TEXAS PENSION REVIEW BOARD

ACTUARIAL COMMITTEE MEETING

JANUARY 25, 2024

TEXAS PENSION REVIEW BOARD

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TEXAS PENSION REVIEW BOARD
ACTUARIAL COMMITTEE MEETING AGENDA

Thursday, January 25, 2024 – 10:00 AM

William P. Clements Building, Fourth Floor, Room 402

300 W. 15th Street, Austin, TX, 78701

Committee members may attend this meeting by videoconference pursuant to Texas Government Code §551.127. One or more committee members, including the presiding officer, will be physically present at the physical location of the meeting listed above. The meeting will be accessible to the public at the physical location listed above. The public may access the meeting virtually by joining via the Zoom link: https://us02web.zoom.us/j/82741759696. A livestream of this meeting, agenda materials of the meeting, and a recording of the meeting will be made available at www.prb.texas.gov.

The Committee may discuss or take action regarding any of the items on this agenda. A quorum of the Administrative Committee will be present during the Actuarial Committee meeting, but no Administrative Committee matters will be discussed.

1. Meeting called to order
2. Roll call of committee members
3. Administrative matters
    a. Consideration and possible action to approve July 27, 2023, meeting minutes
4. Invitation for public comment
5. Update on Dallas Police & Fire Pension System, including actuarial analysis required by Section 2.025, Article 6243a-1, Vernon's Texas Civil Statutes
6. Update from Austin Firefighters Retirement Fund on potential plan changes
7. Texas Local Fire Fighters Retirement Act (TLFFRA) governance project
8. Review of the PRB Pension Funding Guidelines and Guidance for Developing a Funding Policy
9. Update of research on systems authorized under Texas Government Code Chapter 810 that offer 100 percent lump sum options
10. Future meetings: Agenda items, dates, locations, and related matters
11. Adjournment

NOTE: The committee may go into closed session concerning any item on this agenda as authorized under the Texas Open Meetings Act, Government Code, Chapter 551. Persons with disabilities who plan to attend this meeting and who may need special assistance are requested to contact Lindsay Seymour at (512) 463-1736 as far in advance as possible, but no less than three business days prior to the meeting date so that appropriate arrangements can be made.

How to provide public comment: Members of the public who wish to provide public comment to the committee may attend the meeting in person at the address above or register for the meeting using the Zoom link provided above. If you wish to provide comment remotely by Zoom, you must contact Lindsay Seymour (lindsay.seymour@prb.texas.gov) no later than Wednesday, January 24. Note that public comments will be limited to no more than three minutes.

3. Administrative Matters
a. July 27, 2023, meeting minutes

TEXAS PENSION REVIEW BOARD

Actuarial Committee Meeting Minutes
July 27, 2023

1. **Meeting called to order (0:00)**

   The first meeting of 2023 of the Actuarial Committee was called to order Thursday, July 27, 2023, at 10:00 a.m. in the William P. Clements building, room 402, 300 W. 15th Street, Austin, Texas, 78701.

2. **Roll call of committee members (0:00)**

   Board members present:

   Keith Brainard, Chair
   Marcia Dush
   Stephanie Leibe

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

3. **Administrative matters (0:01)**

   a. **Consideration and possible action to approve November 3, 2022, meeting minutes**

      Chair Brainard entertained a motion to suspend reading the minutes of the November 3, 2022, committee meeting and approve them as circulated.

      The motion was made by Ms. Dush and seconded by Ms. Leibe.

      The motion passed unanimously.

4. **Invitation for public comment (0:04)**

   There were no public comments.

5. **Request for proposal for independent actuary to perform the actuarial analysis of Dallas Police & Fire Pension System required by Section 2.025, Article 6243a-1, Vernon's Texas Civil Statutes (0:31)**

   Chair Brainard asked Tamara Aronstein and David Fee to present item five. Ms. Aronstein explained the selection process for an independent actuary before providing details on an updated memorandum of understanding with Dallas Police & Fire Pension System.

   Mr. Fee discussed the two proposals received, and explained the process the selection committee went through to recommend Cheiron. He explained that the proposals were detailed enough that the selection committee decided not to conduct interviews before making its recommendation. Ms. Aronstein apprised the committee of upcoming steps to finalize the selection.

Chair Brainard entertained a motion to recommend the executive director finalize the selection of Cheiron, as recommended by the selection committee, pending final approval of the board chair, as authorized at the June board meeting.

The motion was made by Ms. Dush and seconded by Ms. Leibe.

The motion passed unanimously.

6. **Preliminary summary of systems authorized under Texas Government Code Chapter 810 that offer 100 percent lump sum options (9:44)**

Mr. Fee explained that actuarial equivalence is comprised of interest rates and mortality tables. He stated that the IRS mandates updated mortality tables be used when calculating lump sum payouts in the private sector, but that Texas does not mandate public retirement systems to do so, which led to outdated mortality tables being used currently in some system lump sum calculations. Further, Mr. Fee pointed out that systems offering lump sums tended to use higher interest rates when calculating payouts.

Mr. Fee and the committee discussed how retirees electing a lump sum may not be receiving a truly equivalent benefit when systems used higher interest rates and outdated mortality tables. They also discussed the importance of systems providing adequate financial information when they presented the options of annuity or lump sum payments. Mr. Fee explained that recent mortality tables generally reflected longer retiree lifetimes, which generated higher lump sums. He presented the next steps the PRB would take to finalize assumption data.

The committee asked that the final data be approved by the full board before being posted on the agency's website. Chair Brainard asked for the percentage of lump sum payees that were either retiring or separating employment before stating his opinion that systems could improve stakeholder communications. Ms. Dush and Mr. Fee discussed whether a spouse signature was required when a lump sum was paid. Chair Brainard also mentioned that it would be helpful to know which systems' employees participate in Social Security.

7. **Future meetings: Agenda items, dates, locations, and related matters (38:17)**

Chair Brainard announced that the next Actuarial Committee meeting was TBD. He stated the next full board meeting would be September 21, 2023, at the same location. Ms. Dush requested an update from Cheiron on the actuarial analysis of DPFP at an upcoming meeting.

8. **Adjournment (40:17)**

The meeting was adjourned at 12:22 p.m.

PRB staff in attendance:

Amy Cardona	David Fee	Mariah Miller	Tamara Aronstein
Ashley Rendon	Robert Munter	Wes Allen	Jasmin Loomis
Bryan Burnham	Noah Jones	Lindsay Seymour	Matthew Featherston

Members of the public in attendance:

Kelly Gottschalk- Dallas Police & Fire Pension Eddie Solis- Dallas Police & Fire Pension

Art Alfaro- TEXPERS John Posey- LBB

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Keith Brainard, Chair

7. Texas Local Fire Fighters Retirement Act (TLFFRA) governance project

Mariah Miller

Summary

- Governance Overview
- Introduction to TLFFRA
- Project Background
- FSRP & TLFFRA Systems
- Previous Research
  - LBJ Report
- Work Group
- Identified Potential Issues
- Feedback Timeline

Governance Overview

- Governance is the systems and processes that comprise the oversight and control of an organization.
- Good governance generally means decisions are made through processes that are:
  - consistent and well-documented
  - in compliance with relevant statutes, rules, industry-recognized best practices
  - and open and accountable to stakeholders

Governance Overview (cont.)

- Good governance is important to many aspects of pension management.
  - Ensures trustees understand their board's authority and are informed of statutes and best practices.
  - Establishes accountability and responsibilities for fiduciaries.
  - Builds the confidence of pension members and stakeholders.
  - Reduces the risks of fiduciary breach, litigation, and other risks.
  - May improve long-term investment returns.

Introduction to TLFFRA

- Article 6243e, Vernon's Civil Statutes
  - Includes instructions for paid/part-paid and volunteer fire departments
- Some aspects mandated in statute.
  - seven board members
  - sponsor contribution minimum
- Other aspects controlled locally.
  - Prospective benefit and member contribution changes proposed by system board and approved by actuary & membership vote

Introduction to TLFFRA (cont.)

- TLFFRA systems have historically underperformed as a group; however, recently there have been some improvements:
  - Systems with a discount rate above 7.5 percent is down to six.
  - Median funding period has dropped below 30 years.
    - Systems with a funding period above 50 years is down to six.
  - Median funded ratio shows slight increasing trend.

Project Background

- Historically, many TLFFRA systems have experienced low sponsor engagement, but communication and collaboration have generally increased for a variety of reasons.
- Intensive reviews fostered better system/sponsor relationships and better system outcomes:
  - 11 of 12 intensive reviews have been TLFFRA systems
- Funding Soundness Restoration Plan (FSRP) in effect since 2015. In 2021, the legislature passed more stringent FSRP requirements set to take full effect in 2025.

FSRPs and TLFFRA Systems

- FSRPs are jointly developed to improve funding status of financially distressed systems.
  - Three TLFFRA systems have Legacy FSRPs
  - Five TLFFRA systems currently subject to FSRP
  - Four TLFFRA systems at risk of FSRP
    - Two of which have previously completed an FSRP
  - Six TLFFRA systems have completed an FSRP

Previous TLFFRA Governance Research

- Board directed staff to study retirement system governance in 2020:
  - Contributions/benefits decisions
  - Board member qualifications
- In 2022, House Pensions, Investments, and Financial Services committee interim charge to review TLFFRA governance:
  - PRB representatives testified before the committee on August 16, 2022
  - Interim report with five recommendations released January 2023
- In Spring 2023, graduate students completed a policy research project focusing on TLFFRA governance
- Board directed staff to study TLFFRA governance in 2023

University of Texas LBJ Student Report

- In Fall 2022, PRB engaged a team of graduate students from the LBJ School of Public Affairs to conduct a project investigating TLFFRA governance issues and developing recommendations
- Student analysis found that governance variables, including MET compliance, were associated with better outcomes for TLFFRA systems.
- The LBJ Student Report had several recommendations:
  - Use of agreements (MOU, collective bargaining, etc.)
  - Reforming citizen seats on TLFFRA boards
  - Utilizing websites
  - Implementing an ADC rate

Stakeholder Work Group

- Used to gain direct insight to the issues facing TLFFRA systems and sponsors.
- Membership included representatives from several TLFFRA systems and sponsors.
- Three meetings covering the following topics:
  - internal governance issues
  - system/sponsor relations
  - system/PRB relationship
- Work Group discussions helped PRB staff identify key areas where statutory changes or additional guidance may benefit the systems.

About Potential Issues and Recommendations

- This document and presentation reflects staff's analysis and synthesis of information from various sources.
- This is intended to be a concrete starting point for stakeholder and board feedback.
- Staff anticipates finalizing recommendations for possible board approval later this year.

Identified Topic Areas

- Topic Area 1: System funding and decision-making practices
- Topic Area 2: Board structure and membership
- Topic Area 3: Transparency and communication
- Topic Area 4: Additional areas for research and consideration

Topic Area 1: System Funding and Decision-making Practices

- Overview:
  - Certain guidelines set in statute, general operations and administration practices left up to the system's board
  - Sponsors not required to be involved in setting benefits
  - Sponsors hesitant to raise contributions due to feeling that systems may in turn increase benefits
  - Some systems use agreements to establish contribution and benefit boundaries
- **Identified Issue:** TLFFRA statutory decision-making processes may hinder progress in resolving funding issues faced by TLFFRA systems and their sponsors.

Topic Area 1 Preliminary Staff Recommendations

- **Statutory/Legislative:**
  - Require the sponsoring entity to first approve benefit/contribution ballot options prior to a member vote.
- **PRB Guidance/Technical Assistance:**
  - The PRB may issue guidance for conducting member votes, including the creation of a joint working agreement with the sponsor and member education
  - The PRB may create a continuing education (CE) course on successful system reforms

Topic Area 2: Board Structure and Membership

- Overview:
  - TLFFRA board structure is set in statute:
    - Three members of the retirement system
    - Two citizens who are not members of the system or sponsor employees
    - The mayor or mayor's representative
    - The chief financial officer or employee responsible for finance
  - No guidelines for addressing inactive board members
    - Some systems have implemented attendance or education policies
  - Systems have issues identifying qualified citizen board members
- **Identified Issue:** TLFFRA board structure may need updating to address identified concerns and ensure balanced representation.
- **Identified Issue:** TLFFRA boards occasionally struggle with disengaged and/or noncompliant trustees, but systems lack tools and policies to address these issues.

Topic Area 2 Preliminary Staff Recommendations

- **Statutory/Legislative:**
  - Consider changes to statutory TLFFRA board structure. A potential option could be to eliminate one citizen seat and make it an additional city appointee and retain one citizen seat.
  - Provide statutory authorization for TLFFRA boards to remove disengaged/noncompliant board members. Some options may include:
    - Authorization for each board to adopt a policy for removing inactive or noncompliant board members.
    - Including language allowing for appointed trustees to be removed by the mayor or elected trustees to be removed by members in accordance with procedures adopted by the board.
    - Formalizing in statute that absences beyond a certain percentage or number of meetings is cause for removal.

Topic Area 2 Preliminary Staff Recommendations (cont.)

- **PRB Guidance/Technical Assistance:**
  - The PRB may compile information and guidance on processes used by TLFFRA systems for identifying citizen members with qualifications and example policies used by systems to set standards for engagement of their board members.

Topic Area 3: Transparency and Communication

- Overview:
  - Historically, systems have struggled to maintain good, ongoing communication with sponsors
  - High-performing systems had good communication practices
  - Not all systems' reports and other statutorily required documentation are accessible through a public website
- **Identified Issue:** Information may not be easily accessible by all parties, including sponsoring entity and membership.
- **Identified Issue:** Minutes and board meeting materials are sometimes incomplete or not comprehensive.
- **Identified Issue:** Some TLFFRA systems have difficulty contacting their sponsoring entity to discuss plan issues.

Topic Area 3 Preliminary Staff Recommendations

- **Statutory/Legislative:**
  - Require the sponsoring entity of a TLFFRA system to make publicly available on their website reports submitted to the PRB by the system.
- **PRB Guidance/Technical Assistance:**
  - The PRB may issue guidance or conduct continuing education on transparency and communication topics.

Topic Area 4: Additional Areas for Research and Consideration

- Overview:
  - Statute created in the 1930s and may need revision
    - Multiple references to volunteer systems for systems that no longer include volunteers
  - May be difficult to know all PRB reporting and training requirements when first joining a board
  - TLFFRA systems have few staff and resources, so may benefit from having access to more reference material
- **Identified Issue:** Statutory language is potentially outdated and may not reflect current practices.
- **Identified Issue:** Additional information-sharing mechanisms and resources may be helpful for TLFFRA systems.

Topic Area 4 Preliminary Staff Recommendations

- **Statutory/Legislative:**
  - Propose statutory updates based on any specific feedback or suggestions received from TLFFRA stakeholders through this process.
- **PRB Guidance/Technical Assistance:**
  - The PRB could create a new core or CE course on reporting requirements and the role of the PRB for new administrators and trustees.
  - The PRB could implement a process to collect, share and regularly update example polices, requests for proposal and other relevant resources.

Timeline for Feedback

- February: Preliminary recommendations made available for stakeholder feedback
- March: Update provided to board
- May: Updated material and stakeholder comments presented to Actuarial Committee
- July: Updated recommendations with committee input presented to board
- September: Final recommendations presented to board for possible approval
- November: Include any recommendations to the legislature in PRB Biennial Report

Potential TLFFRA Governance Issues and Recommendations
January 25, 2024

Overview

In 2020, the Pension Review Board (PRB) directed staff to study Texas public retirement system governance structures and practices. Staff began the process of studying system governance of all 100 systems by completing reports on board structure, outlining each system's decision-making process, and providing data on board qualifications for some systems. Since that time, the PRB's focus on studying governance has shifted more specifically to the 42 systems that operate under the Texas Local Fire Fighters Retirement Act (TLFFRA).

The primary reason for focus on TLFFRA systems is that these systems tend to struggle more from a funding standpoint, accounting for 11 out of the 12 systems that have been subject to PRB intensive reviews, which typically prioritize poorly funded systems for review.[1] In addition, most of the systems currently subject to the Funding Soundness Restoration Plan (FSRP) requirement are TLFFRA systems.[2] While some TLFFRA systems are well-funded, on average, TLFFRA systems have the highest median expected return, highest median funding period, and lowest median funded ratio of all categories of Texas public retirement systems.[3] In addition, TLFFRA systems have recently been in the legislative spotlight. In 2022, the Speaker's interim charges included a charge to the House Pensions, Investments, and Financial Services (PIFS) Committee to study governance of systems under TLFFRA.[4] The PRB provided testimony during an interim committee hearing in August of 2022 and the PIFS committee issued a report in December of the same year.[5]

To complete preliminary research on TLFFRA governance, in the fall of 2022, PRB staff engaged a team of graduate students at the LBJ School of Public Affairs at the University of Texas at Austin to conduct a policy research project to study TLFFRA governance, develop research findings, and identify potential recommendations. The team completed their research and provided a report (LBJ student report) to the PRB in the spring of 2023.

In the fall of 2023, the PRB worked with TLFFRA stakeholders to form a workgroup comprised of stakeholders from multiple TLFFRA systems and sponsoring entities representing small, medium, and large systems. The PRB's goal in forming the TLFFRA Governance Work Group (Work Group) was to build on previous research and identify areas for improvement in TLFFRA governance by working directly with stakeholders. The intended outcome of this process is to help the PRB develop possible recommendations that can improve governance of these systems and ultimately help them succeed. Recommendations adopted by the board may include statutory changes, development of PRB guidance or other education/technical assistance, or direction for the PRB to engage in further studies.

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[1] Texas Pension Review Board, Intensive Reviews, accessed January 11, 2024, https://www.prb.texas.gov/intensive-reviews/
[2] Texas Pension Review Board, *FSRP Updates* (Austin: Texas Pension Review Board, November 2023)
[3] Pension Review Board November 2023 Actuarial Valuation Report
[4] Texas House of Representatives, Interim Charges for the 87th Legislature, 24, accessed January 3, 2024, https://house.texas.gov/_media/pdf/interim-charges-87th.pdf
[5] House Committee on Pensions, Investments, and Financial Services, *Interim Report to the 88th Texas Legislature*, accessed January 12, 2024, https://house.texas.gov/_media/pdf/committees/reports/87interim/Pensions-Investments-and-Financial-Services-Committee-Interim-Report-2022.pdf

This document is intended to outline the potential governance issues found through the research conducted thus far and propose possible recommendations to address those issues. The PRB used multiple sources and reports to identify issues and possible recommendations, primarily the Work Group meetings, the LBJ student report, and previous experience working with TLFFRA systems and sponsoring entities. This document reflects PRB staff's analysis and synthesis of those sources of information and is meant to be a concrete starting point for stakeholder and board feedback and deliberations in a public forum to result in finalized board recommendations later this year.

TOPIC AREA 1: SYSTEM FUNDING AND DECISION-MAKING PRACTICES

Background: The Texas Local Fire Fighters Retirement Act (TLFFRA) was originally created in 1937 by the 45th Legislature and named the Firemen's Relief and Retirement Fund. In 1989, the Act was restated under Article 6243e and renamed as the Texas Local Fire Fighters Retirement Act. The Act allows for paid and part-paid fire departments and volunteer fire departments in participating cities to administer their own local retirement systems.

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.

Local retirement systems established under TLFFRA have authority to determine member contribution rates, benefit levels, and other plan provisions locally through procedures outlined in TLFFRA. However, the composition of TLFFRA boards of trustees is set in statute. The composition of the TLFFRA board represents the interests of the member, governing entity, and taxpayers. Sponsoring entities of TLFFRA systems must meet a statutory minimum contribution rate but may adopt by ordinance a higher contribution rate than that set in statute.[6]

Identified Issue: TLFFRA statutory decision-making processes may hinder progress toward resolving funding issues faced by many TLFFRA systems and their sponsors.

TLFFRA systems must adhere to certain operational and funding guidelines set in statute, including minimum contribution rates and a pre-determined board structure. While sponsoring entities control their employer contribution levels, typically through city budget processes, changes to benefits and member contributions occur through board-initiated action rather than a statutory change or change to city charter, as is common with many non-TLFFRA systems. Prior to a benefit or contribution change being finalized, the changes must be first approved by the system's actuary, as well as by a majority vote of participating members of the system. At least 50 percent of all participating members must participate in the vote.[7] Use of a membership vote to decide member contribution and benefit changes is mostly unique to TLFFRA when comparing these systems to others in Texas. While decision-making mechanisms vary from system to system, the PRB identified only two municipal systems that include a vote of members for certain decisions. El Paso Police and Fire Pension Fund has a member vote for making benefit and member contribution changes. However, the system's board must first submit any proposed benefit or member

[6] TLFFRA Peer Review Committee et. all, *Texas Local Fire Fighters Retirement Act Trustee Manual,* 2022
[7] Section 7(b), Article 6243e, Vernon's Texas Civil Statutes

contribution changes to the city's governing body for approval before the board is able to adopt a change.[8] Fort Worth Employees Retirement Fund (FWERF) utilizes a member vote for changes to member contributions. Unlike El Paso Fire and Police, FWERF does not require proposed member contribution changes to first be approved by both the board and the system.[9]

The TLFFRA member vote mechanism allows for individual plan members to have influence over the management of their pension plan. Some Work Group members characterized the member vote requirement as a helpful and necessary check and balance; however, the goals of the system administration, sponsoring governmental entity, and plan membership may not always be in alignment, potentially preventing necessary changes from occurring. For example, some sponsoring entities may hesitate to provide increased contributions, or implement an actuarially determined contribution (ADC), out of the belief that plan members will vote to increase their own benefits and, in turn, increase the sponsor's financial burden since the sponsoring entity does not have a specific role in approving benefit changes, other than the two seats they hold on the seven-member system board. Conversely, plan members may be hesitant to vote for changes that would reduce their own benefits, even in cases where those changes are needed to address funding gaps.

The LBJ student report noted that system representatives interviewed were generally in favor of shifting to an ADC contribution structure that would allow for the system's contribution levels to adequately address the unfunded liability. The report's analysis also showed a correlation between high-performing TLFFRA systems and actual contribution rates above the ADC. However, the analysis also found that some sponsors are wary of moving towards an ADC structure because there are concerns that systems will raise benefits.[10]

Due to the current statutory decision-making structure, sponsors are not required to be directly involved in setting benefit levels unless more specific working agreements are developed between systems and sponsors, as discussed below. During Work Group meetings, members noted that there is often not a formalized communication or agreement structure between the system and sponsor, and the quality of the working relationship may vary depending on the specific people involved and their willingness to work together on pension issues. Without such an agreement, the system, sponsor, and plan members may not be able to effectively work together to resolve any existing funding issues or address issues in a timely manner when they arise. While nearly all TLFFRA systems have a funding policy as required under legislation passed in 2019, policies submitted initially were not required to be jointly developed and adopted by the system and sponsor. With amendments to the funding policy requirement passed by the legislature in 2021, funding policies now require involvement from both parties.[11]

Through research and the Work Group meetings, PRB staff identified a trend of more sponsors and systems creating their own agreements or memorandums of understanding (MOUs) to outline parameters surrounding contributions and benefits changes. Some of these agreements are summarized in the chart, *Examples of Agreements.* These parameters, often referred to as "guardrails," allow for the

[8] El Paso Firemen and Policemen's Pension Fund, *Statement of Funding Policy,* January 2019, https://www.elpasofireandpolice.org/index.php/about/board-documents-2/board-policies/961-epfppf-statement-of-funding-policy/file

[9] Section 5.07, Article 6243i, Vernon's Texas Civil Statutes

[10] Ryan Hurt, Richard Guzman, Noah Jones, *Putting Out the Fire: Pension Governance of TLFFRA Plans* (Austin: The Lyndon B. Johnson School of Public Affairs), 69.

[11] Section 802.2011, Texas Government Code

sponsor to have peace of mind that no unfunded benefit increases will occur, while allowing the system to obtain additional needed funding to resolve funding issues and ensure that members will ultimately receive the benefits they are promised. Such agreements can lead to improved funding and potentially allow for additional benefits when the plan is well-funded; for example, Denton Fire and the City of Denton agreed to an ad-hoc cost-of-living adjustment in 2022 while maintaining a funding period below 10 years. Joint working agreements may occasionally occur more informally, but the PRB recommends that any jointly agreed upon terms regarding contribution and benefit levels are eventually incorporated into a funding policy, particularly since the statute now provides a foundation for jointly developed and adopted funding policies.

Examples of Agreements	
Denton Fire	The system and the city use a Meet and Confer Agreement to establish certain responsibilities and funding goals shared by both parties. For example, the system agrees to not raise benefits during the term of the agreement and the city agrees to only adjust contributions based upon an actuarial valuation.[12]
Longview Fire	The system and city entered into a memorandum of understanding that the city would provide the system a lump-sum contribution from the proceeds of a pension obligation bond and the system would not enhance benefits unless the funding period was less than five years and the enhancement would not increase the system's funding period above 10 years.[13]
Irving Fire	The system and the city entered into a formal agreement surrounding a pension obligation bond. The bond will pay down a portion of the system's UAAL and as a result, the system agrees that any benefit enhancement submitted for a membership vote will require that the member contributions solely cover the increase to the ADC. It further states that both the members and city will equally split the ADC if it is lower than 26 percent of pay, but if it goes above 26 percent, the members will only be responsible for a maximum of 13 percent.[14]
Corpus Christi Fire	The city informally agreed to increase contributions, with the understanding by the system that they could not use the additional contributions to increase benefits.

Sometimes the system and sponsor may be in alignment about needed changes, but as previously mentioned, changes to benefits and member contributions require approval from plan members as a final step. During Work Group meetings, group members discussed past difficulties some systems have experienced in convincing members to support needed reforms; however, they identified proactive, robust education efforts as a key to success. Some of the Work Group members represent systems that have recently implemented significant reforms to address funding issues, and they discussed the measures that they have taken in the past to help ensure that their members are well informed about on the proposed changes, including conveying the potential repercussions of having an inadequately funded plan. They explained how they educated members prior to votes, including bringing the system actuary in to talk to the members directly, offering multiple options, and holding votes immediately following the

[12] Meet and Confer Agreement Between the City of Denton and the Denton Firefighters Association, *Denton Firemen's Relief and Retirement Fund.* 24 September 2019, https://www.prb.texas.gov/wp-content/uploads/2023/12/Denton-Funding-Policy.pdf

[13] Longview Firemen's Relief and Retirement Fund and the City of Longview, *Agreement Regarding City of Longview Pension Obligation Bonds*, 23 June 2022.

