Texas Pension Review Board

Biennial Report

2021-2022

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Term Expiration: January 31, 2025
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Executive Director

TEXAS PENSION REVIEW BOARD

November 30, 2022

The Texas Pension Review Board (PRB) is pleased to present this Biennial Report on its activities and findings for 2021 through 2022. During this biennium, the PRB has worked diligently to execute its mission to provide information and recommendations to help ensure that Texas public retirement systems are properly managed and actuarially sound. The PRB has accomplished a great deal in the last two years. It provided a high level of education, assistance, and guidance to the members, administrators, and trustees of 100 Texas public retirement systems; state and local government officials; and the public. The total membership of actuarially funded Texas public retirement systems includes over three million active and retired members with total net assets of approximately $370 billion.

The 87th Legislature passed major pension legislation that updated reporting requirements for Texas pension systems aimed at increasing transparency, improving governance, and ensuring Texas systems have an effective plan in place leading them towards fully funding their promised benefits. The PRB faced a complete turnover of its executive staff as well as an internal database crash following the previous legislative session, but even with these hurdles still implemented the new statutory requirements and provided high-quality support to ensure a seamless transition.

During the 2021-2022 biennium, the agency implemented the new legislation by adopting rules and a compliance policy for Funding Soundness Restoration Plans, updating guidance for Investment Practices and Performance Evaluations, and providing educational presentations and materials to further assist retirement systems with the new requirements. Throughout this process, the PRB relied significantly on stakeholder involvement to ensure rules, policies, and guidelines were as helpful, effective, and clear as possible.

Additionally, the PRB conducted and published two intensive reviews in 2021 and 2022 and invited prior reviewed plans to give updates on their progress towards better funding. The review process encouraged systems experiencing funding problems to work with their governmental sponsors to develop a plan to guide them towards stability in the future. Some previously reviewed systems made major reforms and progress in working with their sponsors to remedy their long-term funding situation, such as by increasing contributions, paying off unfunded liabilities with pension obligation bonds, and establishing guardrails to mitigate future funding issues.

The PRB also focused on major IT projects. The first, replacing the agency's internal database, will help streamline agency workflow, modernize reports, and improve the agency's data center. The second, a reporting portal for systems to submit reports and view agency correspondence, will ensure data sharing is efficient and secure.

The PRB is the sole ongoing oversight mechanism for Texas public retirement systems. To fulfill its mission requires the combined effort of the systems, their sponsoring governmental entities, and other members of the Texas public pension plan community. The PRB remains focused on helping ensure that retirement benefits are securely provided at the lowest cost to the taxpayers.

Sincerely,

Stephanie Leibe
Chair

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EXECUTIVE SUMMARY

During the last biennium, a major focus of the PRB has been implementing House Bill 3898 (87R), which made statutory changes reflecting the PRB's Recommendations to the 87th Legislature. The bill updated and clarified statutes for the existing Funding Policy, Funding Soundness Restoration Plan (FSRP), and Investment Practices and Performance Evaluation requirements to make them more effective. The PRB provided education in multiple formats to help public retirement systems understand the updated requirements and the particularly complex FSRP statute. PRB staff made three educational presentations during stakeholder conferences and produced several different educational materials explaining the statutory requirements, from flowcharts to one-pagers. To further clarify the FSRP statute for the systems, the agency adopted rules fleshing out the requirements after nearly a year of working with stakeholders, the PRB's Actuarial Committee, and the full board. Alongside the rules, the board also adopted a new policy regarding steps the PRB will take to promote compliance with the FSRP requirement. Finally, since many plans will begin their next Investment Practices and Performance Evaluations in 2023, the PRB updated its guidance originally published in 2019 based on the changes made to the statute through HB 3898. The PRB continually sought and used stakeholder feedback to develop and improve both the FSRP rules and compliance policy as well as the updated Investment Practices and Performance Evaluation guidance.

The agency made significant efforts to address comments received through its customer service and educational services surveys, where stakeholders asked for more education and outreach from the PRB. The agency focused on building and launching a new and intuitive website, updating its existing online courses, and utilizing a new learning management system that will be the host site of new educational courses for public retirement system board members and system administrators. The new education website remedies many usability issues participants had with the older site. Additionally, the agency created three new courses for continuing education credit which are scheduled to debut by the end of 2022 in response to requests from stakeholders.

Another major priority of the PRB this biennium has been rebuilding and modernizing its IT infrastructure through multiple projects using a $600,000 one-time appropriation made to the agency through the supplemental appropriations bill (House Bill 2) passed by the 87th Legislature. The agency was able to begin work on an online internal database to replace two of its existing Access-backed databases, which are technologically outdated, and make preliminary plans to build a reporting portal for use by retirement systems. Staff is working with a programmer to create a more intuitive and reliable database, which houses the foundational data that informs the analyses that are critical to the PRB's oversight mission. The information from the database will also result in enhancements to the Texas Public Pension Data Center. Since the agency's oversight mandate has grown over the last decade, the new database will include several newer required reports, such as investment expense information. Having this information in the agency's database will allow the PRB to provide useful data more readily to the legislature, public retirement systems, and the public. Another IT infrastructure priority for the agency was to cease use of its onsite server, modernizing and moving agency network folders and agency affairs to a cloud server. With the switch to the cloud, the agency experiences fewer disruptions due to server crashes or errors, and document management and workflow are streamlined.

The PRB also published two intensive reviews on public retirement systems during the biennium and continued follow-up efforts to monitor changes made by systems that have undergone this process since the agency began conducting these reviews. In reviewing Midland Firemen's Relief and Retirement Fund and Wichita Falls Firemen's Relief and Retirement Fund, the agency found both systems with concerning funding metrics and shortcomings in governance; however, the reviews focused on very different issues. Whereas Midland Firemen's Relief and Retirement Fund showed signs of poor investment management, Wichita Falls Firemen's Relief and Retirement Fund benefitted from above average investment returns but suffered from inadequate contributions. Overall, the PRB has performed 11 intensive reviews since 2018, and as a result continues to see joint efforts by systems and their sponsors to find effective, collaborative solutions to shore up funding for these systems and ensure members receive promised benefits.

Improving retirement system governance, or the processes by which decisions are made, has been a major focus of the PRB, as reflected in previous legislative recommendations and ongoing policy research efforts directed by the board. Governance has also become a focus of the legislature, as reflected in an interim charge assigned to the House Committee on Pensions, Investments, and Financial Services. The PRB provided information and testimony to the committee on pension plan governance as it pertains to systems under the Texas Local Fire Fighters Retirement Act (TLFFRA). As the agency's board has also requested staff to begin to focus on pension plan governance to identify policy improvements, staff began greater research on the topic, leading to establishing a partnership with the LBJ School of Public Affairs at the University of Texas at Austin. The policy research work of this student-led team to study TLFFRA governance and provide a report offering recommendations for best practices and potential legislative changes will kick start the agency's own research in the interim following the 88th Legislative Session.

During the 87th Regular and Special Legislative Sessions, the agency completed a total of 53 actuarial impact statements, which contained analyses of the actuarial effects proposed bills would have on public retirement systems that are critical to the legislature's deliberations on these bills. Since pre-filing for the 88th Legislative Session began on November 14, 2022, 11 pension-related bills have been filed. As part of its mandate, the PRB will continue to provide the legislature with thorough and accurate actuarial analysis on the effects of pension bills.

While reflecting on the significant achievements of the last two years, the PRB is already laying the groundwork for the next biennium. The agency is hiring an educational program specialist to provide needed focus on administering and further developing its Minimum Educational Training program, such as by continuing to provide timely and relevant continuing education courses. The PRB will also continue enhancing stakeholder outreach, and updating important guidance, beginning with its funding policy guidance. Furthermore, the agency will develop investment guidelines as a logical next step since the legislature passed enhanced investment oversight in 2019. These guidelines will be based on retirement system experience and recognized best practices. Finally, finishing the critical rebuild of the PRB database will allow the agency to further develop and upgrade its existing data center, and with workflow streamlined with a reporting portal, limited agency resources will be refocused on the agency's policy and analytical work, such as its governance research and other pressing issues in the public pension world.

TRANSPARENCY INITIATIVES AND LEGISLATIVE PRIORITIES

Funding Soundness Restoration Plan Rulemaking & Compliance Policy

The Pension Review Board's (PRB) 2020 Recommendations to the Legislature addressed aspects of the existing statutes that could be updated to better achieve the goals of improving public retirement system funding and adherence to best practices. The focus of the recommendations included changes to Funding Soundness Restoration Plan (FSRP) and funding policy requirements and included suggestions to update the FSRP requirement with three major goals in mind:

- Increasing sponsor accountability in the process and joining the FSRP and funding policy requirements together.
- Updating the allowable funding period maximum and mechanism that triggers an FSRP.
- Updating the preparation and implementation timeline to allow for development of more robust FSRPs and adjusting the consequences of preparing an insufficient one.

House Bill 3898 (87R) incorporated the PRB's recommendations. The bill amended Sections 802.2015 and 802.2016, Texas Government Code to include substantial changes to the FSRP requirements to improve the efficacy for future FSRPs, ensure systems intervene earlier to prevent funding problems from growing unchecked, and better integrate changes from an FSRP into a system's wider governance practices through the funding policy requirement.

FSRP Rulemaking

The PRB determined that formal rulemaking was necessary to clarify the new requirements and facilitate implementation of the bill. The agency's approach centered on three major goals:

- Providing guidance and streamlining reporting for FSRPs after the statutory changes.
- Preserving the work of systems that previously submitted FSRPs and are committed to following their plans and achieving full funding.
- Supporting systems in unusual situations due to when they became subject to the new FSRP requirement.

The rulemaking process began in January 2022 with the presentation of the initial rule concepts to the PRB Actuarial Committee. Throughout the year, the PRB held a total of five meetings between the board and its Actuarial Committee, to work through changes and solicit stakeholder input. The rulemaking process was completed in October 2022 when Chapter 610, Texas Administrative Code was finally adopted by the board and became effective shortly thereafter.

Throughout the year, the agency requested insight and feedback from a variety of stakeholders in addition to offering a variety of educational resources, conference presentations, and individual meetings. The PRB planned and executed a transparent process to help ensure stakeholders understood the new requirements, knew what rules were being developed and why, and knew their questions and concerns were considered.

The requests for stakeholder feedback and participation throughout the rulemaking process allowed the agency to address concerns early in the development of the rules and adjust as people gained a better understanding of how their systems would be affected. While a variety of stakeholders met with agency staff or provided comments for board or committee meetings, the agency did not receive any comments during the formal comment period after the proposed rules were initially posted in the *Texas Register*. The proposed rules were therefore adopted without further changes and took effect at the end of October 2022.

FSRP Education

After HB 3898 was enacted, the PRB looked for opportunities to provide education to public retirement systems on the statutory changes and upcoming PRB rulemaking. In 2021 and 2022, the agency presented on the FSRP changes and rulemaking at three Texas Association of Public Employee Retirement Systems (TEXPERS) conferences.

In August 2021, the PRB Executive Director presented at the TEXPERS Summer Educational Forum in San Antonio, Texas, on the changes made through HB 3898 to FSRP, funding policy, and Investment Practices and Performance Evaluation (IPPE) statutes. Staff also provided copies of a preliminary flowchart and other charts to explain the new FSRP law compared to the law before changes were effective.

In April 2022, the PRB Executive Director and Policy Analyst attended the TEXPERS Annual Conference in Fort Worth, Texas, and provided an overview of the rulemaking process, answered frequently asked questions, and discussed staff's rule concepts and recommendations for rulemaking. As this conference was held in the middle of the PRB's rulemaking process, it provided stakeholders an opportunity to ask questions and provide feedback on initial rule concepts before staff began to draft rules.

In the summer of 2022, staff worked to improve the preliminary educational materials and create additional materials, such as flowcharts and one-pagers, so that systems and their sponsors could easily ascertain what changes affected their system and what steps they should take if they are required to develop an FSRP. These materials include:

- Comparative chart of requirements for different types of FSRPs
- One-page descriptions of each FSRP type
- An explanation and chart regarding compliance corridors
- Flowcharts for FSRPs after Sept. 1, 2025, and for legacy FSRPs, and
- A flowchart regarding FSRP reporting

The educational graphics can be found in Appendices A through C of this report.

Finally, in August 2022, the PRB Deputy Director of Operations and Projects presented at the TEXPERS Summer Educational Forum in El Paso, Texas, to provide an overview of the FSRP types, the FSRP proposed rules and timeline, and an overview of the new FSRP compliance policy that would be adopted at the October 2022 PRB meeting. At this point of the rulemaking process, the PRB's proposed rules had been published in the Texas Register, with the comment period ending August 29th.

FSRP Compliance Policy

During the rulemaking process, the PRB also updated the board policy that accompanied FSRPs to better align with the new requirements and current board practices. Upon examining its existing policy, "Policy for Determination of System Actuarial Review," the agency found that it no longer aligned with agency needs. Instead of updating the policy, the PRB decided to replace it with the new policy, titled "Policy for

Promoting Compliance with FSRP Requirements," which outlines the steps the PRB will take if a system or sponsor does not meet the requirements in statute or rules.

Investment Practices and Performance Evaluations Guidance

During the 86th Legislative Session, the Texas Legislature enacted Senate Bill 322, which focused on public retirement system investment transparency. The bill added Section 802.109, Texas Government Code, which requires systems with assets greater than $30 million to "select an independent firm with substantial experience in evaluating institutional investment practices and performance to evaluate the appropriateness, adequacy, and effectiveness of the retirement system's investment practices and performance and to make recommendations for improving the retirement system's investment policies, procedures, and practices." During the 87th Legislative Session, the Texas Legislature improved upon the statute by passing House Bill 3898, which was based on the PRB's recommendations in its 2020 *Investment Performance Report*.

HB 3898 made the following changes to the IPPE requirement:

- For IPPEs completed after September 1, 2021, the bill added new disclosure requirements, including:
    1. Statement that independent firm meets experience requirement.
    2. Statement identifying any conflict of interest and relationship with the system.
    3. Explanation of a firm's determination regarding whether to include a recommendation or not on each evaluated matter.
- Added formal review-and-comment process as a required element to the evaluations.
- Specified the plan sponsor may pay all or part of the cost to prepare the evaluation, while the system is responsible for the remainder of the cost.
- Clarified that systems may continue to use current investment consultants to prepare IPPEs.

At its July 14, 2022, meeting, the PRB Investment Committee directed staff to work with Texas retirement system stakeholders to update the PRB's *Informal Investment Practices & Performance Evaluations Guidelines* originally created in 2019 to assist plans in complying with the requirements. The PRB provided stakeholders two months to submit feedback and work with staff to clarify the draft guidance. Staff identified guidance improvements including clarity on due dates, compliance with new disclosure requirements, and the new review-and-comment section based on feedback and questions received from stakeholders. At the October 6, 2022, meeting, the board approved the updated guidance. The 2022 *Informal Investment Practices & Performance Evaluations Guidance* can be found in Appendix D.

Funding Policy Guidance Update

The PRB published an interim study on *Funding Policies for Fixed-Rate Plans* in January 2019, including the recommendation that all Texas public retirement systems, including fixed-rate plans, adopt and maintain a written funding policy that fully funds the plan over as brief a period as possible. As a result of the study and the board's recommendation, the Legislature enacted SB 2224 (86R), creating Section 802.2011, Texas Government Code. The statute requires the governing body of a Texas public retirement system to adopt a written funding policy detailing the governing body's plan for achieving full funding. The funding policies were due to the PRB in February 2020 and any subsequent updates are required to be sent to the PRB within 31 days of adoption.

Following the receipt of the funding policies, the PRB analyzed the submitted documents and discovered that most systems did not involve their sponsor during the development of their funding policy. As a result, the board recommended the 87th Legislature modify the statute to require the sponsor's involvement in new or revised funding policies, and also to tie the funding policy to the FSRP requirement, as developing an FSRP must involve the sponsor and will result in plan changes. During the 87th Legislative Session, House Bill 3898 (87R) passed and updated requirements for funding policies going forward.

