state.tx.us/txpen/> (last visited Aug. 8, 2018).

- the political entities which sponsor them, and the public;
- Recommending policies, practices, and legislation to public retirement systems and their sponsoring governments;
- Examining all legislation for potential effect on Texas' public retirement systems, overseeing the actuarial analysis process, and providing actuarial review when required by law;
- Administering the registration and reporting requirements under Chapter 802, Government Code; and
- Reporting Board activities to the Governor and Legislature in November of each even-numbered year.¹²²

The PRB was established in 1979 as the state's oversight body for Texas public retirement systems at the state and local level. The PRB's service population consists of the members, trustees, and administrators of 340 public retirement plans; state and local government officials; and the general public.¹²³ The PRB monitors the financial and actuarial soundness of 99 actuarially funded defined benefit public retirement systems in Texas (including 2 hybrid plans), 160 defined contribution plans, and 81 pay-as-you-go volunteer firefighter plans.¹²⁴ As of December 2015, these retirement systems had approximately \$241 billion in total net assets and 2.4 million members.¹²⁵ Through its oversight authority, the PRB plays a vital role ensuring public pension system retirees' benefits are preserved and protected.

Discussion

Different Types of Retirement Plans

Retirement plan design can range from an employer maintaining sole responsibility for providing a guaranteed lifetime benefit to employees bearing the full responsibility to finance their own retirement savings. In plans for state and local government workers, retirement plan design falls somewhere between those two extremes. There are three major types of retirement plans in the public sector: defined benefit, defined contribution, and hybrid plans.

A defined benefit (DB) plan promises a specified monthly benefit at retirement, usually based on the employee's length of service and salary. Most state and local governments require both employers and employees to contribute to their DB pensions while they are working. Typically, these plans are funded through a combination of employer contributions, employee contributions, and earnings from investments. Public pension assets are held in a trust and invested in diversified portfolios to prefund the cost of pension benefits. These pooled assets are professionally managed and provide economies of scale that lower fees and increase returns. Assets are then paid out in monthly installments during an employee's retired years, not as a lump sum. Typically, survivor and disability benefits are part of the financing and design of the DB pension plan. Retirees also may be eligible for cost-of-living adjustments (COLA), which may be capped or dependent on the pension plan investment performance.

¹²² *General Duties of the Board*, TEX. PENSION REVIEW BD, <http://www.prb.state.tx.us/about/board/general-duties-of-the-board/> (last visited Aug. 8, 2018).

¹²³ *Pensions Charge: Hearing Before the S. Comm. on State Affairs*, 2018 Leg., 85th Interim (Tex. 2018) (written testimony by Tex. Pension Review Bd.).

¹²⁴ *Id.*

¹²⁵ TEX. PENSION REVIEW BD., *GUIDE TO PUBLIC RETIREMENT SYSTEMS IN TEXAS* (2017) [hereinafter PRB Guide], available at <http://www.prb.state.tx.us/txpen/wp-content/uploads/2017/02/2017-Primer-Final.pdf>.

DB plans are the most prevalent plan design in the public sector. The typical DB plan places some level of responsibility and risk on both the employer and employee. This use of shared financing and shared risk as part of plan design has grown in recent years as states have modified required employer and employee contributions, restructured benefits, or both. Most state and local governments offer DB pension plans to their employees, in part because public sector workers generally have accepted more modest wages in exchange for more retirement security. Retirement income also contributes to local and state economies as retirees spend their pension checks on goods and services where they live. DB plans in both the public and private sectors provide a reliable income for millions of Americans.

A defined contribution (DC) plan is a retirement savings vehicle that accumulates savings based on contributions to an employee's individual retirement account. A DC plan does not promise a specific retirement benefit. In this plan design, the employee, the employer, or both contribute to the plan, often at a certain percentage of the employee's salary. The employee will ultimately receive the balance in his or her account, which is based on contributions and any investment earnings. DC plans typically do not pool investments and employees are instead given a range of investment options they manage individually. While 401(k)s are most prevalent in the private sector, they are not common in the public sector, where 401(a), 403(b), and 457 DC plans are typically used instead. Although nearly all public employees have access to a DC plan as a supplemental savings plan, part of a hybrid plan, or as an alternative to a DB plan, only a handful of states provide a DC plan as their employees' only retirement plan option. In a DC plan, employees assume all of the investment and longevity risk. Employer obligations are fulfilled annually as contributions are made. Employers have some uncertainty about orderly retirements, particularly if investment returns drop and older employees decide to delay their retirement.

Hybrid pension plans combine elements of both DB and DC plans. The two most prevalent types of hybrid plans sponsored by state and local governments are: (1) a combination of DB and DC plans and (2) a cash balance plan. Combination plans typically include a modest DB element in combination with a DC plan. Cash balance plans marry elements of traditional pensions with individual accounts into a single plan. Employers generally guarantee an annual rate of return on a hypothetical account to which the employer, employee, or both contribute.