[14] Irving Firemen's Relief and Retirement Fund and the City of Irving, Texas, *Agreement Regarding City Pension Obligations Bonds,* 21 March 2022.

discussion. The members noted that when systems take proactive measures to educate the plan members, the overall process to obtain support from the membership tends to go smoothly and systems are able to make the changes needed to address funding challenges.

Preliminary Staff Recommendations
Statutory/legislative 1.1 Require the sponsoring entity to first approve any ballot options concerning benefit or contribution changes prior to a member vote. This recommendation would ensure sponsors and systems work collaboratively on potential changes before going to a member vote and could change the incentive structure to make it more likely sponsors would be less hesitant to provide necessary employer contributions. **PRB guidance/technical assistance** 1.2 The PRB may publish guidance based on experiences of multiple TLFFRA systems for improving overall plan governance, such as best practices for creation of a joint working agreement (and ultimately jointly adopted funding policies) between the system and sponsor and methods to effectively educate members in preparation for a vote on plan changes. Included in this effort could be compiling actual agreements and funding policies as examples and making them publicly available. 1.3 The PRB may create a continuing education (CE) course on successful system reforms, potentially featuring a panel of TLFFRA stakeholders.

TOPIC AREA 2. BOARD STRUCTURE AND MEMBERSHIP

Background: TLFFRA boards are comprised of seven members:

- the mayor of the municipality or the mayor's designated representative
- the chief financial officer (CFO) of the municipality, the person who performs the functions of a CFO, or the CFO's designated representative
- three members of the retirement system elected by participating members
- two citizens of the state who are not officers or employees of the municipality and are elected by participating members.[15]

The distribution of trustee seats is set in statute.

Identified Issue: TLFFRA board structure may need updating to address identified concerns and ensure balanced representation.

The LBJ student report noted that filling citizen trustee positions is challenging for many TLFFRA systems regardless of overall system performance.[16] The Work Group members echoed this concern. During Work Group sessions, members noted that excluding the statutory residency requirement – the citizen seat for any TLFFRA system must be filled by a Texas resident – there is currently no guidance available to systems about what qualifications they should look for when filling the citizen seat. However, filling citizen seats with individuals with relevant and helpful expertise—such as financial or legal expertise—can also be

[15] Section 19, Article 6243e, Vernon's Texas Civil Statutes
[16] Ryan Hurt, Richard Guzman, Noah Jones, *Putting Out the Fire: Pension Governance of TLFFRA Plans* (Austin: The Lyndon B. Johnson School of Public Affairs), 57.

difficult, especially for smaller TLFFRA systems. As a result of the difficulties associated with filling citizen seats, they are often filled by retired firefighters, many times retired firefighters who formerly served on the TLFFRA board. While this expertise and institutional knowledge can be useful, citizen seats filled by retired firefighters can also mean that firefighter/plan member perspectives outnumber others, especially sponsor perspectives.

Outside of TLFFRA systems, recent legislative reforms of some municipal public pension boards have resulted in shifting the balance towards having more representation from the sponsoring entity and adding required qualifications for certain trustees, as described in the table, *Examples of Recently Changed Board Structures and Qualifications*.[17]

Examples of Recent Legislative Changes to Board Structures and Qualifications		
	Board Structure	**Required Qualifications**
Galveston Police (2019)	Increased board from seven to eight total members, additional member designated by city representatives.	To be designated or elected a trustee, a person must have 1) demonstrated financial, accounting, business, investment, budgeting, or actuarial experience; 2) a bachelor's degree from an accredited institution of higher education; or 3) been vetted to verify that the person is capable of performing the duties and responsibilities of a trustee.[18]
Austin Police (2021)	One active member seat replaced with a citizen appointed by the city council.	The citizen trustee member must have demonstrated financial or investment experience.[19]

Some Work Group members indicated their systems voluntarily try to find candidates for citizen seats that have expertise/qualifications, such financial or investment industry backgrounds. This became a discussion point amongst the members which indicated further guidance or sharing of best practices would be beneficial.

Identified Issue: TLFFRA boards occasionally struggle with disengaged and/or noncompliant trustees, but systems lack tools and policies to address these issues.

Work Group participants noted that some TLFFRA systems struggle with low engagement particularly from sponsor representatives sitting on the board, such as not attending board meetings. They further noted that typically sponsor representatives on the board are responsible for bringing pertinent information from the TLFFRA board to the attention of the sponsoring entity as a whole, making their role on the board and level of engagement critical to the overall working relationship between the system and the sponsor.

Members also raised the concern that there are some TLFFRA trustees who are not compliant with the PRB's Minimum Educational Training (MET) program requirements. They noted that system

[17] For example, Section 2.021, Article 6243p, Vernon's Texas Civil Statutes, Section 3.02, Article 6243n-1, Vernon's Texas Civil Statutes, and Section 4, Article 6243n, Vernon's Texas Civil Statutes.
[18] Section 2.021, Article 6243p, Vernon's Texas Civil Statutes
[19] Section 3.02(a)(5), Article 6243(n-1), Vernon's Texas Civil Statutes

administrators make attempts but are still sometimes unable to get their trustees compliant. The PRB is currently pursuing a project working with all systems with trustees out of compliance, with core education specifically, to understand reasons for noncompliance and assist where possible.

A suggestion offered by Work Group members was adding statutory authority allowing TLFFRA systems to remove inactive or noncompliant members. The chart below, *Examples of Statutory Removal of Members,* provides some examples of mechanisms in current law for several Texas municipal systems.

Examples of Statutory Removal of Members	
Removal by elector/appointer	
San Antonio Fire and Police	Allows firefighter or police officers to vote to remove their appointed representatives. Subsection (b) allows retiree members to vote to remove elected retiree representatives.[20]
Attendance requirement	
Austin Police	Provides that trustees who are absent from five consecutive regular board meetings will be removed.[21]
Board member vote, with hearing	
Houston Police	The board may vote to remove a board member, with agreement from a hearing examiner.[22]

Through the Work Group discussions, PRB staff also learned that some systems have developed their own policies and procedures to promote board member engagement and education. In general, members indicated these policies are helpful in promoting engagement and compliance. The policies are as follows:

- **Education policy.** Odessa Firemen's Relief & Retirement Fund created an education policy which requires board members to complete 15 to 30 hours of MET training annually. If a board member does not complete their requirement, they must share their reason for noncompliance with the board chair and the board will decide what actions to take regarding the trustee's position on the board.
- **Attendance policy.** Irving Firemen's Relief and Retirement Fund created an attendance policy requiring trustees to attend at least 75 percent of regular board meetings each year. The board of trustees may excuse absences in the case of unusual circumstances, but otherwise a trustee who is noncompliant with the policy will be asked to consider resigning from the board.

Preliminary Staff Recommendations

Statutory/legislative

2.1 Consider changes to statutory TLFFRA board structure. A potential option could be to eliminate one citizen seat and make it an additional city appointee and retain one citizen seat. Such a change would provide even representation between city and plan members but still retain one citizen member meant to represent taxpayers.

2.2 Provide statutory authorization for TLFFRA boards to remove disengaged/noncompliant board members. Some options may include:

[20] Section 2.03(a), Article 6243o, Vernon's Texas Civil Statutes
[21] Section 3.06(c), Article 6243n-1, Vernon's Texas Civil Statutes
[22] Section 7(a), Article 6243g-4, Vernon's Texas Civil Statutes

- Authorize each board to adopt a policy for removing inactive or noncompliant board members. The specific criteria would be left up to each system's board.
- Include language allowing for appointed trustees to be removed by the mayor or elected trustees removed by members in accordance with procedures adopted by the board.
- Formalize in statute that absences beyond a certain percent of meetings or number of meetings is cause for removal, or a certain number of consecutive meetings.

PRB guidance/technical assistance

2.3 The PRB may compile information and guidance on processes used by TLFFRA systems for identifying citizen members with qualifications and example policies used by systems to set standards for engagement of their board members, including attendance policies and education policies. This recommendation would provide information and assistance to TLFFRA systems while not mandating specific qualifications for citizen members, which may be difficult for some systems to comply with.

TOPIC AREA 3. TRANSPARENCY AND COMMUNICATION

Background: In general, good communication practices and overall transparency help mitigate issues and help ensure stakeholders of any organization are all on the same page and have the information needed to effectively make decisions. The LBJ student report states that representatives of high-performing TLFFRA systems interviewed by the team described having consistent and reliable communications with plan members specifically as a key governance success factor.[23] In other words, improving communication and transparency could ultimately lead to improved overall performance of the system.

Through the Work Group meetings, communication among the systems, their sponsors, their members, and the PRB was a topic discussed at length. PRB staff aimed to understand current methods of communication and identify issues and found systems use a variety of methods to communicate with their members, which helps improve the member vote process and helps the plan members understand their benefits overall. Generally, TLFFRA systems have very few staff members, so most day-to-day communication occurs through the administrator and occasionally the board members themselves, particularly when systems are contemplating major reforms.

Identified Issue: Information may not be easily accessible by all parties, including sponsoring entity and membership.

Some existing statutory requirements already exist that are meant to promote transparency for all Texas retirement systems, such as the requirement for all reports submitted to the PRB to also be published on a website.[24] Examples of required reports include actuarial valuations, annual financial reports, and funding policies. This statute does not require each system to have a website; instead, it allows for the information and reports to be posted on any public website, such as that of the sponsoring entity. The LBJ student report noted that many TLFFRA systems currently lack a website, or the website is missing information. The team arrived at this conclusion after conducting a search for and review of websites of

[23] Ryan Hurt, Richard Guzman, Noah Jones, *Putting Out the Fire: Pension Governance of TLFFRA Plans* (Austin: The Lyndon B. Johnson School of Public Affairs), 62.
[24] Section 802.107, Texas Government Code

all 42 TLFFRA systems.[25] In addition, the need for increased transparency was addressed in the most recent PRB intensive review; the system reviewed (Abilene Fire) has since made improvements to address the deficiencies highlighted in the report, such as missing and outdated reports on the system website.[26]

For systems without their own website, the information required to be posted may be unavailable on any public website, including required reports. Sponsoring entities – a majority of which are cities – already have websites and post other publicly available documents online. It is an intuitive location for members of the public to go when looking for financial and actuarial information, and many cities' websites already include this information for local retirement systems. Work Group members noted that administering a website is difficult for systems because they do not typically have the in-house knowledge or bandwidth needed to manage it themselves and third-party administrators can be expensive.

Identified Issue: Some TLFFRA systems have difficulty contacting their sponsoring entity to discuss plan issues.

Work Group members noted that they are often dependent on the level of engagement from the sponsor representative on the system's board. Getting information in front of the sponsor has been a challenge for some TLFFRA systems, but a few who have completed an FSRP or been part of an intensive review by the PRB did mention that having to complete those processes improved communication and working relationships overall. During the Work Group sessions, it became apparent that there may also be a lack of understanding surrounding certain reporting cycles. In particular, actuarial valuations and experience studies are typically not completed on the same timeline as city budgeting cycles. This mismatch has led to some sponsors hesitating to make contribution decisions until they have a more recent report, which can increase the overall amount of time it takes to address funding issues. As a result, at least one system represented on the Work Group has moved to annual actuarial valuations to ensure stakeholders have updated actuarial information on a more frequent basis.

Identified Issue: Minutes and board meeting materials are sometimes incomplete or not comprehensive.

Governmental entities are required to keep minutes or a recording of their public meetings, but they are currently not required to keep detailed records of discussions or other information that may be pertinent to system status.[27] Beyond statutory compliance, the use of detailed and easily obtainable meeting minutes helps keep both the membership aware of the system's decisions, as well as provides a resource for the sponsor.

The LBJ student report found that high-performing TLFFRA systems were more likely to have detailed minutes and scored higher on various transparency measures than low- and medium-performing systems. However, the report found that TLFFRA board meeting minutes and materials were often unavailable for many systems. During their analysis, the student team discovered that they were unable to locate minutes

[25] Ryan Hurt, Richard Guzman, Noah Jones, *Putting Out the Fire: Pension Governance of TLFFRA Plans* (Austin: The Lyndon B. Johnson School of Public Affairs), 70.
[26] Texas Pension Review Board, *Intensive Review: Abilene Firemen's Relief and Retirement Fund,* September 2023, 25.
[27] Section 551.021, Texas Government Code

for 19 of the 42 TLFFRA systems. They noted that it was often due to being unable to find system websites overall.[28]

Preliminary Staff Recommendations
Statutory/legislative 3.1 Require the sponsoring entity of a TLFFRA system to make publicly available on their website reports submitted to the PRB by the system. This change would facilitate access to information about TLFFRA systems even in situations where the system is unable to maintain an independent website. **PRB guidance/technical assistance** 3.2 The PRB may issue guidance or conduct continuing education on transparency and communication topics.

TOPIC AREA 4. ADDITIONAL AREAS FOR RESEARCH AND CONSIDERATION

Identified Issue: Statutory language is potentially outdated in some areas and may not reflect current practices.

The Work Group members made PRB staff aware that TLFFRA statute contains some outdated language that needs revising to reflect current trends and practices. They noted that the statute was created in the 1930s and some sections have not been updated since then. For example, in various provisions, the statute still addresses volunteer systems within systems that have no volunteers. Not only does the current statute not always align with current system structures, it has also historically made it more difficult for struggling TLFFRA systems to close their plan to new members and join statewide systems. The Texas Municipal Retirement System (TMRS) statute allows for local systems to join TMRS through city ordinance; however, TLFFRA systems may still lack clarity on this process.[29]

Identified Issue: Additional information-sharing mechanisms and resources may be helpful for TLFFRA systems.

The PRB often fields questions from TLFFRA systems about reporting requirements and Minimum Educational Training (MET) requirements. This has primarily occurred via technical assistance requests but was briefly brought up during Work Group meetings. Work Group members noted that when first joining the board, it is difficult to learn certain PRB reporting requirements, such as the MET reporting, especially when there is high turnover on the board or when a system has a new administrator. It was also noted that the sponsor representatives may need more information about how defined benefit plans work overall.

Work Group meetings often led to the participating systems sharing information about how they handle certain topics and issues. While PRB staff moderated the meetings, Work Group members chimed in asking questions of each other and sharing their own system's unique practices. One of the benefits of the Work Group sessions beyond information gathering for the PRB was providing an avenue for Work

[28] Ryan Hurt, Richard Guzman, Noah Jones, *Putting Out the Fire: Pension Governance of TLFFRA Plans* (Austin: The Lyndon B. Johnson School of Public Affairs), 53, 70.
[29] Section 852.005, Texas Government Code

Group members to share resources and information amongst themselves. For example, when filling citizen seat positions, some Work Group members shared that they ask the prior citizen seat member to provide a list of recommendations. Systems would benefit from having access to examples and templates to help them conduct daily operations without starting from scratch. TLFFRA systems in particular could benefit from such assistance because they tend to have few staff and resources to administer their plans.

Preliminary Staff Recommendations
Statutory/legislative 4.1 Propose statutory updates based on any specific feedback or suggestions received from TLFFRA stakeholders through this process. Proposing any such updates would depend on the PRB receiving specific suggestions from TLFFRA stakeholders. **PRB guidance/technical assistance** 4.2 The PRB could create a new core or CE course on reporting requirements and the role of the PRB for new administrators and trustees. The PRB may also consider other topics based on TLFFRA stakeholder requests. Such a course could help trustees and administrators more easily learn statutory reporting and education requirements and make compliance easier. 4.3 The PRB could implement a process to collect, share and regularly update example polices, requests for proposal and other relevant resources. This process would ultimately make it easier for systems to access useful examples since they would just have to go to one place.

Pension Review Board
January 25, 2024

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

Pension Review Board
January 25, 2024

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

Pension Review Board
January 25, 2024

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. Some contributions toward future benefits is subject to contribution corridor mechanism outlined in the governing statute.	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, approved by city council, and authorized by the legislature.	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.
Austin Police Retirement System	V.T.C.S., Article 6243n-1	Determined by governing statute. City council may authorize additional contributions to the system. Some contributions toward future benefits is subject to contribution corridor.	Determined by governing statute. If the board so recommends, active members by majority vote may increase or decrease contributions with a minimum set in statute.	Determined by governing statute.	Determined by governing statute. The governing statute also allows the board of trustees to change Retro DROP requirements.	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

Pension Review Board
January 25, 2024

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 & 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
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

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						
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
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 governing statute. After 1/1/2025, determined by actuarial valuation. If the valuation recommends an aggregate contribution greater than actual contributions, employer and employee split the difference 50%/50%.	Determined by governing statute. After 1/1/2025, determined by actuarial valuation. If the valuation recommends an aggregate contribution greater than actual contributions, employer and employee split the difference 50%/50%.	Board is authorized to make benefit increases, with approval of a 6 out of 8 trustees.	Board of trustees is authorized to make benefit modifications.	No

Pension Review Board
January 25, 2024

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						
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
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.

Pension Review Board
January 25, 2024

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	
CPS Energy 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	

Putting Out the Fire: Pension Governance of TLFFRA Plans

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Table of Contents

Executive Summary....5

1. Introduction....7

1.1. The National Pension Landscape....7

1.2. Texas Pensions....8

1.3 TLFFRA Pensions....9

1.4 Research Questions....12

2. Literature Review....14

2.1 Approach....15

2.2 Independent Variables....17

2.2.1 Pension governance....18

2.2.1.1. Board expertise....19

2.2.1.2. Transparency....20

2.2.1.3. Risk tolerance....21

2.3.1. Assumptions....22

2.3.1.1. Discount rate....23

2.3.1.2. Payroll growth....23

2.4.1. City support....24

2.4.1.1. Additional plan benefit....25

2.4.1.2. City contributions....26

2.5 Outcome variables....27

2.5.1. Change in funded ratio....27

2.5.2. Unfunded liability as % of payroll....28

2.5.3. Amortization period....29

2.6 Literature Review Summary ….30

3. Phase 1 Methodology....30

3.1 Phase 1 Limitation....31

3.2 Quantitative Findings....31

3.2.1 Regression Model 1....31

3.2.2 Regression Model 2....33

3.2.3 Regression Model 3....35

` 3.2.4 Regression Model 4....37

3.2.5 Regression Model 5....38

3.2.6 Regression Model 6....40

3.3. Regression Analysis....41

4. Phase 2 Methodology....43

4.1 Phase 2 Limitations....44

4.2 Taxonomy Comparison: Outcome Variables....46

4.3 Taxonomy Comparison: Governance Variables....47

4.4 Taxonomy Comparison: Assumption Variables....47

4.5 Taxonomy Comparison: City Support Variables....49

4.6 Taxonomy Comparison: External Factors....50

4.7 Taxonomy Analysis....53

5. Phase 3: Qualitative Analysis....55

5.1 Phase 3 Methodology....56

5.2 Phase 3 Limitations....57

5.3 Phase 3 Findings....57

5.4 Pension System Board Governance....58

5.5 Pension System Board Composition....59

5.6 Interactions with the PRB and external parties....60

5.7 Key differences between pension systems....62

5.8 Summary of Qualitative Findings....64

6. Recommendations....64

6.1 Establish a Statewide TLFFRA Fund....65

6.2 Require an annual MOU between city council, TLFFRA board, and PRB....66

6.3 Require a minimum ADC contribution rate....69

6.4 Each plan should develop independent website....70

6.5 Conduct a study on expanding TLFFRA to county plans....71

6.6 Reform citizen seats....73

7. Conclusion....74

8. Authors....77

9. Works Cited....79

Figure Table of Contents

Figure 1: Regression Model #1: All Variables with Funded Ratio……..……...31

Figure 2: Regression Model #2: Difference Variables with Funded Ratio……...….....33

Figure 3: Regression Model #3: All Variables With Unfunded Liability…….....35

Figure 4: Regression Model #4: Difference Variables with Unfunded Liability.....37

Figure 5: Regression Model #5: All Variables with Amortization.....38

Figure 6: Regression Model #6: All Variables with Amortization Period.....40

Figure 7: Statistical Significance of Variables.....41

Figure 8: Outcome Variables by Plan Performance.....46

Figure 9: Governance Variables by Plan Performance.....47

Figure 10: Assumption Variables by Plan Performance.....47

Figure 11: City Support Variables by Plan Performance.....49

Figure 12: External Variables by Plan Performance.....50

Executive Summary

The purpose of this study is to evaluate pension systems that fall under the Texas Local Fire Fighters Retirement Act (TLFFRA). These plans, overseen by the Texas Pension Review Board (PRB), demonstrate wide variability in actuarial outcomes. Governance and the methods in which plans decide on investments, contribution levels, and benefit payouts play a role in this variability. To further investigate how governance within TLFFRA pension plans varies, our team utilized a mixed methods approach to identify variables associated with strong outcomes and governance best practices. First, we conducted a series of six multivariate regression models under different scenarios and subsequently grouped the 42 TLFFRA plans based on their performance. From this breakdown, our team identified differences between high-performing plans and under-performing plans and what factors were most associated with strong financial outcomes. Lastly, we conducted semi-structured interviews with TLFFRA board members to uncover and contextualize our quantitative findings as they relate to decision-making processes.

Through this methodology, our team found that governance and expertise were statistically significant in every regression model. Medium-performing pension systems demonstrated the highest governance scores, while high-performing pension systems tended to have the most support from the plan sponsor. Under-performing pension systems tended to have the lowest population growth, the most retirees, and limited support from the plan sponsor. Our semi-structured interviews underscored some of these topics in further depth. We found that although there may be variance in actuarial outcomes, most TLFFRA pension systems struggle with the same issues. This includes the inherent tension and hesitancy of plan sponsors to raise their contributions for fear of a subsequent benefit increase on behalf of the TLFFRA board, the difficulty in filling citizen seats on

the TLFFRA board, and reliance on previous board member's expertise. However, some of the pension systems described varying levels of financial expertise, while others described having good governance principles outlined in this report.

From these findings, our team outlines six recommendations for the consideration of the PRB, individual TLFFRA plans, and the Texas Legislature. The key themes of our recommendations revolve around stability, city support, and open governance. First, we recommend that an opt-in statewide TLFFRA fund be established to mitigate risk among the smaller plans. Secondly, an annual memorandum of understanding (MOU) should be created each year by the plan and plan sponsor to create guardrails and accountability around pension performance. Third, we recommend requiring all plan sponsors to use an actuarily determined contribution (ADC) rate to ensure that plan sponsors are adequately funding their pension systems. Fourth, each TLFFRA plan should establish its own website for enhanced transparency. Fifth, the PRB should commence a study into the viability of countywide TLFFRA plans to illuminate how this program may be different under different political subdivision structures. Finally, our team recommends taking a closer look at reforming the citizen seats on TLFFRA boards to increase board flexibility and ensure that only quality members are at the decision-making table.

1. Introduction

1.1 The National Pension Landscape

Public pension plans in the United States have undergone significant changes over the past decade. These retirement plans, which promise a guaranteed benefit to retirees based on certain factors, help the public sector attract high-quality employees. However, these plans have faced significant funding challenges in recent years due to a combination of factors, such as insufficient contributions from state and local governments, poor investment returns, and demographic factors, which has led to a funding gap and a significant liability for taxpayers. All pensions operate on the same equation: employee (i.e., government)/employer contributions + investment returns = retirement benefit + cost of administering the plan. The ideal plan has both sides of these equations exactly evened out. According to the U.S. Census Bureau, state and local defined-benefit pension systems, on average, were 73.6% funded with 83.4% of these plans reporting a net liability (U.S. Census Bureau, 2019). Nearly 21 million Americans are members of a public pension plan. To address this alarming trend, some states have enacted major changes within their systems to reduce costs both presently and into the future. Among the most frequent reforms are reduced benefit levels, longer vesting periods, increased age and service requirements, limited cost-of-living adjustments, and increased employer and employee contributions (Urban Institute, 2018). There is a vested interest for taxpayers, plan members, and governments, to implement reforms that will put these plans on a path to fiscal solvency. Each plan has different attributes, governing board structures, and regulatory environments that they must navigate. This report contributes to existing literature by undertaking a

deep analysis on a specific kind of pension plan in Texas, but the findings are relevant for all public plans looking to make strategic reforms.

1.2 Texas Pensions

Texas has 93 public retirement systems with nearly 2 million members that all promise different pension packages at retirement. Seven of these systems are statewide, like the Teacher's Retirement System, and 86 of them are administered at the local level. Under the umbrella of these systems are 347 individual retirement plans overseen by the Texas Pension Review Board (PRB). The PRB officially functions as an independent oversight and reporting body for all pension plans across the state of Texas. The PRB currently employs 13 full time employees (FTE) and is responsive to the State Pension Review Board. The State Pension Review Board is composed of seven members that serve six-year terms and are appointed by the Governor. In the current state budget for the 2024-2025 biennium, the PRB is appropriated $2,562,518 to carry out its operations. In its enabling statute, the PRB is tasked with eight objectives (McGee, 2020):

1. Review all public retirement systems in the State of Texas.
2. Conduct and publish studies of potential or existing problems that threaten the financial stability of public pension plans in the state.
3. Provide technical assistance and policy advice to state pension plans and their government sponsors.
4. Make concrete reform recommendations to be implemented by plans or their sponsoring governments.
5. Analyze and comment on all legislation that affects Texas's retirement systems.
6. Administer the reporting requirements that the Texas legislature has instituted for the state's public pension plans.

7. Develop, administer, and track compliance with an educational training program for trustees and system administrators.
8. Report on its activities over the previous biennium before each new legislative session.