Section 802.2011, Texas Government Code now requires non-statewide public retirement systems and their sponsors to work jointly together to develop a written funding policy and to timely revise the policy to reflect significant changes, such as those resulting from an FSRP. Additionally, the statute requires that the written funding policy outline any automatic contribution or benefit changes designed to prevent the creation of a revised FSRP, and that the funding policy must be posted on a publicly available website.

The PRB adopted *Guidance for Developing a Funding Policy* on October 17, 2019, to assist systems with understanding the role of a funding policy and assist with the creation of funding policies. Due to the extensive changes to the FSRP requirements, the agency focused on creating rules and releasing reference material to assist plans. Next biennium, the agency will update the funding policy guidance to reflect the new requirements enacted through the bill.

Investment guidelines

At its July 14, 2022, meeting, the PRB board directed staff to work with the Investment Committee to begin developing additional resources covering multiple areas of investment best practices for Texas retirement systems in alignment with the Investment Practices and Performance Evaluations statute. These resources will focus on topics such as investment policy statements, asset allocation, investment fees, governance, investment management selection and monitoring as well as additional potential topics such as portfolio liquidity. Over the next biennium the PRB will look to develop and adopt guidelines on these topics which will derive from IPPEs received from retirement systems, industry best practices, expert input, and stakeholder feedback.

The development of investment guidelines is a natural next step after initial implementation of the IPPE requirement to synthesize and condense the knowledge systems have gained through these efforts, since the requirement has led to hundreds of recommendations for improvement by expert evaluators and has set a standard that will help reduce the potential for public retirement systems to be misled and mismanaged. Further, the Legislature's actions to improve the practices and transparency of Texas retirement systems' investment programs through legislation allow the PRB to continue working to provide guidance and help integrate the desired transparency improvements into every retirement system for the benefit of the systems, their members, and taxpayers.

MAJOR IT PROJECTS

In 2021, the 87th Legislature appropriated $600,000 to the PRB through the supplemental appropriations bill (HB 2) for two major IT projects:

1. Database rewrite – this project entails migrating data from multiple servers to the cloud and creating a new web-based interface to replace the agency's current outdated internal databases.

2. Reporting portal – this project would create a website for all Texas public retirement systems to access a self-service portal to upload their reports and to complete and submit required forms online.

Database rewrite

The PRB prioritized the database rewrite project, with hopes to avoid a major crash, as its on-site server had been indicating heightened instability over the last biennium. The first step was to migrate its Access-backed databases to a cloud server in the summer of 2021.

When the databases were moved to the cloud, they indeed suffered a major crash. The agency quickly responded to this event; however, since the internal databases are central to the agency's ability to provide information to stakeholders, staff was unable to provide regular reports to its board at the end of 2021. The agency's IT contractor developed an alternative temporary database after the crash, but data entry was affected, and reports had to be developed manually.

Despite the databases' malfunctions, staff began meeting with the agency's IT consultant to map out the project in the summer of 2021. Staff outlined and developed mockups of the new online database to incorporate its educational training database, which is currently separate. The agency also focused on developing skills for certain staff and provided opportunities to learn programming languages such as structured query language (SQL) and Python. Learning these programming languages helps both staff members and the agency, so that future reports and graphics can be developed in-house for the agency websites and interfaces, such as the internal database and the externally facing data center.

The agency also experienced a significant delay in hiring a programmer, due to market demands and specialized skillset needs for the project. However, the PRB was able to contract with a programmer in July 2022 and has held twice-weekly meetings to monitor progress. The core of the new online database is on schedule to be substantially complete by June 2023, with additional automation and functionality possible if the Legislature extends the PRB's access to this funding until 2025.

Reporting portal

Central to its ability to monitor systems' financial and actuarial health and trustee education, one of the agency's main functions is to collect information from systems through required reports. These statutorily required reports include financial, actuarial, investment, membership, benefits, and training information. Currently, systems must submit their required reports to the PRB via email, fax, or mail. The agency found that there is a security risk when electronically collecting reports, since the agency collects over 600 reports a year, mostly through email, increasing the risk of a possible phishing attack.

In the spring of 2022, the agency conducted a pilot program for a sample size of retirement systems to participate in submitting their reports in a new way. The agency tested this using its cloud network to share folders with retirement systems. The goal of the pilot program was to allow to agency to test its ability to assist systems, to gain feedback on ease of use, and to provide PRB staff with ideas on how to design the portal based on very simple workflows.

Currently, the agency is working to outline the reporting portal, so that staff can begin to work on this project after the close of the database rewrite project in mid-2023. Staff hopes to finish this project in the next biennium.

Cloud migration

Hand-in-hand with the two major IT projects, over the last biennium, the agency has moved its daily operations from an on-site server to a cloud server. As previously mentioned, the agency's on-site server was indicating it could crash, so the agency and its IT consultant used a phased approach to move all its functions to cloud-based servers.

In July 2021, the agency moved its databases to a cloud server. Though it caused a crash of those databases, eventually the agency was able to access them again and use them with modifications while the new database is built.

In November 2021, the PRB's IT contractor moved the agency's network and digital files to a cloud server through Box.com. The move took less than a week to successfully move over 175,000 files. With this move, staff can securely access the agency's network from any location. Also, the site regularly provides back up records, which is helpful in the event of a threat or a virus. The agency works with the Box.com representatives to learn new functions and to improve internal workflow and project management.

In October 2022, the agency finally moved completely from its on-site server when it moved staff to online accounts. The move to online accounts has improved staff's ability to telecommute and hold hybrid meetings and has decreased the number of technical issues that staff was having before this move. With a full switch to a cloud environment, staff has been able to gain efficiencies and better control workflow, the agency has suffered fewer technical issues, and the agency's data is better protected.

REPORTING REQUIREMENTS

Funding Soundness Restoration Plan

The Funding Soundness Restoration Plan (FSRP) requirement was enacted by the legislature in 2015 to bring Texas public retirement systems in line with the PRB's *Guidelines for Actuarial Soundness* and improve the funding conditions of retirement systems with amortization periods exceeding 40 years. As systems submitted their FSRPs and began the 10-year process of completing their plans, it became clear that several aspects of the requirement needed refinement to ensure effectiveness. Additionally, the PRB revised the *Guidelines for Actuarial Soundness*, now *Pension Funding Guidelines*, in 2017 mainly to bring the maximum amortization period down from 40 years to 30 years and to ensure they were more consistent with actuarial standards and best practices.

In 2020, the PRB worked throughout 2020 on Recommendations to the 87th Legislature, which ultimately included several potential changes to FSRP statute. Most of the PRB's recommendations were eventually incorporated into House Bill 3898 (87R), which took effect on September 1, 2021. The PRB crafted these recommendations using stakeholder feedback, which was solicited during and between several board and committee meetings over the year.

While preparing these recommendations to the legislature, the board took care to ensure that the recommendations also kept in mind systems adhering to their existing FSRPs, and noted they wanted to be sure those systems were able to finish the term of their existing plans without having to start over due to the updated requirements.

In 2022, the PRB adopted rules to clarify FSRP statutory requirements and to help public retirement systems and their sponsors to understand the new statute.

To date, 16 systems have submitted FSRPs under the original guidelines. Of those:

- eight systems have successfully brought their amortization period below the applicable threshold (40 years prior to September 1, 2021, 30 years thereafter),
- four legacy systems are working towards the new threshold (30 years),
- three systems are developing a plan under the new law since the initial FSRP was not met under the old law, including one of those three plans developing a third FSRP, and
- one of the 16 systems will need to begin developing a plan under the new law should the next actuarial valuation report show an amortization period above 30 years.

Five additional systems are currently required to submit first FSRPs targeting 30 years. Six more systems will be subject to the FSRP requirement if their next actuarial valuation shows an amortization period of over 30 years.

While many systems did not initially make changes sufficient to keep them on track to meet the amortization period threshold, several were successful on the next attempt. Of the eight systems that met the threshold, six met the threshold after submitting a revised FSRP.

The FSRP requirements are outlined in Sections 802.2015 and 802.2016 of the Texas Government Code. The statutes state that a public retirement system is required to notify its associated governmental entity if it receives an actuarial valuation indicating the system's actual contributions are insufficient to achieve an amortization period below the specified threshold. Should the system exceed one of several thresholds, the public retirement system and its associated governmental entity are required to formulate an FSRP. The thresholds are as follows:

After September 1, 2021:

- Funding period is greater than 30 years for three consecutive valuations or two consecutive valuations if actuarial valuations are not annual.

After September 1, 2025:

- Funding period is greater than 30 years for three consecutive years or two consecutive years if actuarial valuations are not annual.
- Funding period is greater than 40 years for one valuation.
- Funding period is greater than 30 years AND funded ratio is less than 65 percent.

FSRPs submitted on or after September 1, 2025, must successfully achieve an amortization period of 30 years or less and be submitted within two years of triggering the FSRP. The FSRP requirement varies for certain systems, including exemption from the requirement.

Texas public retirement systems that are subject to the FSRP requirement must submit progress updates within a year of the triggering valuation and every six months thereafter until the FSRP formulation is adopted by the retirement system. Sections 802.2015(d) and 802.2016(d), Texas Government Code require a system to formulate a more stringent revised FSRP if the system triggers another FSRP within 10 years of triggering the first FSRP. Some exemptions apply for systems that submit FSRPs prior to September 1, 2025.

At this time, no plans have submitted FSRPs under the new statute and rules; however, since no system is required to have a funding period below 30 years until 2025, the agency expects to receive mostly voluntary FSRPs, if any, before then.

The following summaries include significant updates from systems with FSRPs since the prior Biennial Report.

Orange Firemen's Relief and Retirement Fund

Orange Firemen's Relief and Retirement Fund became subject to the revised FSRP requirement on September 18, 2019, with a submission deadline of March 18, 2020. Under the plan, member contribution rates were increased from 12.5 percent to 12.8 percent effective January 28, 2020, and again to 13.8 percent effective October 1, 2020. City contribution rates were increased from 14.5 percent to 15.8 percent effective January 28, 2020, and again to 18.8 percent effective October 1, 2020. In a letter dated November 10, 2020, the system estimated the amortization period had decreased to 35 years as of January 1, 2020, based on the contribution increases. The January 1, 2021, actuarial valuation report showed an amortization period of 20.7 years. With the original contributions in effect, the amortization period would have been 42.7 years.

Plainview Firemen's Relief and Retirement Fund

Plainview Firemen's Relief and Retirement Fund (Plainview Fire) became subject to the initial FSRP requirement on August 17, 2020, with a submission deadline of February 17, 2021. In a letter dated February 16, 2021, the system estimated the amortization period had decreased to 35 years as of December 31, 2020, based on the following changes:

- Provided additional city cash contributions of $1.25 million over four years,
- Increased city contribution rate from 24.68 percent to 25 percent,
- Removed overtime pay from the definition of pensionable pay, and
- Reduced the benefit formula.

Plainview Fire will complete its legacy FSRP once the system produces an actuarial valuation report showing an amortization period of 30 or less prior to 2031.

Investment expense reporting

During the 86th Legislative Session, the Texas Legislature enacted SB 322, which focused on public retirement system investment transparency. The bill included a section expanding the reporting requirements in Section 802.103 of the Texas Government Code, which requires systems to publish annual financial reports. The reports must now include the following new pieces of information:

1. A listing, by asset class, of all direct and indirect commissions and fees paid by the retirement system during the system's previous fiscal year for the sale, purchase or management of system assets, and
2. The names of investment managers engaged by the retirement system.

In February of 2020, the PRB adopted rules to require plans to also specify amounts paid towards investment services provided to the system.

Most Texas retirement systems began including the new required information in their 2020 fiscal year annual audits, which were due in 2021. PRB staff began informing Texas public retirement systems in 2020 about the new required reporting changes by sending email notifications, distributing PRB adopted templates and explanatory documents, and creating rules that further clarify reporting requirements.

With the investment expense information being a new reporting requirement, the PRB has observed that Texas public retirement systems have faced a learning curve on gathering the information to report in their annual audits. The PRB has spent a significant amount of effort to inform systems and to educate them on the new expectations. This includes staff's continued efforts to thoroughly review the information provided in system reports and contact systems with expenses that are different than expected to verify the accuracy of the information. Since this requirement was added, over 50 percent of Texas public retirement systems either requested technical assistance from staff or had reporting accuracy issues identified by staff. During review of the annual audit, if staff identifies issues with the report, staff request corrections or additional supporting details. Staff also provides guidance upon request to ensure the data collected follows a consistent methodology and the standard template established by the PRB.

Staff expect to publish the investment expense information on the PRB data center during the next biennium, after sufficient data is collected. The PRB hopes to provide data analysis that will offer a useful insight into Texas public retirement systems' fees, which will in turn give smaller systems another resource to help them evaluate their own investment programs.

Annual Reporting and Compliance

To be considered compliant with annual requirements under Chapter 802 of the Texas Government Code, systems are required to submit an annual financial report, membership report, and the investment returns and assumptions report (form PRB-1000). These three reports are due within 210 days after the end of the previous fiscal year.

In addition to the new section of the website focusing on reporting and compliance, the PRB has created a reference document, the *Summary of Reporting Requirements for Texas Public Retirement Systems*. This document contains summaries of the statute as well as additional links to resources for systems to aide in the completion of their requirements for the reports shown below.

Systems Required	Report	How often
All	• Annual Financial Report (audited) • Investment Returns and Assumptions Report (PRB-1000) • Membership report • MET form to report training (PRB-2000)	Annually
All	• Actuarial Valuation	Every three years
Systems with assets over **$100 million**	• Investment Practices and Performance Evaluation	Every three years

Systems Required	Report	How often
Systems with assets over **$100 million**	• Actuarial Experience Study • Actuarial Audit	Every five years
Systems with assets over **$30 million**	• Investment Practices and Performance Evaluation	Every six years
All	• Funding Policy • Investment Policy • Summary Plan Description • Registration/board information (Form PRB-150)	Upon change

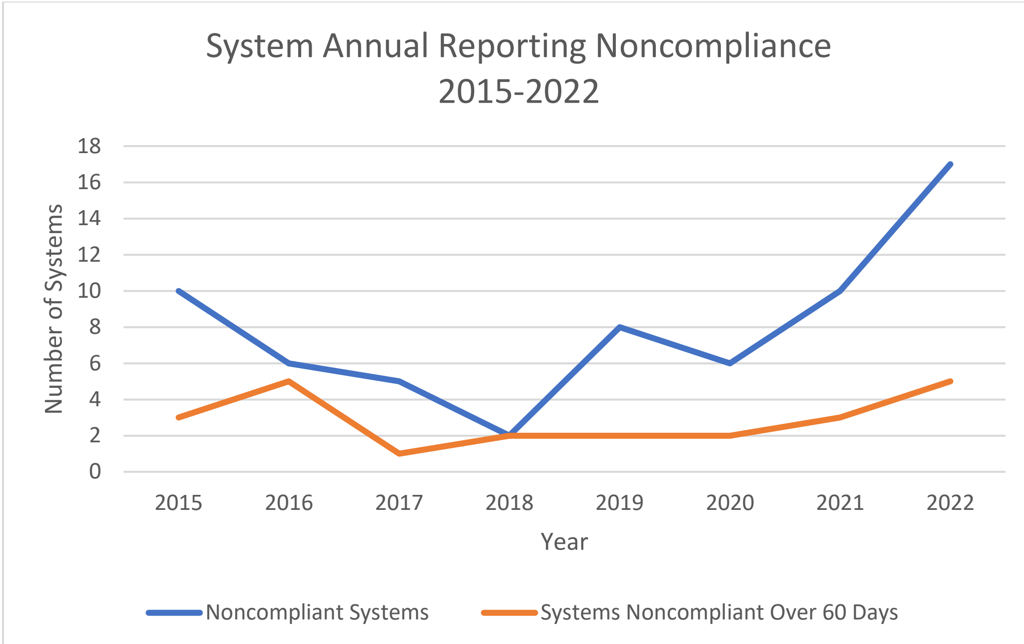
In 2021, the 86th Legislature added an investment expense reporting requirement under Texas Government Code Sections 802.103(a)(3) and (4), expanding requirements for annual financial reports and promoting investment transparency. The agency has prioritized educating and assisting systems with the new reporting requirements since the changes were enacted, such as providing a reporting template and adopting rules to outline reporting needs.