Debate over the merits and costs of various retirement plan structures has intensified recently as state and local pension funds address funding deficits and consider potential plan modifications. This is in part due to the economic downturn of 2008-2009, which left governmental plan sponsors with lower tax revenues to fund government expenditures, including pension costs. A significant number of plan sponsors have contributed less than the Actuarially Required Contribution (ARC) rate during this time, which, in addition to investment losses sustained by their pension funds, has increased Unfunded Actuarial Accrued Liabilities (UAAL) of plans.¹²⁶ Other factors impacting the debate include the impending retirements of the baby boomer generation and the rising costs of retiree health care.

Employees, employers, and taxpayers have a stake in state and local government pension plans.

¹²⁶ *A Review of Defined Benefit, Defined Contribution, and Alternative Retirement Plans*, TEX. PENSION REVIEW BD., (2012), <http://www.prb.state.tx.us/files/education/research/finaldbdcwhitepaper.pdf>. [hereinafter PRB Plan Review]

Pensions are important to employers because they help to attract and retain well-qualified individuals to work in government. This is important because of the investment that employers make in the training and experience of their workers. Pensions allow employers to manage the progression of their workers throughout their career to ensure that public services are delivered effectively and efficiently, even as one generation retires and new employees are hired. All stakeholders have a vested interest in retirees who are financially independent and do not require costly social services to meet their basic needs. For retirees, pensions are essential to help provide an adequate standard of living throughout their retirement years. In addition, employers, employees, and taxpayers alike place a high priority on reasonable, predictable pension costs.

From 2009 to 2015, every state made meaningful changes to one or more of its pension plans.¹²⁷ Although the market crash and the recession affected all plans, plan changes varied because of differing designs, budgets, and legal frameworks across the country. Each state or local government made modifications that were tailored to its unique circumstances. Similar to other states, Texas has a variety of different types of pension plans that vary greatly in size and consist of different types of obligations, benefits, and plan design.

Although comprehensive modifications have been made across the country to public pension plans, only five states (Michigan, Rhode Island, Tennessee, Utah, and Virginia) created combination hybrid plans.¹²⁸ The most common change to pension plans during this time was an increase in employee contributions. Increases in contributions often have applied to both current and new employees. Other plan changes, such as increasing the retirement age, typically have applied to new employees. Some plans reduced or eliminated automatic COLAs or reduced the amount of income replaced in retirement for each year worked. Retirement plan changes that are successful in preserving a sustainable pension to pay benefits for the long-term follow a deliberative and informed process, engage employees and other stakeholders, keep the government competitive in recruiting and retaining employees, and rely on high quality data. Because each pension plan is unique and complex in its own way, there are many challenges, legally and financially, to consider before making sweeping reforms. The Texas Legislature learned this first-hand during the 85th Legislative Session passing Senate Bill 2190 and House Bill 3158, both local pension plan reforms. These pieces of legislation were certainly complex and involved significant input from pension and legal experts, employees and employers, and other interested parties with the intent to preserve benefits as much as fiscally possible and make these local pension plans sustainable well into the future.

Actuarial Assumptions

Funding a pension benefit requires the use of projections, known as actuarial assumptions, about future events. Actuarial assumptions fall into one of two broad categories: demographic and economic. Demographic assumptions are those pertaining to a pension plan's membership, such as changes in the number of working and retired plan participants, when participants will retire, and how long they will live after they retire. Economic assumptions pertain to such factors as the rate of wage growth and the future expected investment return on the fund's assets.

¹²⁷ *Understanding Public Pensions: A Guide for Elected Officials*, AARP, (April 2017), <https://www.nctreasurer.com/ret/Documents/UnderstandingPublicPensions.pdf>.

¹²⁸ *Id.*

Because investment earnings account for a majority of revenue for a typical public pension fund, the accuracy of the return assumption has a major effect on a plan's finances and actuarial funding level. An investment return assumption that is set too low will overstate liabilities and costs, causing current taxpayers to be overcharged and future taxpayers to be undercharged. A rate set too high will understate liabilities, undercharging current taxpayers, at the expense of future taxpayers. An assumption that is significantly wrong in either direction will cause a misallocation of resources and unfairly distribute costs among generations of taxpayers. This is why actuarial assumptions for public pension funds have recently drawn so much attention among the media, state and local policymakers, pension experts, and taxpayers.