The PRB has been cited as a model for their work on maintaining and improving the structure of pensions in the state (McGee, 2020). Most states do not have a centralized authority for this kind of consolidated oversight for pension systems. The PRB's ability to offer guidance, resources, and recommendations to individual plans has allowed for the improvement in the funding levels of many pension systems across the state. Over the course of its history, PRB's analysis and legislative recommendations have led to the passage of several bills that has expanded and clarified their own powers while also maintaining the limited power the board holds over the pensions under its jurisdiction (Sunset, 2013). In 2018, S&P Global listed PRB oversight as a positive long-term factor for the state's finances and views, "the transparency provided by the PRB as elevating emerging national themes and standard practices to elected officials, plans, and the public" (McGee, 2020). Additionally, the PRB has provided critical support to pension systems across the state that were at risk of financial crisis. While the PRB has certainly provided tangible positive impact to many plans across the state, one subset of pension systems continues to struggle with making the necessary adjustments to reach long-term fiscal solvency.

1.3 Texas Local Firefighters Retirement Act (TLFFRA)

The Texas Local Firefighters Retirement Act (TLFFRA) was created to allow paid and part-time fire departments and volunteer fire departments in participating Texas cities to administer their own local retirement systems separated from the host city. The TLFFRA statute provides general guidelines for fund management, including some investment restrictions, but leaves most aspects of administration, plan design, contributions, and specific investments to each system's local board. Currently there are 42 programs that are governed by TLFFRA with approximately 10,000 total

members (Texas, 2022). Systems that operate under TLFFRA are entirely locally funded from the city and contributions from the active members of the plan. TLFFRA plans are designed to give an element of local control to fire departments who prefer more autonomy in their plan structure. A vast majority of fire departments across the state opt for the Texas Municipal Retirement System, a statewide, pooled asset fund that places administration in a centralized entity. Members of this plan have little discretion in contribution rates, investment decisions, and benefit payouts. Therefore, TLFFRA serves as a locally controlled alternative for plans who seek to have more decision-making authority.

Local retirement systems established under TLFFRA have authority to democratically determine member contribution rates, benefit levels, and other plan provisions locally outlined in TLFFRA. However, the composition of TLFFRA boards of trustees is set in statute and all 42 plans follow the same overarching structure. TLFFFRA plans must meet a statutory minimum contribution rate but may adopt a higher contribution rate than the one set in statute depending on individual need.

The TLFFRA statute includes rigid guidance for fund management, including the composition of the seven member board of trustees consisting of the mayor, or the mayor's designated representative for the sponsoring municipality; the chief financial officer of the municipality; three members of the retirement system that are elected by participating members; and two citizens who reside in the state and are not officers or employees of the municipality or any other political subdivision and who are elected by a majority vote of the members of the board. It also sets the contribution minimum for the sponsor at 12% of payroll (Interim, 2022).

In 2022, staff from the PRB testified to the Texas House Committee on Pensions, Investments, and Financial Services. They offered the following evidence that TLFFRA plans are among the lowest performing in Texas. Compared to other pension systems in the state, TLFFRA systems are underperforming state averages and are consistently underfunded as a group. When

looking at the funded ratio, the actuarial value of assets shown as a percentage of its actuarial accrued liability, they trend worse as a peer group, compared to all other Texas public plans by about 20% on average over the last decade. On average, TLFFRA plan's amortization period and unfunded ratios are among the highest in the state of Texas. These plans also tend to have poor investment returns relative to statewide funds with considerable variation between the plans. TLFFRA plans average a 10-year return assumption of 7.39%, with actual returns coming in at 6.95%. This is the lowest actual return compared to the other groups of plans in Texas (Interim, 2022). As demonstrated, individual TLFFRA plans are among the lowest performing across an array of metrics. According to data from the PRB's October 2022 meeting, five of the seven plans in Texas with an infinite amortization period were from TLFFRA. Therefore, it can be assumed that the poor performance of these plans may be attributed to the unique statutory makeup of their governance boards.

One function of the PRB is to undertake intensive reviews of plans that fall below a minimum threshold for fiscal solvency. These reviews are undertaken either as a precaution for warning signs that could lead to downturns in pension plans or for plans that are already in a dire situation. Out of the past 11 reviews, 10 have been TLFFRA plans. The most recent PRB intensive reviews have focused on TLFFRA pensions in Midland and Wichita Falls. In the case of both plans, the liabilities threatened to significantly begin outpacing assets in the near future. However, the cause of this mismatch is markedly different between both plans. Midland's plan was in danger due to risky investments and a portfolio that did not deliver on its return over the last 10 years (Midland, 2022). In Wichita Falls, the plan was in danger due to a lack of support of the plan from the city (Wichita, 2022). These reviews, among others, serve as preliminary evidence that there is not a universal reason for the underperformance of TLFFRA plans. Rather, there may be different factors affecting different cities in ensuring these plans are fiscally solvent in the long-term. For example, some of the TLFFRA plans demonstrate impressive outcome measures. Moreover, there is considerable variability among

the different TLFFRA plans across the state, suggesting that the outcome measures for long-term fiscal solvency may be better analyzed at an individual level, rather than in aggregate. Regardless, the failure of any individual TLFFRA plan to match liabilities with assets puts the retirement of firefighters at risk. The underperformance of these programs is not only dangerous for Texas firefighters who rely on these benefits upon retirement, but it would indicate a failure in terms of oversight and regulation. To best analyze the governance of TLFFRA pension systems, our team developed the following research questions.

1.4 Research Questions

1. Why are some TLFFRA pension plans more actuarially sound than others and what is the best way to evaluate them?

This question is the "umbrella" for our project and serves as the main focus of our engagement. PRB documents prove that the differences in these programs are leading to a wide variation of current performance along with mixed future projections (Texas Pension Review Board, 2022). Identifying these differences and giving recommendations to correct poor performance will be key to helping the future performance of all TLFFRA programs.

2. How can best practices improve the governance of struggling TLFFRA programs?

This question provides a specific response to the initial prompt from the PRB. To answer this question, our research delves into the practices that make some TLFFRA programs more successful than others. Our team also examines the practices of successful pension programs in both Texas. A general analysis of best industry practices and their application to TLFFRA programs is also included as a part of this study.

3. Is there a taxonomy for the management of TLFFRA programs?

The PRB uses a version of a taxonomy to determine the wellness of the programs under their review. One form of analysis currently performed by the PRB is a score given to struggling

programs to determine which of the programs will undergo an intensive review. Our team took various components of this review process and developed our own methodology for assessing the performance of a TLFFRA plan.

4. How do the structural differences in TLFFRA programs affect their governance?

In answering this question, our team understands all the various differences between each of the TLFFRA programs. Our objective was to identify the differences in these programs and understand how the different applications of the TLFFRA enabling statute affect their overall governance. In some cases, the governance of the programs may be affected by limitations set on their investment decisions, decisions on the openness of their operations, or the composition of their board.

Our approach to answering these questions was done in three phases. We first identified the most salient variables to analyze among all 42 plans through a literature review that is detailed in the next section. Once these variables were identified and collected, we began our discovery process. Phase 1 entailed a multivariate regression analysis to identify which variables, out of all that were examined, were the most correlated to positive or negative outcomes. This also allowed us to see how much predictive strength our selected variables had in comparison to outcomes. Phase 2 included a sorting of plans into three categories of performance: high, medium, and under. These placements were based on an assessment of various outcome variables and a rubric created by our team. Our goal in this phase was to identify how each of the independent variables compare between different performing plans. Phase 3, the last phase of our discovery, involved semi-structured interviews with plan members to contextualize our findings from the first two phases and understand the governance process in a more qualitative setting. Our takeaways from each of these phases informed our recommendations.

2. Literature Review

The following chapter is broken down into three sections. The first details prior pension studies we used to craft our methodology and justification for our approach. The second explains each of our independent variables and why they were chosen as aspects of pension performance that are relevant to our analysis. These variables are broken further into three primary subsections: governance, assumptions, and city support. The third section explains the outcome variables we chose as a way to measure performance. We ultimately concluded that for our findings to be as robust as possible we needed to look at more than one outcome measure because of the complexity associated with these numbers. In summary, our variables are organized as follows:

- Governance
    - MET Compliance broken down by board member
    - Risk Tolerance
    - Transparency
- Assumptions
    - Discount rate difference
        - Assumed discount rate – investment return
    - Payroll difference
        - Assumed payroll growth – actual payroll growth
- City Support
    - Benefit Difference
        - Normal cost of the plan – employee contribution
    - Contribution Difference
        - Fixed contribution – actuarially determined contribution

- Outcomes
    - Funded ratio difference from 2011 to 2021
    - Unfunded liability as a percentage of payroll
    - Amortization period

The following section serves as a justification and a deeper dive into the variables we used to compare each plan, the process for comparing them, and lays a road map for how these variables differed among each of the plans.

2.1 Approach

To examine the 42 TLFFRA plans in depth, our team utilized a mixed-method approach to underpin some of the most salient factors explaining pension performance and differences in governance structure. A further explanation of our methodology is discussed later in this report in the methodology sections of chapters 3-5. The first part of this methodology is grounded in existing literature that quantitatively examines factors underlying pension performance. Martin Luby developed a pension taxonomy to group 337 different pension plans in Michigan by common characteristics that were predictive of fiscal solvency (Luby, 2021). This approach specifically analyzed four broad categories of factors: political, institutional, fiscal, and financial and their statistical relationship with the funded ratio (i.e. the ratio of projected assets vs. projected liabilities). The paper finds that plan design and management (i.e. institutional factors) are significantly correlated to a plan's funded ratio. Political ideology, sociodemographic factors, and intergovernmental constraints are not strongly associated with the success of a pension plan. Because plan design and management are what makes TLFFRA plans unique in Texas, this article serves as the basis of our quantitative approach to

answering the stated research questions. This article serves as both justification for a taxonomy analysis and further signifies the importance of plan administrators in making investment decisions (i.e. governance). However, our approach uses a subcategorization for the individual plans, rather than the underlying factors. Moreover, our approach utilizes three broad buckets of independent variables: governance, assumptions, and city support, to reflect the unique stature of the TLFFRA statute. In line with Martin Luby, our approach utilizes a multivariate regression model to see which variables are the most associated with certain outcomes. From there, we grouped each of the plans into taxonomies for close analysis to pinpoint what makes high-performing plans different from under-performing plans. While our sample size only includes the 42 TLFFRA plans in Texas (which poses statistical difficulty in making causal claims), this approach for analyzing a group of pension plans is in line with our desired objectives.

However, there are many ways for analyzing pension governance and its relationship to performance. Research suggests that evaluating pension governance needs a multi-faceted approach that incorporates the structure and composition of the plan's governing board, evaluating the plan's investment policies and practices, and assessing the transparency and communication of the plan. Chen. et al (2015) examined the effect of board composition on pension funding by using a panel data set of large public pensions across the United States from 2001-2009. They found that increasing political appointees and active members of the system increases the funding performance of the system. Plans that were composed of more beneficiaries tended to perform better than those that were composed of outsiders. This is a critical finding in the context of TLFFRA plans. Active seats make up the majority of the governing board (particularly true in light of the fact that these three seats have the unstated authority to choose the other two citizen seats). However, it can be theorized that these members have an incentive to be hesitant to reduce the benefits they currently receive. Our research aims to identify where TLFFRA plans fall on this spectrum and to see if the active-member heavy

nature of the board influences pension performance. Anne Maher argues that accountability and transparency are key for good governance of pension plans (Maher, 2003). Although Maher focuses on private pension plans, she finds a link between different aspects of pension governance and pension performance. Moreover, inconsistent performance is associated with indicators of poor performance. One of the most critical factors for good governance, she argues, is having effective accounting and auditing requirements and a clear method for identifying how decisions are made within the governing body.

Our approach attempts to take the insights from these various approaches to analyzing pension governance and to contextualize them with the unique structure and performance of TLFFRA plans. In consultation with the PRB and the existing literature, we selected variables that are germane to these specific plans that all incorporate some component of governance and decision-making, whether it be the compliance of each board member in fulfilling their training requirements or how transparent the board's meeting minutes are. Further justification and detail of each variable included in our analysis is detailed below.

2.2 Independent Variables

In creating our TLFFRA taxonomy and identifying the variables that begin to uncover patterns in governance, our team identified 14 independent variables and three outcome variables. These variables represent a mix of qualitative governance variables, financial assumption variables, individual plan design, and city contribution variables. These variables are grounded in both the findings of various research on pension systems across the United States and new variables developed in conversations with the PRB. While there is a large amount of existing literature on pension systems in the wider United States, there is limited scholarly research on Texas plans specifically, let alone TLFFRA plans. While our research helps fill the gap on scholarly research on TLFFRA pension systems and informs the PRB on potential reasons that some TLFFRA plans are underperforming,

existing literature provided the necessary evidence that pension system governance is associated with pension system performance and assisted with the identification of methods for assessing that.

2.2.1. Pension Governance

The following research articles seem to serve as strong evidence that governance plays a role in the bigger picture of pension performance. Brooks (2019) used 210 observations from the Public Plans Data (PPD), collected by the Center for Retirement Research at Boston College, to determine if there is a statistical relationship between public pension board governance variables and pension performance. The author used the pension fund's average rate of return and funding ratio as measures of pension fund performance. Using OLS regression analysis, the author identified a statistically significant relationship between the number of active employee board members and higher funding ratios. The author found that, on average, plans with more active members on board demonstrated better overall financial solvency. Furthermore, Dobra et al. (2013) tested the hypothesis that variation in public pension asset decisions could be explained by governance factors, such as board composition. The data used in their study is from the National Association of State Retirement Administrators and covered 246 pension systems. They identified statistically significant associations between governance factors and asset allocation and found that larger pension system boards and boards with a greater number of retirees were associated with riskier investments. The proposed causal mechanism for this statistical association is that poor pension governance increased the risk tolerance of pension system board members, leading to riskier investments which resulted in poor pension performance on average.

To better pinpoint the direct relationship between pension governance and pension performance, Albrecht and Hingorani (2004) conducted a regression analysis that controlled for intervening variables such as investment strategy and assumptions that pension systems make at the beginning of each fiscal year (i.e. discount rate and payroll growth). The article utilized data from 290

public pension systems from a Public Pension Coordinating Council (PPPC) survey conducted by the National Association of State Retirement Administrators (NASRA). The authors identified a statistically significant relationship between governance factors and pension system performance even while controlling for the variability of asset allocation and rates of return. Consequently, Albrecht and Hingorani (2004) argued that the variability of pension system asset allocation and investment returns should be controlled for to better identify the relationship between governance factors and pension system performance. Our goal, in this research, is to see the extent to which these findings apply to TLFFRA plans.

There is a substantial body of literature that supports this report's research approach to explain the variation of TLFFRA pension system performance through the lens of pension system governance. However, unlike the existing literature which primarily compared pensions systems across the United States, the board structure of TLFFRA pension systems is statutorily set by the Texas Local Fire Fighters Retirement Act (TLFFRA) and is the same across all 42 plans. As a result, our report does not utilize board composition explicitly as a governance factor to compare and explain variation in individual TLFFRA plans, even though the previously stated research identified it an important element in the performance of pension systems. Rather, our research utilizes indirect measures of board composition based on three variables: board expertise, board transparency, and board risk tolerance to better understand differences in governance across each plan.

2.2.1.1. Board expertise

Our report measures board expertise by utilizing the rates of compliance among each member of each plan's governing board with the statutorily required Minimum Educational Training (MET) program. Established in 2013, these requirements are a minimum number of hours of training for board trustees and administrators that covers topics such as, fiduciary procedures, governance, the Texas Open Meetings Act, and risk management (PRB, 2023). While these trainings are required by

law, there is varied completion among different pension trustees. In providing recommendations that promote good governance of pension systems, Juan Yermo stressed the need for higher levels of expertise that may be achieved via training or the use of independent trustees that are knowledge about actuary matters (Yermo, 2008). Therefore, our research uses these training modules and the completion metrics from each of the TLFFRA board members to identify how expertise may be associated with positive outcomes. While there may be alternative measures to capture expertise, this variable is quantifiable and represents the closest proxy to relative expertise (Yermo, 2008).

2.5.1.2 Board transparency

To complement our quantitative measure of board expertise, we evaluated and ranked TLFFRA pension system board transparency by comparing the quality of their board meeting minutes. Transparency and accountability involving the critical decisions and investments policies that these governing boards undertake is central to the best practice principles adopted by the International Monetary Fund (IMF) Code of Good Practices on Fiscal Transparency and the Code of Good Practices on Transparency in Monetary and Financial Policies (Carmichael and Palacios, 2003). In developing this framework, the driving principles cited include clear objectives, free from conflict of interest, transparency regarding decisions, and accountability for outcomes. Therefore, as a measure of transparency, our team went through the publicly available meetings for each plan's board meeting and assigned it a "transparency score." The process for quantifying each pension system's board transparency utilized a rubric that ranked their quality on a 1 – 4 scale.

Meeting Minutes Transparency Scale

- **Scale 1** – pension system board meeting minutes are difficult to find, or nonexistent.
- **Scale 2** – pension system board meeting minutes lack sufficient detail or are missing one or more components (such as public comments, consent agenda, and attendance).

- **Scale 3** – pension system board meeting minutes contain purpose of meeting, time and location of board meeting, name of board member making a motion, title of motion, number of votes for or against motion.
- **Scale 4** – pension system board meeting minutes contain factors outlined in Scale 3. In addition, pension system board meeting minutes provide further explanation of meeting items, beyond simply stating the name of the item.

2.2.1.3 Board risk tolerance

For our evaluation matrix we used the standard deviation of TLFFRA ten-year returns as an indirect measure of board risk tolerance. The ten-year time frame of this variable is designed to screen out poor investment returns that may come from external factors, such as a recession or poor market year. By looking across the span of a decade, a better sense of how these returns have fluctuated demonstrates how tolerant these plans are of risk. In addition, we used the standard deviation of returns instead of actual rates of return to control for the possibility that poor performing TLFFRA pension systems may inherently make riskier investment decisions because of the required higher rate of return needed to maintain a higher funding status. According to the findings of the Albrecht and Hingorani (2004) study, failing to account for this possibility could confound the effects of governance factors on pension performance.

As stated previously, one of the potential causal mechanisms that explains the statistically significant relationship between board governance and pension system performance is that board governance factors, such as composition and expertise, influence the risk tolerance for pension system investments. However, Andonov and Cremers (2017) identified another causal mechanism that influences board risk tolerance. For example, Andonov and Cremers (2017) conducted a comparative study of 850 pension system in the United States, Canada, and Europe. The authors focused primarily

on the impact of linking a pension system's liability discount rate with the expected return on assets for U.S. pension systems, which is outlined in the Government Accounting Standards Board (GASB) guidelines for public pensions. As opposed to the regulatory practice in other countries, the authors argued that this linkage gives U.S. pension systems incentives to invest in more risky assets to report a higher funding status.

Based on their findings, U.S. pension systems invested in risker assets yet also underperformed when compared to international pension systems. In addition, Andonov and Cremers (2017) also identified a statistically significant relationship between board composition and risk tolerance. This indicates that the regulatory and governance landscape in the U.S. may provide unique incentives for pension systems to invest in riskier assets. As such, including the standard deviation of returns in our evaluation matrix of TLFFRA pension systems allows us to identify the presence of these incentives and identify how the risk tolerance of these plans may be associated with negative performance outcomes.

2.3.1. Assumption variables

The governing board of a pension plan makes a number of assumption decisions to properly plan for the future and predict future liabilities. However, research suggests that these assumptions are manipulated by certain plans to protect from having to make difficult decisions surrounding benefits decreases or contribution increases (Eaton, 2004). To control for this, our research includes two of these assumptions as an independent variable. However, our team focuses on the difference between the assumption and the real figure that the plan demonstrated. This allowed for our research to properly pinpoint how these positive or negative mismatches may contribute to overall outcomes. While this is a secondary component of governance, our research includes these assumptions to assess and identify the magnitude of its effect on performance outcomes.

2.3.1.1. Discount rate

In addition to governance factors influencing asset allocation decisions, existing literature also indicates that governance factors influence the initial discount rate selected for pension systems. For example, Anzia and Moe (2019) analyzed the political aspects of pension governance by studying how board composition of an individual pension plan (and their consequent incentives) plays into their decision making. They found that public employees have a higher likelihood of selecting an ambitiously high discount rate to lower their contributions to the fund. Political appointees, on the other hand, tended to choose a more realistic discount rate that may require either less benefits or more contributions from current employees. However, as stated previously TLFFRA plan board composition is statutorily defined and the only variation among the systems is based on who actually sits on these boards. Weng and Peng (2018) utilized an event history analysis of discount rate changes for 81 public pension plans over the span of 14 years. They utilized data from the Public Plans Data (PPD), collected by the Center for Retirement Research at Boston College. They identified that a state's fiscal health, the number of active employees, and a high initial discount rate were the variables that had the greatest effect on changes in pension plan discount rates. Their findings are useful for our research because these authors identified variables beyond pension governance that may have a greater effect on discount rate selection, which is a measure of pension fund performance. In addition, this research ties discount rate selection to other variables included in our evaluation matrix, such as the level of city support to the pension systems.

2.3.1.2. Payroll growth assumption

Another variable included in our report is payroll growth assumptions, which is the growth in new employees and the amount contributed by the pension system's city. We included this variable in our evaluation matrix because it is a useful benchmark to compare TLFFRA plans among each other

and with pension systems across the nation. Additionally, this variable serves as a relative proxy for population growth. Research suggests that current demographic trends are unsustainable for public pensions as aging and longer life expectancy are poised to put public pension systems under pressure (Bongaarts, 2004). Individual plans must forecast their payroll growth, or the number of new employees relative to the current number of employees, to balance their finances. While high payroll growth suggests an influx of contributions in the future, the long-term effect of having to pay for these benefits is often neglected. Therefore, our research includes the assumed difference vs. the actual difference to get a sense of how accurate the plans predicted population growth and identify if this is a mechanism in which plans manipulate assumptions to avoid having to raise contributions. Preliminary research suggests this may be the case. Based on the findings of the National Association of State Retirement Administrators *(*NASRA) *Public Fund Survey FY 2021,* payroll growth assumptions have gone down across the United State, on average, to reflect changing economic conditions. However, PRB research indicates that TLFFRA plans are showing the opposite trend and projecting increases in payroll growth. This consolidated data on all public pension plans provided by NASRA is critical for identifying how TLFFRA plans differ from the national median. Moreover, our research aims to identify how these assumptions differ across different subgroups of TLFFRA plans.

2.4.1. City support

City representatives make up two seats of the seven-person governing board and play a pivotal role in the larger governance apparatus. It is worth noting that the city, as the employer, plays a critical role in the decisions that might affect fiscal solvency, namely the contribution level at which they match employee contributions. This figure, and the arrangement that different cities have with their TLFFRA plans, varies considerably from plan to plan. Insufficient support from the city, as in the case of Wichita Falls, may indicate a breakdown in governance or disagreement between active members on the pension systems board and representatives from its city that sit on the board.

Regardless, research has identified the importance of undergoing an analysis of the employer's support as a critical part of the overall landscape. For example, Evgenia Gorina (2019) analyzed the relationship between municipal funding of pensions and city revenue structure. This research gives insight into how various funding models of cities have an effect on how well their pensions are funded into the future. The paper concludes that cities who rely on elastic sources of revenue are more likely to have lower levels of fiscal autonomy and more unfunded liabilities. While our study does not incorporate characteristics like elasticity of revenue source of the employing cities in the quantitative model, this finding informs our ultimate recommendations.

Conversely, our research is aware of the importance of the city's perspective when it comes to funding TLFFRA pension systems. Based on research from Munnell et al. (2013), some cities may have higher pension burdens than others due to the number of disparate pension systems they must fund. An economic downturn exclusive to that region (such as a natural disaster) may also complicate the picture. Therefore, our research attempts to quantitatively identify the impact of city contributions and qualitatively incorporate context through interviews with select plan administrators to develop a holistic understanding of the role that cities, as the overarching employer and plan sponsor, play in promoting long-term fiscal solvency for TLFFRA plans.

2.4.1.1. Additional plan benefit

To calculate the additional plan benefit for each plan, our team subtracted the normal cost of the plan's stated contribution level from the employee's contribution level. This figure represents the additional benefit that a retiree receives from investing a portion of their paycheck into the pension fund. For example, if a plan's normal cost is 20% and the employee contributes 15% of their paycheck, the retiree receives a 5% benefit at retirement for investing today. This variable reflects the generosity of each plan. This is a critical variable that varies across each plan with some plans demonstrating a *negative* APB, meaning that these employees are paying a disproportionately high percentage of their

paycheck to cover current liabilities. Luby (2021) found that individual plan design and the generosity of the plan had the most statistically significant relationship with funded ratios. Because our research is modeled after this approach, our team included this variable to test if the findings from this research are comparable to our findings. Similarly, Bagshi (2018) found that public pension plan benefits tended to be more generous in politically competitive municipalities. Since the majority of the governing board is elected by members of the plan, it can be theorized that these trustees have an incentive to structure as generous a plan as possible. Identifying how this unique, democratic structure differs among the 42 plans is critical for understanding the context in which decisions are made. Moreover, by using the difference between normal cost and employee contribution level our research will uncover the range of different plan structures among different performing plans that are incorporated into the overall findings.

2.4.1.2 City contribution

As a measure for identifying if the city is contributing enough, our team subtracted the fixed cost of the plan (i.e. the percentage that the city actually contributes) from the actuarily determined contribution, a calculation based on actuarial projections that reflect the amount of money an employer needs to contribute to fund future pension benefits. The difference between these two variables is aimed to identify if the city is contributing "enough" to be fiscally solvent in the long term. This variable was key to fiscal solvency in the case of the TLFFRA plan in Wichita Falls. The contribution level from the city had fallen to such a point that even plan investments outperforming estimates was not enough to cover this gap (Wichita, 2022). According to analysis from the Society of Actuaries, most large state and municipal plans received insufficient contributions to reduce their unfunded liabilities between 2005-2016, even if all the actuarial assumptions were met exactly (Moore, 2019). However, the report notes that employer contribution amounts are only one of many factors that influence pensions plans' funded status. Including this metric in our model is critical for seeing

the extent to which city contributions play into the fiscal solvency of the plan (as in the case of Wichita Falls), or if the other independent variables that are more germane to governance are more associated with performance outcomes. That is, this variable aims to see if plans like Wichita Falls are more of the exception or more of the rule.