The PRB staff found that most noncompliant systems over the last biennium required further assistance in obtaining and reporting the proper required information. Staff identified that the most common missing or incomplete report this biennium was the annual financial report, due to missing or incomplete investment expense information. The agency has also provided heavy assistance to several systems in determining the investment fee breakdown by asset class and determining additional investment service fees such as custodial or legal fees.

Per the agency's noncompliance policy and state statute, systems are subject to a notice of noncompliance after 60 days from the reporting deadline for one or more of the required reports. A list of systems that have been noncompliant for 60 or more days are placed on the agency's website under the 60-day noncompliant list. The list is also discussed during board meetings. As of November 2022, there were 10 systems on the 60-day noncompliant list.

Compliance challenges

Over the last decade, updated best practices and an increase of required reporting for Texas public retirement systems—such as investment expense reporting—have led to reporting delays. Additionally, the agency saw a rise in the number of systems that submitted late or incorrect required reports since the beginning of the pandemic. At that time, normal operating procedures were halted due to shutdowns across the nation, forcing retirement systems and their contractors to find alternative ways to gather the information they needed to compile their regular reports. Many retirement systems and their contractor organizations had a limited number of staff available and data that was kept in physical office spaces and files was not as readily available or accessible.



The graph above shows the number of noncompliant plans during the summer of each year from 2015-2022. In 2015, the Governmental Accounting Standards Board (GASB) released statements 67 and 68 which provided new requirements to be included in annual financial reports. Mostly due to these changes, 10 plans were noncompliant during that summer. Noncompliance dropped below 10 plans until 2021, which was heavily impacted by the pandemic and new investment expense reporting requirements. Staff has been working with systems to rectify the noncompliance issue, but with a limited number of staff and a database crash in 2021, these efforts were temporarily interrupted. The agency has worked to bring compliance monitoring back to normal levels and will continue building on these efforts going forward.

MET Reporting Requirements

Public retirement systems must submit a Minimum Educational Training Program Form (PRB-2000) by September 1 each year. This form records training completed between August 1 of the previous year and July 31 of the current year. Trustees and system administrators are required to complete seven hours of Core training within their first year of service, and four hours of Continuing Education (CE) training every two years thereafter. They may take Core or Non-Core training during CE cycles. Further, trustees and system administrators may only receive CE credit hours once they have completed the Core requirement and have reached their one-year anniversary of service.

For updates to board trustees and system administrators, systems must submit a Minimum Educational Training Registration Form (PRB-150). The form contains requirements outlined in PRB rules, such as the name and contact information of each trustee and administrator, their position on the board, and their term starting and ending dates.

Actuarial Valuation Report and FSRP Report

To incorporate feedback from the board, staff revamped its quarterly actuarial valuation report presented at board meetings. At the July 2022, board meeting, the PRB Senior Actuary presented the actuarial valuation (AV) report in the new format to better facilitate understanding of this complex report, such as by presenting analyses and essential takeaways and better highlighting key issues. The improvements included:

- A summary of Texas public pension system news updates since the last board meeting,
- A summary of significant economic assumption changes since the last board meeting,
- A snapshot of key metrics by system type,
- A pictorial view of the spectrum of results for each key measurement,
- For each measurement, a listing of the systems with outlier results, and
- Additional analyses such as the retiree funded ratio.

The FSRP report presented to the board was also enhanced beginning with the July 2022 board meeting to include an overview of the FSRP status changes since the previous board meeting. The AV report and the FSRP report can be found in Appendix E.

PUBLIC RETIREMENT SYSTEM INTENSIVE REVIEWS

2021-2022 Intensive Reviews

Following its mandate to conduct intensive studies of potential or existing problems that threaten the actuarial soundness of public retirement systems, the PRB conducted two intensive reviews during the 2021-2022 biennium. These reviews provide a starting point for individual systems and sponsors to begin addressing the difficult situations their funds face; the reviews also serve as valuable educational resources and case studies for other systems who may be facing similar challenges.

The intensive reviews during this biennium analyzed risks facing the Midland Firemen's Relief & Retirement Fund (Midland Fire) and the Wichita Falls Firemen's Relief & Retirement Fund (Wichita Falls Fire). The two reviews focused on very different issues. Midland Fire suffered from lagging investment returns and soaring investment expenses caused by poor investment management. Wichita Falls Fire, conversely, benefitted from above average investment returns but suffered from inadequate contributions. Key recommendations made through these two intensive reviews include the following:

Midland Fire	Wichita Falls Fire
• Contract with an independent third party to perform a forensic and governance audit. • Use investment professionals to guide the investment program. • Develop a robust Funding Soundness Restoration Plan (FSRP) and funding policy that is sustainable and achievable. • Commit to inform plan members of issues facing the fund. • Keep the PRB and the Legislature informed of the progress.	• Consider options to increase contributions to offset previous underfunding. • Adjust or remove the benefit cap as part of determining the long-term contribution level. • Use an experience study and asset-liability study to adjust assumptions, estimate future changes, and determine long-term contribution level. • Submit a new FSRP prior to September 1, 2025, to avoid the stricter revised FSRP requirements. • Consider using a smoothed actuarial value of assets.

The review process provided multiple opportunities for input from both the systems and system sponsors, including inviting initial input into the review, providing an opportunity for written responses from the systems and sponsoring cities for inclusion in the final published reports as well as inviting both parties to attend the PRB's board meetings to discuss the reviews' findings and answer questions. The Midland Fire review can be found in Appendix F, and Wichita Falls Fire in Appendix G.

Updates from previous intensive reviews

The PRB has performed 11 intensive reviews since 2018. Appendix H provides a summary of those systems' progress after the review publication, including systems that were reviewed prior to 2021. The following updates represent highlights of the significant changes to reviewed systems since the PRB's 2019-2020 Biennial Report.

Midland Firemen's Relief and Retirement Fund

In November 2021, the PRB published its *Intensive Review of Midland Firemen's Relief and Retirement Fund* which, for the first time in the PRB's history of conducting intensive reviews, included a more detailed review of a system's investment program. The review noted that between 2000 and 2019, the system went from a stable funded ratio of 93.7 percent to 51.1 percent. Investment underperformance was the primary contributor to an increase in unfunded actuarially accrued liability (UAAL) since investments have underperformed their assumed rate of return of 7.5 percent by more than 2 percent, only achieving a 10-year compounded return of 5.1 percent over the last decade, despite a strong bull market during that same period. Additionally, the review noted the system's board does not monitor the composite portfolio or have a formal policy to evaluate the program's performance and expenses, raising transparency and accountability concerns. The PRB adopted the review and recommendations, including that the system engage a third party to conduct a forensic and governance audit based on issues identified in the review.

In the year following the review, the PRB received several small updates from the sponsoring city and no updates from the system representatives on any progress toward implementing the PRB's intensive review recommendations. This lack of communication and responsiveness from the system has been a consistent pattern over time. For example, in 2020, the system had not submitted the statutorily required Investment Practices and Performance Evaluation (IPPE) report and eventually turned it in over a year late. The PRB only received the IPPE after contacting the system's legislative representatives. Overall, an established pattern of egregious noncompliance, lack of communication, and lack of progress on the forensic and governance audit recommendations led the PRB board to request the city and the system representatives provide an update at the October 6, 2022, PRB meeting.

At the meeting, the City of Midland representatives noted they voted for and funded the forensic and governance audit to be completed by the end of October 2022. They also mentioned that they offered to help pay for any necessary professional services to assist the system in completing the audit, but system representatives rejected these offers. They also indicated that even getting the audit approved by Midland Fire's board was more difficult than anticipated. Additionally, they identified other changes made by the city to assist the system, such as addressing overtime issues and increasing city contributions, while being open to further changes to ensure firefighters receive the benefits they have earned. The Midland Fire representatives provided no prepared remarks but stated they attended the meeting to answer questions from the PRB board. The PRB questioned the system on their efforts to fix the situation and the implementation status of the PRB's recommendations. The Midland Fire board chair confirmed he had voted against conducting the forensic and governance audit, but a majority of the board members voted in favor. They also mentioned that they have hired an additional expert, on top of their investment consultant whose role they expanded, to provide reports on both past and future expenses and portfolio performance to help resolve certain reporting deficiencies, as recommended by the PRB. Keith Brainard, the PRB Vice Chair, concluded the Midland Fire update agenda item by reciting the list of required reports that Midland Fire submitted with significant delays or that remain outstanding; and the findings and recommendations of the PRB's intensive review of Midland Fire. Vice Chair Brainard then called on the Midland Fire's board chair, David Stacy, to resign his position due to Midland Fire's repeated failure to follow state law requiring submission of these reports, the fund's funding condition, and its investment record of performance. The video of the meeting may be found on the House Audio/Video Archives site here.

The forensic and governance audit activities were completed at the end of October 2022 and results from it are expected to be provided to the PRB once the report is finalized.

Three systems that have been the subject of intensive reviews have recently taken steps or completed the issuance of pension obligation bonds (POBs) to fully or partially pay down their unfunded liabilities in conjunction with other important reforms to establish sustainable funding arrangements moving forward.

Paris Firefighters Relief and Retirement Fund

In October 2019, the PRB published its *Intensive Review of Paris Firefighters Relief and Retirement Fund* and provided a summary of the review in its 2019-2020 biennial report. The intensive review discovered the system to be at risk of completely depleting assets within the next 25 years, which was a significant risk to the system's ability to pay promised member benefits. Both the sponsor and system began working to resolve the concerns.

The system made several changes since the review and the most recent actions have significantly improved the situation. As of October 1, 2022, the plan is frozen, which means that it is no longer accepting new members and current members' benefits accrued before that date are frozen. All current and future members will be moved into the Texas Municipal Retirement System. This reform was only made possible through the city issuing $12.5 million in POBs in August 2022 to pay down the system's unfunded liabilities.

Irving Firemen's Relief and Retirement Fund

In October of 2018, the PRB published its *Intensive Actuarial Review of Irving Firemen's Relief and Retirement Fund* (Irving Fire). The PRB brought special attention to the deferred retirement option plan (DROP) because the DROP program offered a guaranteed 6.25 percent annual rate of return, which was 2 percent less than the actuarial investment return assumption. It also allowed the interest to continue post retirement, which effectively meant an unlimited period to accrue that guaranteed interest.

Irving Fire made several changes to the system following the review, some of which were included in the PRB's 2019-2020 Biennial Report. In April 2022, the City of Irving issued $80 million in POBs to pay down a significant portion of Irving Fire's unfunded liability, as this amount was identified as the most efficient amount to coincide with an increase in city contributions from 20.25 percent to 26 percent. Part of the agreement between the city and Irving Fire was that the city would agree to pay the ADC rate. This includes both parties splitting the contributions equally if the ADC rate is below 26 percent. If the rate is above 26 percent, the members would cover 13 percent with the city covering the rest. Part of this agreement is that any future benefit increases would be funded by the members through increased contributions. As of its 2021 Actuarial Valuation Report, the system's amortization period is now 37 years with a funded ratio of 64 percent. The amortization period decreases to 23 years with a funded ratio of 91 percent once the POB funds are added into the assets.

Longview Firemen's Relief and Retirement Fund

In October of 2018, the PRB published its *Intensive Actuarial Review of Longview Firemen's Relief and Retirement Fund* (Longview Fire). The PRB identified issues with a mismatch in the assets and liabilities coming from lower investment returns and insufficient contributions.

Following the review, Longview Fire made changes to lower its return assumption and increase contributions. The City of Longview also issued $45.6 million in POBs in July 2022 to pay down most of the system's unfunded liability. Additionally, the system issued a memorandum of understanding between the system and the city agreeing that there would be no plan changes to increase benefits until the funding period is less than five years, and no plan changes can result in an increase in the funding period of over 10 years.

DATA/REPORTING

Texas Public Pension Data Center

Launched in January of 2019, the PRB's *Texas Public Pension Data Center* provides lawmakers, taxpayers, pension systems, and other stakeholders with a searchable, user-friendly database of Texas public retirement system information. Over the 2021-2022 biennium, the agency has continued to improve the data center, which includes key actuarial and financial indicators of retirement system health over time, as well as demographic, benefit, and governance information.

Staff made improvements to the data center in 2021, which included enhanced data visualization and the addition of comparative benchmarks, such as statewide and national averages for key metrics. The goal of future improvements, to coincide with the ongoing internal database upgrade, will be to redesign the data center graphs to include interactivity and the additions of information from newer reports received from systems, such as investment expenses. These updates are expected to be phased in starting late 2023 through 2024.

PRB Database

The PRB, as required by its governing statute, collects a wide range of data from Texas public retirement systems. Required reports from the 100 defined benefit pension systems that are stored in the PRB database include annual financial reports, actuarial reports, plan benefit information, membership information, and investment returns. This data is a critical component of the agency's daily operations and is vital to achieving its oversight mission. However, the agency suffered a database crash in the summer of 2021 that prevented staff from intaking required reports for several months, and greatly hurt its ability to monitor retirement system health. For example, regular reports provided to the agency's board were impossible to produce during this time even though these reports, such as the Actuarial Valuation Report, are critical to the agency's oversight mission.

The agency is in the middle of a major database overhaul, which is funded through HB 2 (87 R) supplemental funding. This database rewrite will allow the PRB to expand its capabilities and become more efficient in serving Texas retirement systems by having a reliable repository for all the data it collects from retirement systems. The new web-based database will soon include additional data based on legislative changes over the past several years, such as FSRP status, real-time compliance information, and investment expense data. The new database will also integrate functions from the currently separate Minimum Educational Training database to streamline data entry and retrieval.

The database improves the effectiveness of the PRB in fulfilling its oversight mission by housing all data collected and serves as a scalable underpinning for the PRB to actively monitor the funding soundness of Texas public retirement systems. The agency uses the data to create reports, perform studies, analyze pension related topics, and inform pension members and the legislature on the fiscal health of Texas public pensions.

PRB Website

A major improvement to the PRB's communication and accessibility efforts was the launch of the new agency website in early 2022. A majority of the website was developed in-house by the PRB's Digital Design and Projects Analyst, with consult from a web designer. The project took approximately six months to complete once outlined.

The new website was organized to be more intuitive than the prior website, so users can more easily locate important materials or information. For example, the previous website had a calendar of events, but it was sometimes difficult for users to find the calendar on the site. The homepage now includes a calendar so visitors can easily see upcoming events. The homepage now also includes a reference dashboard to show the number and overall assets of public retirement systems in Texas, as well as information about upcoming reporting deadlines and other topical information.

The website visuals were designed to be more consistent with the PRB's data center website as part of an effort to make agency visuals and branding more consistent. This included refreshing the color scheme, images, and small accents such as fonts and icons.

The PRB website plays an important part in the agency's transparency efforts. On the website, users can access information about upcoming and previous board and committee meetings, and view board documents and policies. Informal guidance and additional resources are also made available on the PRB website. Important announcements are also featured on the homepage to draw attention to agency updates.

Guide to Public Retirement Systems in Texas

Every odd-numbered year, the PRB publishes the *Guide to Public Retirement Systems in Texas*. Publication coincides with the beginning of each legislative session to provide lawmakers with as much relevant and current information on the state's retirement systems as possible. The March 2021 *Guide to Public Retirement Systems in Texas* can be found on the agency's website.

The PRB is currently drafting its 2023 *Guide* for the 88th Legislature. The online data center has allowed much of the information previously published only biennially in the guide to be available as soon as it is reviewed by the agency. Because of this and the planned improvements for the data center, future iterations of the guide will focus on providing analysis and key insights from the data already available through the agency's data portal.

Public Pension Search Tool

The PRB continues its online data partnership with the office of the Texas Comptroller of Public Accounts to maintain the Public Pension Search Tool and promote transparency and open government. The PRB provides the Comptroller's Office with the most recent data received, including contact information, financial, actuarial, membership, benefit, targeted asset allocations, and investment returns from all public defined benefit retirement plans in the state. The PRB sent the latest update to the Comptroller's Office in October 2022 and generally sends the updated data quarterly. The search tool can be found on the Comptroller's website.