Assumptions should occasionally change to reflect new information, mortality improvement, changing patterns of retirements, terminations, and changing knowledge. Most public retirement systems review their actuarial assumptions regularly, pursuant to state or local statute or system policy. Texas law requires plans with assets of at least \$100 million to review their actuarial assumptions every 5 years.¹²⁹ For plans with assets less than \$100 million, PRB Funding Guideline #6 states that all plans should review actuarial assumptions at least once every five years.¹³⁰ Although the statewide plans are exempt from this requirement, they have their own experience study requirements in their statutes.¹³¹

The pension funds are responsible for setting the return assumption and typically work with one or more professional actuaries, who follow guidelines set forth by the Actuarial Standards Board in Actuarial Standards of Practice No. 27 (ASOP 27).¹³² ASOP 27 prescribes the factors actuaries should consider in setting economic actuarial assumptions, and recommends that actuaries consider the context of the measurement they are making.¹³³ Per ASOP 27, an economic assumption is reasonable if: (1) it is appropriate for the purpose of the measurement; (2) it reflects the actuary's professional judgement; (3) it takes into account historical and current economic data that is relevant as of the measurement date; (4) it reflects the actuary's estimate of future experience; and (5) it has no significant bias.¹³⁴

ASOP 27 also advises that actuarial assumptions be reasonable, and requires that actuaries consider relevant data, such as current and projected interest rates and rates of inflation; historic and projected returns for individual asset classes; and historic returns of the fund itself. For plans that remain open to new members, actuaries focus chiefly on a long investment horizon, i.e., 20 to 30 years, which is the length of a typical public pension plan's funding period.¹³⁵ One key purpose for relying on a long timeframe is to promote the key policy objectives of cost stability and predictability, and intergenerational equity among taxpayers. The investment return assumption used by public pension plans typically contains two components: inflation and the real rate of return. The sum of these components is the nominal return rate, which is the rate that is most often used and cited. The system's inflation assumption typically is applied to other actuarial assumptions, such as the level of wage

¹²⁹ TEX. GOV'T CODE § 802.1014.

¹³⁰ TEX. PENSION REVIEW BD., PENSION FUNDING GUIDELINES (2017), <http://www.prb.state.tx.us/txpen/wp-content/uploads/2017/03/PRB-Pension-Funding-Guidelines.pdf> (last visited Oct. 10, 2018).

¹³¹ TEX. GOV'T CODE §§ 815.206 & 825.206.

¹³² ACTUARIAL STANDARDS BD., SELECTION OF ECONOMIC ASSUMPTIONS FOR MEASURING PENSION OBLIGATIONS (2013), http://www.actuarialstandardsboard.org/wp-content/uploads/2014/02/asop027_172.pdf (last visited Oct. 10, 2018).

¹³³ *Id.*

¹³⁴ *Id.*

¹³⁵ NASRA Issue Brief: Public Pension Plan Investment Return Assumptions, NASRA (2018), <https://www.nasra.org/files/Issue%20Briefs/NASRAInvReturnAssumptBrief.pdf> (last visited Oct. 10, 2018).

growth and, where relevant, assumed rates of cost-of-living adjustments (COLA). The second component of the investment return assumption is the real rate of return, which is the return on investment after adjusting for inflation. The real rate of return is intended to reflect the return produced as a result of the risk taken by investing the assets.

In the wake of the 2008-09 decline in capital markets, global interest rates and inflation have remained low by historic standards. Now, these low interest rates, with low rates of projected global economic growth, have led to reductions in projected returns for most asset classes, which, in turn, have resulted in an unprecedented number of reductions in the investment return assumption used by public pension plans across the country. In fact, the average investment return assumption for Texas public retirement systems is currently 7.46%, while the national average is 7.36%.¹³⁶ If projected returns continue to decline, investment return assumptions are likely to also to continue their downward trend.¹³⁷

One challenge of setting the investment return assumption that has emerged more recently is a divergence between expected returns over the near term, i.e., the next 5 to 10 years, and over the longer term, i.e., 20 to 30 years. A growing number of investment return projections are concluding that near-term returns will be materially lower than both historic norms as well as projected returns over longer timeframes. Because many near-term projections calculated recently are well below the long-term assumption most plans are using, some plans face the difficult choice of either maintaining a return assumption that is higher than near-term expectations, or lowering their return assumption to reflect near-term expectations. If actual investment returns in the near-term prove to be lower than historic norms, plans that maintain their long-term return assumption risk experiencing a steady increase in unfunded pension liabilities and corresponding costs. Alternatively, plans that reduce their assumption in the face of diminished near-term projections will experience an immediate increase unfunded liabilities and required costs. In Texas, the two biggest statewide public pension systems, the Employees Retirement System of Texas (ERS) and the Teachers Retirement System of Texas (TRS), have recently been challenged with this exact dilemma. Even revising the return assumption just slightly for these large systems has a dramatic impact on the state's budget, unfunded liabilities and costs, and taxpayers.

The investment return assumption is the single most consequential of all actuarial assumptions in terms of its effect on a pension plan's finances. The sustained period of low interest rates since 2009 has caused many public pension plans to re-evaluate their long-term expected investment returns, leading to an unprecedented number of reductions in plan investment return assumptions around the country. Absent other changes, a lower investment return assumption increases both the plan's unfunded liabilities and cost. Furthermore, lowering the return assumption results in higher contribution requirements. With Texas' constitutional limits on public pension contributions, this also presents challenges for the Texas legislature. Because of the potential impact, the process for evaluating a pension plan's investment return assumption should include abundant input and feedback from professional experts and actuaries, and should reflect consideration of the factors prescribed in actuarial standards of practice.