2.5 Outcome variables

Our pension evaluation matrix utilizes three different outcome variables in conjunction with the independent variables stated previously. This is due to the fact that measures of pension performance can be misleading when based on single variables. For example, because pension systems performance changes overtime, using cross sectional data for funded ratios for a single year can be misleading. Poor decisions made decades ago may still haunt current plans. Our goal, in this research, is to measure *improvement* in addition to current outcomes. Therefore, our evaluation matrix compares the 10-year change in funded ratios, the amortization period in 2021, and unfunded liability as a percentage of the overall payroll. These three outcome variables provide a robust amount of various performance measures to accurately measure and compare TLFFRA pension system performance. These outcome variables are described in the Texas Pension Review Board's 2022 Texas Local Fire Fighters Retirement Act (TLFFRA) Pension Report and are commonly used to assess plans from a performance perspective. This report contains the actuarial details and describes the financial condition of all 42 TLFFRA programs consistent with our approach for the pension evaluation matrix. By validating our findings across multiple performance measures, our ultimate findings are able to be as robust as possible.

2.5.1 Change in funded ratio

The funded ratio represents a measure of a pension plan's ability to meet its current and future obligation to its members based on the current valuation of its assets and contributions from

employees. A funded ratio of 100% means that a plan has enough assets to cover all of its liabilities, while a ratio of less than 100% indicates that a plan is underfunded. Using data from the PRB, our research utilizes the difference between a plan's funded ratio in 2011 to 2021 to get a sense of the improvement or decline of each plan over the past decade and control for prior decisions that may skew the overall health of the plan. Wang and Peng (2014) utilized changes in funded ratio from 2001-2009 of 84 large public pension plans to assess differences in losses amid the Great Recession through a similarly structured multivariate regression model. This research found that differences were most attributed to variations in annualized investment return and changes in investment return assumption, which is also one of the independent variables utilized in our research. The report notes significant differences between investment strategies and outcomes of state and local governments and recommends the use of investment council, managing risk effectively, and adjusting portfolios to reflect the employing entities current status as methods for addressing declining funded ratios. Nonetheless, this paper draws a link between investment decisions and change in funded ratio, which is one of the central questions of our research.

2.5.2 Unfunded liability as % of payroll

Unfunded liability represents the difference between a plan's liabilities and its assets and reflects the actual amount a plan would need to have on hand today to fund future benefit payments. When expressed as a percentage of payroll, this figure represents the proportion of a plan's total payroll that would need to be set aside to pay future benefit payments. While this is a useful variable for assessing the extent of a plan's fiscal status and the magnitude of its liabilities in proportion to its size, confounding variables such as demographics, benefit changes, or an economic downturn, make this variable difficult to stand alone. However, out of our three outcome variables, this is the only one that takes into account some of these external factors, which is why it is included in our overall analysis. Existing research suggests that current accounting rules tend to significantly understate unfunded

pension liabilities and argues that public pensions need to adopt rules similar to private sector pensions to accurately reflect the magnitude of unfunded liabilities (Biggs, 2012). Public pension accounting methods assumes that plan investments can earn high returns without taking any account of the market risk involved. Biggs recommends using an options-pricing method for calculating these unfunded liabilities to reflect the true extent of how much state and local governments need to contribute to be fiscally solvent. While there is debate on how to accurately calculate future unfunded liabilities, our team includes this figure as reported. However, our team calculates this figure as a percentage of payroll to capture this metric in proportion to the number of employees to standardize the magnitude of these liabilities in relation to each other. However, this academic debate serves as further evidence for including multiple outcome variables as a robustness check.

2.5.3. Amortization period

The amortization period, our final outcome variable, reflects an estimate of when a plan will become fully funded based on current contribution rates and investment returns. 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 (PRB, 2023). Our research includes this outcome variable because it incorporates a holistic actuarial value of each plan by taking into account future projections, current valuation of assets, and contribution rates from both the employer and employee. Moreover, this variable is used by the PRB to determine which plans must submit a Funding Soundness Restoration Plan. Eaton (2004) uses amortization period as the dependent variable in his analysis of the effect of political and fiscal constraints on a plan's likelihood of using overly optimistic assumptions relating to discount rate and expected payroll growth. He notes that the calculated amortization period is affected by these assumptions and cautions against using this variable as a sole determinant of performance. Moreover, he finds that the less constraints that a plan has, the lower the amortization period on average. This is informative in the context of TLFFRA plans, which have

less constraints on decisions regarding contributions and investments but more financial constraints due to the back-seat role of the employing city. Including this variable for analysis will help inform the relationship between assumptions and amortization in the context of TLFFRA plans and provide additional analysis that informs the final recommendations.

2.6 Literature Review Summary

Our study and methodology are informed by the deep existing literature on both quantitative methodologies and qualitative theories surrounding pension governance and performance. Additionally, these variables were chosen in consultation with the PRB and their perspective on the most relevant factors pertaining to pension governance. Because the TLFFRA statute and governance model is relatively unique, an analysis of how our findings compare to other bodies of research will be insightful in the context of overall effective pension governance. A multi-layered approach that incorporates different aspects of governance and is validated through three different outcome variables is necessary for our findings to be robust. While there are certainly many ways to examine pension governance, this approach attempts to combine the most salient factors identified by previous research. Further detail on the methodology, data sources, taxonomy creation, and statistical methods employed by this report are described in the next section.

3. Phase 1 Methodology

Each of the variables detailed in the previous section were put into six separate regression models to test which, if any, had the strongest relationships with positive or negative outcomes. The purpose of a regression analysis to test the relationships between an array of independent variables and a dependent variable. Each of the models had slight variations in the variables included that are detailed in the next section.

3.1 Phase 1 Limitations

Our team acknowledges the limitations associated with this approach. The regression analysis does not determine causality and there are specific design changes that may certainly influence the overall approach. There are certainly numerous variables that our team neglected or failed to consider. By running the regression model six times using different designs, we attempted to control for this as much as possible. But ultimately, there are many things beyond the scope of the project that likely influence the overall health of TLFFRA plans. Moreover, past correlations are not necessarily determinative of future outcomes. These regression models are not designed to be prescriptive about the future of TLFFRA plans. Rather, they are an attempt to explain current outcomes using historical data.

3.2. Quantitative Findings

The mixed-methods approach of our study allowed for in-depth conversations with different TLFFRA stakeholders to complement our quantitative findings. By first conducting a series of regression models, our team was able to see how certain relationships changed when broken down by different categories of performance. This, in turn, informed the conversations that we had with TLFFRA board members. Although we had a relatively small sample size, our regression model yielded a critical finding: governance variables continually demonstrated statistically significant relationships. That is, governance as we have defined it plays a predictive role in the success of a TLFFRA plan. Further illumination of this is detailed below.

3.2.1 Regression 1: All/Funded Ratio

Figure 1

Regression Model #1: All Variables With Funded Ratio

Regression Statistics	
Multiple R	0.910877524
R Square	0.829697864
Adjusted R Square	0.704356016
Standard Error	0.095998881
Observations	42

	Coefficients	***Standard Error***	***t Stat***	***P-value***	***Lower 95%***	***Upper 95%***
Intercept	0.4900128	0.194	2.520	0.017924	0.0911543	0.888871274
Active Member MET	**-0.068394**	**0.030**	**-2.22**	**0.03452**	**-0.13142**	**-0.005361307**
City Rep MET	-0.053583	0.034	-1.563	0.12953	-0.12389	0.01672774
Citizen MET	-0.015697	0.034	-0.455	0.65213	-0.08635	0.05495587
Plan Administrator MET	-0.081088054	0.048936	-1.6570	0.109094623	-0.181497347	0.019321239
MET Compliance %	**0.3134967**	**0.182**	**1.71314**	**0.09814**	**-0.06197**	**0.688970862**
Standard Deviation of Return	**3.837643**	**1.925**	**1.99279**	**0.05648**	**-0.11368**	**7.788973411**
Minutes	0.0129948	0.018	0.69985	0.49000	-0.02510	0.051093251
Discount Rate Difference	1.0621523	1.750	0.60678	0.54906	-2.52952	4.653826421
Payroll Grow Difference	-1.006563	0.947	-1.062	0.29747	-2.95060	0.937481213
Normal Cost	4.9058888	5.556	0.88293	0.38506	-6.49478	16.30656654
Employee Contribution	-4.263014122	5.509634	-0.77374	0.44580787	-15.5678495	7.041821254
Benefit Difference	-2.232883142	5.626238	-0.39687	0.694583281	-13.77697039	9.311204103
Fixed Contribution Rate	-0.070604929	0.20428	-0.34563	0.732300089	-0.489751935	0.348542077
Actuarily Determined Condition	**-1.391307691**	**0.288449**	**-4.8234**	**4.89573E-05**	**-1.983156946**	**-0.799458436**
Actuarily Determined Difference	0	0	65535	#NUM!	0	0

This model reflects all of the variable's standalone relationship with the difference in funded ratio from 2011 to 2021. MET compliance was the strongest predictor of positive improvement with two other governance variables also demonstrating statistical relationships. With an adjusted R-squared of 0.7, 30% of the change in funded ratio may be attributed to other variables and/or randomness. Under this model, for each additional board member that completed their MET requirement, the funded ratio improved, on average, by approximately 4.42%. This figure should be taken in consideration of all the other variables, but this relationship certainly stands out as noteworthy. The association with the actuarily determined contribution (ADC) represents some collinearity. As the ADC increases, or the amount that the employer should contribute based on an actuarial calculation, the funded ratio decreases by a significant amount. This reflects the notion that as TLFFRA plans liabilities grow faster than their assets, the amount that they must contribute to stay to achieve solvency increases in tandem.

3.2.2 Regression 2: Difference/Funded Ratio

This model also measures the difference in funded ratio from 2011 to 2021. The difference between the two lies in the independent variables: rather than all variables in isolation, only the difference between normal cost and employee contribution (i.e. benefit difference) and the difference between the employer fixed contribution rate and the actuarily determined contribution (i.e. contribution difference) are inputs in the model. This is to reflect that the "plan generosity" and "necessary contribution rate" are the important factors that matter to beneficiaries and employers alike. Additionally, these are the two emerging themes that kept showing up in the literature review.

Figure 2

Regression Model #2: Difference Variables with Funded Ratio

Regression Statistics	
Multiple R	0.727759307
R Square	0.529633609
Adjusted R Square	0.357165933
Standard Error	0.117000256
Observations	42

	Coefficients	***Standard Error***	***t Stat***	***P-value***	***Lower 95%***	***Upper 95%***
Intercept	-0.046774673	0.190631	-0.24537	0.807842314	-0.436094505	0.342545159
Active Member MET	-0.019223506	0.036935	-0.52046	0.606559976	-0.094655407	0.056208395
City Rep MET	**-0.107245319**	**0.03825**	**-2.80383**	**0.008770586**	**-0.185361425**	**-0.029129213**
Citizen MET	-0.027203738	0.039649	-0.68612	0.497906948	-0.108177224	0.053769749
Plan Admin MET	**-0.161616772**	**0.055014**	**-2.93776**	**0.006299377**	**-0.273969496**	**-0.049264049**
MET Compliance %	0.323463699	0.208167	1.553865	0.130704008	-0.101670501	0.748597899
Standard Deviation of Return	1.102050377	2.256035	0.48849	0.628754727	-3.505388101	5.709488855
Minutes	0.011744471	0.021954	0.534965	0.596617504	-0.033091016	0.056579958
Discount Difference	-0.810004629	2.041428	-0.39678	0.694335927	-4.979157773	3.359148515
Payroll Growth Difference	-0.535839145	1.123638	-0.47688	0.636903969	-2.830614186	1.758935896
Benefit Difference	**1.130054511**	**0.522557**	**2.162548**	**0.03867479**	**0.062850653**	**2.197258368**
Actuarily Determined Contribution	0.644078921	0.242379	2.657317	0.012501148	0.149074103	1.13908374

This model demonstrated a much lower R-square value, likely stemming from less variables in the model, which suggests that there is still a lot of randomness/other variables at play. Two MET requirement positions (city representatives and plan administrators) showed up as statistically significant, albeit with negative coefficients. This suggests that the relationship between MET

requirement completion and an improved funded ratio may depend on which members of the board are not in compliance. Regardless, it is noteworthy that these variables showed up again. In this model, the plan generosity demonstrates statistically significant positive relationships with an improved funded ratio. If a plan improves the benefits that it gives to its members, the funded ratio also improves. However, this may stem more from the inverse. As plans become more funded, they are able to offer more generous benefits to their members. This finding is highlighted when broken down by taxonomy.

3.2.3 Regression 3: All/Unfunded Liability as a Percentage of Payroll

This model and the following model demonstrate the same independent variable usage as the previous two. The only difference is the dependent variable: unfunded liability as a percentage of payroll. This attempts to account for the size of the plan in the dependent variable and see how much of a difference it makes when compared to the other dependent variables.

Figure 3

Regression Model #3: All Variables with Unfunded Liability

Regression Statistics	
Multiple R	0.972171304
R Square	0.945117044
Adjusted R Square	0.879622177
Standard Error	0.404597338
Observations	42

	Coefficients	***Standard Error***	***t Stat***	***P-value***	***Lower 95%***	***Upper 95%***
Intercept	0.880652822	0.819283	1.074906	0.291929069	-0.80037788	2.561683523
Active Member MET	**0.285818435**	**0.129475**	**2.207516**	**0.035960533**	**0.020157353**	**0.551479517**
City Rep MET	**0.316020325**	**0.144424**	**2.188149**	**0.037489063**	**0.019687671**	**0.612352978**

Citizen MET	-0.003102428	0.145127	-0.02138	0.98310185	-0.300878281	0.294673425
Plan Administrator MET	**0.567460911**	**0.206248**	**2.751355**	**0.010469978**	**0.144275427**	**0.990646394**
MET Compliance %	**-1.277863119**	**0.77125**	**-1.65687**	**0.109122241**	**-2.860338245**	**0.304612007**
Standard Deviation of Return	**-25.22335129**	**8.116312**	**-3.10774**	**0.004404827**	**-41.87664717**	**-8.570055418**
Minutes	-0.078906035	0.078257	-1.0083	0.322263644	-0.239475746	0.081663676
Discount Rate Difference	9.998876321	7.377552	1.355311	0.186549094	-5.138610251	25.13636289
Payroll Grow Difference	-2.152040204	3.993205	-0.53893	0.594354441	-10.34541918	6.041338776
Normal Cost	-13.63130851	23.4178	-0.58209	0.565334147	-61.6806588	34.41804178
Employee Contribution	20.10947202	23.22093	0.866006	0.394117166	-27.53594081	67.75488485
Benefit Difference	-1.86853651	23.71237	-0.0788	0.937772768	-50.5223014	46.78522838
Fixed Contribution Rate	0.972554119	0.860958	1.129619	0.268572932	-0.793984842	2.739093079
Actuarily Determined Contribution	14.26707384	1.2157	11.73568	4.12411E-12	11.77266317	16.76148452
Actuarily Determined Difference	0	0	65535	#NUM!	0	0

As a whole, this model demonstrates the least amount of randomness with a large adjusted R-squared (0.87). It is telling, then, that there are five statistically significant variables and all of them deal with governance. Under this model, a negative coefficient represents a positive outcome. If the unfunded liability goes down, that is generally considered to be a good thing as presumably more of the liability becomes funded or the liability itself decreases. In this model, a relatively surprising finding is that the higher the standard deviation of investment returns over the past ten years (i.e. board risk tolerance) the lower the unfunded liability as a percentage of payroll. While we caution against risky investments to reduce the unfunded liability, this suggests that for each increase in investment return standard deviation, the unfunded liability decreases by 25%. This consider the size of plans and is rather general, but this model suggests that the bigger change from year to year that a

plan saw in investment returns, the better their results were. Perhaps this may be indicative of investment improvements and strong market years, but it is hard to conclude for certain without data at an individual level. MET compliance, again, demonstrated a positive relationship: the more board members that completed the training, the lower the unfunded liability.

3.2.4. Regression 4: Difference/Unfunded Liability as a Percentage of Payroll

Figure 4

Regression #4: Difference Variables with Unfunded Liability

Regression Statistics	
Multiple R	0.723312092
R Square	0.523180383
Adjusted R Square	0.348346523
Standard Error	1.131364596
Observations	42

	Coefficients	***Standard Error***	***t Stat***	***P-value***	***Lower 95%***	***Upper 95%***
Intercept	3.715940454	1.843353	2.015859	0.052847694	-0.048689549	7.480570457
Active Member MET	0.565411095	0.357155	1.583096	0.123886285	-0.163997416	1.294819606
City Rep MET	**1.061985729**	**0.369865**	**2.871283**	**0.007429948**	**0.306621594**	**1.817349863**
Citizen MET	0.273678575	0.383394	0.713832	0.480848383	-0.509315744	1.056672893
Plan Admin MET	**1.559698094**	**0.531968**	**2.931938**	**0.006391509**	**0.473274028**	**2.64612216**
MET Compliance %	**-4.395031297**	**2.012928**	**-2.1834**	**0.036962421**	**-8.505977704**	**-0.284084889**
Standard Deviation of Return	-11.09978677	21.81532	-0.50881	0.614609419	-55.65261893	33.45304538
Minutes	-0.185456165	0.212287	-0.87361	0.389270648	-0.61900464	0.24809231
Discount Difference	31.85690586	19.74013	1.613815	0.117038563	-8.457811557	72.17162328

Payroll Growth Difference	4.613211998	10.86531	0.424582	0.674171285	-17.57671581	26.80313981
Benefit Difference	**-17.00436916**	**5.053002**	**-3.3652**	**0.002107702**	**-27.32397615**	**-6.684762163**
Actuarily Determined Contribution	-1.649062512	2.343751	-0.7036	0.487107545	-6.435641151	3.137516126

This model, like the previous set of models, showed lower R-squared values than all the variables considered independently. Like the other unfunded liability model, benefit difference, and MET compliance showed up with similar trends. The more generous the benefits, the lower the unfunded liability. But again, this may be reflective of an inverse relationship. Additionally, for each additional board member that is in compliance with their MET requirements, the unfunded liability as a percentage of payroll decreases by, on average, approximately 65%. These recurring findings suggest that, as a whole, the more in compliance that a plan's board member are, the better outcomes they demonstrate. Additionally, the type of board members that are compliant are important, namely the fact that city member compliance has a heightened relationship with positive outcomes. By our calculations, these members were in the lowest compliance with MET, which makes this relationship important for plans that are seeking to improve outcomes.

3.2.5. Regression 5: All/Amortization

The following two models follow the same pattern as the previous two sets. Table 5 reflects all of the variables with the amortization period. These two models are the first and only two that show relationships with investment/assumption variables.

Figure 5

Regression #5: All Variables with Amortization

Regression Statistics	
Multiple R	0.715400795
R Square	0.511798297
Adjusted R Square	0.221619636
Standard Error	18.14438088
Observations	42

	Coefficients	***Standard Error***	***t Stat***	***P-value***	***Lower 95%***	***Upper 95%***
Intercept	-5.243296238	36.7412	-0.14271	0.887579735	-80.63000412	70.14341164
Active Member MET	4.715502846	5.806382	0.812124	0.423823116	-7.19820841	16.6292141
City Rep MET	3.978915752	6.47675	0.614338	0.544134304	-9.310278277	17.26810978
Citizen MET	5.320912917	6.508293	0.817559	0.420765482	-8.033002179	18.67482801
Plan Administrator MET	**18.80066288**	**9.24929**	**2.03266**	**0.05202861**	**-0.177313189**	**37.77863895**
MET Compliance %	-31.94473812	34.58713	-0.9236	0.363874619	-102.9116693	39.02219303
Standard Deviation of Return	387.6561733	363.9803	1.065047	0.2962868	-359.1696581	1134.482005
Minutes	2.912081039	3.509468	0.829779	0.413940674	-4.288752282	10.11291436
Discount Rate Difference	**-8.067113975**	**3.308502**	**-2.4383**	**0.021616464**	**-14.85559962**	**-0.1278628333**
Payroll Grow Difference	82.23518258	179.0774	0.459216	0.649754939	-285.2012165	449.6715816
Normal Cost	147.1378906	1050.183	0.140107	0.889615543	-2007.66055	2301.936331
Employee Contribution	-337.3473297	1041.355	-0.32395	0.748471746	-2474.030982	1799.336323
Benefit Difference	-200.1254333	1063.394	-0.1882	0.852131075	-2382.029165	1981.778299
Fixed Contribution Rate	**74.83130107**	**38.61009**	**1.938128**	**0.063129782**	**-4.390069754**	**154.0526719**
Actuarily Determined Condition	-11.52207864	54.51871	-0.21134	0.83420775	-123.3852404	100.3410831
Actuarily Determined Difference	0	0	65535	#NUM!	0	0

Under this model, only one governance variable showed a relationship: plan administrator MET compliance. The adjusted R-square is 0.51, which is about average for all of our models, and points to some validity of the relationships from this model. Even as such, the relationship between

plan administrator and amortization period is inverse of what we might expect. The critical finding from this model lies in the difference between the assumed discount rate and the actual investment return. This model shows that when plans beat their assumptions by 1%, their amortization period decreases by 8 years. This doesn't take into account the fact that plans may set their discount rate assumption lower as a cautionary measure or they may have just made strong investments. This regression model does not account for this. Regardless, it is important to note that plans who have investments that exceed their expectations are more likely to have a lower amortization period.

3.2.6. Regression 6: Difference/Amortization

Amortization period, as this model shows, had the most consistent relationships between the model with all independent variables and the model with just the differences. This makes these findings robust and significant.

Figure 6

Regression Model #6: All Variables with Amortization Period

Regression Statistics	
Multiple R	0.668068026
R Square	0.446314887
Adjusted R Square	0.243297013
Standard Error	18.33138112
Observations	42

	Coefficients	***Standard Error***	***t Stat***	***P-value***	***Lower 95%***	***Upper 95%***
Intercept	-20.81658947	29.86766	-0.69696	0.491193231	-81.81449202	40.18131308
Active Member MET	6.217034795	5.78695	1.07432	0.291244672	-5.601494308	18.0355639
City Rep MET	6.589409385	5.992876	1.09954	0.280277977	-5.649675944	18.82849471
Citizen MET	8.241470447	6.212087	1.326683	0.194624304	-4.445303838	20.92824473
Plan Admin MET	**19.60733169**	**8.619425**	**2.274784**	**0.030232797**	**2.004117227**	**37.21054614**

MET Compliance %	-46.40273853	32.61525	-1.42273	0.165129983	-113.0119692	20.20649216
Standard Deviation of Return	414.7998258	353.4714	1.173503	0.249826923	-307.0850106	1136.684662
Minutes	1.569693658	3.439668	0.45635	0.65142489	-5.455046513	8.594433828
Discount Difference	**-802.874166**	**319.8472**	**-2.51018**	**0.017691546**	**-1456.089277**	**-149.6590553**
Payroll Growth Difference	53.67658197	176.0495	0.304895	0.76255154	-305.864476	413.2176399
Benefit Difference	-1.917352885	81.87326	-0.02342	0.981471487	-169.1248557	165.2901499
Actuarily Determined Contribution	61.19914162	37.97555	1.61154	0.117534591	-16.35728679	138.75557

The same findings are seen with the discount rate difference and plan administrator. The coefficients are nearly identical in addition to the p-values (i.e. strength of statistical significance). This suggests that investment returns are critical important to a low amortization period. The PRB considers 30 years to be the threshold of an acceptable period. For plans looking to decrease their amortization period, either lowering the assumed discount rate or improving investment returns may be suitable options to accomplish this and avoid a Funding Soundness Restoration Plan.

3.3 Analysis

These regression models represent the first phase of our quantitative research. Figure 7 demonstrates the number of times each variable demonstrated a statistically significant relationship. However, there were a handful of times that the direction of the correlation went in opposite directions. Nevertheless, our goal was to identify which variables were the most correlated with positive outcomes out of approximately 14 and to do this in a way that captures the many ways to study and assess pension outcomes.

Figure 7

Statistical Significance of Variables

Variable	**Statistical Significance Count**
Active Member MET	2
City Rep MET	3
Plan Admin MET	5
MET Compliance	3
Risk Tolerance	2
Transparency	0
Governance Total	**15**
Discount Rate Difference	2
Payroll Growth Difference	0
Assumptions Total	**2**
Normal Cost	0
Employee Contribution	0
Benefit Difference	2
Fixed Contribution	1
Actuarily Defined Contribution	0
Contribution Difference	0
City Support Total	**3**

By and large, governance variables dominated the statistical significance count across all six regression models. This suggests that on average, governance does have a statistical relationship to TLFFRA pension system outcomes. In addition, the variables that showed no statistical significance have just as much importance as the ones that did. Transparency, payroll growth, normal cost of the plan, employee contribution rate, and difference between employer contribution and ADC never showed any strong relationship with any of the models. However, some of these variables do tend to show trends in higher-performing plans. This regression analysis simply identifies that out of all of these variables taken together on behalf of all the plans, the governance variables are the most predictive of a plan's strength. However, based on the differentiation of these plans by outcome variable, we find that the highest-performing plans do not necessarily exhibit the strongest governance metrics. A close analysis of how each of these variables compares across different performing plans is detailed in the next section.

4. Phase 2 Methodology

The regression analysis allowed for a robust understanding of which variables showed relationships as a conglomerate of the 42 plans. However, our team wanted to break down these 42 plans even further and separate them into a taxonomy for closer analysis. Based on the existing literature and consultation with the Pension Review Board, we placed each team into one of three categories: high-performing, medium-performing, and low-performing. The following criteria was used to determine the placement of each plan:

High Performing Pension Systems

Two out of the three outcome variables are considered good using PRB standards:

- Positive funded ratio from 2011 – 2021

- Amortization period under 30 years
- Unfunded liability percentage is below TLFFRA average (268.1)

Medium Performing Pension Systems

1 out of three outcome variables are considered good using PRB standards

Underperforming Pension Systems

- Negative funded ratio from 2011 – 2021
- Infinite amortization period
- Unfunded liability percentage is above TLFFRA average (268.1)

After each plan was sorted into a taxonomy, the independent variables detailed in the literature review were compared across the three different categorizations. This allowed our team to determine characteristics that differentiate high-performing plans from other plans that served as a basis for our recommendations.