PRB MINIMUM EDUCATIONAL TRAINING (MET) PROGRAM

Section 801.211 of the Texas Government Code directs the PRB to develop and administer an educational training program for trustees and administrators of Texas public retirement systems. The original curriculum for the PRB's Minimum Educational Training (MET) Program was completed in November 2016, with the release of the curriculum guide and PRB online Core courses. In 2021, the PRB began reviewing and updating the Core courses to include up-to-date best practices, current events, reporting requirements, and addressing various feedback received from past participants through online surveys. The PRB is also developing continuing education (CE) training that will be free for all stakeholders. MET Program efforts also include reviewing and accrediting sponsor and individual course applications and providing technical assistance to stakeholders.

Online Courses

The PRB has researched, written, designed, and published seven online courses to assist trustees and system administrators to obtain required training. Each course covers one of the following Core content areas:

- Fiduciary Matters
- Governance
- Actuarial Matters
- Investments
- Risk Management
- Ethics
- Benefits Administration

The online courses are available free of charge on the PRB website. As of October 17, 2022, there have been over 4,500 course completions.

In January 2019 the board requested staff to provide the percentage of participants taking PRB online courses compared to attending training from other MET sponsors. To provide this information, PRB staff reviewed data received from the systems' annual trustee training reports, beginning in 2017 when all seven PRB online courses became available.

The following table shows the percentage of MET participants that took Core and CE training from the PRB, retirement systems, and other MET sponsors from January 2017 to June 2019, and January 2020 to October 2022. Due to the pandemic in 2020, the need for online training grew substantially as annual conferences were forced to cancel their events. This led to more retirement systems looking to train their trustees in-house or seek other training opportunities different from prior years. Some sponsors, like the Texas Association of Public Employee Retirement Systems (TEXPERS), were able to transition into providing more online training content when it was not feasible to hold their in-person conferences. This helped to keep the number of participants receiving their training from declining substantially. The Texas Local Fire Fighters Retirement Act (TLFFRA) Education Foundation on the other hand, had to cancel their 2020 conference and did not provide alternative sources of training that year, which has caused their representation to sharply drop in recent years. In 2021 and onward, these and other sponsors have been able to hold in-person conferences again, so the PRB expects the percentages to rise again in the future.

Provider/Sponsor	Percentage of MET Participants Receiving Training			
	2017-2019		2020-2022	
	Core	CE	Core	CE
PRB Online	**68%**	**15%**	**57%**	**16%**
Retirement System In-House	**4%**	**14%**	**9%**	**14%**
Other Sponsors				
TEXPERS	23%	50%	23%	40%
TLFFRA	5%	14%	1%	4%
Other	N/A	7%	10%	26%
Total-Other Sponsors	**28%**	**71%**	**34%**	**70%**

In 2021, the PRB began reviewing and updating the seven PRB online courses. To account for additional CE that PRB staff committed to providing before the end of the year, four Core courses were prioritized for updates:

- Actuarial Matters
- Governance
- Benefits Administration
- Investments

The PRB has currently finished the updates of three of the four courses with the update to the Investments course expected by the end of 2022. The agency will reevaluate the remaining three courses and develop a plan to update those in the coming years.

Development and Launch of New Learning Management System

Over the past several years, the agency received feedback on the MET course platform regarding some usability concerns. Commonly cited problems included trouble printing certificates and an overall cumbersome user experience. The PRB decided to change to a new learning management system (LMS) to address these concerns and better serve public retirement system trustees and administrators.

PRB staff developed the new MET course website in-house in consultation with a web developer, and it mirrors the agency's primary and data center websites to maintain consistent branding recognition. The site home page was designed with the user in mind and helps users to navigate to the correct course track.

In a shift from the prior LMS, the new LMS allows for users to create their own individual profiles to register for courses. Each user will have a unique dashboard which shows what courses they are enrolled in, their course progress, as well as any certificates they have earned after completing a course. As this was a main concern for users, the addition of certificates on participants' dashboards is a great improvement for the agency. The user can access and save old certificates and the PRB is also able to see the generated certificates.

The new MET website will be ready to launch before the end of 2022. The agency will use the next educational services survey in 2023 and the course evaluation results to assess the new LMS's success and determine what improvements may be necessary.

Launch of Non-Core Course Offerings for Continuing Education Credit

To respond to stakeholder feedback asking the PRB to provide more options for their continuing education training cycle, the agency has begun to produce in-person, virtual, and recorded video courses to provide these opportunities for system administrators and trustees to earn credits under the Minimum Educational Training Program. The PRB's goal was to provide two new non-core courses in 2022; however, staff was able to produce three by November of 2022, as described below.

- Two courses are focused on compliance with Texas laws, specifically one on the Open Meetings Act and the Public Information Act, and another course covering various ethics requirements. Recordings of both presentations will soon be available on the PRB's website.
- The third course focuses on the recent updates made to the Actuarial Standard of Practice 4, Measuring Pension Obligations and Determining Pension Plan Costs or Contributions, as described in more detail in the following section.

ASOP 4 Continuing Education

At the November 3, 2022, Actuarial Committee meeting, PRB's Senior Actuary presented a training on the revised Actuarial Standard of Practice (ASOP) No. 4, Measuring Pension Obligations and Determining Pension Plan Costs or Contributions. The training informed trustees regarding upcoming new calculations they should expect to see in actuarial valuation reports due to revisions to the ASOP.

This was the first time the PRB provided a course for MET credit during a live committee or board meeting, and approximately 20 people participated. Participants received 0.75 hours of continuing education credit from the PRB for attending the meeting either in person or over videoconference. The training will also be made available on the online MET course website around the end of 2022.

Sponsor Accreditation

As of November of 2022, the PRB has accredited 25 MET sponsors, as well as 91 individual courses offered by non-accredited sponsors. Of the 25 approved MET sponsors, 23 are still accredited and two chose not to renew their sponsorship after their initial two years.

Frequent training providers, including public retirement systems conducting in-house training, may apply to become sponsors accredited by the PRB to conduct trainings for MET credit hours. Those sponsors who become accredited do not need to obtain approval for each course offered; sponsors may be accredited to offer Core instruction, CE, or both.

When an application to become an accredited sponsor is accepted by the PRB, the retirement system or training organization is a sponsor for two years. At the end of those years, the sponsor must apply for renewal of their accreditation, and if granted is then a sponsor for four years before they must renew again.

A retirement system or training organization that does not wish to become an accredited sponsor may apply for approval of individual courses. A list of current accredited sponsors can be found online on the PRB's accredited sponsors and courses page.

MET Compliance and Reporting

The PRB has now completed several reporting cycles for MET compliance. At each reporting deadline, systems report to the PRB the training completed by their trustees and administrator during the previous period. The information submitted to the PRB has been compiled to create the *Public Retirement System Compliance with Minimum Educational Training Requirements* report (Appendix I). This report contains data from the most recently completed training cycle reported to the PRB for Texas public retirement system trustees and system administrators. Since training compliance is dependent on each trustee's or administrator's specific term start date, many are in the middle of a training cycle and may be reported as "in progress." This simply means the individual is neither compliant nor noncompliant.

The following table provides overall MET compliance information by retirement system type. It is an aggregate number of all the individuals' compliance status from each retirement system in their respective system type.

System Type	Percent of Trustees Compliant
Statewide	**93.02%**
Municipal	**80.32%**
Local Fire Fighter	**60.44%**
Special District and Supplemental	**58.74%**

TECHNICAL ASSISTANCE & INNOVATION

As part of the agency's broader efforts to increase transparency and improve stakeholder experience, the PRB has been refreshing several communication practices, such as the agency news clips and website.

Technical Assistance

An important service the PRB provides is technical assistance for the legislature, public retirement systems, state agencies, and members of the public. This includes many types of assistance such as providing information about legislation or answering questions about reporting requirements or compliance.

Staff responds to these requests in a timely and thorough manner.

Despite a major internal database outage in the summer of 2021, the agency achieved 107 percent of its general technical assistance goals in FY 2021 and 90 percent for FY 2022. PRB staff members are working diligently to make several improvements to agency processes to make more information easily available on its website without the need to make requests from staff. For example, the PRB provides additional resources to help private pension plan members contact the appropriate organization for help with their pensions.

Customer Services Survey

The Customer Services Survey is performed in even numbered years as part of the agency's strategic planning process. The survey covers the PRB's educational materials, mission, transparency, communications, TLFFRA relations, facilities, staff, complaints, timeliness, and overall satisfaction. The most recent customer service survey was conducted in March through April of 2022 and had a response rate of 12.85 percent. The participants' average overall satisfaction with the agency was 85 percent.

While responses were generally positive overall, some respondents did indicate a desire for more information and communication from the agency. The PRB has worked hard to improve various aspects of customer service and communication with stakeholders as a response to the feedback and will continue to work to improve stakeholder satisfaction with the agency and its functions.

Educational Services Survey

The Educational Services Survey is conducted during odd numbered years and focuses on the PRB's educational offerings including the Minimum Educational Training (MET) program, Texas Public Pension Data Center, Texas Local Fire Fighters Retirement Act (TLFFRA) resources, legislative session material, and weekly News Clips. This biennium, the survey was conducted during May and June of 2021. The results showed an average overall satisfaction with PRB educational services rating of 86.3 percent, with the questions related to the data center, MET program, and News Clips each receiving satisfaction ratings over 91 percent.

The most common feedback was a request was for a greater number and variety of educational offerings, particularly as part of the MET online courses. The agency has made progress in this area with the new learning management system, updated core courses, and new continuing education offerings. Additionally, staff worked to improve the quality and appearance of other educational offerings, and communications about what trainings are available.

News Clips

The effort to create a more consistent appearance across all agency materials can also be seen in the News Clips, which is a weekly email containing an overview of local and national news related to public retirement systems and the economy. Staff overhauled the layout this biennium, with the new version first launching in August of 2021.

The clips include news covering Texas pension and economic news, national pension and investments news, studies and reports, and editorials and perspectives.

Social Media

In 2022, the PRB began to expand its use of social media to share agency news and activities with stakeholders. The agency has had a LinkedIn page for several years, but it has only been used for job postings. Staff began posting on the page more regularly to provide another way for stakeholders to see agency news and announcements. These efforts are still in the early stages and the agency intends to continue improving social media utilization to assist with stakeholder outreach. Since the agency began to utilize LinkedIn as a communication platform in May 2022, it has seen an 82 percent increase in page views, a 77.4 percent increase in unique visitors, and 71.4 percent increase in followers.

Complaints & Data Requests

When a complaint is received, staff contacts the complainant as well as representatives of the retirement system that is the subject of the complaint to provide them with the PRB's *Complaint Policy and Procedures*. The purpose of the process is to provide conclusions and recommendations on whether the system's policies and procedures were sufficient and followed correctly. This biennium, the PRB responded to five open records requests and worked on three complaints regarding public retirement systems. The agency received no complaints against the PRB itself.

SPECIFIC ASSISTANCE FOR TLFFRA SYSTEMS

Forty-two of the defined benefit retirement systems the PRB oversees are organized under the Texas Local Fire Fighter Retirement Act (TLFFRA). These systems are typically small in terms of both assets and staff compared to most other Texas systems, and range between less than $5 million for the smallest plan and more than $220 million for the largest. Part of the PRB's mandate is to offer specific services and resources tailored to the needs of these systems.

Role of the TLFFRA Specialist

The PRB's TLFFRA specialist works closely with TLFFRA systems to provide technical assistance and information on various issues, including service verification, questions relating to the TLFFRA statute, and assisting the systems with reporting requirements. The TLFFRA specialist also serves members of the TLFFRA plans during disputes with their retirement systems about system board decisions on benefit payments. If a member files a notice of appeal regarding a decision of their pension board with the PRB, the TLFFRA specialist will then refer the matter to the State Office of Administrative Hearings. The PRB makes available the instructions for filing an appeal, as well as the appeal form, on its website.

Training provided by the PRB board members and staff

Additionally, both board and staff members have played a pivotal role training and assisting TLFFRA systems. At both the 2021 and 2022 TLFFRA annual conferences, PRB staff and board members presented on key educational topics. At the 2021 conference, board Vice Chair and Actuarial Committee Chair Keith Brainard presented on state and national public pension data, trends, and issues. The PRB Executive Director presented on best practices for ethical standards and contracting processes. At the most recent conference in fall 2022, board member and Investment Committee Chair Christopher Zook presented on pitfalls that trustees commonly make when hiring asset managers, including a special focus on the role investment fees and expenses play in relation to performance. The PRB General Counsel explained how the Open Meetings Act affects TLFFRA systems and fielded questions from many systems to help refine their understanding of the Texas statute. The Open Meetings Act presentation was a basis for the new continuing education course on the Open Meetings Act and Public Information Act, which will soon be available on the PRB's website.

TLFFRA Pension Report

Every two years, the PRB releases its TLFFRA Pension Report (see Appendix J for full report) which contains financial, actuarial, investment, and other key information on all 42 paid/part-paid TLFFRA retirement systems. The latest report was completed in May of 2022. The goal of the report is to help TLFFRA systems by allowing them to compare their data easily with their peer systems, including a listing of contractors each system hires, such as actuaries and investment managers.

TLFFRA Trustee Manual

The PRB finished updates to the TLFFRA Trustee Manual in the summer of 2022. This manual is meant to assist TLFFRA trustees in completion of their daily duties as trustees and fiduciaries of their systems. The PRB reorganized the manual to allow the trustee to easily navigate and find references and examples for relevant topics. The PRB also updated the description of its role in assisting TLFFRA systems as well as provided updated information about required reports and statutes updated since the manual was last published in 2013. The manual is available on the PRB's website.

87TH LEGISLATURE

Public Pension Legislation & Impact Statements

During legislative sessions, the PRB tracks bills related to Texas public retirement systems. In 2021, tracking reports for bills during the regular session and among the three special sessions were posted regularly on the PRB website as a quick reference for stakeholders. A summary of major pension-related legislation passed during the 87th Legislative Session can be found in Appendix K.

The PRB also issued 51 actuarial impact statements to the Legislative Budget Board during the regular session and 2 during the three special sessions. These impact statements contain an analysis of the actuarial effects bills would have on state and local retirement systems and help provide vital technical information for the legislature to use when considering these bills.

Presentations to the Legislature & Interim Hearings

As part of the agency's assistance to the legislature, the PRB offers informational presentations and expert testimony throughout legislative sessions and the interim periods. In March of 2021, the PRB gave a presentation to the House Committee on Pensions, Investments, and Financial Services (PIFS). The presentation provided an overview of the agency's functions, including the implementation of past legislation (Appendix L). Also in March 2021, staff provided a seminar to legislative staff and other government relations stakeholders. The presentation, titled "Pension Basics Legislative Seminar," offered an overview of both the agency and Texas public retirement systems (Appendix M). This is a recurring training organized at the beginning of each legislative session to provide legislative staff, especially those working on pension legislation, with the background information they need to make informed decisions.

The Executive Director and Vice Chair of the PRB Keith Brainard each testified at an interim PIFS hearing in August 2022. The Executive Director spoke on two of the committee's interim charges on behalf of the PRB:

- Charge 1: Monitor the agencies and programs under the Committee's jurisdiction and oversee the implementation of relevant legislation passed by the 87th Legislature.
- Charge 3: Review the Texas Local Fire Fighters Retirement Act (TLFFRA) to ensure proper governance and financial oversight. Examine whether the Pension Review Board has proper oversight and authority to implement necessary corrective measures.

The Executive Director's presentation included an overview of the FSRP rulemaking and other steps the agency has taken to implement the statutory changes in House Bill 3898 (87R), as well as important contextual information about TLFFRA systems, agency research efforts, and actions of previous legislatures to improve public pension governance (Appendix N).

Mr. Brainard testified on his own behalf to the committee, not in his capacity as a PRB board member. His presentation reviewed public pension governance, TLFFRA governance, and recommended statutory changes to improve TLFFRA governance. The three recommended changes included:

- Requiring the full actuarially determined contribution be made each year,
- Requiring joint city council and board approval of changes to employee contribution rates and benefits, and
- Requiring any plan benefit changes that increase the amortization period only be approved if the amortization period less than or equal to 15 years both before and after the benefit increase.