¹³⁶ See *supra* note 67.

¹³⁷ See *supra* note 79.

Investment Practices and Performance

Since the financial crisis, public pension plans, like other large institutional investors, have moved a significant portion of their portfolios into investments outside of traditional equities, bonds, and cash. This has been true of Texas plans too. Texas statewide plans' alternatives allocation grew from 2% in 2005 to 31% in 2015.¹³⁸ Texas municipal plans' alternatives allocation grew from 9% in 2005 to 29% in 2015.¹³⁹ These alternative investments include a diverse assortment of assets including private equity, hedge funds, real estate, and commodities. This shift reflects a search for greater yields than expected from traditional stocks and bonds, an effort to hedge other investment risks, and a desire to diversify the portfolio.

In general, alternatives tend to be riskier and less liquid than traditional equity and fixed income, so investors have the opportunity to earn both a risk premium and a liquidity premium.¹⁴⁰ Proponents of alternative investments argue that the returns on many alternatives are uncorrelated with those in the stock market, so they can add diversification to a portfolio and help mitigate volatility. On the other hand, investments in alternatives involve a number of challenges. First, these investments are often complex, and many investors may not fully understand the exact nature of the products and their attendant risks. Second, in many instances, it is difficult to make annual assessments of the value of the investment. Third, complicated investments involve high fees. Finally, the fact that these assets are generally illiquid can pose risks for investors that need liquidity.¹⁴¹

Overall, 2017 produced very strong returns for public pension systems in terms of equity performance for statewide and some large municipal systems.¹⁴² For example, in 2017, the statewide pension systems earned an average investment return of 10.62% while the municipal systems earned 9.04%.¹⁴³ Although the long-term return (30 years or longest term available between 11-30 years) for the statewide systems comes in at 8.04%, the 10-year investment return drops significantly to average 5.56%¹⁴⁴

As of June 14, 2018, PRB's Actuarial Valuation Report states that the average funded ratio of all Texas public pension systems is 79.1%.¹⁴⁵ Furthermore, the majority of Texas systems (58 out of 93) have amortization periods within PRB Guidelines of no more than 30 years, and 37 out of 93 are at no more than 25 years (PRB's preferred target range is 10-25 years).¹⁴⁶ Although the total unfunded actuarial accrued liability is now over \$69.4 billion, it is noteworthy that about half of that is comprised of TRS' unfunded liability (\$35.5 billion).¹⁴⁷ Although the funded ratios are slightly up from the previous year, Texas public pension systems must continue to be vigilant to cut down on unfunded liabilities to ensure retirees' benefits are preserved and protected for decades to come.

¹³⁸ *Pensions Charge: Hearing Before the S. Comm. on State Affairs*, 2018 Leg., 85th Interim (Tex. 2018) (oral testimony by Tex. Pension Review Bd.).

¹³⁹ *Id.*

¹⁴⁰ *A First Look at Alternative Investments and Public Relations*, CTR. FOR RET. RESEARCH AT BOSTON COLL. (2017), http://crr.bc.edu/wp-content/uploads/2017/06/slp_55.pdf.

¹⁴¹ *Id.*

¹⁴² *See supra* note 82.

¹⁴³ *See supra* note 67.

¹⁴⁴ *Id.*

¹⁴⁵ *Id.*

¹⁴⁶ *Id.*

¹⁴⁷ *Id.*

Adequacy of Financial Disclosures

For many public pension systems, current disclosure policies make it difficult for policymakers, stakeholders, and the public to gauge the actual performance of these funds. Opaqueness of fee information, particularly with respect to alternative investments not traded publicly, continues to be an issue for pension funds across the country. Because of this, some states, including Texas, have passed laws to increase fee transparency and disclosures. To develop a more complete understanding of both the results and the costs of different investment strategies and to improve transparency through greater disclosure, state legislatures and pension funds should consider:

- Adopting comprehensive fee-reporting standards;
- Making investment policy statements transparent and accessible;
- Disclosing bottom-line performance, both net and gross of fees;
- Expanding reporting to include longer-term performance results; and
- Reporting results by asset class, net and gross of fees.