4.1 Phase 2 Limitations

The taxonomy and placement of plans into each category could certainly be debated. We recognize that some plans have made improvements in their decision-making in recent years that might be reflecting in this data. Moreover, this data is from December 2022 and plans may have different outcome variables at the time of publication of this paper. We also acknowledge that there may be more robust methods for ordering the plans. For example, a weighted formula that incorporates these three outcome variables would fit within this criterion. However, our team felt that it was important to weight each of the outcome variables equally. A plan could still be considered high-performing even if they had one outcome variable that might not be considered

"good." Additionally, in constructing a tiered formula that assigns weights to the outcomes, our team felt that cut-off scores and giving preference to one outcome variable over another could be interpreted as subjective. However, we implore future researchers to examine how our findings may be different if this approach were adopted.

Uncovering the difference between plans that are high-performing and under-performing was one of the main objectives of this research project. More specifically, what are the lessons that plans who are struggling can learn from plans that are high performing? By using the criteria described in the methodology section, each plan was placed into the following categories:

- **High-performing (10)**
- **Medium-performing (18)**
- **Under-performing (14)**

Just because a plan is designated as "under-performing" does not mean that it is a bad plan or that its board members are incompetent. Some of the reasons these plans may be in this category may stem from decisions made from years past. Additionally, many of these plans have made positive improvements either in recent years or since this data was collected that may not be reflected in this designation. Regardless, based on our conversations with the PRB and the existing literature, our team determined that these designations were helpful in understanding what separates a TLFFRA plan with very strong outcomes and a plan with outcomes that have room for improvement.

4.2 Taxonomy Comparison: Outcome Variables

Figure 8

Outcome Variables by Plan Performance

Performance	Funded Difference	Unfunded Liability	Amortization
High	18.28%	110.02%	20.29
Medium	-0.39%	260.69%	42.24
Under	-10.08%	391.76%	48.53

This table illustrates the three outcome variables broken down by taxonomy. As expected, the higher-performing plans demonstrated the strongest outcome metrics. It is especially remarkable that these plans, on average, improved their funded ratio by ~18% over a ten-year period. Medium-performing plans remained relatively stable in their funded status while under-performing plans showed negative trends in this regard. Another key observation is the relatively large gap between high-performing plans and both medium and underperforming plans in the amortization period. These plans had nearly half the amortization period, which suggests there may be features of these plans outside of the variables included in this study that explain such drastically strong outcomes. These attributes are explored further in the last section.

4.3 Taxonomy Comparison: Governance

Figure 9

Governance Variables by Plan Performance

Performance	Active Member MET	City Rep MET	Citizen MET	Plan Admin MET	MET Compliance %	Standard Deviation of Return	Minutes
High	1.5	0.7	0.8	0.4	0.4909	7.68%	**2.5**
Medium	**2.2777**	**1.333**	**1**	**0.8889**	**0.729983**	7.50%	1.9444
Under	1.8571	0.857	0.75	0.92857	0.533057	7.55%	1.8571

Across the different governance variables, there is certainly some notable differences across the taxonomies. For one, high-performing plans were the *least likely* to be in MET compliance than either of the other two categories. This finding is particularly surprising considering the strong relationship that the regression models exhibited. It can be theorized, however, that these plans may have actuarial experts or previous experience that do not necessitate these trainings. However, these plans had the highest-quality minutes and scored the highest on our measure of transparency. Additionally, these plans had the greatest variation in their annual returns which suggests that strategic investments may have also played a role in their strong outcomes.

Medium-performing plans, by and large, showed the strongest governance variables across the board. Approximately 73% of their board was in compliance with the MET and their returns were the most stable out of all the other plans.

4.4 Taxonomy Comparison: Assumptions

Figure 10

Assumption Variables by Plan Performance

Performance	Discount Rate Difference	Payroll Growth Difference
High	0.36%	1.03%
Medium	-0.55%	0.98%
Under	-0.32%	0.31%

An analysis of how each of the plan's assumptions (a critical part of the amortization calculation) fared with what they experienced also fills in another piece to the larger puzzle. High-performing plans were the only ones that had investment returns exceed their assumptions, exemplifying the notion that strong pensions must meet their actuarial assumptions to demonstrate strong outcomes. When pension plans artificially set a high assumed rate of return and fail to meet it, they are setting themselves up for years of trying to catch up.

Another important observation that these table shows is the difference between payroll growth assumptions. In particular, the relatively low difference demonstrated by under-performing plans compared to medium and high performing plans. Each of these two taxonomies exhibited considerable growth in their payroll relative to assumptions. That is, these plans, on average, grew their contribution base at a much higher rate than under-performing plans. This suggests that population growth, which is correlated with payroll growth of the local fire department, may be one important indicator to consider when evaluating each plan individually. In can be further theorized that medium-performing plans were able to overcome poor investment returns through higher-than-expected growth in the payroll. Had these plans seen better investment returns, they would likely fall in the high-performing category. On the flip side, had these plans not grown as rapidly, they would likely fall in the under-performing category. This finding demonstrates the importance of the left-side of the equation for pension solvency (contributions + investment returns) and the importance of maintaining high values for each of these components.

4.5 Taxonomy Comparison: City Support

Figure 11

City Support Variables by Plan Performance

Performance	Normal Cost	Employee Contribution	Benefit Diff.	Fixed Cont.	Actuarily Defined Cont.	Actuarily Defined Diff.
High	19.52%	13.40%	**6.13%**	17.60%	14.38%	**3.22%**
Medium	18.66%	14.10%	**4.68%**	18.87%	20.07%	**-1.21%**
Under	17.81%	15.11%	**2.69%**	25.09%	25.12%	**-0.03%**

Plan design and employer contribution are crucial elements to each plan's overarching success. This table not only captures the current employer contribution rates and benefit generosity of the plan, but it also demonstrates how historical patterns have affected the different categories of plans. As the plans increase in performance, the normal cost increases while the employee contribution decreases. That is, higher-performing plans can offer more generous benefits. While the normal cost may be higher, these plans have the financial strength to require a lower contribution amount. There is a similarly inverse relationship shown the difference between the employer contribution rate and the actuarily defined contribution rate (i.e. the calculated contribution rate needed to maintain fiscal solvency). High-performing plans, on average, contribute ~3% more than they need to. This may be why their employees receive such a generous benefit. That is, high-performing plans tend to receive strong support from the host city that is reflected in higher benefits. Medium-performing plans tended to contribute less than their ADC while under-performing plans tended to contribute almost the exact ADC. The reason these ADC's tend to get higher as the performance of the plans gets lower may be attributed to a few factors or a combination of poor investment performance, disproportionately high number of retirees, failure of adequate contributions in the past, etc. Thus, it would be hard for these plans to contribute more

than this amount, the basic percentage needed to maintain the level they are at. This signifies the difficulty in trying to "play from behind" as a pension plan. As evidenced by this table, plans seeking to move into the high-performing category need to consider contributing more than the ADC. This decision lies at the city level. Cities may be reluctant because of the unique nature of the TLFFRA statute: members can vote to increase or decrease their benefits at any time. Therefore, strong communication and understanding between these two parties is necessary for these plans to improve. Cities must contribute a higher percentage under the condition that members do not go around and simply raise benefits. This idea is further explored in the next section.

4.6 Taxonomy Comparison: External Characteristics

Figure 12

External Variables by Plan Performance

Performance	Population Growth	Active/Retiree Ratio	Credit Rating
High	10.08%	8.88	3.27
Medium	7.76%	1.51	4.22
Under	5.28%	1.01	3.53

After presenting the previous findings to the PRB, our team was encouraged to investigate external characteristics that may be playing a role and might be predictive of outcomes. Specifically, the size of the city that the fire department resides in, the ratio of active (i.e. members contributing to the fund) to retired (members receiving money from the fund), and the financial health of the

city. Population growth from 2010 to 2020 was collected as a proxy for size of the city. Active/retiree data was collected from the 2022 TLFFRA report. The credit rating was collected from Moody's using a 7 point scale: AAA represented a 7, AA2 represented a 6, A represented a 1. This figure, while important, poses additional challenges stemming from the fact that not every city even had a credit rating (nearly 1/3 were missing). Our team either used the most recent credit rating or assigned a 1 if the city had never received a credit rating. We recognize that this may pose limitations, but concluded it was still important to include.

Our team ran each of the regression models again with these three new variables. The statistical significance of the model remained largely unchanged. The R-squared only improved slightly in some cases, while certain models actually demonstrated a lower figure. Our models didn't change that much, if at all. Governance variables continued to dominate as statistically significant. Although the R squared slightly increased, the ultimate findings remained consistent. For this reason, our team opted to not include them in the final model. However, we felt that it was necessary to see how these factors were different across the different taxonomies. The results, reflected above, demonstrate how these factors are important considerations when assessing pension plans and highlights how the demographics of the host city may hinder or create obstacles to the success of an individual plan.

Population analysis

The highest-performing plans tended to grow at a much more rapid pace than the other plans. This points to the importance of a strong tax base and financial condition of the city that employs these firefighters. Additionally, this points to the growing significance of external factors that impact the actuarial status of individual pension plans. That is, factors beyond the scope of the TLFFRA board may be at play. Plans in the higher-performing category tended to be more urban

and consolidated close to urban centers. Medium-performing plans tended to be more suburban and slightly more isolated than high-performing plans. Under-performing plans tended to be more rural and had smaller populations. There are exceptions to this in each of the taxonomies, but on average, this trend seemed to emerge. This suggests that the nature of TLFFRA plans, and perhaps pensions at large, may be better conformed to certain types of firefighter departments that lend themselves to strong actuarial outcomes.

Ratio analysis

One key takeaway from our interviews was the impact that the age of TLFFRA plan's inception had on its current funding levels. In one interview with a high-performing plan, there were only two members that had ever retired. That is, there were many members contributing into the plan with very few members receiving contributions. As such, we postured it would be important to see this ratio broken down by the different taxonomies. The results are not surprising. High-performing plans, which includes two plans that were established within the last 15 years, had a very large positive ratio. Even if these two plans were taken out, the ratio would still be the largest among all three taxonomies (1.71). It seems obvious to suggest that plans who have more members contributing that receiving benefits would lend themselves to stronger funded outcomes. But as a robustness check, our data confirms this. It follows the same trend that population growth displayed. Under-performing plans had a near even 1:1 ratio. This reflects how these plans lack any kind of safety net from both inadequate contributions from the city or a poor investment year. High-performing and even medium-performing plans may be able to counteract these things in the short term because they have more individuals contributing into the fund that paid benefits.

Credit rating analysis

The lack of current credit ratings from nearly 1/3 of the plans makes an analysis on the financial condition of the city difficult. Our team incorporated some proxy variables to incorporate the financial condition of the city (payroll growth, population growth, etc.) but we postured that there would be no more direct way to look at this then credit rating. Our limited data shows that medium-performing plans tended to have the highest credit-rating while high-performing plans had the lowest credit rating. Unfunded pension liabilities tend to be a major driver in credit downgrades, but that doesn't seem to be the case in our findings. Our data perhaps demonstrates that even in poor financial conditions, high-performing plans can contribute enough to be well-funded. As a result, while there may be external characteristics that play a role in these decisions, high-performing plans tend to find a way to get the necessary contributions from the city, which in turn, leads to more generous benefit plans for members.

4.7 Taxonomy Analysis

The separation of the 42 TLFFRA plans unveiled critical differences between plans that are high-performing, medium-performing, and under-performing. Medium-performing plans tended to demonstrate the strongest MET compliance and good governance as our team defined it. Notably, high-performing plans were the most likely to take and publish strong minutes and scored the highest on transparency. These plans also were the only ones that beat their assumptions on both investment returns and payroll growth – both of which bring in additional revenue to pay off unfunded liabilities and benefits for current retirees. Medium-performing plans tended not to meet investment expectations, but exceed payroll growth at a rate that was only slightly less than high-performing plans. That is, it can be assumed that these plans were able to overcome underwhelming investment returns by growing at a faster-than-expected rate. Under-performing plans did not grow as rapidly and tended to just meet investment expectations. The real distinction between each of the

taxonomies lies in the city support. There was a very clear inverse relationship between the normal cost of the plan and the employee contribution rate. The normal cost tended to increase and the employee contribution rate tended to decrease as the performance of the plan went up. That is, higher-performing plans were able to offer the most generous benefit packages (6% vs. 2%). This indicates that it is possible for plans to have strong actuarial outcomes while still offering good benefits to members. This finding may be more a symptom than a cause: high-performing plans may be able to offer more generous plans because they are well-funded, rather than the opposite. However, when analyzing the support from the city it becomes clear that the employee contribution variable is, perhaps, the most explanatory of strong outcomes. Employers within the high-performing category tended contribute more than their actuarily defined contribution. That is, they made above and beyond the necessary contributions to stay solvent to, presumably, offer more generous benefits. These plans also had the lowest unfunded liability likely because of these strong contributions. Medium-performing plans did not make adequate contributions above the ADC. By our research, this is the biggest separator between medium-performing and high-performing plans. Although these plans had strong governance and payroll growth, these gains were offset by lower contributions from the city. If a medium-performing plan with strong governance seeks to become a high-performing plan (and consequently offer more generous benefits), more contributions from the city are needed. Although low-performing plans made contributions right at the ADC, the lack of payroll growth, investment returns, and low active/retiree ratio make actuarial strength difficult. The safety net that exists for high-performing plans is not present for under-performing ones. External characteristics play a role too. These plans tended to have the lowest population growth and active/retiree ratios. The only way for a low-performing plan to make gains in its outcomes is to either beat investment/payroll assumptions (by either lowering the initial assumption or having a strong actual result), contribute more than the ADC, or demonstrate better governance. In sum,

good governance and transparency can help an under-performing plan become a medium-performing plan. But to become a high-performing plan, a city must contribute above its actuarial defined contribution to 1) pay off outstanding liabilities, 2) offer more generous benefits (which may also have the effect of recruiting more firefighters), and 3) create a safety net in the event that investments or payroll growth do not meet assumptions. However, external characteristics like population growth, the financial condition of the city, and the ratio of active members to retirees pose some additional barriers. Plans may, to an extent, be handcuffed by these variables. Regardless, these are the necessary decisions that need to be made to improve TLFFRA plans. Plans seeking to improve should seek advice from the PRB, their city council, and plan members on possible steps to overcome these barriers.

5. Phase 3: Qualitative Analysis

To better understand the results from our modeling and taxonomy, our team conducted semi-structured interviews with TLFFRA stakeholders. This phase involved acquiring understanding of the decision-making processes, interactions with plan sponsors/PRB, and pension system best practices. Our team developed several themes that correlated with our quantitative findings. A further description of our process is detailed below.

5.1 Phase 3 Methodology

Our team wanted to ensure that we incorporated the thoughts, opinions, and expertise of TLFFRA pension system board members. As a result, the questions and topics we explored during our semi-structured interviews were driven by the statistically significant variables identified in our regression analysis and trends in our pension system taxonomy. For example, some of the topics we

wanted to discuss with interviewees were how their pension governing board operates and makes decisions, challenges facing their system, the relationship between the pension system boards and plan sponsor, and any other issues they wanted to discuss regarding governance, performance, or challenges. In sum, we utilized the key differences that emerged from the quantitative research to identify and contextualize the decision-making process and governance of TLFFRA boards.

Because of the variability in pension system performance and the overall broad topics of discussion, our team chose a semi-structured interview format to allow for greater freedom for interviewees to express their experiences with topics we identified as potentially relevant to pension system performance. In addition, the PRB assisted the research team by providing the contact information for TLFFRA pension system board members. In total, our team conducted five semi-structured interviews with a total number of seven interviewees. Four interviewees were firefighter TLFFRA board members, two were TLFFRA board administrators, and one was a TLFFRA plan sponsor. The five semi-structured interviews included interviewees from at least one TLFFRA pension system from each subcategory of our taxonomy (high performing, medium performing, and underperforming). At least two researchers were present for each semi-structured interview. While we wanted the interviews to be as conversational as possible, we prepared questions to help guide the interview towards topics of importance identified during our quantitative research.

5.2 Phase 3 Limitations

We interviewed pension systems that represented all varying levels of pension performance as defined by our taxonomy. However, this study's sample size is small and does not statistically reflect the opinions of all 42 TLFFRA pension system board members. In addition, to protect the confidential information of interviewees and the pension systems they represent, the level of detail that this report can provide on their responses is somewhat limited. Nevertheless, the five semi-

structured interviews provided insightful information that couldn't be gleaned solely from quantitative analysis and also confirmed some of the quantitative findings previously outlined.

5.3 Phase 3 Findings

Overall, each pension system described facing different challenges and opportunities, highlighting the variability in TLFFRA pension system performance. For example, the best performing pension system had been established more recently than the underperforming systems. However, four findings were consistent across the TLFFRA pensions systems, no matter their performance:

1. All TLFFRA pensions system boards had differing levels of formalized governance structures.

2. Filling citizen seats were a challenge for all boards.

3. Most pension system interviewees described support for the implementation of an actuarily defined contribution system.

4. All pension system interviewees described changes overtime in the working relationship between pension system boards and plan sponsors.

The semi-structured nature of each interview meant that each was relatively unique in terms of the topics we discussed. As such, our team organized some of the key takeaways under the

following four themes: board governance, board composition, interaction with external parties, and key differences.

5.4 Pension System Board Governance

Pension system governance refers to how these boards make decisions and acquire expertise. Our questions centered around process, relationships, and communication. Overall, the medium performing pension system had a more formalized board governance structure than the other pension systems. This qualitative finding is consistent with the taxonomy finding that medium performing TLFFRA pension systems on average have higher measures of governance than the high and underperforming plans. In addition, to alleviate some of the structural friction between plan sponsors and TLFFRA boards, the medium performing pension system implemented a contractual agreement in which the board agreed to a framework that limited increases in employee benefits when plan sponsor contributions increased. Also, the medium performing pension system created a board succession plan to maintain continuity of expertise should board members leave. This is a critical governance step as all pension system interviewees described having to rely on the expertise of previous board members for effective governance when they initially joined the pension system board. There were also clear guidelines in place that guided contribution and benefit decisions that brought an element of stability in the plan. These examples offer a preview of what good governance looks like within the statutory purview of TLFFRA plans.

All pension system interviewees described their investment decision making and actuarial assumptions as being guided by advice received from external fiduciary services. Additionally, all pension system interviewees described using a request for proposal (RFP) to acquire external professional services. However, the mandatory use of an RFP varied for each pension system by the

cost of external services. For example, the medium performing may be required to use an RFP if external services cost over $50,000 while the other pension systems may be required to use an RFP for a higher or lower cost of services. It became clear that the services used to advise each plan varied by size. It can be theorized that well-funded plans are able to acquire more advanced actuaries and expert knowledge than plans who don't have these kinds of funds. This is perhaps indicative of why high-performing plans tended to have strong investment returns above their assumed discount rate. All in all, these conversations point to further evidence that having a clearly defined board structure, reliable communication, and expertise are important indicators for a plan's financial soundness.

5.5 Pension System Board Composition

The second theme that emerged was issues stemming from board composition and expertise that have been consistently tied to pension performance. In this case, board composition focuses on the individual stakeholders that make decision and how their different roles, experiences, and perspectives shape the overall decision-making process. Although there is no variability in TLFFRA board structure amongst the 42 pension systems, the semi-structured interviews managed to uncover variability in more subtle ways. For example, all pension system interviewees had varying levels of financial or investment experience. Again, the medium performing TLFFRA pension system had members with greater financial and actuarial experience than the high performing and underperforming pension systems. In addition, all pension system interviewees described having a challenging time attracting quality volunteers to fill the citizen seats on their boards. The pension system interviewees described the high volunteer work hours, level of knowledge required, and lack of compensation as contributing factors. As a result, some of the citizen seats on these boards were filled by retiree firefighters. These factors led to the plan sponsor interviewee to describe the TLFFRA boards as being primarily dominated by firefighter perspectives. This aspect may add to the complicated relationship described between TLFFRA boards and plan sponsors and is explored

further in this report's subsequent recommendations. Lastly, adding to the high volunteer work hours required for TLFFRA boards to effectively govern, only two of the pension systems interviewed had fulltime paid administrators to assist with operations. These administrators played a key role in making the decision-process more fluid and consistent by taking the operational burden off of the board members. Even though each TLFFRA plan has the same statutory structure, there is wide differences between what these individuals bring to the table. While having former firefighters serve in the citizen seat role may be helpful in terms of finding knowledgeable individuals to fill these seats, there is a clear conflict of interest that may create a tense atmosphere at the decision-making table.

5.6 Interactions with the PRB and external parties

The extent to which the PRB and the plan sponsor interact with the plan is an area that came up in each of our interviews. The PRB is charged with carrying out duties set by the Legislature. Their expertise, resources, and assistance are designed to help plans, not come after them. Our team sought to uncover these interactions to see how each of the interviewees viewed the oversight body and if there were major differences between them.

All pension system interviewees found the statutorily required Minimum Educational Training (MET) program to be useful. However, interviewees with greater financial/investment experience found their experience to be more useful than the MET program alone. Nevertheless, interviewees with more financial experience still considered the MET program to be a useful baseline for all board members. Some pension system interviewees described the lack of an enforcement mechanism for MET noncompliance as an issue, particularly for pension system sponsor noncompliance. In our quantitative analysis, city representatives were less likely to have been in compliance with the MET requirements. The one city representative we did interview was in compliance, but also brought decades of experience and cited the training as unnecessary for someone like them. It can also be theorized that bigger cities (which tended to fall in the high-performing category) have more on their

plate in terms of running a city and fulfilling their duties in other domains than cities with a smaller budget. This may explain why high-performing plans tended to score low on our governance metrics. However, without an enforcement mechanism for completing these trainings, expertise is developed voluntarily.

In addition, three pension system interviewees described some of the statutorily required reporting requirements as duplicative and costly. These interviewees identified SB 322 Investment Expense Reporting in Annual Financial Reports and Funding Soundness Restoration Plans (FSRPs) reporting requirements in particular. These interviewees seemed to blame the PRB for enforcing these requirements that are set by the Legislature. It became clear that some of the under-performing plans had a relatively negative opinion of the PRB. In addition, all pension system interviewees described the working relationship between plan sponsors and the TLFFRA board as varying overtime. For example, interviewees described how levels of trust and interaction could vary overtime depending on plan sponsor board member transitions or through compromises reached through negotiated MOUs or contracts. A salient example of this structural dynamic came up during the plan sponsor interview. For instance, the plan sponsor interviewee expressed concern over increasing contribution rates as required by an actuarily determined contribution rate. The concern stemmed from fears that an increase in contribution rates would lead to the perceived firefighter dominated TLFFRA board in turn increasing plan benefits, thus negating the purpose of increasing the contribution rate.

In describing their current relationship with their plan sponsor, most of the TLFFRA board members expressed a positive relationship that was collaborative. However, the plan sponsor interviewee described the complicated nature of this relationship. For example, the plan sponsor described how the city had a desire to raise contributions to rectify poor outcomes, but was concerned

about the "human nature element" inherent in the ability for TLFFRA board members to vote on benefits. In contrast, the interviewees from the medium-performing plan, which scored very high on quantitative governance metrics, did not describe this contentious relationship. It's possible that the rigid, clear guidelines that governed contribution and benefit decisions, established by a contract, eliminated this tension and made for easier decision-making as the goals of each stakeholder were now clearly aligned.

5.7 Key Differences Between Pension Systems

While all interviewees described perspectives shared across the taxonomy categories, the semi-structured interviews also highlighted some key differences among different performing TLFFRA pension systems. For example, the high performing pension system interviewees described having consistent, and reliable communication with their TLFFRA members as a key governance factor for its success. This finding is supported by our report's indirect measure of transparency: board minutes. This pension system received a higher transparency score than other high performing pension systems. The interviewees also described the Office of Fire Fighters' Pension Commissioner as being instrumental to its initial success establishing itself as a TLFFRA pension system. However, this agency is currently inactive after the Texas Sunset Advisory Commission issued the results and recommendations of a sunset review conducted in 2013. After becoming inactive, the role and responsibilities of the office were absorbed into the PRB. The interviewee also described that messaging and clear communication were necessary to convince the fire department of the merits that TLFFRA would bring. The interviewee ultimately stressed that these benefits, which they may raise their contributions in the near-term, will increase in the future over the alternative option. That is, the members of the plan itself had an outsized role in the decision-making process. Decision-making went

beyond the board, as the interviewee cited a conscious effort to keep pension system members informed on everything going on and actively seeking their input.

The medium-performing pension system interviewees described having a formal succession plan to address board turnover, had board members with actuarial experience, and described heavy emphasis on firefighter control of the board over plan sponsor members. The medium performing pension system interviewees also described their pension system performance as being the result of having to recover from the poor decisions of previous board members. This is further evidence for the need to consider the history of the plan and other characteristics outside of the scope of the TLFFRA board. Even though they demonstrated many best practices regarding pension governance, these plans struggle to rectify prior decisions. Decisions made in the past continue to impact the current outcomes and performance of each plan. Therefore, it is important to consider the external characteristics of each plan when prescribing remedies to improve. If these plans had some of the same histories/consistent support from the plan sponsor, it is possible that many of them would fall under the high-performing category.

Lastly, the under-performing pension system interviewees described creating a tiered plan in response to a PRB intensive review, did not have a formal risk-sharing plan with the plan sponsor, and strongly disagreed with the PRB's intensive review findings. The interviewees also described the annual conferences and trustee trainings provided by the nonprofit organization, the TLFFRA Education Foundation, as offering useful actuarial and financial knowledge for TLFFRA board members that goes beyond the statutorily required MET program.