Partnership With the LBJ School of Public Affairs at the University of Texas – Governance Study

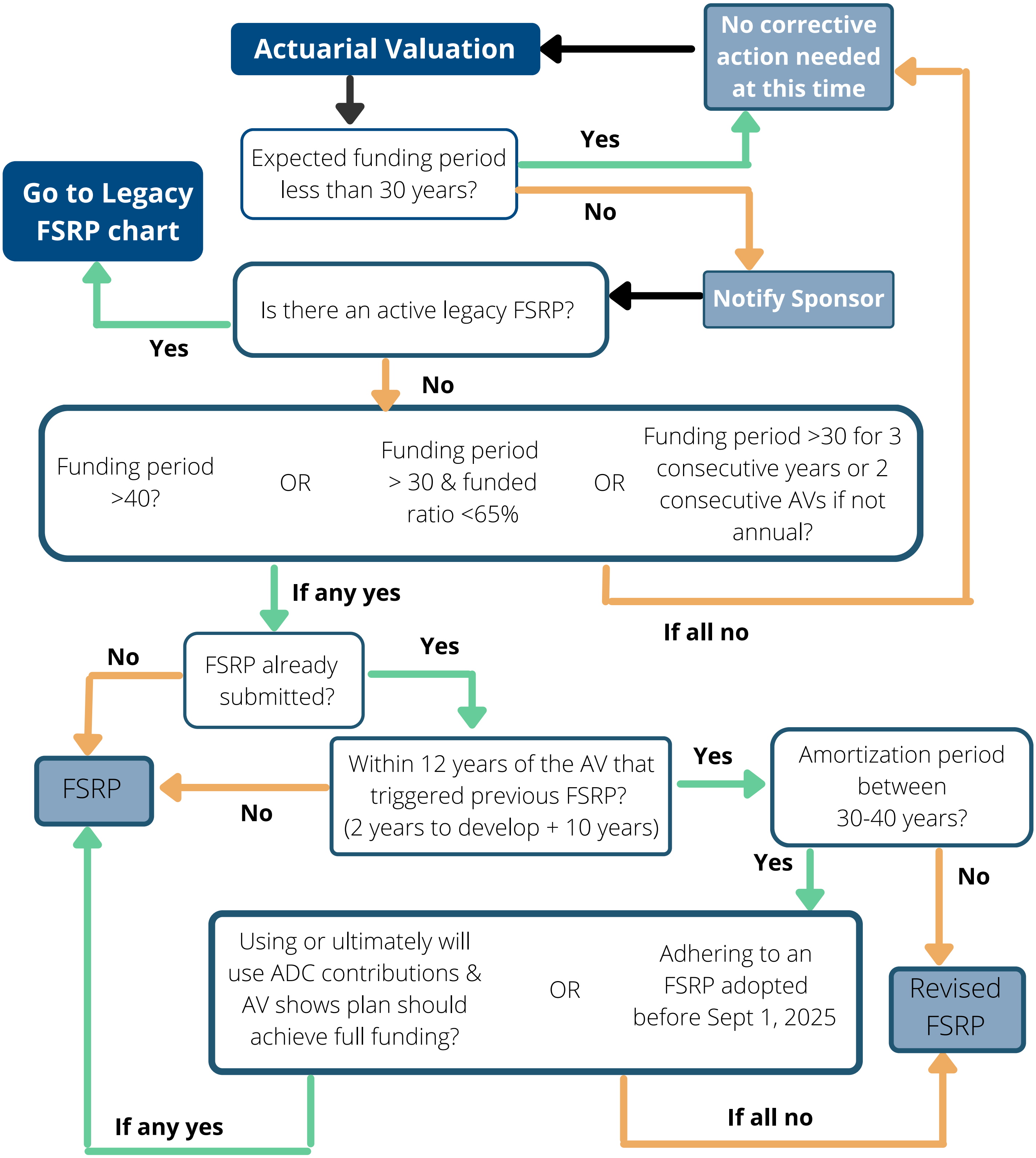
In 2020, the PRB board directed staff to conduct a study on pension system governance in Texas. To effectively leverage available resources, the PRB identified an opportunity to partner with the Lyndon B. Johnson School of Public Affairs (LBJ School) at the University of Texas at Austin to assist the agency with this project. The PRB's Executive Director and board Vice Chair Keith Brainard provided an overview of the agency's unique oversight role and presented the governance study proposal to students in

September 2022 (Appendix O). A team of three LBJ School students have since begun a yearlong study of Texas local pension governance to complete a policy research project and fulfill their master's degree requirements, which will conclude in May 2023. The overarching goal of the project is to identify best practices and legislative recommendations to improve pension governance. In alignment with a closely related Texas House interim charge assigned to the Pensions, Investments, & Financial Services Committee in 2022, the student team will focus specifically on the 42 Texas Local Fire Fighters Retirement Act systems since, on average, these systems tend to be more poorly funded than other types of pension systems in the state. With direction from PRB staff, the LBJ School team will complete a literature review, meet with various stakeholders, develop an evaluation methodology and compare Texas pension governance with other states to produce a final report with recommendations.

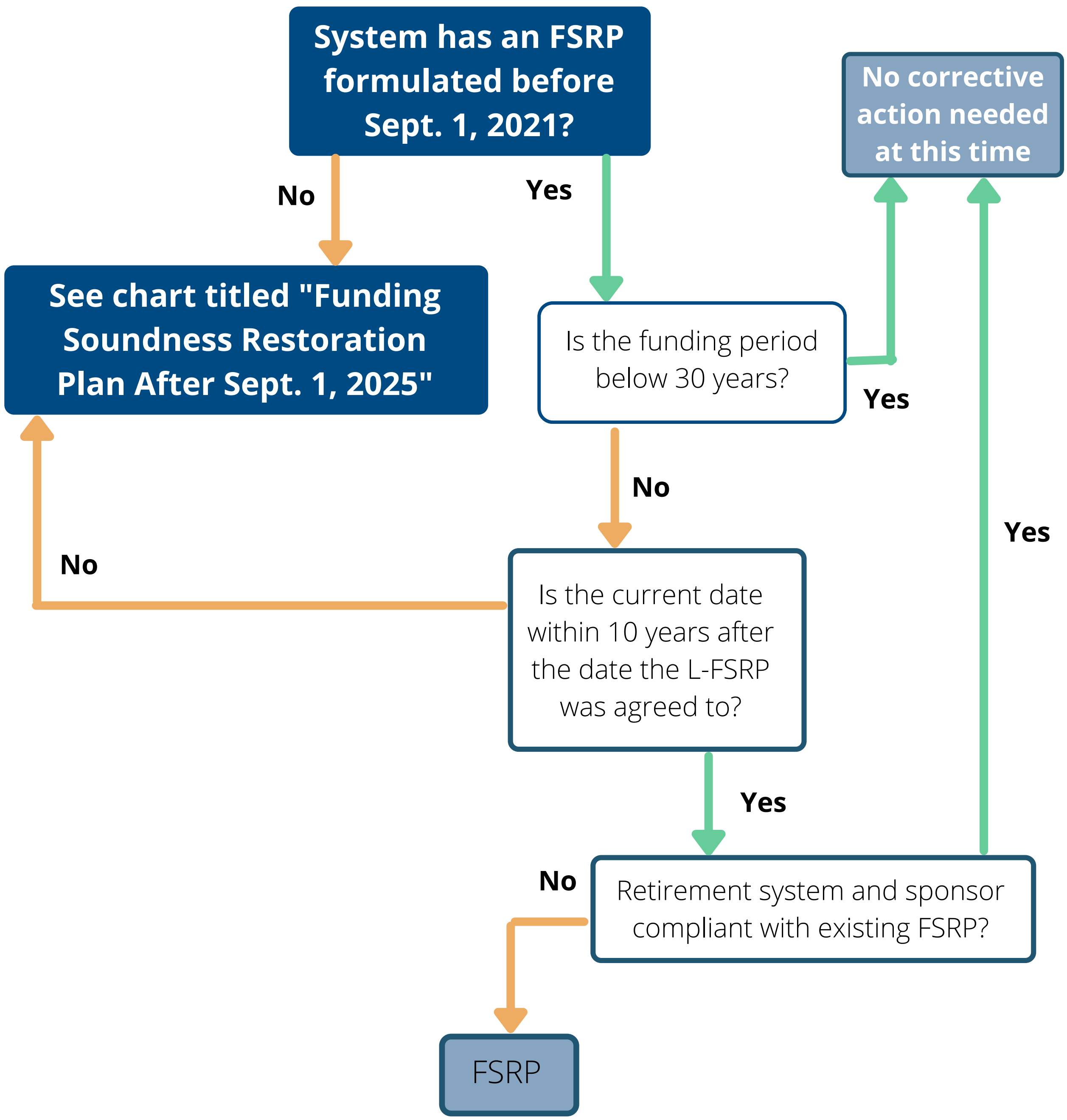
APPENDICES

Appendix A – Funding Soundness Restoration Plan Flowchart

Updated Based on Current Understanding (7-2022)
Funding Soundness Restoration Plan After Sept. 1, 2025



Funding Soundness Restoration Plan for Legacy FSRP Systems



If a retirement system with an Legacy FSRP is not compliant with the L-FSRP, the retirement system and sponsor shall prepare an FSRP under requirements as they stand after Sept. 1, 2021, instead of a revised FSRP under previous statute.

FSRP Reporting to PRB

Retirement system & sponsor work together after FSRP is triggered

Within 1 year of triggering AV:
Send progress report to PRB that includes a draft of any plan or changes being considered + updates every 6 months afterwards

Within 2 years of triggering AV (or by Sept. 1, 2025):
Both retirement system & sponsor **adopt FSRP/R-FSRP** at open meetings

Update funding policy based on the FSRP/R-FSRP

Within 31 days of adoption:
submit FSRP/R-FSRP to PRB

Within 90 days of adoption or 90 days of request from PRB:
submit AV or separate analysis showing combined impact of all changes adopted in FSRP/R-FSRP, an asset-liability projection between the valuation date and projected date of full funding, and a description of the methods and assumptions.

Follow the FSRP/R-FSRP & return to regular actuarial valuation schedule

Appendix B – Funding Soundness Restoration Plan One-Pagers

FSRP Types: Legacy Funding Soundness Restoration Plans (L-FSRP)

- Legacy FSRPs were **formulated before Sept. 1, 2021.** <u>It is not possible to create a new legacy FSRP.</u>
- Legacy FSRPs must be designed to achieve a contribution rate sufficient to amortize the UAAL within *40 years* by the target date.
- **Progress updates** on the Legacy FSRP are due every two years while the system is following the plan. These updates are less formalized than the progress updates for new FSRPs.
    - If a legacy FSRP is changed or amended while in progress, a copy of any changes must be submitted to PRB within 31 days.
- **If a system does not adhere to existing L-FSRP** and is no longer able to achieve a 40-year funding period by the target date, the system or sponsor would then become subject to the new FSRP requirements. A new FSRP must be prepared that achieves a funding period of *30 years.*
    - A system would need to prepare a standard FSRP under the new law *before* becoming subject to a revised FSRP under the new law.
- The PRB has two methods to determine **legacy FSRP compliance**.
    - The old way: a system's funding period must go down until it falls below 40 years, and it must remain under 40 years afterwards.
    - new way: **Compliance Corridors:** a system may still be considered compliant even if its funding period increases as long as it remains within established compliance corridors. There are two types.
        - **Funding period** compliance corridors are built around the systems funding period baseline, either established by the PRB or submitted by the system.
        - **Funded ratio** compliance corridors are based on an optional projection submitted by the system. **This corridor will not be available if the system does not submit a projection.**

FSRP Types:
Funding Soundness Restoration Plans (FSRP)

- FSRPs under new law must be designed to achieve a contribution rate sufficient to amortize the UAAL within **30 years** no later than **2 years** after the triggering AV **or Sept. 1, 2025**, whichever is later.
- These FSRPs must be adopted at open meetings of the governing bodies of both system and sponsor. Both the system and sponsor must participate in creation of an FSRP.
  - FSRP must be consistent with system's governing statute.
- **Progress updates** on the preparation of the FSRP are due to the PRB within **1 year of the triggering AV and every 6 months afterwards** until the plan is adopted.
- Certain **materials** are due on the applicable due date (Sept. 1, 2025 or 2 years after triggering AV). PRB rules clarify these materials.
  - A completed FSRP form as a cover-sheet
  - Any supplementary documents necessary to illustrate how the system's funding period will be within the maximum (i.e. revised funding policy, etc.)
  - Documentation of the adoption by the governing bodies of the system and sponsor.
- The **actuarial valuation or other analysis** showing the asset-liability projection and description of assumptions is due later.
  - The AV is due 90 days after FSRP adoption or the analysis is due 90 days after the PRB requests it. However, either may be submitted to fulfill the requirement at any point before the final deadline.
- The PRB will determine **compliance** with an FSRP based on if all the necessary materials are submitted and adequately meet the requirements in statute and rules.
  - For systems eligible for the pre-2025 branch of the revision exemption, adherence with the new FSRP will be based on **Compliance Corridors**. As long a system remains within one of the corridors, it will be considered adherent.
- **Funding Policy** must be updated to reflect any changes.

FSRP Types: Revised Funding Soundness Restoration Plans (R-FSRP)

- An R-FSRP is a special subtype of FSRP that a system or sponsor is required to prepare if they trigger the FSRP requirement within 10 years of a previous FSRP submission.
  - Since the first new FSRPs are not due until Sept. 1, 2025, then the first R-FSRPs will not be triggered until after that date.
- Must be designed to achieve a contribution rate sufficient to amortize the UAAL within **25 years** no later than **2 years** after the triggering valuation.
- **Must include** automatic risk-sharing mechanisms, ADC-based contributions, and other adjustable benefit or contribution mechanisms.
  - Otherwise, materials and analysis are the same as regular FSRPs.
- These FSRPs must be adopted at open meetings of the governing bodies of both system and sponsor. Both the system and sponsor must participate in creation of an FSRP.
  - FSRP must be consistent with the system's governing statute.
- Progress updates on the preparation of the FSRP are due to the PRB within 1 year of the triggering AV and every 6 months afterwards until the plan is adopted.
- **Funding Policy** must be updated to reflect any changes.

- **Revision exemption** available under certain conditions [§§802.2015(d-1) or 802.2016(d-1)]. A system meeting these conditions would prepare a regular FSRP rather than an R-FSRP if they triggered the requirement a second time within 10 years.
  - Systems funding period must be between 30 and 40 years to qualify.
  - **And**, one of two conditions must also be met:
    - The system is adhering to an FSRP formulated before Sept. 1, 2025. Compliance corridors are used to determine adherence with a new FSRP for this purpose.
    - The system is using or will ultimately use an actuarily determined contribution structure and is expected to reach full funding.

FSRP Types: Voluntary Funding Soundness Restoration Plans (V-FSRP)

- **Prepared without first becoming subject to the FSRP requirement.**
  - **Progress updates not required.**
- FSRPs under new law must be designed to achieve a contribution rate sufficient to amortize the UAAL within **30 years.**
- These FSRPs must be adopted at open meetings of the governing bodies of both system and sponsor. Both the system and sponsor must participate in creation of an FSRP.
  - FSRP must be consistent with system's governing statute.
- **Materials required for submission are the same as a regular FSRP.**
  - A completed FSRP form as a cover-sheet
  - Any supplementary documents necessary to illustrate how the system's funding period will be within the maximum (i.e. revised funding policy, etc.)
  - Documentation of the adoption by the governing bodies of the system and sponsor.
- The actuarial valuation or other analysis showing the asset-liability projection and description of assumptions is due after the initial V-FSRP is submitted to the PRB.
  - The AV is due 90 days after FSRP adoption or the analysis is due 90 days after the PRB requests it. However, either may be submitted to fulfill the requirement at any point before the final deadline.
  - The PRB will determine compliance with an FSRP based on if all the necessary materials are submitted and adequately meet the requirements in statute and rules.
- For systems eligible for the pre-2025 branch of the revision exemption, adherence with the new FSRP will be based on **Compliance Corridors**. As long a system remains within one of the corridors, it will be considered adherent.
- Funding Policy must be updated to reflect any changes.