The call for standardized reporting and transparency of private equity fees in the United States is gaining momentum. The Institutional Limited Partners Association's Fee Transparency Initiative, a widely supported industry effort to establish comprehensive standards for fee and expense reporting among institutional investors and fund managers, is advocating for total fee reporting by private equity managers and their investors.¹⁴⁸ Further, in a recent letter to the Securities and Exchange Commission, thirteen state and municipal treasurers and comptrollers made an appeal for industrywide standards on private equity fee disclosure.¹⁴⁹

The Government Finance Officers Association (GFOA) recommends that each pension plan develop a concrete statement of investment goals that describes its investment and risk tolerance.¹⁵⁰ Making these investment policies transparent and readily accessible provides stakeholders with critical information on the strategies that pension systems follow for the investment of public funds. Clear information that accounts for the costs of managing assets is needed to fully understand investment performance. Reporting performance both gross and net of fees gives stakeholders information on both the cost and bottom-line results of pension funds' investment strategies.

The GFOA recommendations also call for funds to provide performance results by asset class over time, as well as full disclosure of long-term investment performance by investment type or asset class. State retirement systems in Georgia, Kentucky, Louisiana, Missouri, and New York already release comprehensive 20-year data on performance returns by asset class.¹⁵¹ Currently, only Georgia and Missouri make that information available net of fees. South Dakota is the only state to disclose 20-year performance net and gross of fees but does not break this reporting down by asset class.¹⁵² While the performance of individual asset classes may vary over the short term, long-term performance data must be available to assess the overall success of the investment strategy when dealing with public funds. Further, disclosure of performance both gross and net of fees by asset class would provide

¹⁴⁸ *Making State Pension Investments More Transparent*, PEW (Feb. 18, 2016), <http://www.pewtrusts.org/en/research-and-analysis/issue-briefs/2016/02/making-state-pension-investments-more-transparent>.

¹⁴⁹ *Id.*

¹⁵⁰ *Id.*

¹⁵¹ *Id.*

¹⁵² *Id.*

stakeholders and the public with bottom-line results and a clearer picture of the cost of implementing the investment strategy identified in fund policy.

Allocation of assets and bottom-line performance ultimately determine pension plans' fiscal health and the ability to pay for the promised retirement benefits. In fact, pension experts estimate that investment returns account for 60 percent of pension benefits.¹⁵³ The fees and cost of managing these assets can significantly affect the long-term costs of providing retirement benefits to public workers. There is no one-size-fits-all approach to investing pension assets. However, because many alternative investments involve greater risk and complexity, boosting transparency is essential.

Recommendations

Every state and local pension plan has its own history, legal framework, and characteristics. Due to this complexity, solutions to pension funding and other challenges must be tailored to the individual needs and circumstances of participating employers and workers. Regardless, each public pension system, in coordination with local and state government, should have a clear pension funding policy that lays out a plan to fully fund pension benefits within a reasonable time period. A sound pension funding policy offers guidance in making annual budget decisions, documents prudent financial management practices, and provides transparency as to how and when pensions will be funded. Policymakers, stakeholders, and the public need full disclosure on investment performance and fees to ensure that risks, returns, and costs are balanced in ways that follow best practices and meet funds' policy needs.

In examining pension plans that are well funded, certain strategies stand out. Without exception, these pension plans have been able to count on the employer contributions. These governments routinely make their full contribution whether the economy is prosperous or not. Additionally, if the pension system needs to make changes to their pension plan design, it is done based on reliable data; all stakeholders are engaged as changes are considered; and pension plan objectives remain a priority. Finally, well funded pension plans are rigorous in examining their assumptions to ensure they accurately reflect the plan's experience and that any needed adjustments can be made in a timely fashion.

Improving a pension plan's funded status can be achieved with discipline and commitment. As more workers retire and a younger generation moves into the government workforce, attracting and retaining well qualified individuals is more important than ever. Therefore, it is critical to balance stakeholder objectives to produce a sustainable retirement system that is both competitive and cost-effective. The Texas Legislature must keep these strategies at the forefront to ensure public pension system retirees' benefits are preserved and protected for generations to come.

¹⁵³ *Id.*

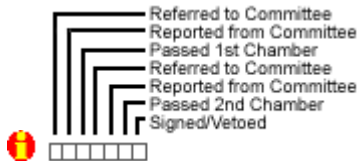
TAB 6C



PENSION BILL REPORT

01-18-2019 - 08:52:37

 - Action in the date range  - Link to Related Information () - Priority



State Pension Review Board

[HB 56](#) [Martinez, Armando\(D\)](#) Relating to a cost-of-living increase applicable to benefits paid by the Teacher Retirement System of Texas.



Companions: [HB 398](#) Hernandez, Ana (Identical)
11-20-18 H Filed
[HB 597](#) Munoz, Sergio (Identical)
12-27-18 H Filed

Track Code(s): TRS

Bill History: 11-12-18 H Filed

[HB 183](#) [Stephenson, Phil\(R\)](#) Relating to a pension revenue enhancement plan for the Teacher Retirement System of Texas.



Track Code(s): TRS

Bill History: 11-12-18 H Filed

[HB 210](#) [Craddick, Tom\(R\)](#) Relating to the service retirement annuity for certain members of the Judicial Retirement System of Texas Plan Two.