5.8 Summary of Qualitative Findings

All in all, there were many elements of governance, decision-making process, and board composition that were consistent across each of the interviewees. There was also variation among different aspects of governance that highlights the importance of the individuality of each of the plans. TLFFRA cannot be fixed with a sweeping solution. Rather, careful consideration of each plan's history, board makeup and the expertise they bring, and external factors of the city are needed to identify the problem and subsequent solution. As a result, the following recommendations are intended to create flexibility and accountability for all TLFFRA plans regardless of performance.

6. Recommendations

Our recommendations center around three concepts: open governance, mitigating risk, and strong city-plan relationships. These six recommendations vary from changes to statute to internal changes that can be made by each individual plan. Implementation of these would include structural changes by both plan sponsors and their TLFFRA boards. Each of these recommendations are informed by both our quantitative and qualitative findings. While each of these recommendations may have their limitations, our team believes that each of these options deserves proper consideration.

6.1 Establish a Statewide TLFFRA Fund

Our research uncovered concerning trends among TLFFRA pension systems that could endanger their long-term prospects. Among these notable trends are a lack of payroll growth and population growth in rural communities. The relative lack of growth in these areas may make a TLFFRA program unsustainable in a rural area if the program is not properly managed. Many pension programs function in rural places in Texas due to asset pooling into a larger system, like the

Texas Municipal Retirement System (TMRS). TMRS is the pension system that most municipal employees contribute to for their retirement savings. This includes some firefighters as well. Each city contributes to the system a whole. A partial explanation for the relative stability of TMRS is due to the pooling of assets from cities across the state.

TLFFRA programs have lacked stability as a group compared to other programs in the state of Texas. Asset pooling may be the answer to the issue of stability. Texas has a potential best practice to follow with asset pooling with the state of Massachusetts. The Pensions Reserves Investment Management Board of Massachusetts (PRIM) has a unique model that may be perfect for TLFFRA programs. PRIM manages all of Massachusetts' statewide pension programs such as their equivalents to TRS and TMRS. However, PRIM has an addition feature: optional asset pooling. Local pension programs have the option to invest their assets into the PRIM portfolio to be pooled with others from around the state. The individual programs still exist and negotiate with cities, but the assets and resulting pensions come from investment performance in the larger fund.

Local control is a key value behind the TLFFRA statute. These boards are established by firefighters to control their own pensions. If a statewide program were established keeping it optional would be essential for allowing plans that already exist to maintain their autonomy. Even if a plan were to opt into a statewide program, they would maintain some autonomy. In PRIM each local board still exists as a separate entity but chooses to invest into PRIM. This could potentially allow for board to divest as necessary. Alternatively, the TLFFRA state fund could take control of a program if it continually underperforms. Some plans in the TLFFRA system have underperformed for multiple years. This puts these programs in danger of losing the rest of their assets and firefighters losing their benefits. Taking control of the assets can stabilize a spiraling program and allow firefighters to gain better benefits.

Certain limitations exist that make the implementation of this recommendation difficult. For a statewide fund to be established, it would require changes to the TLFFRA statute. This would require action from the legislature. Despite support for reforming TLFFRA indicated from the last interim report from the Texas House Pensions, Investments, and Financial Services Committee, it is uncertain that the legislature would have an appetite for this solution. For this fund to succeed it will need the trust of the firefighters. The investment strategy must be clear and have the proper balance of risk and stability to ensure that an underperforming program will succeed when they opt into the fund. The managers of the fund must have clear communication with the client boards. A publicly appointed board with some sort of firefighters input will likely be necessary to ensure that boards have trust in the fund.

6.2 Require an annual MOU between the city council, TLFFRA board, and PRB

There is an inherent dynamic present between the city, who determines an annual contribution rate, and the TLFFRA board, who votes on benefits and contributions. Cities have a clear incentive to contribute a sufficient amount because a growing unfunded pension liability only constricts budgetary flexibility in the future and hurts credit scores. However, they may feel hesitant to do so because of the democratic nature in which the TLFFRA board can use the funds. There is nothing to stop a TLFFRA board from taking more support from the city to increase their own benefits or lower their own contributions. In fact, many TLFFRA plans seemed to have done this. The better-performing plans, however, tended to have strong lines of communication between these two parties and many of the good governance plans had clear risk-sharing agreements to mitigate against this. This MOU would first start with an actuarial status update provided by the PRB that details how the plan did in the preceding year, the magnitude of its unfunded liabilities, and what the

actuarial determined contribution should be. Based on these projections, the PRB will recommend a benefit and contribution rate that would help the plan improve its funded ratio, amortization period, and unfunded liability. With this data, all these stakeholders will agree on a contribution rate and benefit packages at the beginning of the fiscal year. Or, an agreement that determines the conditions for benefit increases (certain investment return thresholds, new employees, etc.) would also help alleviate some of these communication issues.

Data from the taxonomy revealed that the highest-performing plans contributed above the ADC and receiving strong support from the employing city. One key takeaway from the interviews was the tension between cities and TLFFRA board inherent in this kind of pension structure. Both parties have an incentive to adopt a contribution/benefits rate that is intergenerationally equitable, provides ample retirement benefits to retirees, and preserves the actuarial soundness of the plan. This option creates that dialogue to bridge gaps in perspectives on how to get there. Additionally, nearly all the plans that underwent an intensive review from the PRB tended to improve rather dramatically in the periods following the review. While some of the interviewees may have rejected the nature of how the review was conducted, these recommendations ultimately lead to improvements from the plans that needed it the most. Therefore, these annual MOUs also serve the function of being "informal intensive reviews" from the PRB. For high-performing plans, this may simply be a "keep doing what you're doing" message. But regardless, this gives the PRB a more hands-on approach and identifies problems and subsequent solutions before the problem becomes unsolvable. In making recommendations and reports to the Legislature, PRB will be more aware each TLFFRA plan and can testify to each plan's adherence to the MOU.

One of the medium-performing plans that we interviewed cited a similar process that they undergo with their plan sponsor. This plan regularly communicates with the plan sponsor about the

actuarial status of the plan, any changes that are made, and what they intend to discuss at future board meetings. They have established a relationship that is built on trust and, in return, both parties benefit. This plan sponsor contributes above its actuarially determined contribution on a relatively regular basis. It also scored relatively high on many of the governance aspects of our model. The plan sponsor contributes this amount because they have a clear, written agreement with the board on what the benefit payout will be and establishes the thresholds needed to raise them (i.e. strong investments, more employee contributions, etc). As a result, this plan has shown improved outcomes over the past few years. It is this level of collaboration, trust, and formal risk-sharing that serves as a best practice for all TLFFRA plans. If every plan was required to undergo this process with the PRB serving as a mediator, we believe that all plans regardless of current performance would stand to improve into the future.

This option is intended to be considered as one immediate measure that the PRB could take to achieve multiple objectives. However, without statutory changes, this would have to be done on a voluntary basis. That is, there is no legal mechanism for enforcing an annual MOU. This would add to the burden of TLFFRA plans which already administratively stretched thin. Additionally, there is currently only one FTE at the PRB that focuses on TLFFRA plans. Adding 42 annual casual intensive reviews will require a lot of work. It is unclear if the PRB has capacity to do this annually. Regardless, forcing the stakeholders and the experts to the same table to talk about what is needed in the best interest for all parties would certainly be helpful in improving the financial strength of each TLFFRA plan.

6.3 Require plan sponsors to utilize an actuarily determined contribution (ADC) rate

This recommendation attempts to alleviate some of the issues our research has identified with TLFFRA pension systems. An actuarily determined contribution (ADC) rate is a funding method that uses an actuarial calculation to determine a plan sponsors annual contribution required to eliminate the pension systems unfunded liabilities in timely manner. There are many ways to calculate an ADC, but guidance developed by the Actuarial Standards Board (ASB) may act as a guide. Conversely, a fixed contribution rate is a funding method not tied to the pension systems unfunded labilities and is usually determined at the discretion of plan sponsors or statute. Based on the PRB's December 2022 AV Report, few TLFFRA pension systems utilize an ADC, the majority utilize a fixed contribution rate. This is an important finding because our taxonomy indicated that higher performing plans tended to have higher contribution rates. In addition, contribution rates were found to be statistically significant and had coefficients positively associated with pension system performance in our regression analysis. As a result, requiring all TLFFRA pension systems to use an ADC would require plan sponsors to make the necessary contributions to ensure TLFFRA systems are properly funded. Additionally, most TLFFRA board member interviewees supported the implementation of a required ADC. However, based on our semi-structured interview with a plan sponsor, plan sponsors are opposed to an ADC because they fear that TLFFRA boards will then elect to increase plan benefits. This is a fair criticism and this structural tension between plan sponsors and TLFFRA boards has been identified in this research. Requiring an ADC may also increase the short-term financial stress on plan sponsors. Another potential limitation is that an ADC may make it harder for plan sponsors to predict future contributions because ADCs may vary overtime. However, some TLFFRA plans fixed contributions are significantly lower than their ADC. As a result, failing to make the appropriate annual contributions consistently will only make the necessary contributions more costly over time. In addition, there are options to prevent TLFFRA boards from increasing pension benefits with an ADC. One of the TLFFRA pension systems that we interviewed signed an MOU with the plan sponsor

outlining the conditions that pension benefits could be increased. In another example, a TLFFRA pension system negotiated with their plan sponsor that employees would match the plan sponsor's contribution rate.

6.4 Each plan should establish an independent website

Out of the 42 plans, our team was unable to locate the minutes for 19 of them. Often, this was due to our team being unable to find the website for the plan itself. In other cases, this was due to the city having an inadequate system for posting and archiving minutes and required documents. Statute requires public posting of minutes and TLFFRA statute has certain reporting requirements. Even if these minutes are technically available, they are not easily accessible. As such, each plan should establish a website that is independent of their city. Despite the close relationship between a city and their TLFFRA plan, they are separate entities. Reliance upon an outside source (the city) to post their minutes and documents can be risky. Putting the burden onto each program to post their own documents and minutes is better for transparency. Most governmental organizations have their own website. However, just because a plan has a website does not mean that the website is easy to use. Many individual plan websites were outdated and lacked basic information about plans. Even if a plan already has a website, steps should be taken to ensure websites are brought up to date. More specifically, these sites should be user and mobile friendly. These websites are not only useful for displaying information for the public, they are marketing tools for these plans. TLFFRA is a complex statute and these websites are a plan's way of creating their brand and showing their usefulness to their community.

The obvious downside is lack of ability to implement this recommendation. Some of the smaller plans have indicated that they have difficulty affording a plan administrator or a 3rd party

actuary. If they are having difficulty in hiring for these roles, hiring a 3rd party web designer may not be feasible. There may also be some difficulties in updating websites for anyone who is not familiar with web design or has received training.

6.5 Conduct a study on expanding TLFFRA to county fire department's

The PRB has the capacity to do research on certain pension policies. In one interview with a county fire department, the differences between working with a commissioner's court and a city council certainly became evident. This plan was created in 2008 and has enjoyed strong outcomes since its inception. This is likely due to the age of the plan, but members receive a higher retirement benefit package than they would if they simply opted into TMRS. The interviewee described the ease of working with the commissioner's court and how the incentives they have may be different than a city council. Thus, a further examination into how these dynamics may be different under a TLFFRA framework would illuminate more about the different natures of pension systems. Specifically, the study should include 1) current landscape of county fire department pension structures, 2) openness of these departments to TLFFRA, 3) how benefits might change under TLFFRA, 4) how the makeup and electoral incentives of county commissioners may be different than those elected to city council, and 5) how the budget of a county may affect the potential adoption of TLFFRA.

This option is intended to be coupled with a statewide TLFFRA fund. If TLFFRA were to be expanded, more plans will be needed to collectively strengthen the fund. Counties seem like a prime place to start in potentially expanding TLFFRA. They often have smaller budgets to begin with but employ a large amount of fire fighters. A study surrounding this topic would not help the

PRB understand TLFFRA on a deeper level, but they would learn more about how pensions are different at the county level. Using the county plan currently as a TLFFRA as a basis, more fire fighters that serve in counties across the state could stand to see increases in their retirement benefits and more rewarding plans if deployed efficiently.

This option does not involve any remedies to outstanding TLFFRA problems. Those should take precedent. However, if the PRB wishes to expand TLFFRA, this would be the first place to start. The county fire department our team interviewed demonstrated that when done right, TLFFRA can deliver wins for all parties involved. However, some plans continue to be plagued from decisions made years in the past. This option looks further into the future rather than trying to solve problems from the past. It could be argued that limited resources from the PRB may be better used in attempting to rectify and assist plans that are currently struggling. However, if the statewide TLFFRA fund were to be adopted, this could be a useful tool to determine and identify county fire departments that would make that fund strong while still delivering generous benefits to the fire fighters it serves.

6.6 Reform citizen seats on TLFFRA boards

The final recommendation aims to alleviate some of the governance concerns described by plan sponsors and challenges described by other TLFFRA board members in our semi-structured interviews. For example, all interviewees described having a difficult time finding qualified candidates with actuarial or financial experience to fill the two citizen seats on their boards. In addition, interviewees described the high volunteer work hours, level of knowledge required, and lack of compensation as contributing factors to the challenge. Furthermore, as an indirect measure of governance, citizen TLFFRA board members had the lowest percentage of MET compliance out of

the three categories of TLFFRA board members. Based on the 2022 MET compliance report, for all 42 TLFFRA plans, 65.1% of firefighters, 51.2% of plan sponsors, and 43.4% of citizen board members were compliant. Additionally, during our interview with the plan sponsor, they described how TLFFRA boards tend to be firefighter dominated because it is possible for the citizen seats to be filled by retired firefighters, leading to a board majority of five vs two (plan sponsor board members). This has also caused a sense of deference to these firefighters from the perspective of city representatives. This format allows for an overwhelming amount of burden to be placed upon the firefighters in terms of board composition and control.

To avoid situations of overwhelming firefighter control on TLFFRA board, we recommend reforming TLFFRA statute to make citizen seats optional. This will remove the burden placed upon these boards, especially those in rural areas, of having to find qualified citizens to fill those seats. We recommend keeping these seats optional to allow boards that have located qualified citizen members to keep their seats as they will likely offer substantive advice upon governance and actuarial matters. Taking the pressure off boards that cannot find qualified candidates will allow them to instead dedicate their time to discussing and improving their plan instead of constantly trying to remain in statute. However, for TLFFRA boards that wish to maintain their citizen seats, we recommend that firefighters, either current or retired, be barred from holding those seats. This will reduce the potential conflict of interest these firefighters have in controlling their own benefits. The idea behind having citizen seats on the board stems from the fact that they, as taxpayers, have a stake in the financial success of pension plans. It is ultimately them who must pay for any unfunded liability. However, citizens still maintain the ultimate direction of the plan through election of city councilors who oversee the plans. Therefore, our team believes that by making these seats optional, plans are granted additional flexibility by removing a statutory burden but still offers a way to provide expertise.

However, this recommendation alone may not lead to better relations between plan sponsors and TLFFRA boards. Interpersonal relations in each board can vary and citizen seats are not the determinant issue for individual boards. In addition, plan sponsors share some of the responsibility in the variability of working relationships with TLFFRA boards since our research indicates that plans sponsors tended to have lower levels of compliance with the statutorily required MET program.

7. Conclusion

The PRB is charged with overseeing all pension plans in Texas, including the 42 that fall under the Texas Local Fire Fighters Retirement Act (TLFFRA). These plans are unique in their statutory design: members vote on contribution and benefit levels while still relying on contributions from the plan sponsor that employs them. Investment and high-level decisions are made by a board that includes nearly a majority of active plan members. This is one of the most democratic forms of pension governance across the country, which naturally lends itself to some of the same tensions inherent in any democratic model.

Our research uncovered that governance, expertise, and transparency are key elements of strong outcomes. Moreover, above-and-beyond contributions from the city makes a world of difference in both the generosity of the benefits that members receive and the long-term funded status of each of the plan. However, it is also important to consider the external factors of an individual plan before making any conclusions. Population growth and the age of the plan can either create or eliminate any form of protection against low contributions or a poor investment year. As such, the highest-performing plans tended to have strong population growth, above the minimum required contributions from the city, and demonstrated strong expertise in decision-making. Examples of good governance in the context of TLFFRA pensions systems includes having a formalized board structure

where roles are clearly delineated, having a succession plan to pass down valuable insights from previous boards, and ensuring strong, consistent lines of dialogue between all stakeholders. TLFFRA, if utilized and regulated appropriately, can be a vehicle for fire fighters to receive more generous retirement benefits than if they were folded into TMRS. To establish accountability and guardrails for ensuring that both fire fighters and plan sponsors benefit from this program, statutory changes may be needed. This may include the creation of a statewide TLFFRA fund to share risk and mitigate population differences in smaller, rural parts of the state. It may also simply require the plan sponsors to sit down with the TLFFRA board and agree on contribution/benefit levels based on data produced by the PRB. Or, it may simply involve a mandatory city contribution rate that is equal to the actuarial determined contribution. Any of these changes would help make this program more effective for all parties involved and begin to rectify some of the poor performance in prior years.

Additionally, smaller changes may help individual plans that are struggling. Creating a website to increase transparency of how decisions are made would help all stakeholders evaluate these plans. A study on expanding TLFFRA to county fire departments may be helpful with the creation of a statewide TLFFRA fund. Additionally, making citizen seats optional might help plans make more effective decisions. Regardless, these options should be considered as both short-term and long-term solutions to the wide variability in TLFFRA performance. These changes would likely take time to implement, but firefighters across the state deserve to have a retirement package that values the work they do.

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Item 8: Review of the PRB Pension Funding Guidelines and Guidance for Developing a Funding Policy

Mariah Miller

Background

- Pension Funding Guidelines last revised in 2017
  - Previously, systems with funding periods between 30 and 40 years had until June 2025 to reach a 30-year funding period.
  - As of 2021, statute gives systems until September 2025 to reach 30-year funding period.
- Section 802.2011, Texas Government Code requires systems to develop and adopt a funding policy
  - PRB developed guidance and an example policy in 2019
  - 96 of 100 plans have since adopted a funding policy

Methodology

- Focused on updating both documents to reflect statutory changes and updated best practices
  - Legislation: Funding policy requirement (2019) and FSRP updates (2021)
  - Best practices: GFOA, ASOPs, GASB, and other updated guidance
- Technical updates for formatting, consistency, and clarity

Pension Funding Guidelines Proposed Changes

- Added language -
  - reflecting 2019 and 2021 statutory changes, including:
    - FSRP updates
    - Funding policy requirements, including required sponsor involvement
  - supporting intergenerational equity
  - limiting duration of negative amortization

Funding Policy Guidance Proposed Changes

- Added language incorporating FSRP requirements
- Replaced other states examples with examples from Texas funding policies
- Added sections -
  - reflecting requirement for joint funding policy development
  - encouraging the periodic review and revision of funding policies
  - helping systems plan for overfunding, not just underfunding
- Added information about various ways a system and sponsor can implement formal risk-sharing policies

Next Steps

- February: Guidelines and guidance made available for public comment
- March: Update provided to board
- April: Revise example policy
- May: Updated material and stakeholder comments presented to Actuarial Committee
- July (projected): Final guidance, guidelines, and example policy presented to board for possible approval

PRB Pension Funding Guidelines

Introduction:

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 systems ~~plans~~ and their sponsors as they determine a reasonable approach to responsible funding, whether the contribution rate is fixed or actuarially determined.

According to state law, each public retirement system and its sponsoring governmental entity shall adopt a written funding policy. The system and sponsor must revise this policy to reflect any significant changes, including changes required after implementing a funding soundness restoration plan (FSRP).[1]

~~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.~~

Guidelines:

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 funding ~~amortization~~ period. State law requires a funding policy to include a plan for achieving a 100 percent or greater funded ratio.[2] Starting September 1, 2025, funded ratio will be a factor in the triggering mechanisms for the FSRP requirement.[3]

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, in accordance with state law.[4] ~~with 10 – 25 years being the preferable target range.*~~ For plans that use multiple amortization layers, the weighted average of all

[1] Section 802.2011, Texas Government Code

[2] Section 802.2011, Texas Government Code

[3] Section 802.2015, Texas Government Code specifies that on or after September 1, 2025, systems with a funding period of between 30 and 40 years and a funded ratio of less than 65 percent will trigger the FSRP requirement after one actuarial valuation.

[4] Section 802.2015, Texas Government Code establishes a 30-year funding period as the state's minimum funding standard for public retirement systems as part of the Funding Soundness Restoration Plan (FSRP) requirement. Any systems that subsequently become subject to the Revised FSRP requirement must meet a stricter 25-year funding period and implement an actuarially determined contribution, among other requirements.

DRAFT

~~amortization~~ funding 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.~~] Once a system reaches 100 percent funded, contributions should continue to cover the normal cost.

5. The funding policy should include two reasonable target dates which do not change from year to year:

a. The intended date when the system will begin to reduce the unfunded actuarial accrued liability should not be more than 10 years in the future when the target date is first established.

b. The intended date when the system will eliminate the unfunded actuarial accrued liability should not be more than 30 years in the future when the target date is first established.

6. Benefit increases should not be adopted if the proposed changes cause a material increase in the funding period and if the resulting funding period exceeds the average future working lifetime of the current active members.[5]

~~5~~7. The choice of assumptions used by a system should be reasonable and should comply with applicable actuarial standards.

~~6~~8. Public 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.*~~

[5] For example, if members on average have accrued 12 years of service and are expected to retire after 25 years of service, any benefit increases should be paid for within the 13 expected remaining service years of the current active members.

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PRB Pension Funding Guidelines

Introduction:

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 systems and their sponsors as they determine a reasonable approach to responsible funding, whether the contribution rate is fixed or actuarially determined.

According to state law, each public retirement system and its sponsoring governmental entity shall adopt a written funding policy. The system and sponsor must revise this policy to reflect any significant changes, including changes required after implementing a funding soundness restoration plan (FSRP).[1]

Guidelines:

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 funding period. State law requires a funding policy to include a plan for achieving a 100 percent or greater funded ratio.[2] Starting September 1, 2025, funded ratio will be a factor in the triggering mechanisms for the FSRP requirement.[3]

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, in accordance with state law.[4] For plans that use multiple amortization layers, the weighted average of all funding periods should not exceed 30 years. Once a system reaches 100 percent funded, contributions should continue to cover the normal cost.

5. The funding policy should include two reasonable target dates which do not change from year to year:

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[1] Section 802.2011, Texas Government Code

[2] Section 802.2011, Texas Government Code

[3] Section 802.2015, Texas Government Code specifies that on or after September 1, 2025, systems with a funding period of between 30 and 40 years and a funded ratio of less than 65 percent will trigger the FSRP requirement after one actuarial valuation.

[4] Section 802.2015, Texas Government Code establishes a 30-year funding period as the state's minimum funding standard for public retirement systems as part of the Funding Soundness Restoration Plan (FSRP) requirement. Any systems that subsequently become subject to the Revised FSRP requirement must meet a stricter 25-year funding period and implement an actuarially determined contribution, among other requirements.

a. The intended date when the system will begin to reduce the unfunded actuarial accrued liability should not be more than 10 years in the future when the target date is first established.

b. The intended date when the system will eliminate the unfunded actuarial accrued liability should not be more than 30 years in the future when the target date is first established.

6. Benefit increases should not be adopted if the proposed changes cause a material increase in the funding period and if the resulting funding period exceeds the average future working lifetime of the current active members.[5]

7. The choice of assumptions used by a system should be reasonable and should comply with applicable actuarial standards.

8. Public retirement systems should monitor, review, and report the impact of actual plan experience on actuarial assumptions at least once every five years.

DRAFT

[5] For example, if members on average have accrued 12 years of service and are expected to retire after 25 years of service, any benefit increases should be paid for within the 13 expected remaining service years of the current active members.

TEXAS PENSION REVIEW BOARD

Guidance for Developing a Funding Policy

~~As required by Senate Bill 2224 (86R)~~
(Adopted ~~October 17, 2019~~TBD)

Overview

Section 802.2011, Texas Government Code ~~§802.2011~~ requires **the governing board of a Texas public retirement system ~~to~~and its sponsor to jointly develop and adopt a written funding policy ~~by January 1, 2020~~.and timely revise the policy to reflect any significant changes, including those made because of a funding soundness restoration plan (FSRP)**. The policy is intended to be ~~used as a retirement system's~~ a roadmap to fully fund ~~its~~the system's long-term obligations. ~~The policy should be created with input from the system's sponsoring governmental entity whenever possible.~~

The funding policy ~~is required to~~requirement includes several components. By statute, the policy must be filed with ~~its sponsor and~~ the Texas Pension Review Board (PRB) no later than the 31st day after the date the policy is changed or adopted. ~~-~~The most recent version of the funding policy must also be available on a publicly available website.

A funding policy is required by law to be revised in a timely manner to reflect any changes a system and its sponsor make due to an FSRP. For purposes of a revised FSRP, the funding policy revisions must include any risk-sharing mechanisms, the adoption of an actuarially determined contribution structure, and other adjustable benefit or contribution mechanisms.[1] For more information about the FSRP requirement, including applicable statute, rules and policy, see the PRB's FSRP webpage.

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

A funding policy should include ~~the following components:~~

~~I.~~ ~~Clear~~clear and concrete funding objectives~~;~~
~~II.~~ ~~Actuarial~~, actuarial methods~~;~~
~~III.~~ ~~A~~, a roadmap to achieve funding objectives~~;~~, and

[1] Section 802.2011(c), Texas Government Code

DRAFT

~~Actions~~ actions that will be taken to address actual experience that diverges from assumptions. The following material provides more detail on each of these necessary components of a funding policy. While this guidance uses examples of Texas retirement system funding policy provisions under various components, the use of such examples is for informational purposes and does not constitute endorsement or recommendation by the PRB.

Components of a Funding Policy

I. Establishing Clear and Concrete Funding Objectives

A funding policy should clearly establish the retirement system's funding objectives. ~~Per Government Code §802.2011, the~~ **The funding policy must target a funded ratio of 100~~%~~ percent or greater~~.~~ and be jointly developed and adopted with the system's sponsor.**[2] The PRB recommends that systems adopt a funding policy that fully funds the plan **over as brief a period as possible**, ~~with **10 – 25 years** being the preferable range,~~ using a finite, or **closed, funding period**.