Compliance Corridors

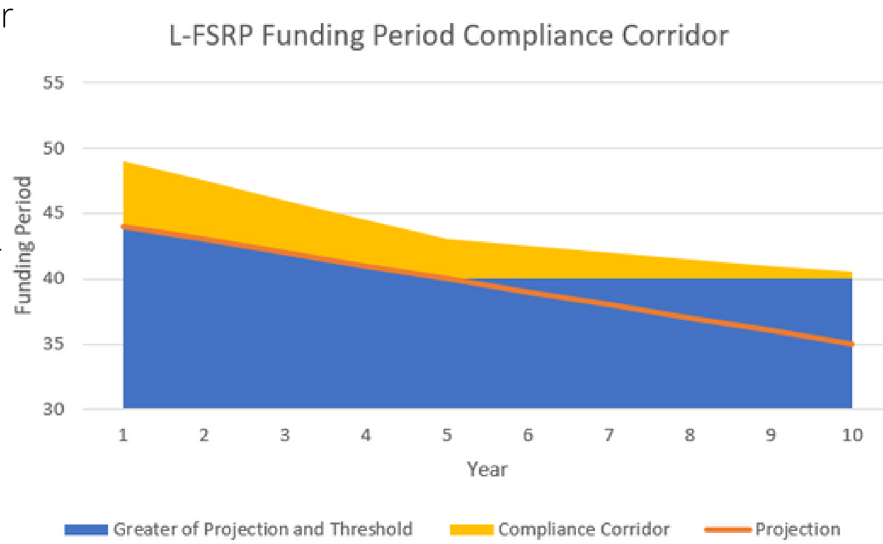
- Compliance corridors are the mechanism to demonstrate that a system with a new FSRP or V-FSRP is adherent **so they can qualify for the pre-Sept. 2025 branch of the revision exemption**.
  - Corridors would only apply for the 10 year period when a system could potentially trigger an R-FSRP.
- Compliance corridors have a baseline and a corridor of variation from that baseline that narrows towards the end of the exemption period. As long as a system remains within the corridor, it would still be considered adherent to the FSRP for the purposes of the exemption.
- There are two types of compliance corridors:
  - **Funding period corridors** have a baseline of 30 years.
  - A baseline for a **funded ratio corridor** is the asset-liability projection submitted as part of the actuarial valuation or other analysis submitted to complete the new FSRPs.

Compliance Corridors for L-FSRPs

- While compliance corridors were created for new FSRPs, a variation offers L-FSRP systems greater flexibility.
- L-FSRP systems have the option to submit their own asset-liability projection to use a funded ratio corridor and a custom funding period corridor.

If an L-FSRP system chooses not to submit a projection for a compliance corridor baseline, they would only have a funding period corridor, which would have a baseline of a 1-year-per-year reduction while the system's funding period is >40 years

- If a system's funding period is <40 years, then the baseline for the compliance corridor would remain at a 40-year minimum.



	Legacy FSRP (old law)	Voluntary FSRP	FSRP before 9-1-2025	FSRP after 9-1-2025	Revised FSRP
Target Funding Period	≤40 years	≤30 years			≤25 years
Latest Date to Formulate	8-31-2021	N/A	8-31-2025	N/A	N/A
Time allowed to reach target	10 years	Until adoption of V-FSRP	Until 9-1-2025 or 2 years	2 years	
Progress Updates	After adoption, every 2 years	N/A	within 1 year of triggering valuation and every 6 months until adoption		
Valuation that starts the clock	Determined under previous law	Selected by System/Sponsor	Triggering valuation		Triggering valuation within 10 years of previous FSRP
Must include auto-risk sharing	N/A				Yes
Effects of Compliance	Remains under previous law until L-FSRP target date or funding period is <30 years	Recognized for revision exemption if submitted by 8-31-2025; update funding policy		FSRP/R-FSRP process completed	
Compliance Corridor	Applies until L-FSRP complete; Funding period when >40 years; Funded ratio optional	Both funding period and funded ratio corridors apply if submitted by 8-31-2025 and funding period between 30 and 40 years; Applies for 10 years		N/A	

Appendix C – Funding Soundness Restoration Plan Compliance Policy

Texas Pension Review Board

Policy for Promoting Compliance with Funding Soundness Restoration Plan Requirements

(Adopted October 6, 2022)

1. Purpose. This policy communicates the Pension Review Board's (PRB) approach to promoting compliance with the requirements and standards in the Funding Soundness Restoration Plan (FSRP) statute and rules.[1] This policy describes how the PRB will assist systems in complying with the requirements and the tools PRB will use to ensure the systems, sponsors, the legislature, and the public are aware of instances of noncompliance with FSRP requirements.

2. Notifications. Most FSRP deadlines are outlined in statute. As a courtesy, the PRB will notify each system after becoming aware the system meets certain conditions, as follows:

a. Notification of at-risk status when a system has one or more actuarial valuations with a funding period above the maximum.

b. Notification of actuarial valuation triggering FSRP or revised FSRP (R-FSRP) when a system's most recent actuarial valuation has made them subject to the requirement.

c. Acknowledgement of receipt of FSRP materials from a retirement system when the PRB receives a system's FSRP materials.

d. Notice of inadequate materials when the PRB determines that a system's FSRP materials are missing or do not meet the standards necessary to be considered compliant with the requirements.

e. Notice when a progress update is due or late as outlined in §§802.2015(f) or 802.2016(f), Texas Government Code.

f. Notice when FSRP is due or late as outlined in §§802.2015(2) or 802.2016(2), Texas Government Code.

3. Regular reports. Staff will regularly report the FSRP status of systems subject to the FSRP requirements and systems at risk of becoming subject to the requirements based on a system's most recent actuarial valuation. Staff will provide these regular reports to the Actuarial Committee, the board, and as part of the agency's Biennial Report to the Legislature.

4. Late notification. If a system does not submit materials within 15 days after the deadline, the PRB will notify the system of its noncompliant status and will request submission of the required materials.

5. Staff action. If the PRB does not receive the requested materials within 30 days after the notification, staff will contact the system and attempt to resolve the compliance matter.

[1] Sections 802.2015 and 802.2016, Texas Government Code and Title 40 Chapter 610, Texas Administrative Code

6. Executive director action. If the plan is still noncompliant 60 days after the deadline and staff has been unable to reach a resolution with the system, the names of the system and sponsor will be included on the list of noncompliant public retirement systems posted on the PRB website. The executive director will contact the system and sponsor to notify them of the noncompliant status and that the issue may be addressed at an upcoming board meeting.

7. Role of the board. At each board meeting, staff may provide a list of noncompliant systems to the board. The list will indicate the severity of noncompliance for each plan, including the amount of time that each plan has been noncompliant, and efforts by staff to bring the plan into compliance. The board will determine whether to place the noncompliant system(s) on the agenda for the next board meeting. If the board so determines, the PRB staff will notify the system, advising them that they will be placed on the agenda for formal discussion as a noncompliant plan at the next board meeting. The board will designate a specific time frame that the plan must submit their materials. If the system does not submit the required materials timely, representatives of the system and sponsor will be requested to appear at a board meeting to formally address the noncompliant status.

8. Notifications to legislative and governor's offices. In addition to the PRB's regular reports to the legislature and governor's office, if a retirement system is noncompliant and has not responded to the board's efforts to resolve the issue, the PRB may notify the senator and house member representing the districts where the retirement system is located, the presiding officer of the committees responsible for retirement legislation, and any other offices if necessary.

9. Further action. To address the noncompliance of a plan, the board may conduct inspections, issue subpoenas, and seek other legal action, as set forth in §§801.204, 802.205, and 802.003(d) of the Texas Government Code.

Appendix D – Investment Practices and Performance Evaluation Guidance Update

TEXAS PENSION REVIEW BOARD

Guidance for Investment Practices and Performance Evaluations
(§802.109, Texas Government Code)

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

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

A thorough evaluation would include the following elements:

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

Applicability

Systems with assets of **at least $100 million** must complete an evaluation **once every 3 years**.[i] Systems with assets of **at least $30 million but less than $100 million** must complete an evaluation **once every 6 years**. Systems with assets **less than $30 million** are **not required**, but are encouraged, to conduct an evaluation. Systems that have not voluntarily completed an evaluation and have assets less than $30 million will be required to complete an evaluation if, as of the last day of their preceding fiscal year, their assets exceed $30 million. Systems completing their first evaluations must conduct a comprehensive review of all invested asset classes while systems conducting subsequent evaluations may select specific asset classes to focus on.

Deadlines

Systems that have not completed an evaluation

A report of the first evaluation must be filed with the governing body of the system not later than May 1 the following year in which the system is either required to be or voluntarily evaluated.

Example timeline and deadlines for a system with assets that first exceed $30 million in 2022 or a system that decides to voluntarily complete an evaluation in 2023.

Fiscal Year Assets Exceed $30 Million	Preparation Recommended Start Date	Evaluation Process Completion Year	Submission to Governing Body and Request Review-and-Comment Target Date	Governing Body Response to Review-and-Comment Due	Final Report to a System's Governing Body Due	Report Due to the PRB
2022	February 2023	2023	March 2, 2024	April 1, 2024	May 1, 2024	June 1, 2024

Systems that completed an evaluation

Reports of subsequent evaluations must be filed with the governing body of the system not later than May 1 the following year in which the system is evaluated.

Example timeline and deadlines for subsequent evaluations after an evaluation was first completed in 2020

Applicable Systems	Preparation Recommended Start Date	Evaluation Process Completion Year	Submission to Governing Body and Request Review-and-Comment Target Date	Governing Body Response to Review-and-Comment Due	Final Report to a System's Governing Body Due	Report Due to the PRB
At Least $100 Million	October 2022 October 2025	2023 2026	March 2, 2024 March 2, 2027	April 1, 2024 April 1, 2027	May 1, 2024 May 1, 2027	June 1, 2024 June 1, 2027
At Least $30 Million but less than $100 Million	October 2025	2026	March 2, 2027	April 1, 2027	May 1, 2027	June 1, 2027

Deadline for submission before June 1, 2024

If a substantially completed report is submitted to a retirement system's governing body in accordance with the formal review-and-comment process before March 2, 2024, a final report is **due to the PRB not later than 91 days after the governing body first receives the substantially completed report**.[1]

[1] §802.109 (e-1), Texas Government Code

Formal review-and-comment process

Trigger of review-and-comment

- The evaluating firm has completed its evaluation and the evaluation report is **substantially completed**.
- The evaluating firm submits a substantially completed report to the retirement system's board.
- The firm requests the system to review and respond on the report within 30 days.

30 days for governing body to respond

- Within 30 days the system's board will review the report and create a written response to the firm's request.
- A response could include a description of actions the system will take or comments regarding any recommendations or findings in the report.

30 days for firm to finalize report with response

- Within 30 days from receipt of the system's response, the evaluating firm will provide to the system a final report.
- A final report by the evaluating firm is the firms completed report including the system's response.

31 days for system to provide final report to the PRB

- The system must provide the final report to the PRB not later than 31 days from receiving the final report from the firm.

Independent firm

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

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

> *(1) subject to Subdivision (2), is authorized to select a firm regardless of whether the firm has an existing relationship with the retirement system; and*
>
> *(2) is* ***prohibited*** *from selecting a firm that* ***directly or indirectly manages investments*** *of the retirement system.*

Directly or Indirectly Managing Investments

A firm is considered to be directly or indirectly managing investments if the firm, a subsidiary, or its parent company, has assets of the system under management, or is solely responsible for selecting or terminating investment managers.

Restriction on Performing the Evaluation

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

Required Disclosure by Independent Firm

The evaluation must include the following disclosures by the independent firm:

1) a summary outlining the qualifications of the firm in evaluating institutional investment practices and performance;
2) a statement that the firm meets the experience requirements;
3) a statement indicating the nature of any existing relationship between the firm and the system being evaluated;
4) a statement acknowledging that the firm, or its related entities, is not involved in directly or indirectly managing investments of the system;
5) a statement identifying any potential conflict of interest or any appearance of a conflict of interest that could impact the analysis between the independent firm and the system or any current/former member of the system's governing body;
6) a list of the types of remuneration received by the firm from sources other than the retirement system for services provided to the system; and
7) an explanation of the firm's determination regarding whether to include a recommendation for each of the evaluated matters in the report or a lack thereof.

Governmental Entity's Ability to Cover Evaluation Costs

A public retirement system's associated governmental entity may pay for all of part of the costs resulting from the evaluation. Any remaining cost not covered by the governmental entity shall be paid by the system.

Components of Evaluation

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

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

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

Resources

PRB - Developing an Investment Policy

GFOA - A Guide for Establishing A Pension Investment Policy

CFA - A Primer for Investment Trustees

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

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

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

- What are the strategic and tactical allocations?
- What is the expected risk and expected rate of return of each asset class?
- How is this risk measured and how are the expected rates of return determined? What is the time horizon?
- What mix of assets is necessary to achieve the plan's investment return and risk objectives?
- What consideration is given to active vs. passive management?
- Is the approach used by the system to formulate asset allocation strategies sound, consistent with best practices, and does it result in a well-diversified portfolio?
- How often are the strategic and tactical allocations reviewed?

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

- How are alternative and illiquid assets selected, measured and evaluated?

- Are the system's alternative investments appropriate given its size and level of investment expertise? Does the IPS outline the specific types of alternative and illiquid investments allowed, as well as the maximum allocation allowable?
- What valuation methodologies are used to measure alternative and illiquid assets? What alternative valuation methodologies exist and what makes the chosen method most appropriate?

(D) future cash flow and liquidity needs;

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

Resources

GFOA – Asset Allocation for Defined Benefit Plans

CFA – A Primer for Investment Trustees

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

- Do the system's policies describe the management and monitoring of direct and indirect compensation paid to investment managers and other service providers? What direct and indirect investment fees and commissions are paid by the system?
- Who is responsible for monitoring and reporting fees to the board? Is this responsibility clearly defined in the system's investment policies?
- Are all forms of manager compensation included in reported fees?
- How do these fees compare to peer group and industry averages for similar services? How are the fee benchmarks determined?
- Does the system have appropriate policies and procedures in place to account for and control investment expenses and other asset management fees?
- What other fees are incurred by the system that are not directly related to the management of the portfolio?
- How often are the fees reviewed for reasonableness?
- Is an attorney reviewing any investment fee arrangements for alternative investments?

Resources

GFOA - Investment Fee Guidelines for External Management of Defined Benefit Plans

CFA - A Primer for Investment Trustees

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

Transparency

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

Investment Knowledge/Expertise

- What are the backgrounds of the board members? Are there any investment-related educational requirements for board members?
- What training is provided and/or required of new board members? How frequently are board members provided investment-related education?
- What are the minimum ethics, governance, and investment education requirements? Have all board members satisfied these minimum requirements?
- Does the system apply adequate policies and/or procedures to help ensure that all board members understand their fiduciary responsibilities?
- What is the investment management model (i.e. internal vs. external investment managers)?
- Does the board receive impartial investment advice and guidance?
- How frequently is an RFP issued for investment consultant services?