Track Code(s): JRS2

Bill History: 11-12-18 H Filed

HB 398 Hernandez, Ana(D) Relating to a cost-of-living increase applicable to
benefits paid by the Teacher Retirement System of
Texas.

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Companions: [HB 56](#) Martinez, Armando (Identical)
11-12-18 H Filed

[HB 597](#) Munoz, Sergio (Identical)
12-27-18 H Filed

Track Code(s): TRS

Bill History: 11-20-18 H Filed

HB 425 Allen, Alma(D) Relating to certain benefits paid by the Employees
Retirement System of Texas.

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Companions: [HB 398](#) Allen, Alma (Refiled from
85R Session)

Track Code(s): ERS

Bill History: 11-29-18 H Filed

HB 426 Allen, Alma(D) Relating to benefits paid by the Teacher
Retirement System of Texas.

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Companions: [HB 397](#) Allen, Alma (Refiled from
85R Session)

Track Code(s): TRS

Bill History: 11-29-18 H Filed

HB 593 Munoz, Sergio(D) Relating to the computation of the standard service
retirement annuity for members of the Teacher
Retirement System of Texas enrolled in the Texas
Public School Employees Group Insurance
Program.

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Track Code(s): TRS

Bill History: 12-27-18 H Filed

HB 596	Hernandez, Ana(D)	Relating to the composition of the board of trustees of the Employees Retirement System of Texas.
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
Companions:		
HB 265	Hernandez, Ana	(Refiled from 85R Session)
SB 935	Hughes, Bryan (F)	(Refiled from 85R Session)
Track Code(s): ERS		
Bill History: 12-27-18 H Filed		

HB 597	Munoz, Sergio(D)	Relating to a cost-of-living increase applicable to benefits paid by the Teacher Retirement System of Texas.
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
Companions:		
HB 56	Martinez, Armando	(Identical)
	11-12-18 H Filed	
HB 398	Hernandez, Ana	(Identical)
	11-20-18 H Filed	
Track Code(s): TRS		
Bill History: 12-27-18 H Filed		

HB 814	Landgraf, Brooks(R)	Relating to the standard service retirement annuity for certain members of the elected class of the Employees Retirement System of Texas.
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
Companions:		
SB 223	Seliger, Kel	(Identical)
	12- 7-18 S Filed	
Track Code(s): ERS, ESO		
Bill History: 01-15-19 H Filed		

HB 877	Oliverson, Tom(R)	Relating to the actuarial valuations of certain public retirement systems.
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
Track Code(s): HUSF, HUSM, HUSP, PRB		
Bill History: 01-17-19 H Filed		

SB 48	Zaffirini, Judith(D)	Relating to the service retirement annuity for certain members of the Judicial Retirement System of Texas Plan Two who resume service.
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
Track Code(s): JRS2		
Bill History: 11-12-18 S Filed		

SB 92	Menendez, Jose(D)	Relating to a supplemental payment for retirees of the Teacher Retirement System of Texas and the unfunded actuarial liabilities allowed under that system.
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
	Companions:	SB 217 Menendez, Jose (Refiled from 85R Session)
	Track Code(s):	TRS
	Bill History:	11-12-18 S Filed
SB 93	Menendez, Jose(D)	Relating to a cost-of-living adjustment applicable to certain benefits paid by the Teacher Retirement System of Texas.
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
	Track Code(s):	TRS
	Bill History:	11-12-18 S Filed
SB 94	Menendez, Jose(D)	Relating to the state contribution to the Teacher Retirement System of Texas.
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
	Companions:	HB 4229 Arevalo, Diana (F) (Refiled from 85R Session) SB 219 Menendez, Jose (Refiled from 85R Session)
	Track Code(s):	TRS
	Bill History:	11-12-18 S Filed
SB 223	Seliger, Kel(R)	Relating to the standard service retirement annuity for certain members of the elected class of the Employees Retirement System of Texas.
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
	Companions:	HB 814 Landgraf, Brooks (Identical) 1-15-19 H Filed
	Track Code(s):	ERS
	Bill History:	12-07-18 S Filed
SB 252	Fallon, Pat (F)(R)	Relating to a cost-of-living adjustment applicable to certain benefits paid by the Teacher Retirement System of Texas.
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
	Track Code(s):	TRS
	Bill History:	12-19-18 S Filed

SB 322

Huffman, Joan(R)

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Relating to the evaluation and reporting of investment practices and performance of certain public retirement systems.

Track Code(s): PRB, TRS

Bill History: 01-10-19 S Filed

SJR 4

Menendez, Jose(D)

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Proposing a constitutional amendment to increase the minimum amount that the state may contribute to the Employees Retirement System of Texas and the Teacher Retirement System of Texas.

Track Code(s): ERS, TRS

Bill History: 11-12-18 S Filed

SJR 27

Huffman, Joan(R)

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Proposing a constitutional amendment prohibiting the use of state funds to pay for the obligations of a local public retirement system.