II. Selecting Actuarial Methods

An important role of a funding policy is to **set boundaries on what is allowable for actuarial calculations**. The system's actuary should be involved with the development of a funding policy by advising the board on selecting actuarial methods that align closely with the system's funding objectives, reducing volatility in returns, allowing a more predictable budget, and increasing the likelihood of meeting obligations.[3] At a minimum, the three actuarial methods that should be addressed are the actuarial cost method, the asset-smoothing method, and the amortization policy.

Actuarial Cost Method	Asset Smoothing Method	Amortization Policy
An actuarial cost method is a way to allocate pieces of a participant's total expected benefit to each year of their working career. 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~~system until ~~his/her~~their	Asset smoothing techniques can help keep contributions stable and more predictable over time. Under smoothing, asset gains and losses are generally recognized over a period of years rather than immediately. A five-year smoothing period where 20~~%~~ percent of any gain or loss is recognized in each subsequent year is typically used in Texas. The funding policy should specify the amount of return subject to smoothing (i.e~~.~~., how much is deferred), the time period of the	An amortization method is a procedure for determining the amount, timing, and pattern of recognition of a plan's gains and losses. Amortization amounts can be level dollar amounts or determined as a percentage of covered payroll. Level dollar amounts are preferable unless payroll is expected to decrease in the future. One approach that helps minimize annual contribution volatility while maintaining a finite, closed funding period is the use of layered amortization, where a single closed-period amortization base is established for each year's realized experience.

[2] Section 802.2011, Texas Government Code

[3] "Sustainable Funding Practices for Defined Benefit Pensions and Other Postemployment Benefits (OPEB)" *Government Finance Officers Association* 3, 5-7, approved March 3, 2023, https://www.gfoa.org/materials/sustainable-funding-practices-for-defined-benefit-pensions

DRAFT

assumed termination or retirement. A funding policy should state the desired goals and purpose of the cost method if it does not specify the exact cost method to be used.	deferral, and if the smoothed value is subject to a corridor. FSRP rules allow a system to use the greater of the market value of assets and the actuarial smoothed value of assets when determining the funding period to compare against the FSRP 30-year threshold.	Another approach is to establish closed-period amortization bases with varying recognition periods dependent upon the cause of a gain or loss. For example, one approach might be to amortize investment and/or actuarial experience gains or losses over a ~~5~~five-year period, gains or losses attributable to assumption changes over a 10-year period, and gains or losses attributable to plan amendments over as short of a ~~25~~period as possible. A well-developed amortization policy will help a system maintain an amortization period below the 30-year ~~period.~~ statutory threshold and avoid triggering a funding soundness restoration plan.

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

Negative Amortization

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~~Systems should be careful in their use of negative amortization. If a ~~plan's~~system's amortization policy results in negative amortization, the funding policy should outline the expected period over which negative amortization will occur and provide justification for the use of negative amortization.

III. Developing a Roadmap to Achieve Funding Objectives

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

Contribution Rates

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

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

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

DRAFT

2. Establish what conditions will trigger action when the current actual contribution rate moves away from the benchmark ADC. For example, a certain funded ratio or difference between actual contribution and ADC could be used.

3. Identify tangible steps that will be taken to mitigate the differences between the actual and benchmark contribution rates, such as contribution and benefit changes. See Section IV for examples.

Benefit and Contribution Change Parameters

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

Examples

~~A funding policy might state~~**Irving Firemen's Relief and Retirement Fund.** The board agrees that~~:~~

- any benefit enhancements ~~can~~/changes to be ~~made only if~~submitted to the ~~funded ratio~~ membership for vote will ~~remain at a certain level after the increase; or~~ :
  - ~~contribution reductions~~require that member contributions solely cover any increases to the ADC as a result of such benefit enhancements/changes, to the extent such sole coverage by members is permitted under TLFFRA statute; and
  - have been analyzed pursuant to the actuarial analysis process agreed to with the sponsor.[4]
- **Fort Worth Employees Retirement Fund**. City and member rates may ~~only occur~~ be increased after:
  - the actuary performs analysis of fiscal impact of proposed change;
  - a majority of eligible members vote in favor; and
  - the change is approved by the board (if city called vote) or city council (if ~~a minimum~~board called vote).[5]
- **San Antonio Fire & Police Pension Fund**. Every two years, the board may review potential changes to the governing statute. The board may not recommend actions that result in a funding ratio less than 90 percent or an effective amortization period ~~is maintained.~~of over 15 years.[6]
- **Longview Firemen's Relief and Retirement Fund.** The funding policy states that the board supports:
  - A reduction in the employer contribution rate only when the funding ratio would be above 105 percent and the total contribution rate is not less than the normal cost.

[4] Funding Policy, *Irving Fireman's Relief and Retirement Fund*. 2023. https://www.prb.texas.gov/wp-content/uploads/2023/12/Irving-Funding-Policy.pdf
[5] Funding Policy of the Fort Worth Employees' Retirement Fund, *Fort Worth Employees' Retirement Fund.* 2019. https://cms1files.revize.com/fortworthretirement/Funding_Policy__12_18_19_____Board_Adopted.pdf
[6] Actuarial Funding Policy, *San Antonio Police and Fire Pension Fund*. 2020. https://www.prb.texas.gov/wp-content/uploads/2023/12/SAFPPF-Funding-Policy.pdf

DRAFT

- Benefit enhancements only if the amortization period is below five years, the resulting amortization period after reflecting the enhancements is above 10 years, and the average experience of three consecutive annual actuarial valuations must be used to evaluate actual fund status before any plan improvements can be brought to a vote.[7]

Working With the Sponsor

A system and its sponsoring governmental entity are required to jointly create and approve a funding policy.[8] Working together will allow a system and its sponsoring entity to craft a funding policy that will achieve the system's objectives while maintaining agreed upon boundaries. Some Texas systems have established parameters like contribution levels or funding objectives in agreements with sponsors such as collective bargaining or meet and confer agreements.

Example

- **Denton Firemen's Relief and Retirement Fund**. The system and the City of Denton use a Meet and Confer Agreement to establish certain responsibilities and funding goals shared by both parties. For example, the members agree to not raise benefits during the term of the agreement and the city agrees to only adjust contributions based upon an actuarial valuation.[9]

Monitoring and Evaluation

A governing board should periodically review and revise their funding policy to better reflect the system's goals. A regular review policy could be adopted by the board by including a clause detailing the timeline or conditions for re-evaluating the funding policy using updated information from actuarial valuations and experience studies.

A board should proactively monitor its system's financial condition. Monitoring requires that a board continually analyze investment returns, contributions, and benefits. A board can also establish actions to provide the system with a roadmap when it encounters adverse investment returns, unexpected member behavior, or other unforeseen events.

Example

- **City of Austin Employees Retirement System**. The Benefits and Services Committee will review the policy at least every two years and make recommendations to the COAERS board necessary to maintain progress towards the goals and objectives in this policy.[10]

DRAFT

[7] Longview Firemen's Relief & Retirement Funding Policy, *Longview Firemen's Relief & Retirement Fund*, 2022. https://www.prb.texas.gov/wp-content/uploads/2023/12/Longview-Funding-Policy.pdf
[8] Section 802.2011, Texas Government Code
[9] Meet and Confer Agreement Between the City of Denton and the Denton Firefighters Association, *Denton Firemen's Relief and Retirement Fund.* 24 September 2019, https://www.prb.texas.gov/wp-content/uploads/2023/12/Denton-Funding-Policy.pdf
[10] Funding Policy, *City of Austin Employees' Retirement System.* 2020. https://www.prb.texas.gov/wp-content/uploads/2024/01/2020.09-COAERS-Funding-Policy.pdf

- **San Antonio Fire & Police Pension Fund**. Actuarial experience studies are completed no less than every five years or at the board's direction. The board will also review the Actuarial Funding Policy in conjunction with the experience review.[11]

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

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

Risk-Sharing

A funding policy should identify key risks faced by the ~~plan~~system and how those risks, and their associated costs, will be distributed between the employer and employees. This structure prevents one party from bearing all the risk in a funding policy. Often when there is no formal risk-sharing policy, benefit reductions or cost increases are imposed on employees, retirees, or both after the ~~plan's condition has deteriorated, rather than proactively, in advance, and in a manner transparent to members and stakeholders.~~[1]

~~*Example:* If investment returns~~system's condition has deteriorated, rather than proactively, in advance, and in a manner transparent to members and stakeholders.[12]

There are ~~not as high as projected, the associated costs will need~~multiple methods a system can utilize to ~~be covered by additional contributions or~~implement a formal risk-sharing policy:

Total ADC Driven	Normal Cost Driven	Milestone Driven
Employee contributions are determined in relation to the ADC rate. Under this system, employees are given the most direct exposure to the system's total experience. Systems can also decide the exact risk sharing ratio (i.e., 50/50, 60/40, etc.).[13]	Employee contributions are calculated in relation to the normal cost. This may result in a variable contribution rate. Employees are exposed to less risk due to their contributions not accounting for the system's unfunded liability.[14]	A system keeps employee contributions fixed until certain funding or investment thresholds are met. [15]

Examples:

- **Houston systems**. The three Houston systems (Houston Firefighters' Relief & Retirement Fund, Houston Municipal Employees Pension System, Houston Police Officers' Pension System) have a statutory funding policy that established a target contribution rate and a corridor around that

[11] Actuarial Funding Policy, *San Antonio Police and Fire Pension Fund*. 2020. https://www.prb.texas.gov/wp-content/uploads/2023/12/SAFPPF-Funding-Policy.pdf
[12] Brainard, Keith, and Alex Brown, *In Depth: Risk Sharing in Public Retirement Plans. National Association of State Retirement Administrators*, January 2019, https://www.nasra.org/content.asp?contentid=124
[13] Keith Brainard and Alex Brown, "In-depth: Risk Sharing Retirement Plans" National Association of State Retirement Administrators. 7-13, December 2018 https://www.nasra.org/files/Spotlight/Risk%20Sharing%20in%20Public%20Retirement%20Plans.pdf
[14] Brainard and Brown, Risk Sharing
[15] Brainard and Brown, Risk Sharing

DRAFT

rate. The systems and the city are required to take corrective action, including negotiating benefit reductions ~~distributed amongst~~, if the recommended contribution falls outside the corridor. [16, 17, 18]

- **Galveston Firefighters Relief & Retirement Fund.** When the calculated amortization period deviates significantly from the benchmark ADC amortization period, the system and city will work together to implement a contribution rate that is reasonably close to the ADC. The rate increase will be no more than 2 percent of pay, can be phased in with two increases one year apart, and will initially be split equally between the members and ~~the sponsor.~~city.[19]
- **Fort Worth Employees Retirement Fund**. If the contribution rate is less than the ADC rate for two consecutive years, city and employee contributions will be increased up to 4 percent of pay (no more than 2 percent of pay in one year), split 60 percent city/40 percent employee. The city council can reduce risk-sharing contribution increases if the ADC will be met for two consecutive years without the increases. If maximum allowed contribution is applied and ADC is still not met, the city council must consider additional benefit reductions.[20]

Contributions

A solution to ensure the ~~plan~~system meets its funding objectives is to require that the actual contribution rate is equal to or exceeds the ADC. If that is not achievable, the funding policy should identify what the trigger should be for a required adjustment to actual contribution rates. If the contributions to the fund are consistently below the ADC, the fund becomes insolvent.[21] Techniques such as the following could be used to help move the actual contribution rate in the proper direction.

Contribution Corridor

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

Maximum and Minimum Contribution Rates

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

Contribution Smoothing

[16] Funding Policy, *Houston Firefighters' Relief and Retirement Fund*, 17 December 2019. https://www.hfrrf.org/_files/ugd/d179ef_e3cad5759f124ee59364ccff4f4eb1b6.pdf

[17] Houston Municipal Employees Pension System Funding Policy, *Houston Municipal Employees Pension System*, 19 December 2019. http://www.hmeps.org/assets/hmeps-funding-policy---12-19-19.pdf

[18] Funding Policy, *Houston Police Officers' Pension System*, 12 March 2020. https://www.hpops.org/media/46525/funding-policy-20200312_reformatted.pdf

[19] Galveston Firefighters' Pension Fund, Funding Policy, 1 February 2023, p. 4, https://galvestonfirepension.com/GAFULF/GAFDCS/Funding_Policy_for_the_Galveston_Firefighters_PensionPOSTWEBSITE.pdf

[20] Funding Policy of the Fort Worth Employees' Retirement Fund, *Fort Worth Employees' Retirement Fund.* 2019. https://cms1files.revize.com/fortworthretirement/Funding_Policy__12_18_19_____Board_Adopted.pdf

[21] "The Role of the Actuarial Valuation Report in Plan Funding" *Government Finance Officers Association,* Approved February 28, 2013, https://www.gfoa.org/materials/the-role-of-the-actuarial-valuation-report-in-plan

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Examples:

- ~~*Example:*~~ If the actual total contribution rate needs to be increased by 2~~%,~~ percent, the rate could be increased in increments until the total contribution rate meets the ADC. Similarly, if the contribution rate needs to be decreased by 2~~%,~~ percent, the rate may be slowly decreased over time. The funding policy may state that the contribution rate may not increase or decrease by more than a given percentage each fiscal year.
- **Texas County and District Retirement System**. The board sets aside investment reserves at its discretion to offset negative future returns. The reserves are not counted as a part of the participating employer's (district or county) assets until the reserves are used.[22]

While the above techniques can stand alone, they are often included in risk-sharing provisions. The three Houston municipal plans' risk-sharing provisions mentioned in the previous section include contribution corridors. Galveston Fire's risk-sharing provisions include contribution smoothing.

Benefits

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

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

~~**Examples of Funding Policy Components**~~

- ~~Many pension plans across~~ **City of El Paso Employees Retirement Trust.** Any benefit increase (including COLAs) may be adopted if:
  - The funded ratio of the ~~United States~~system is above 80 percent after the benefit increase, and the decrease of the funded ratio is not more than 1 percent after the benefit increase.

  The system also outlines provisions specifically for COLAs:

  - The maximum amount of a COLA should not exceed the actual increase in the Consumer Price Index since the last COLA was granted.
  - A COLA will only apply to members who have ~~already adopted a~~ been retired for over one year.

[22] TCDRS Funding Policy, *Texas County and District Retirement System.* 2015. https://www.tcdrs.org/globalassets/policy-documents/tcdrs-funding-policy.pdf

DRAFT

- The board can choose to grant the COLA as a one-time payment or a monthly benefit increase.[23]

➢ **San Benito Firemen Relief and Retirement Fund.** COLAs are tied to investment returns. The crediting rate for the COLA is lesser of the consumer price index or 100 percent of the five-year smoothed return minus 5 percent, not less than 0 percent, not greater than 4 percent.[24]

Some factors to keep in mind when setting such parameters:

- Evaluating the impact of the plan provision on the amortization period and funded ratio after the plan provision takes effect, including whether the system will still meet is target date to reach full funding.
- Putting thresholds in place such that an increase can take effect only if the amortization period is below a specified threshold and the funded ratio is above a specified threshold after the benefit increases are factored in.
- Assessing whether the benefit increases are paid for by current active members to avoid passing down benefit costs to future generations.

Surplus Management

If a system is consistently funded at a rate above the ADC, there is a stronger likelihood of the system achieving a high funded ratio. A funding policy~~, including several in~~ should include provisions detailing steps to follow if a system achieves full funding. A surplus management policy should include the following elements:

- Reviewing system risk management policies to evaluate their efficacy.
- Evaluating current assumptions to ensure reasonableness.
- Considering what changes should be made to employer and employee contributions (if any) when the system is in a surplus.
- Working with the sponsor to establish acceptable conditions for possible benefit enhancements, especially permanent ones, and provide accurate estimations for the immediate and long-term costs.[25]

Examples:

➢ **San Antonio Fire & Police Pension Fund.** If the system is overfunded, the surplus will be amortized over an open amortization period of 30 years.[26]

➢ **Texas**~~. Below are examples of components from those funding policies.~~ **Municipal Retirement System**. If the system is overfunded, all prior bases are erased, and one surplus base would be established. The asset surplus is used to generate a contribution credit for the year that is

[23] City of El Paso Employees Retirement Trust Funding Policy, *City of El Paso Employees Retirement Trust*, December 12, 2019. https://www.eppension.org/documents/fund-overview/Funding%20Policy%20and%20Resolution_19-12-12.pdf?1704385439
[24] San Benito Firemen Relief and Retirement Fund Funding Policy, *San Benito Firemen Relief and Retirement Fund*. December 17, 2019. https://www.prb.texas.gov/wp-content/uploads/2024/01/2019-San-Benito-Firemen-Relief-and-Retirement-Fund-Funding-Policy.pdf
[25] "Core Elements of a Funding Policy for Governmental Pension and OPEB Plans" *Government Finance Officers Association*, approved March 23, 2023, https://www.gfoa.org/materials/core-elements-of-a-funding-policy
[26] Actuarial Funding Policy, *San Antonio Police and Fire Pension Fund*. 2019. https://www.prb.texas.gov/wp-content/uploads/2023/12/SAFPPF-Funding-Policy.pdf

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projected to remain the same over time and keep the funded ratio constant year over year. This practice reduces contribution rate volatility.[27]

Component	Plan	Description
Benefit and Contribution Change Parameters	South Dakota Retirement System	The system may not consider **benefit improvements** unless the fair value funded ratio is and will remain after fully funding the cost of the improvement, over 120%.[2] Proposed benefit improvements must be consistent with both the Board's long-term benefit goals and sound public policy with regard to retirement practices.
	City of Austin Employees' Retirement System	Employer **contribution** rate reductions should be considered only when annual COLA adjustments are built into funding assumptions and the funded ratio will remain greater than or equal to 105% after the reduction.[3]
	City of Austin Employees' Retirement System	A **COLA** may be adjusted only when the adjustment can be financially supported; the funded ratio is ≥ 80% after incorporating the COLA; the amortization period is ≤ 20 years after incorporating the COLA; and the actual employer contribution rate is ≥ the ADC but no more than 18% after incorporating the COLA.[4]
Contribution Smoothing	Fort Worth Employees' Retirement Fund	The contribution rate may not increase more than 2% of pay in one year or 4% in total to account for the ADC increase. If the maximum contribution increase has been applied and the actual contribution is still insufficient, the City Council must consider additional benefit reductions.[5]
Risk-sharing	South Dakota Retirement System	Should the funded ratio fall below 100% or if the fixed contribution rates are not sufficient to meet the actuarial requirement, the system is required to recommend corrective action, including benefit or contribution changes, in its annual report to the Legislature and Governor.[6]
	Houston Firefighters' Relief & Retirement Fund Houston Municipal Employees Pension System Houston Police Officers' Pension System	The 3 Houston plans have a statutory funding policy that established a target contribution rate and a corridor around that rate. The plans and the City are required to take corrective action, including negotiating benefit reductions, if the recommended contribution falls outside the corridor.[7]

[27] Actuarial Funding Policy, *Texas Municipal Retirement System*, 2019. https://www.prb.texas.gov/wp-content/uploads/2023/12/TMRS-Funding-Policy.pdf

DRAFT

Component	Plan	Description
Risk-sharing	Galveston Employees Retirement Plan for Police	Beginning January 1, 2025, if the actuarial valuation recommends an ADC that exceeds the aggregate (employee and City) contribution rate, the excess contribution will be split equally as a percentage of pay between the City and employee contribution rates.[8]
	Maine Public Employees	COLAs are tied to investment returns. Reductions to COLAs may occur after severe market losses. The reductions will be removed once markets improve.[9]
	Wisconsin State Retirement System	Retirement annuities are adjusted using a formula that factors in investment returns.[10]
	Pennsylvania State Employees' Pennsylvania Public School Employees'	The employee contribution rate increases or decreases based on investment plan returns.[11]

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Questions Systems and Sponsors Should Discuss During Funding Policy Development

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

- ☐ **Introduction**
  - ☐ What is the purpose of the policy? What are we trying to achieve in this policy?
  - ☐ How often should we review the funding policy?
  - ☐ How is the ~~plan~~system governed? What statutes or ordinances govern ~~plan~~system funding?
  - ☐ What are our funding priorities?
- ☐ **Funding ~~Objectives~~objectives**
  - ☐ ~~Over what time period will we~~What is the target date to achieve 100~~%~~ percent funding?
  - ☐ How will we measure progress towards full funding? How will we measure if our funding objectives are being met?
- ☐ **Actuarial ~~Methods~~methods**
  - ☐ What valuation methods do we use to determine the ADC (or benchmark ADC)?
  - ☐ How frequently should we calculate the ADC (or benchmark ADC)?
  - ☐ How will we ensure we are meeting the ADC (or benchmark ADC)?
  - ☐ Will we employ any asset smoothing methods? If so, what are they?
  - ☐ What measures do our system and sponsor need to take to achieve 100~~%~~ percent funding?
  - ☐ How should we prepare for unanticipated changes?
  - ☐ How frequently will actuarial experience studies occur?
  - ☐ How is the interest discount rate determined?
  - ☐ Is a negative amortization period ever acceptable, and if so, under what conditions?
- ☐ **Plan for ~~Achieving Funding Objectives~~achieving funding objectives**
  - ☐ How much money do we need today to pay for future promises?
  - ☐ Will we use contribution smoothing methods? If so, what are they?
  - ☐ What conditions must be met for contribution decreases to occur?
- ☐ **When to allow benefit increases**
  - ☐ What conditions must be met to adopt benefit increases or cost-of-living adjustments?
  - ☐ ~~What conditions must be met for contribution decreases to occur?~~
  - ☐ What will the impact of the benefit increase be on the amortization period and funded ratio?
  - ☐ Will the system still meet its target date to achieve full funding?
  - ☐ Will the resulting amortization period be less than the average remaining future service for current active members?
  - ☐ Will the resulting funded ratio be above the system's desired threshold?
- ☐ **Contribution distribution between members and city**
  - ☐ Will members contribute appropriately for the level of benefits received?

DRAFT

- ☐ Is there a target employer normal cost as percent of pay (total normal cost percent less employee contribution percent)?

☐ **Risk ~~Management Policy~~management policy**

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

☐ **Surplus management policy**

- ☐ What actions will we take should the system receive funding over the ADC?
- ☐ What actions will we take when the system exceeds 100 percent funding?

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

[2] South Dakota Retirement System, *SDRS Funding and System Management Policies*, https://sdrs.sd.gov/docs/SDRSFundingPolicy.pdf.

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

[4] *ibid.*

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

[6] South Dakota Retirement System, *SDRS Funding and System Management Policies*, https://sdrs.sd.gov/docs/SDRSFundingPolicy.pdf.

[7] Retirement Horizons Incorporated, *City of Houston HMEPS Pension Reform Cost Analysis*,15 March 2017, https://www.houstontx.gov/pensions/public/documents/rhi-HMEPS.pdf.

[8] H.B. 2763, 86th Texas Legislature, Regular Session, 2019, https://capitol.texas.gov/tlodocs/86R/billtext/pdf/HB02763F.pdf#navpanes=0

[9] Maine Public Employees Retirement System, *Summary: PLD Plan Changes*, www.mainepers.org/Pensions/PLD%202018-Summary.htm.

[10] Brainard, Keith, and Alex Brown, *Shared-Risk in Public Retirement Plans. National Association of State Retirement Administrators*, June 9, 2014, p. 2, https://www.nasra.org/files/Issue%20Briefs/NASRASharedRiskBrief.pdf;
The Pew Charitable Trusts, *Cost-Sharing Features of State Defined Benefit Pension Plans: Distributing Risk Can Help Preserve Plans' Fiscal Health*, January 2017, p. 8, https://www.pewtrusts.org/-/media/assets/2017/05/definedbenefitplansreport.pdf.

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

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TEXAS PENSION REVIEW BOARD

Guidance for Developing a Funding Policy

(Adopted TBD)

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Overview

Section 802.2011, Texas Government Code requires **the governing board of a Texas public retirement system and its sponsor to jointly develop and adopt a written funding policy and timely revise the policy to reflect any significant changes, including those made because of a funding soundness restoration plan (FSRP)**. The policy is intended to be a roadmap to fully fund the system's long-term obligations.

The funding policy requirement includes several components. By statute, the policy must be filed with the Texas Pension Review Board (PRB) no later than the 31st day after the date the policy is changed or adopted. The most recent version of the funding policy must also be available on a publicly available website.

A funding policy is required by law to be revised in a timely manner to reflect any changes a system and its sponsor make due to an FSRP. For purposes of a revised FSRP, the funding policy revisions must include any risk-sharing mechanisms, the adoption of an actuarially determined contribution structure, and other adjustable benefit or contribution mechanisms.[1] For more information about the FSRP requirement, including applicable statute, rules and policy, see the PRB's FSRP webpage.

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

A funding policy should include clear and concrete funding objectives, actuarial methods, a roadmap to achieve funding objectives, and actions that will be taken to address actual experience that diverges from assumptions. The following material provides more detail on each of these necessary components of a funding policy. While this guidance uses examples of Texas retirement system funding policy provisions under various components, the use of such examples is for informational purposes and does not constitute endorsement or recommendation by the PRB.

Components of a Funding Policy

[1] Section 802.2011(c), Texas Government Code

I. Establishing Clear and Concrete Funding Objectives

A funding policy should clearly establish the retirement system's funding objectives. **The funding policy must target a funded ratio of 100 percent or greater and be jointly developed and adopted with the system's sponsor.**[2] The PRB recommends that systems adopt a funding policy that fully funds the plan **over as brief a period as possible**, using a finite, or **closed, funding period**.

II. Selecting Actuarial Methods

An important role of a funding policy is to **set boundaries on what is allowable for actuarial calculations**. The system's actuary should be involved with the development of a funding policy by advising the board on selecting actuarial methods that align closely with the system's funding objectives, reducing volatility in returns, allowing a more predictable budget, and increasing the likelihood of meeting obligations.[3] At a minimum, the three actuarial methods that should be addressed are the actuarial cost method, the asset-smoothing method, and the amortization policy.