Accountability

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

Resources

NASRA - Public Pension Governance

PEW - Making State Pension Investments More Transparent

CFA - Investment Governance for Fiduciaries

CFA - A Primer for Investment Trustees

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

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

Resources

GFOA - Investment Fee Guidelines for External Management of Defined Benefit Plans

GFOA - Selecting Third-Party Investment Professionals for Pension Fund Assets

CFA - A Primer for Investment Trustees

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

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

Appendix E – Actuarial Valuation Report and Funding Soundness Restoration Plan Report

Item 7a: AV Report
and
Item 7b: FSRP Report

David Fee

Pension Review Board

Summary

- AV report
  - Changes since July board meeting
    - System news
    - Major assumption changes
  - System overview
  - Summary analysis
    - Discount rate
    - Amortization period
    - Funded ratio
    - Fund exhaustion
    - Contributions
- FSRP Report
  - FSRP status changes since July board meeting
  - FSRP status by category

Actuarial Valuation Report

Texas Public Pension System News

- Atlanta Fire
  - Increased city contributions 2% each year in 2022, 2023, 2024
  - From 13% to 19% over the period
- Beaumont Fire
  - Increased city/member contributions from 16.5%/17.25% to 20.0%/18.0% by 2023
  - New tier for employees hired after January 1, 2022
- Denton Fire
  - Provided ad hoc COLA July 1, 2022, while maintaining amortization period below 10 years
  - Allocated 75% to equities/alternatives with a 6.75% expected return on assets
- Irving Fire
  - $80M pension obligation bonds sold, graduated from Legacy FSRP
  - Members will contribute up to 13% of pay toward ADC, with city paying remainder
  - Increases to ADC due to benefit enhancements will be paid by the members
- Lower Neches Valley
  - Changed “actuarial equivalence” definition to provide larger lump sums
  - Updated mortality from 1983 GAM to table for lump sums updated annually by IRS
  - Lowered interest rate to equal valuation expected return on assets
- Paris Fire
  - All future accruals in TMRS beginning October 1, 2022
  - Will issue $12M pension obligation bond to pay off UAAL

Three systems became fully funded: Plano Retirement Security Plan, Irving Supplemental Benefit Plan, Guadalupe Regional Medical Center

Significant Economic Assumption Changes

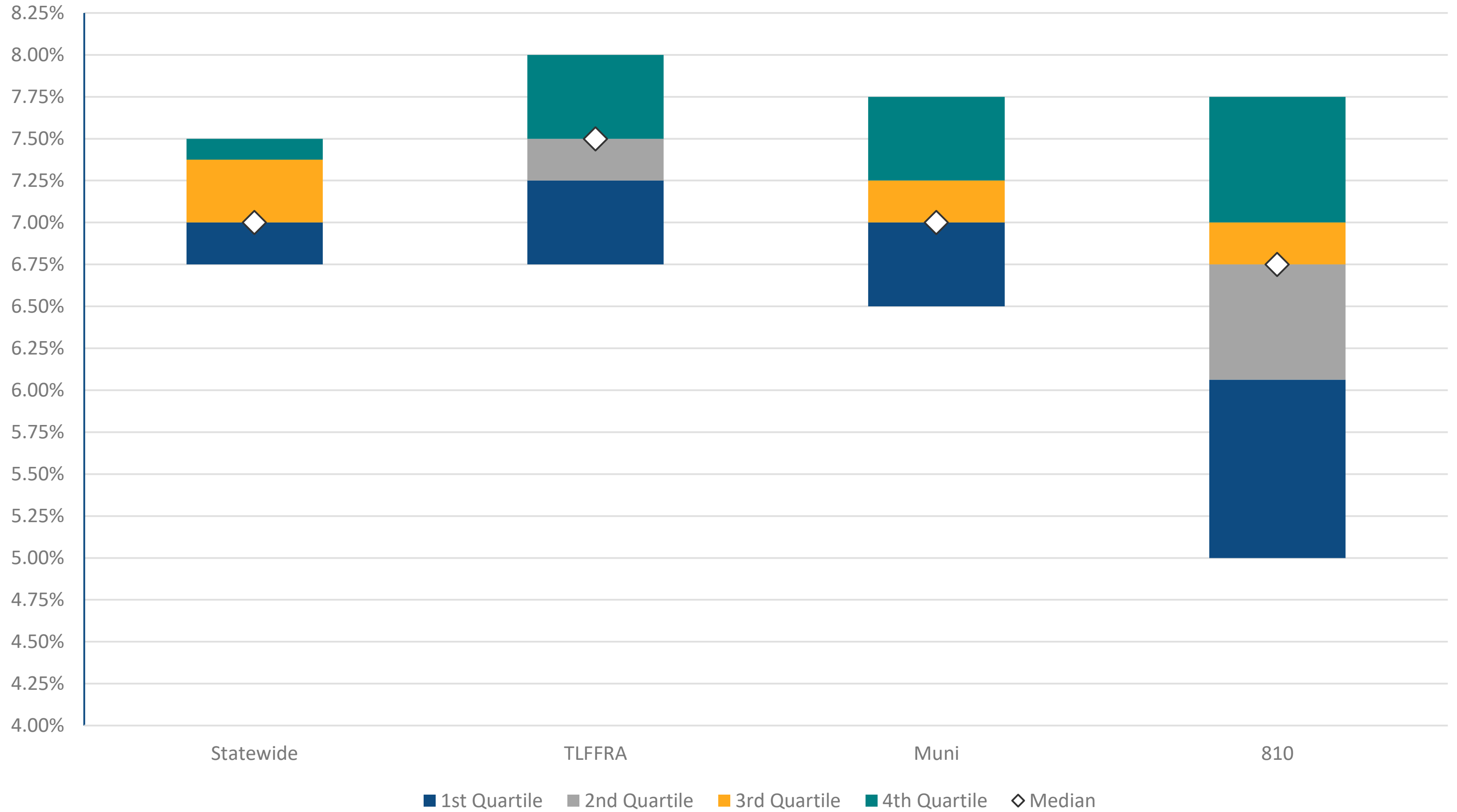
	Decreased Discount Rate 7/14/22 → 10/6/22		Decreased Payroll Growth Rate 7/14/22 → 10/6/22	
System	Current Rate	Prior Rate	Current Rate	Prior Rate
Amarillo Fire			2.50%	2.75%
Dallas Ft. Worth Airport Board	7.00%	7.25%		
Dallas Ft. Worth Airport DPS	7.00%	7.25%	3.50%	3.75%
El Paso Fire			2.75%	3.00%
El Paso Police			2.75%	3.00%
El Paso Staff			2.75%	3.00%
Harris County Hospital District	5.75%	6.25%		
Texarkana Fire	7.50%	7.60%	2.90%	3.00%

System Overview By Type

System Type	System Count	Median Expected Return	Median Amortization Period	Median Funded Ratio
Statewide	7	7.00%	23	83%
TLFFRA	42	7.50%	31	62%
Muni	17	7.00%	27	76%
810	34	6.75%	11	86%
Total	**100**	**7.00%**	**23**	**73%**

Numbers in **teal** denote improvements from the previous report

Expected Return on Assets (Discount Rate)

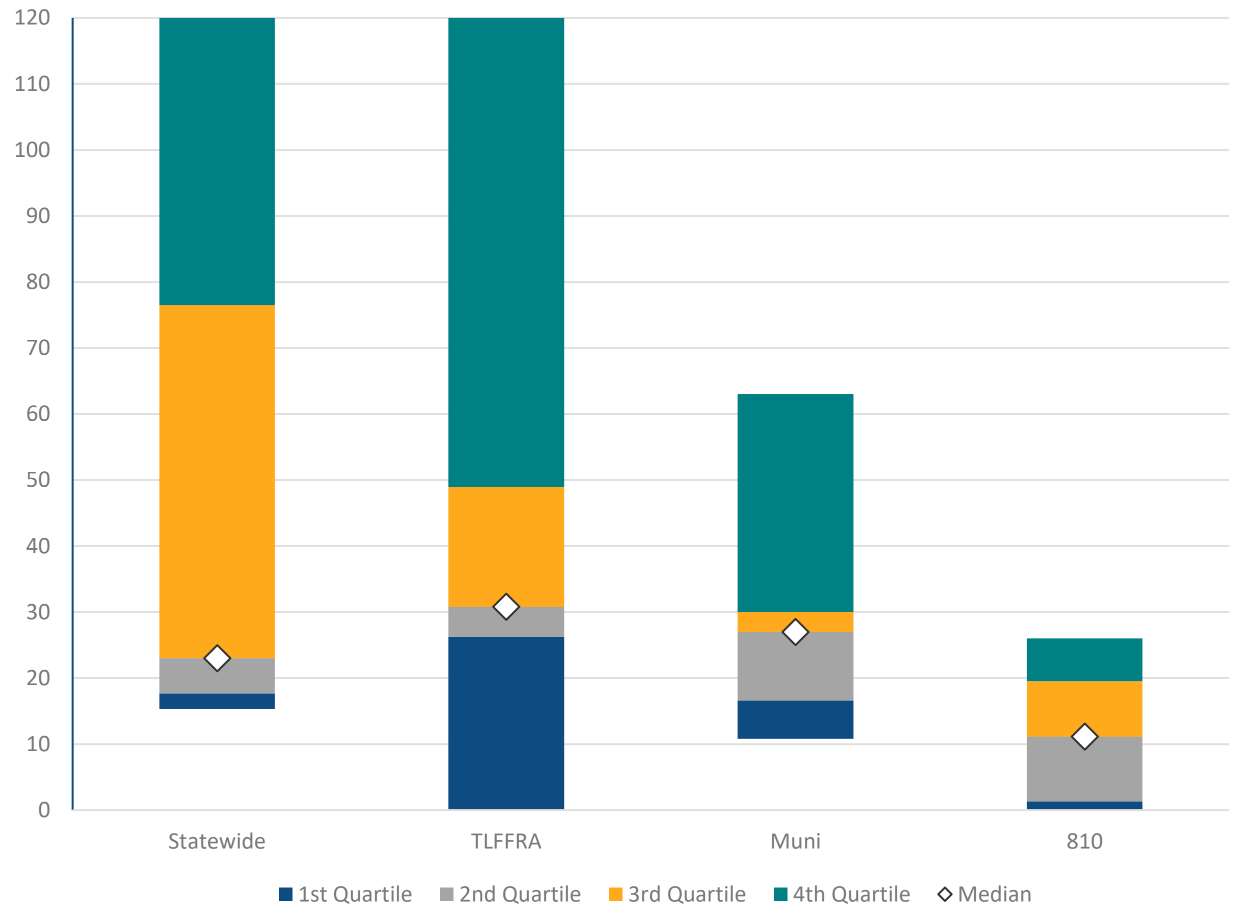


Systems with Discount Rate Above 7.50%

System Name	Discount Rate	System Type
Sweetwater Firemen's Relief & Retirement Fund	8.00%	TLFFRA
San Angelo Firemen's Relief & Retirement Fund	7.80%	TLFFRA
Big Spring Firemen's Relief & Retirement Fund	7.75%	TLFFRA
El Paso Firemen & Policemen's Pension Staff Plan	7.75%	810
El Paso Firemen's Pension Fund	7.75%	Muni
El Paso Police Pension Fund	7.75%	Muni
Harlingen Firemen's Relief & Retirement Fund	7.75%	TLFFRA
Orange Firemen's Relief & Retirement Fund	7.75%	TLFFRA
Temple Firemen's Relief & Retirement Fund	7.75%	TLFFRA
Wichita Falls Firemen's Relief & Retirement Fund	7.75%	TLFFRA

Texarkana Fire was removed from the list since the previous report. No systems were added to the list.

Amortization Period



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Systems With Funding Periods > 50 Years

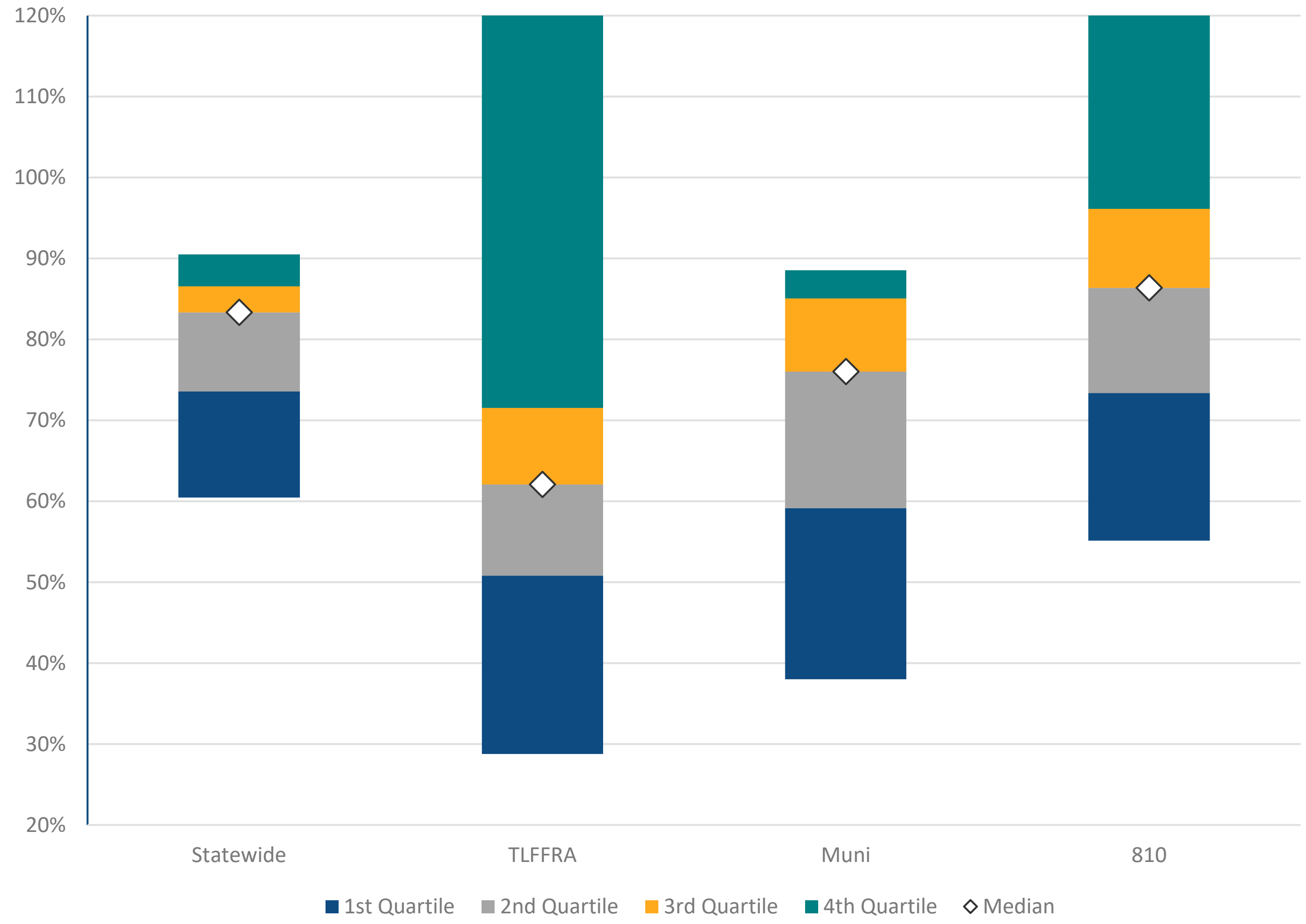
System Name	Funding Period	System Type	Notes
Law Enforcement & Custodial Off Sup. Ret. Fund	**Infinite**	Statewide	
Judicial Retirement System of Texas Plan Two	**Infinite**	Statewide	
Beaumont Firemen's Relief & Retirement Fund	**Infinite**	TLFFRA	New Tier. Contributions ⬆
Midland Firemen's Relief & Retirement Fund	**Infinite**	TLFFRA	
Longview Firemen's Relief & Retirement Fund	**Infinite**	TLFFRA	$46M POB sold
Conroe Fire Fighters' Retirement Fund	**Infinite**	TLFFRA	
Atlanta Firemen's Relief & Retirement Fund	**Infinite**	TLFFRA	40 after city contributions ⬆
Brownwood Firemen's Relief & Retirement Fund	94.7	TLFFRA	
Plainview Firemen's Relief & Retirement Fund	79.7	TLFFRA	35 under legacy FSRP
Sweetwater Firemen's Relief & Retirement Fund	68.9	TLFFRA	
Dallas Police & Fire Pension System-Combined Plan	63.0	Muni	
Laredo Firefighters Retirement System	56.8	TLFFRA	
Corsicana Firemen's Relief & Retirement Fund	52.2	TLFFRA	
Galveston Firefighter's Relief & Retirement Fund	51.6	TLFFRA	Upcoming FSRP submission

Texarkana Fire and Dallas Employees were removed from the list since the previous report. No systems were added to the list.