Companions:

HJR 85	Flynn, Dan	(Refiled from 85R Session)
SJR 43	Huffman, Joan	(Refiled from 85R Session)

Track Code(s): GPEN

Bill History: 01-10-19 S Filed

Total Bills: 20

TAB 6D

Pension Review Board *Guide to Public Retirement Systems*
Outline
January 2019

Introduction

- Executive Director Letter
- About the PRB
- Principles of Retirement Plan Design
- PRB Guidelines for Actuarial Soundness

Summary

- Statewide (by system)
 - Summary of Current Data
 - Board of Trustees List
 - Administrator and System Website
- Municipal (by system)
 - Summary of Current Data
 - Board of Trustees List
 - Administrator and System Website
- Local Firefighter Plans (Governed by TLFFRA)
 - Summary of Current Data (Aggregate)
 - List of Plans
- Special District/Supplemental Plans (Governed by Chapter 810)
 - Summary of Current Data (Aggregate)
 - List of Plans

Actuarial

- Summary (Narrative)
- Funding Soundness Restoration Plan (FSRP)
 - Flowchart
 - List of plans subject to/at risk
 - Plan changes
- Pension Obligation Bonds (credit: Bond Review Board)
 - City Name
 - Issue Name
 - Closing Date
 - Maturity Date
 - Par Amount Issued
 - Principal Outstanding as of 8/31/2018
 - Percent Outstanding

Pension Review Board

January 24, 2019

- Interest Outstanding as of 8/31/2018
 - True Interest Cost
- Actuarial Terms
- Funding Progress (Last three valuations, by system type)
 - Actuarial Valuation Date
 - Actuarial Value of Assets (in Millions)
 - Actuarial Accrued Liability (in Millions)
 - Unfunded Actuarial Accrued Liability (in Millions)
 - Funded Ratio
 - Covered Payroll (in Millions)
 - UAAL/Payroll Ratio
 - Remaining Amortization Period (Years)
- AVA/AAL Trends Charts (by system type, over 10 years)
- Amortization Period Groupings Chart (by system type)
- Funded Ratio Chart
- Contributions Sufficiency Table (by system type)
 - Plan Status
 - Fiscal Year End
 - Covered Payroll
 - Total Normal Cost (percent of pay)
 - Employee Contribution (percent of pay)
 - Employer Contribution (percent of pay)
 - Amortization Payment (percent of pay)
 - Employer Recommended Contribution (percent of pay)
 - Actual Employer Contribution (percent of pay)
 - Percent of Recommended Contribution Paid
- Assumed ROR Trends Table (by system type)
 - Fiscal Year
 - Assumed ROR
 - Amortization Period
 - Funded Ratio
 - Total Contribution Percent
 - Member Contribution Percent
 - Employer Contribution Percent
- Actuarial Assumptions and Methods (by system type)
 - AV Effective Date
 - Actuarial Cost Method
 - Amortization Method
 - Asset Valuation Method
 - Discount Rate
 - Inflation

Membership

- Membership Summary (by system type)
 - Effective Date
 - Total Active
 - Total Annuitants
 - Total Members
- Membership Chart (ratio of actives to retirees over 10 years, by system type)

Financial

- Summary (Narrative)
- Asset Summary Table (by system type)
 - Effective Date
 - Total Net Assets (dollars)
 - Contributions (dollars)
 - Employee
 - Employer
 - Total Income (dollars)
 - Benefit Payments and Withdrawals (dollars)
 - Total Expenses (dollars)
- Asset Allocation (2007 to 2017)
 - Asset Allocation, dollars
 - Asset Allocation, percent

Investments

- ROR Data Summary
 - ROR Graphs/Charts
 - ROR Aggregate Plan Type Table
- ROR Summary Table (by system type)
 - Effective Date
 - 1 Year Gross
 - 1 Year Net
 - 3 Year Gross
 - 3 Year Net
 - 10 Year Gross
 - 10 Year Net
 - Long Term Gross
 - Long Term Net
 - Long Term Return Period
 - Assumed Rate

Accounting Disclosures

- GASB Table (by system type)
 - Fiscal Year End
 - Total Pension Liability
 - Fiduciary Net Position
 - Net Pension Liability
 - Funded Ratio (GASB)
 - Preliminary Discount Rate
 - TPL Discount Rate
 - NPL at Discount Rate -1%
 - NPL at Discount Rate + 1%
- GASB Charts (GASB funded ratio, by system type)
- NPL as a Percent of Assets Chart
- DROP as a Percent of Assets Chart
 - Effective Date
 - DROP Balance
 - Fiduciary Net Position (NFP)
 - DROP Balance as a Percent of NFP