Actuarial Cost Method	Asset Smoothing Method	Amortization Policy
An actuarial cost method is a way to allocate pieces of a participant's total expected benefit to each year of their working career. 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 system until their assumed termination or retirement. A funding policy should state the desired goals and purpose of the cost method if it does not specify the exact cost method to be used.	Asset smoothing techniques can help keep contributions stable and more predictable over time. Under smoothing, asset gains and losses are generally recognized over a period of years rather than immediately. A five-year smoothing period where 20 percent of any gain or loss is recognized in each subsequent year is typically used in Texas. 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. FSRP rules allow a system to use the greater of the market value of assets and the actuarial smoothed value of assets when determining the funding period to compare against the FSRP 30-year threshold.	An amortization method is a procedure for determining the amount, timing, and pattern of recognition of a plan's gains and losses. Amortization amounts can be level dollar amounts or determined as a percentage of covered payroll. Level dollar amounts are preferable unless payroll is expected to decrease in the future. One approach that helps minimize annual contribution volatility while maintaining a finite, closed funding period is the use of layered amortization, where a single closed-period amortization base is established for each year's realized experience. Another approach is to establish closed-period amortization bases with varying recognition periods dependent upon the cause of a gain or loss. For example, one approach might be to amortize investment and/or actuarial experience gains or losses over a five-year period, gains or losses attributable to assumption changes over a 10-year period, and gains or losses attributable to plan amendments over as short of a period as possible.

[2] Section 802.2011, Texas Government Code

[3] "Sustainable Funding Practices for Defined Benefit Pensions and Other Postemployment Benefits (OPEB)" *Government Finance Officers Association* 3, 5-7, approved March 3, 2023, https://www.gfoa.org/materials/sustainable-funding-practices-for-defined-benefit-pensions

DRAFT

		A well-developed amortization policy will help a system maintain an amortization period below the 30-year statutory threshold and avoid triggering a funding soundness restoration plan.

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

Negative Amortization

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. Systems should be careful in their use of negative amortization. If a system's amortization policy results in negative amortization, the funding policy should outline the expected period over which negative amortization will occur and provide justification for the use of negative amortization.

III. Developing a Roadmap to Achieve Funding Objectives

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

Contribution Rates

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

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

1. Determine an ADC that can be used as a benchmark to monitor whether the actual contributions are guiding the system toward the stated funding objectives.
2. Establish what conditions will trigger action when the current actual contribution rate moves away from the benchmark ADC. For example, a certain funded ratio or difference between actual contribution and ADC could be used.
3. Identify tangible steps that will be taken to mitigate the differences between the actual and benchmark contribution rates, such as contribution and benefit changes. See Section IV for examples.

Benefit and Contribution Change Parameters

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

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Examples

- **Irving Firemen's Relief and Retirement Fund.** The board agrees that any benefit enhancements/changes to be submitted to the membership for vote will:
  - require that member contributions solely cover any increases to the ADC as a result of such benefit enhancements/changes, to the extent such sole coverage by members is permitted under TLFFRA statute; and
  - have been analyzed pursuant to the actuarial analysis process agreed to with the sponsor.[4]
- **Fort Worth Employees Retirement Fund**. City and member rates may be increased after:
  - the actuary performs analysis of fiscal impact of proposed change;
  - a majority of eligible members vote in favor; and
  - the change is approved by the board (if city called vote) or city council (if board called vote).[5]
- **San Antonio Fire & Police Pension Fund**. Every two years, the board may review potential changes to the governing statute. The board may not recommend actions that result in a funding ratio less than 90 percent or an effective amortization period of over 15 years.[6]
- **Longview Firemen's Relief and Retirement Fund.** The funding policy states that the board supports:
  - A reduction in the employer contribution rate only when the funding ratio would be above 105 percent and the total contribution rate is not less than the normal cost.
  - Benefit enhancements only if the amortization period is below five years, the resulting amortization period after reflecting the enhancements is above 10 years, and the average experience of three consecutive annual actuarial valuations must be used to evaluate actual fund status before any plan improvements can be brought to a vote.[7]

Working With the Sponsor

A system and its sponsoring governmental entity are required to jointly create and approve a funding policy.[8] Working together will allow a system and its sponsoring entity to craft a funding policy that will achieve the system's objectives while maintaining agreed upon boundaries. Some Texas systems have established parameters like contribution levels or funding objectives in agreements with sponsors such as collective bargaining or meet and confer agreements.

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[4] Funding Policy, *Irving Fireman's Relief and Retirement Fund*. 2023. https://www.prb.texas.gov/wp-content/uploads/2023/12/Irving-Funding-Policy.pdf

[5] Funding Policy of the Fort Worth Employees' Retirement Fund, *Fort Worth Employees' Retirement Fund.* 2019. https://cms1files.revize.com/fortworthretirement/Funding_Policy__12_18_19_____Board_Adopted.pdf

[6] Actuarial Funding Policy, *San Antonio Police and Fire Pension Fund*. 2020. https://www.prb.texas.gov/wp-content/uploads/2023/12/SAFPPF-Funding-Policy.pdf

[7] Longview Firemen's Relief & Retirement Funding Policy, *Longview Firemen's Relief & Retirement Fund*, 2022. https://www.prb.texas.gov/wp-content/uploads/2023/12/Longview-Funding-Policy.pdf

[8] Section 802.2011, Texas Government Code

Example

- **Denton Firemen's Relief and Retirement Fund**. The system and the City of Denton use a Meet and Confer Agreement to establish certain responsibilities and funding goals shared by both parties. For example, the members agree to not raise benefits during the term of the agreement and the city agrees to only adjust contributions based upon an actuarial valuation.[9]

Monitoring and Evaluation

A governing board should periodically review and revise their funding policy to better reflect the system's goals. A regular review policy could be adopted by the board by including a clause detailing the timeline or conditions for re-evaluating the funding policy using updated information from actuarial valuations and experience studies.

A board should proactively monitor its system's financial condition. Monitoring requires that a board continually analyze investment returns, contributions, and benefits. A board can also establish actions to provide the system with a roadmap when it encounters adverse investment returns, unexpected member behavior, or other unforeseen events.

Example

- **City of Austin Employees Retirement System**. The Benefits and Services Committee will review the policy at least every two years and make recommendations to the COAERS board necessary to maintain progress towards the goals and objectives in this policy.[10]
- **San Antonio Fire & Police Pension Fund**. Actuarial experience studies are completed no less than every five years or at the board's direction. The board will also review the Actuarial Funding Policy in conjunction with the experience review.[11]

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

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

Risk-Sharing

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

[9] Meet and Confer Agreement Between the City of Denton and the Denton Firefighters Association, *Denton Firemen's Relief and Retirement Fund.* 24 September 2019, https://www.prb.texas.gov/wp-content/uploads/2023/12/Denton-Funding-Policy.pdf
[10] Funding Policy, *City of Austin Employees' Retirement System.* 2020. https://www.prb.texas.gov/wp-content/uploads/2024/01/2020.09-COAERS-Funding-Policy.pdf
[11] Actuarial Funding Policy, *San Antonio Police and Fire Pension Fund*. 2020. https://www.prb.texas.gov/wp-content/uploads/2023/12/SAFPPF-Funding-Policy.pdf

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stakeholders.[12]

There are multiple methods a system can utilize to implement a formal risk-sharing policy:

Total ADC Driven	Normal Cost Driven	Milestone Driven
Employee contributions are determined in relation to the ADC rate. Under this system, employees are given the most direct exposure to the system's total experience. Systems can also decide the exact risk sharing ratio (i.e., 50/50, 60/40, etc.).[13]	Employee contributions are calculated in relation to the normal cost. This may result in a variable contribution rate. Employees are exposed to less risk due to their contributions not accounting for the system's unfunded liability.[14]	A system keeps employee contributions fixed until certain funding or investment thresholds are met. [15]

Examples:

- **Houston systems**. The three Houston systems (Houston Firefighters' Relief & Retirement Fund, Houston Municipal Employees Pension System, Houston Police Officers' Pension System) have a statutory funding policy that established a target contribution rate and a corridor around that rate. The systems and the city are required to take corrective action, including negotiating benefit reductions, if the recommended contribution falls outside the corridor. [16, 17, 18]
- **Galveston Firefighters Relief & Retirement Fund.** When the calculated amortization period deviates significantly from the benchmark ADC amortization period, the system and city will work together to implement a contribution rate that is reasonably close to the ADC. The rate increase will be no more than 2 percent of pay, can be phased in with two increases one year apart, and will initially be split equally between the members and city.[19]
- **Fort Worth Employees Retirement Fund**. If the contribution rate is less than the ADC rate for two consecutive years, city and employee contributions will be increased up to 4 percent of pay (no more than 2 percent of pay in one year), split 60 percent city/40 percent employee. The city council can reduce risk-sharing contribution increases if the ADC will be met for two consecutive years without the increases. If maximum allowed contribution is applied and ADC is still not met,

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

[13] Keith Brainard and Alex Brown, "In-depth: Risk Sharing Retirement Plans" National Association of State Retirement Administrators. 7-13, December 2018 https://www.nasra.org/files/Spotlight/Risk%20Sharing%20in%20Public%20Retirement%20Plans.pdf

[14] Brainard and Brown, Risk Sharing

[15] Brainard and Brown, Risk Sharing

[16] Funding Policy, *Houston Firefighters' Relief and Retirement Fund*, 17 December 2019. https://www.hfrrf.org/_files/ugd/d179ef_e3cad5759f124ee59364ccff4f4eb1b6.pdf

[17] Houston Municipal Employees Pension System Funding Policy, *Houston Municipal Employees Pension System*, 19 December 2019. http://www.hmeps.org/assets/hmeps-funding-policy---12-19-19.pdf

[18] Funding Policy, *Houston Police Officers' Pension System*, 12 March 2020. https://www.hpops.org/media/46525/funding-policy-20200312_reformatted.pdf

[19] Galveston Firefighters' Pension Fund, Funding Policy, 1 February 2023, p. 4, https://galvestonfirepension.com/GAFULF/GAFDCS/Funding_Policy_for_the_Galveston_Firefighters_PensionPOSTWEBSITE.pdf

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the city council must consider additional benefit reductions.[20]

Contributions

A solution to ensure the system meets its funding objectives is to require that the actual contribution rate is equal to or exceeds the ADC. If that is not achievable, the funding policy should identify what the trigger should be for a required adjustment to actual contribution rates. If the contributions to the fund are consistently below the ADC, the fund becomes insolvent.[21] Techniques such as the following could be used to help move the actual contribution rate in the proper direction.

Contribution Corridor

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

Maximum and Minimum Contribution Rates

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

Contribution Smoothing

Examples:

- If the actual total contribution rate needs to be increased by 2 percent, the rate could be increased in increments until the total contribution rate meets the ADC. Similarly, if the contribution rate needs to be decreased by 2 percent, the rate may be slowly decreased over time. The funding policy may state that the contribution rate may not increase or decrease by more than a given percentage each fiscal year.
- **Texas County and District Retirement System**. The board sets aside investment reserves at its discretion to offset negative future returns. The reserves are not counted as a part of the participating employer's (district or county) assets until the reserves are used.[22]

While the above techniques can stand alone, they are often included in risk-sharing provisions. The three Houston municipal plans' risk-sharing provisions mentioned in the previous section include contribution corridors. Galveston Fire's risk-sharing provisions include contribution smoothing.

Benefits

A funding policy may also establish when benefit adjustments will occur and include provisions that specify how both positive and negative experience will be addressed. Systems may allow for increased

[20] Funding Policy of the Fort Worth Employees' Retirement Fund*, Fort Worth Employees' Retirement Fund.* 2019. https://cms1files.revize.com/fortworthretirement/Funding_Policy__12_18_19_____Board_Adopted.pdf

[21] "The Role of the Actuarial Valuation Report in Plan Funding" *Government Finance Officers Association,* Approved February 28, 2013, https://www.gfoa.org/materials/the-role-of-the-actuarial-valuation-report-in-plan

[22] TCDRS Funding Policy, *Texas County and District Retirement System.* 2015. https://www.tcdrs.org/globalassets/policy-documents/tcdrs-funding-policy.pdf

DRAFT

benefits or an increased COLA as a result of a positive deviation, but systems will need to ensure they are able to consistently meet the new funding demands of the changes.

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

- **City of El Paso Employees Retirement Trust.** Any benefit increase (including COLAs) may be adopted if:
    - The funded ratio of the system is above 80 percent after the benefit increase, and the decrease of the funded ratio is not more than 1 percent after the benefit increase.

  The system also outlines provisions specifically for COLAs:

    - The maximum amount of a COLA should not exceed the actual increase in the Consumer Price Index since the last COLA was granted.
    - A COLA will only apply to members who have been retired for over one year.
    - The board can choose to grant the COLA as a one-time payment or a monthly benefit increase.[23]
- **San Benito Firemen Relief and Retirement Fund.** COLAs are tied to investment returns. The crediting rate for the COLA is lesser of the consumer price index or 100 percent of the five-year smoothed return minus 5 percent, not less than 0 percent, not greater than 4 percent.[24]

Some factors to keep in mind when setting such parameters:

- Evaluating the impact of the plan provision on the amortization period and funded ratio after the plan provision takes effect, including whether the system will still meet is target date to reach full funding.
- Putting thresholds in place such that an increase can take effect only if the amortization period is below a specified threshold and the funded ratio is above a specified threshold after the benefit increases are factored in.
- Assessing whether the benefit increases are paid for by current active members to avoid passing down benefit costs to future generations.

Surplus Management

If a system is consistently funded at a rate above the ADC, there is a stronger likelihood of the system achieving a high funded ratio. A funding policy should include provisions detailing steps to follow if a system achieves full funding. A surplus management policy should include the following elements:

- Reviewing system risk management policies to evaluate their efficacy.

[23] City of El Paso Employees Retirement Trust Funding Policy, *City of El Paso Employees Retirement Trust,* December 12, 2019. https://www.eppension.org/documents/fund-overview/Funding%20Policy%20and%20Resolution_19-12-12.pdf?1704385439
[24] San Benito Firemen Relief and Retirement Fund Funding Policy, *San Benito Firemen Relief and Retirement Fund*. December 17, 2019. https://www.prb.texas.gov/wp-content/uploads/2024/01/2019-San-Benito-Firemen-Relief-and-Retirement-Fund-Funding-Policy.pdf

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- Evaluating current assumptions to ensure reasonableness.
- Considering what changes should be made to employer and employee contributions (if any) when the system is in a surplus.
- Working with the sponsor to establish acceptable conditions for possible benefit enhancements, especially permanent ones, and provide accurate estimations for the immediate and long-term costs.[25]

Examples:

- **San Antonio Fire & Police Pension Fund.** If the system is overfunded, the surplus will be amortized over an open amortization period of 30 years.[26]

- **Texas Municipal Retirement System**. If the system is overfunded, all prior bases are erased, and one surplus base would be established. The asset surplus is used to generate a contribution credit for the year that is projected to remain the same over time and keep the funded ratio constant year over year. This practice reduces contribution rate volatility.[27]

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[25] "Core Elements of a Funding Policy for Governmental Pension and OPEB Plans" *Government Finance Officers Association*, approved March 23, 2023, https://www.gfoa.org/materials/core-elements-of-a-funding-policy

[26] Actuarial Funding Policy, *San Antonio Police and Fire Pension Fund*. 2019. https://www.prb.texas.gov/wp-content/uploads/2023/12/SAFPPF-Funding-Policy.pdf

[27] Actuarial Funding Policy, *Texas Municipal Retirement System*, 2019. https://www.prb.texas.gov/wp-content/uploads/2023/12/TMRS-Funding-Policy.pdf

Questions Systems and Sponsors Should Discuss During Funding Policy Development

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

- ☐ **Introduction**
  - ☐ What is the purpose of the policy? What are we trying to achieve in this policy?
  - ☐ How often should we review the funding policy?
  - ☐ How is the system governed? What statutes or ordinances govern system funding?
  - ☐ What are our funding priorities?
- ☐ **Funding objectives**
  - ☐ What is the target date to achieve 100 percent funding?
  - ☐ How will we measure progress towards full funding? How will we measure if our funding objectives are being met?
- ☐ **Actuarial methods**
  - ☐ What valuation methods do we use to determine the ADC (or benchmark ADC)?
  - ☐ How frequently should we calculate the ADC (or benchmark ADC)?
  - ☐ How will we ensure we are meeting the ADC (or benchmark ADC)?
  - ☐ Will we employ any asset smoothing methods? If so, what are they?
  - ☐ What measures do our system and sponsor need to take to achieve 100 percent funding?
  - ☐ How should we prepare for unanticipated changes?
  - ☐ How frequently will actuarial experience studies occur?
  - ☐ How is the interest discount rate determined?
  - ☐ Is a negative amortization period ever acceptable, and if so, under what conditions?
- ☐ **Plan for achieving funding objectives**
  - ☐ How much money do we need today to pay for future promises?
  - ☐ Will we use contribution smoothing methods? If so, what are they?
  - ☐ What conditions must be met for contribution decreases to occur?
- ☐ **When to allow benefit increases**
  - ☐ What conditions must be met to adopt benefit increases or cost-of-living adjustments?
  - ☐ What will the impact of the benefit increase be on the amortization period and funded ratio?
  - ☐ Will the system still meet its target date to achieve full funding?
  - ☐ Will the resulting amortization period be less than the average remaining future service for current active members?
  - ☐ Will the resulting funded ratio be above the system's desired threshold?
- ☐ **Contribution distribution between members and city**
  - ☐ Will members contribute appropriately for the level of benefits received?

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- ☐ Is there a target employer normal cost as percent of pay (total normal cost percent less employee contribution percent)?

☐ **Risk management policy**

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

☐ **Surplus management policy**

- ☐ What actions will we take should the system receive funding over the ADC?
- ☐ What actions will we take when the system exceeds 100 percent funding?

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Item 9: Updated Research on District/Supplemental Plan Lump Sum Assumptions

David Fee

Summary

- Methodology
- List of systems that offer complete cashouts
- Actuarial equivalence basics
- Actuarial equivalence used for lump sums
- Actuarial valuation assumptions
- Lump sum vs actuarial valuation comparisons
- Sample lump sum calculations
- Administrative practices
- Next steps

Methodology

- Requested and received latest plan documents from each special purpose district plan
- Identified key plan provisions
  - When are lump sums offered?
  - What interest rate is used to calculate lump sums?
  - What mortality table is used to calculate lump sums?
- Asked follow-up questions
  - Take rates
  - Social Security participation
  - Administrative practices
- Responses are self-reported, not verified

Systems That Offer Complete Cashouts

	Full Lump Sums Offered		2022 Take Rate		Social Security
System	Pre-Retirement	Retirement	Pre-Retirement	Retirement	Y/N
Citizens Medical Center	Y	Y	52%	36%	Y
Colorado River Municipal Water District	Y	Y	100%	80%	Y
CPS Energy	Y	N	24%	N/A	Y
Houston MTA Non-Union	Y	Y	25%	55%	Y
Irving Supplemental	Y	Y	Not Available	55%	N
JPS Tarrant County Hospital District	Y	Y	46%	29%	Y
Lower Colorado River Authority	Y	Y	100%	26%	Y
Lower Neches Valley Authority	Y	Y	0%	0%	Y
Nacogdoches County Hospital District	Y	Y	93%	41%	Y
Refugio County Memorial Hospital District	Y	Y	Two lump sum elections in 2022		Y
Sweeny Community Hospital	Y	Y	0%	0%	Y
University Health System	Y	Y	14%	18%	Y

12 out of 34 district/supplemental plans offer full lump sum options

Actuarial Equivalence Basics

- Two components
  - Interest Rate
  - Mortality Table
- Interest Rate
  - Works like a mortgage
    - $3,000 monthly payment buys a more expensive house with a lower interest rate.
    - $3,000 monthly payment results in a higher lump sum with a lower interest rate.
- Mortality Table
  - In general, more recent mortality tables reflect longer expected retiree lifetimes and generate higher lump sums.

Actuarial Equivalence for Lump Sums

	Lump Sum Assumptions		
System	Interest Rate	Mortality Table Year	Mortality Table Description
Citizens Medical Center	8.0%	1984	UP Unisex
Colorado River Municipal Water District	30-year Treasuries	1994	GAR Unisex
CPS Energy	8.5%	1984	UP Unisex set forward one year
Houston MTA Non-Union	7.0%	1971	GAM Female
Irving Supplemental	6.75%	2010	PUB (Safety)
JPS Tarrant County Hospital District	8.0%	1984	UP Unisex
Lower Colorado River Authority	6%	2010	PUB (General, Above Median Income)
Lower Neches Valley Authority	6.5%	Updated Annually	As mandated by IRS in 417(e)(3)
Nacogdoches County Hospital District	7.5%	1983	GAM Unisex
Refugio County Memorial Hospital District	7.0%	1994	GAR Unisex
Sweeny Community Hospital	8.0%	1984	UP Unisex
University Health System	8.0%	1994	GAM Unisex

Actuarial Valuation Assumptions

	Actuarial Valuation Assumptions		
System	Interest Rate	Mortality Table Year	Mortality Table Description
Citizens Medical Center	6.75%	2012	Pri-2012 with projected improvements
Colorado River Municipal Water District	5.75%	2012	Pri-2012 white collar with projected improvements
CPS Energy	7.00%	2010	Pri-2012 with projected improvements
Houston MTA Non-Union	6.25%	2010	PubG-2010 with projected improvements
Irving Supplemental	6.75%	2010	PubS-2010 with projected improvements
JPS Tarrant County Hospital District	6.75%	2012	Pri-2012 with projected improvements
Lower Colorado River Authority	7.00%	2010	PubG-2010 with projected improvements
Lower Neches Valley Authority	6.50%	2010	PubG-2010 with projected improvements
Nacogdoches County Hospital District	6.75%	2014	RP-2014 with projected improvements
Refugio County Memorial Hospital District	6.00%	2010	PubG-2010 with projected improvements
Sweeny Community Hospital	5.75%	2012	Pri-2012 with projected improvements
University Health System	7.00%	2010	PubG-2010 with projected improvements

Lump Sum vs Actuarial Valuation Interest Rate Comparison

	Interest Rates	
System	Valuation Interest Rate	Lump Sum Interest Rate
Citizens Medical Center	6.75%	8.00%
Colorado River Municipal Water District	5.75%	30-year Treasuries
CPS Energy	7.00%	8.50%
Houston MTA Non-Union	6.25%	7.00%
Irving Supplemental	6.75%	6.75%
JPS Tarrant County Hospital District	6.75%	8.00%
Lower Colorado River Authority	7.00%	6.00%
Lower Neches Valley Authority	6.50%	6.50%
Nacogdoches County Hospital District	6.75%	7.50%
Refugio County Memorial Hospital District	6.00%	7.00%
Sweeny Community Hospital	5.75%	8.00%
University Health System	7.00%	8.00%

Interest rates marked in **green** are less than or equal to the valuation interest rate
Interest rates marked in **red** are greater than the valuation interest rate

Lump Sum vs Actuarial Valuation Mortality Table Year Comparison

	Mortality Table Year	
System	Valuation Mortality Table Year	Lump Sum Mortality Table Year
Citizens Medical Center	2012	1984
Colorado River Municipal Water District	2012	1994
CPS Energy	2010	1984
Houston MTA Non-Union	2010	1971
Irving Supplemental	2010	2010
JPS Tarrant County Hospital District	2012	1984
Lower Colorado River Authority	2010	2010
Lower Neches Valley Authority	2010	Updated Annually
Nacogdoches County Hospital District	2014	1983
Refugio County Memorial Hospital District	2010	1994
Sweeny Community Hospital	2012	1984
University Health System	2010	1994

Mortality marked in **green** is within 10 years of the table used in the valuation
Mortality marked in **red** is not within 10 years of the table used in the valuation

Sample Lump Sum Calculations

Calculations at Age 65 Retirement			
Mortality Table Description	Interest Rate	Monthly Annuity	Resulting Lump Sum
UP 1984 Unisex	8.00%	$3,000	$294,840
PubG-2010 with projected improvements	6.60%	$3,000	$406,303

Calculations at Age 45 Termination			
Mortality Table Description	Interest Rate	Monthly Annuity	Resulting Lump Sum
UP 1984 Unisex	8.00%	$500	$8,657
PubG-2010 with projected improvements	6.60%	$500	$18,874

8.00 percent is the average lump sum interest rate for the five systems using 1983-1984 lump sum mortality
6.60 percent is the average valuation interest rate for the five systems using 1983-1984 lump sum mortality

Administrative Practices

These administrative practices do not affect the benefit amount. They affect the level of information provided to the member and spouse.

System	Relative Value Language	Spouse Approval Required?
Citizens Medical Center	Y	N
Colorado River Municipal Water District	N	Y
CPS Energy	Y	Y
Houston MTA Non-Union	Y	Y
Irving Supplemental	N	N
JPS Tarrant County Hospital District	Y	Y
Lower Colorado River Authority	N	Y
Lower Neches Valley Authority	N	Y
Nacogdoches County Hospital District	N	Y
Refugio County Memorial Hospital District	N	Y
Sweeny Community Hospital	Y	N
University Health System	Y	N

The relative value language used may not meet IRS guidelines but does acknowledge the potential lesser value of the lump sum option

Summary

Lump Sum Calculations

- Irving Supplemental, LCRA, Lower Neches Valley Authority all calculate lump sums using similar assumptions to their best estimates used in the actuarial valuation
- All other systems are arguably providing lesser benefits to members who elect the lump sum than those who elect an annuity

Administrative Practices

- CPS, Houston MTA, and JPS self report that they fully inform the members
  - The member is made aware that the lump sum may be less valuable
  - The spouse is made aware that the member wants to choose the lump sum option

Overall

- LCRA and Lower Neches Valley Authority use reasonable assumptions to calculate the lump sum and reasonably inform the members
  - The lump sum is not less valuable, so the member does not need to be made aware
  - The spouse must agree to any lump sum election

Next Steps

- Share results with the respondents.
- Report research findings at future full board meeting.
- Potential drafting of lump sum guidance.