Benefits

- Summary (Narrative)
- Benefit Summary Table
 - Eligible Members
 - Retirement Eligibility
 - Vesting
 - Benefit Formula
 - Final Average Salary
 - COLA
 - Retirement Benefit Options
 - Social Security (Y/N)
- DROP Table
 - Type of DROP
 - Interest Credit
 - DROP Maximum Duration
 - COLA Credited (Y/N)
 - Employee Contribution Credited (Y/N)
 - Spouse Continue After Death
 - PROP (Offered to Retirees)
 - Withdraw (how often, min/max)
 - Comments

Governance

- Summary (Narrative)
- Vernon's and Government Code Plans
- Contribution and Benefit Decision-Making
 - System Name
 - Governing Statute
 - Employer Contributions
 - Employee Contributions
 - Benefit Increases
 - Benefit Reductions
 - Constitutional Benefit Protection
- Board Compositions

Appendices

- Legislation Relating to Public Retirement Systems – 83rd to 85th Legislature
- DC Benefit Summary
- Volunteer TLFFRA Benefit Summary
- Directory (by system type)

TAB 7



**STATE PENSION REVIEW BOARD
OPERATING BUDGET
FISCAL YEAR 2019
As of December 31, 2018**



	LBB Obj. Code	GAA BUDGETED	ADJUSTED BUDGETED	TOTAL BUDGETED	TOTAL EXPENDED	ENCUMBRANCES	PERCENT EXPENDED	REMAINING BALANCE	PERCENT REMAINING
METHOD OF FINANCING									
General Revenue		\$933,769.00		\$933,769.00					
				\$0.00					
Appropriated Receipts			\$0.00	\$0.00					
Total Method of Financing		\$933,769.00	\$0.00	\$933,769.00					
OBJECT OF EXPENSE									
Exempt Salaries	1001A	\$112,750.00		\$112,750.00	\$37,583.32		33.33%	\$75,166.68	66.67%
Classified Salaries	1001B	\$717,728.00		\$717,728.00	\$206,792.60		28.81%	\$510,935.40	71.19%
Other Personal Exp / Longevity Pay	1002A	\$15,397.50		\$15,397.50	\$2,280.00		14.81%	\$13,117.50	85.19%
Retirement Deduction .5% Salary	1002B	\$4,202.50		\$4,202.50	\$1,221.94		29.08%	\$2,980.56	70.92%
Benefit Replacement Pay	1004	\$0.00		\$0.00	\$0.00		0.00%	\$0.00	100.00%
Non-Overnight Meals	1001C	\$500.00		\$500.00	\$0.00		0.00%	\$500.00	100.00%
Sub-Total Salaries & Wages		\$850,578.00	\$0.00	\$850,578.00	\$247,877.86	\$0.00	29.14%	\$602,700.14	70.86%
Professional Fees and Services	2001	\$12,500.00		\$12,500.00	\$369.82	\$0.00	2.96%	\$12,130.18	97.04%
Consumable Supplies	2003	\$3,500.00		\$3,500.00	\$0.00	\$0.00	0.00%	\$3,500.00	100.00%
Travel	2005A	\$26,000.00		\$26,000.00	\$3,263.43	\$0.00	12.55%	\$22,736.57	87.45%
Rent-Building (Record Storage)	2006	\$1,000.00		\$1,000.00	\$321.36	\$0.00	32.14%	\$678.64	67.86%
Rent-Machine & Other (Copier/Software)	2007	\$15,000.00		\$15,000.00	\$0.00	\$0.00	0.00%	\$15,000.00	100.00%
Operating Costs (Miscellaneous)	2009A	\$6,214.25		\$4,214.25	\$2,881.79	\$0.00	46.37%	\$3,332.46	53.63%
Telecommunication Services	2009D	\$2,000.00		\$2,000.00	\$1,529.05	\$0.00	76.45%	\$470.95	23.55%
Education and Training	2009B	\$2,500.00		\$1,500.00	\$325.00	\$0.00	13.00%	\$2,175.00	87.00%
Postage	2009C	\$500.00		\$500.00	\$128.08	\$0.00	25.62%	\$371.92	74.38%
Printing	2009E	\$1,000.00		\$1,000.00	\$202.62	\$0.00	20.26%	\$797.38	79.74%
Subscription/Publications	2009G	\$2,000.00		\$5,000.00	\$4,789.85	\$0.00	95.80%	\$210.15	4.20%
PHC Deduction 1% Salary	2009H	\$8,476.75		\$8,476.75	\$2,266.17		26.73%	\$6,210.58	73.27%
Hardware & Software	2009F	\$2,500.00		\$2,500.00	\$556.00	\$0.00	22.24%	\$1,944.00	77.76%
Sub-Total Operating Cost		\$25,191.00	\$0.00	\$25,191.00	\$12,678.56	\$0.00	50.33%	\$12,512.44	49.67%
Total Object of Expense		\$933,769.00	\$0.00	\$933,769.00	\$264,511.03	\$0.00	28.33%	\$669,257.97	71.67%