Pension Review Board

All other amortization periods greater than 40 have legacy FSRPs

Funded Ratio



Systems with Funded Ratios < 50%

System Name	Total Funded Ratio	Retiree Funded Ratio	System Type
Paris Firefighters' Relief & Retirement Fund*	28.8	43.0	TLFFRA
Plainview Firemen's Relief & Retirement Fund	34.0	58.4	TLFFRA
Odessa Firemen's Relief & Retirement Fund*	36.5	49.1	TLFFRA
Galveston Employees' Retirement Plan for Police*	38.0	61.3	Muni
Longview Firemen's Relief & Retirement Fund	40.0	72.3	TLFFRA
Marshall Firemen's Relief & Retirement Fund	40.2	67.1	TLFFRA
Dallas Police & Fire Pension System-Combined Plan	41.6	61.0	Muni
University Park Firemen's Relief & Retirement Fund*	42.3	67.0	TLFFRA
Greenville Firemen's Relief & Retirement Fund*	42.6	72.2	TLFFRA
Brownwood Firemen's Relief & Retirement Fund	42.8	86.6	TLFFRA
Dallas Police & Fire Pension System-Supplemental*	43.7	49.9	Muni
Texas City Firemen's Relief & Retirement Fund*	45.4	67.8	TLFFRA
Abilene Firemen's Relief & Retirement Fund*	49.4	75.7	TLFFRA

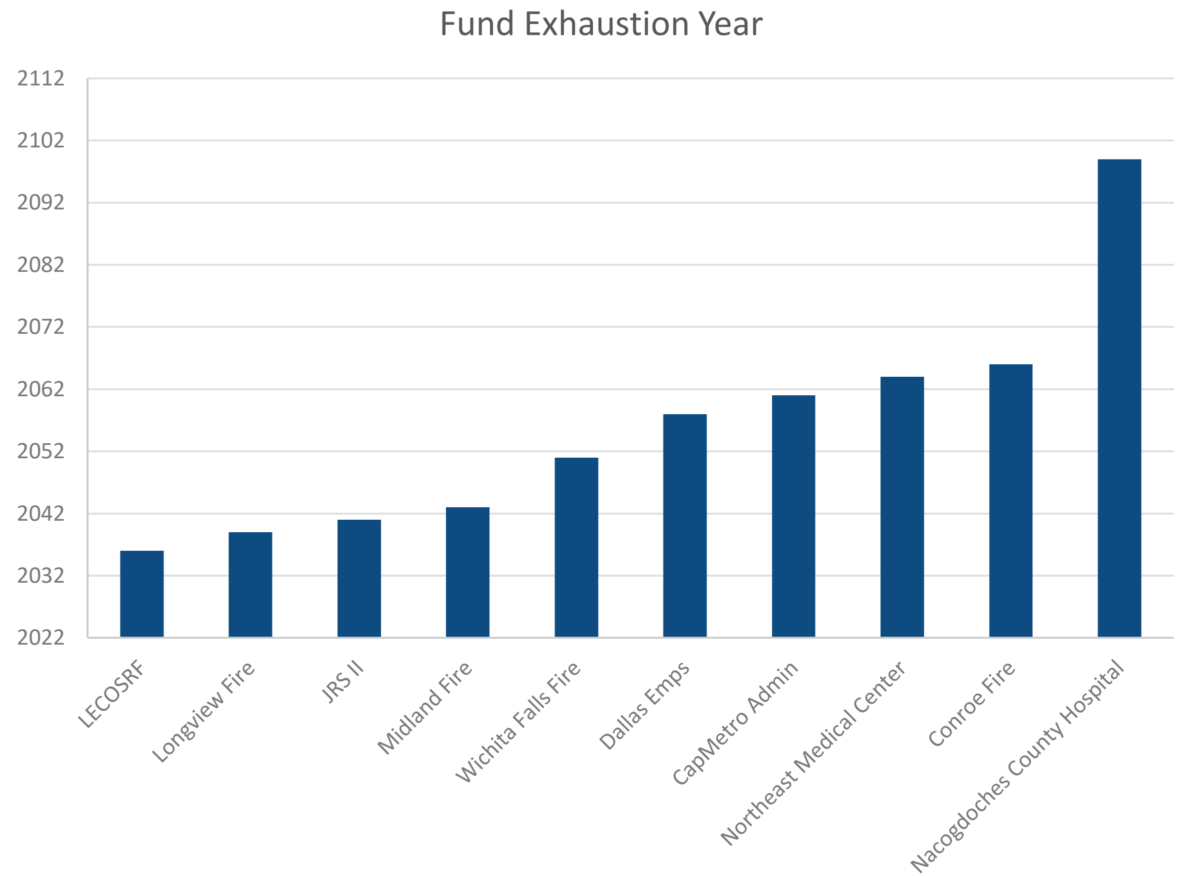
List is unchanged since the previous report.

*Amortization period is under 40

Additional Systems with Retiree Funded Ratios < 100%

System Name	Total Funded Ratio	Retiree Funded Ratio	System Type
Capital MTA Bargaining	55.2	72.8	810
Beaumont Firemen's Relief & Retirement Fund	55.4	84.8	TLFFRA
Orange Firemen's Relief & Retirement Fund	56.6	89.3	TLFFRA
Corsicana Firemen's Relief & Retirement Fund	54.7	91.3	TLFFRA
Fort Worth Employees’ Retirement Fund	53.2	92.4	TLFFRA
Midland Firemen's Relief & Retirement Fund	51.1	99.0	TLFFRA
Cleburne Firemen's Relief & Retirement Fund	59.6	99.4	TLFFRA

Systems with Fund Exhaustion Year



Atlanta Fire and Beaumont Fire were removed from the list since the previous report. The exhaustion years for CapMetro Admin and Northeast Medical Center were extended into the future. No systems were added to the list.

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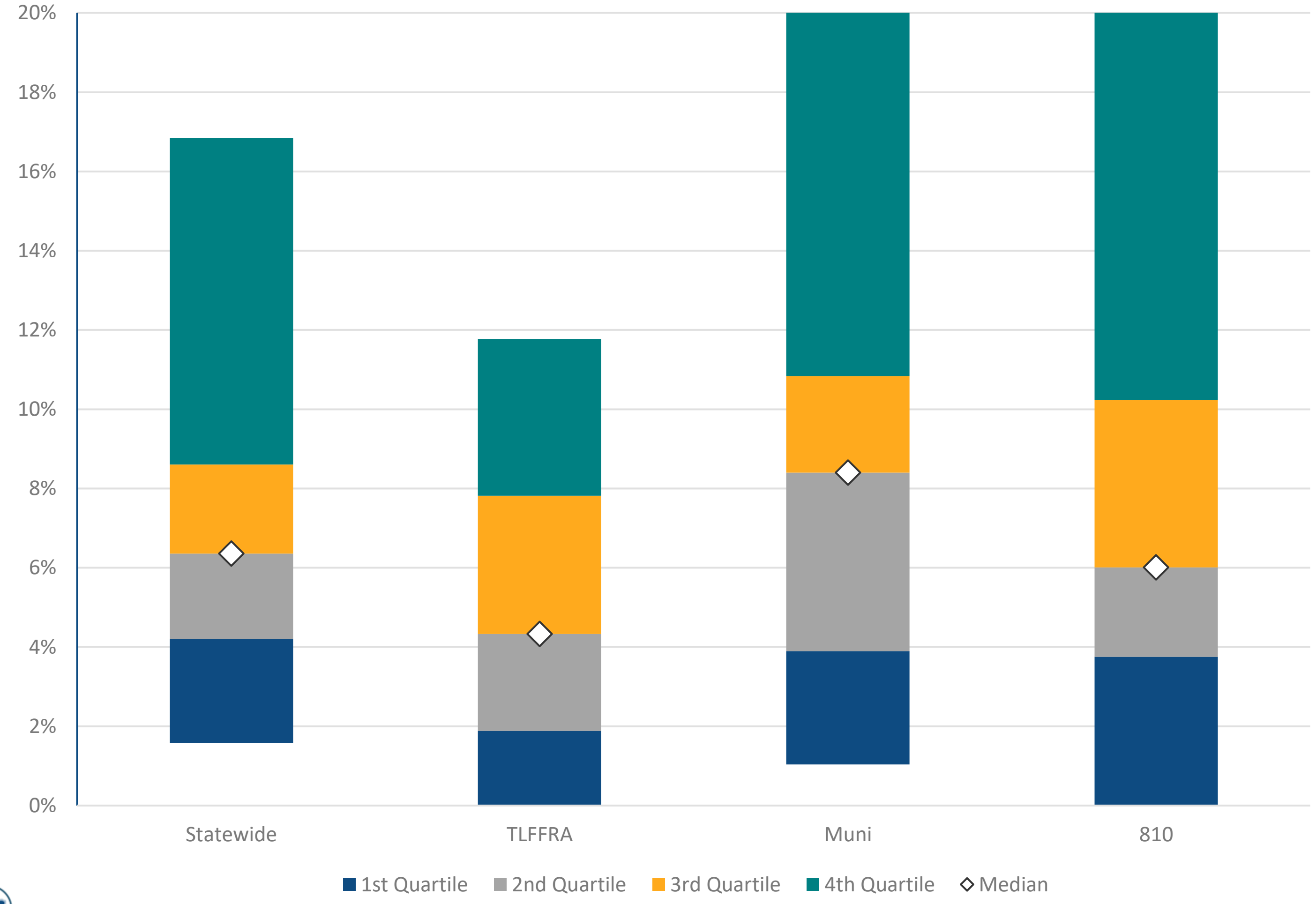
Nacogdoches value of 2099 is a placeholder

Employer Normal Cost



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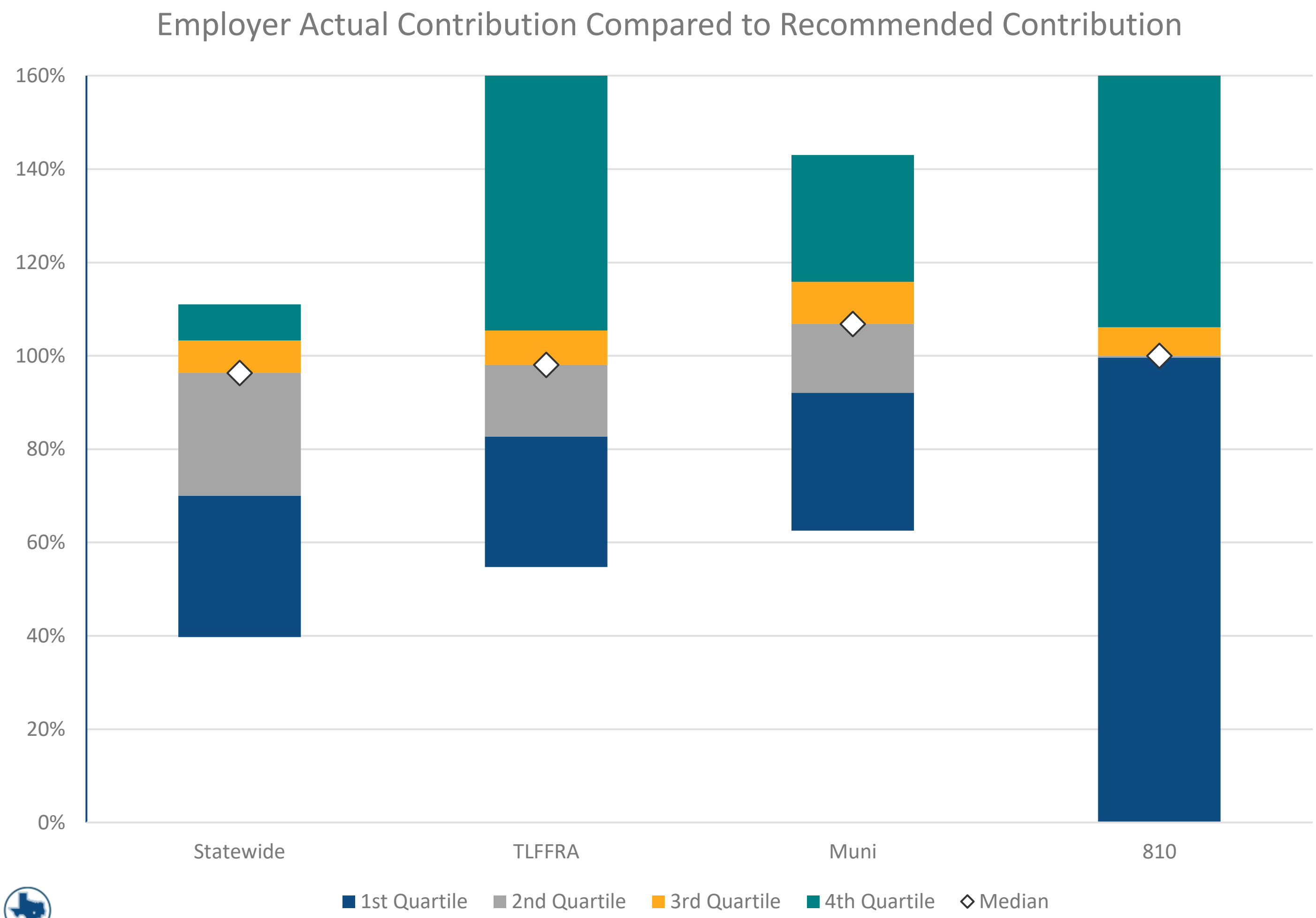
Systems Whose Members Pay > 90% of Normal Cost

System Name	Member Portion	System Type
Paris Firefighters' Relief & Retirement Fund	**166%**	TLFFRA
Texas City Firemen's Relief & Retirement Fund	**113%**	TLFFRA
Odessa Firemen's Relief & Retirement Fund	**105%**	TLFFRA
Denison Firemen's Relief & Retirement Fund	**103%**	TLFFRA
Orange Firemen's Relief & Retirement Fund	**102%**	TLFFRA
Plainview Firemen's Relief & Retirement Fund	**100%**	TLFFRA
Longview Firemen's Relief & Retirement Fund	97%	TLFFRA
Wichita Falls Firemen's Relief & Retirement Fund	97%	TLFFRA
El Paso Police Pension Fund	95%	Muni
Corsicana Firemen's Relief & Retirement Fund	94%	TLFFRA
El Paso Firemen's Pension Fund	94%	Muni
San Benito Firemen Relief & Retirement Fund	91%	TLFFRA

List is unchanged since the previous report.

Employer Percent of Recommended Contribution



Pension Review Board

Employers Contributing < 80% of Recommended Contribution

System Name	Employer Portion	System Type
Law Enforcement & Custodial Off Sup. Ret. Fund	40%	Statewide
Beaumont Firemen's Relief & Retirement Fund	55%	TLFFRA
Austin Police Retirement System	63%	Muni
Dallas Employees' Retirement Fund	64%	Muni
Longview Firemen's Relief & Retirement Fund	65%	TLFFRA
Judicial Retirement System of Texas Plan Two	66%	Statewide
University Park Firemen's Relief & Retirement Fund	70%	TLFFRA
Employees Retirement System of Texas	74%	Statewide
Irving Firemen's Relief & Retirement Fund	74%	TLFFRA
Wichita Falls Firemen's Relief & Retirement Fund	76%	TLFFRA
Orange Firemen's Relief & Retirement Fund	77%	TLFFRA
Sweetwater Firemen's Relief & Retirement Fund	77%	TLFFRA
Colorado River Municipal Water District	78%	810
Galveston Firefighter's Relief & Retirement Fund	79%	TLFFRA
Atlanta Firemen's Relief & Retirement Fund	79%	TLFFRA
Marshall Firemen's Relief & Retirement Fund	79%	TLFFRA

Colorado River MWD was added to the report. No systems were removed.

FSRP Updates

FSRP Status Changes

- Removed from Systems at Risk
  - Texarkana Fire
    - 27.5 amortization period in 12/31/2021 valuation
- Removed from Systems with Amortization Periods between 30-40 Years (not yet at risk)
  - Amarillo Fire
    - 6.0 amortization period in 12/31/2021 valuation
  - San Angelo Fire
    - 29.7 amortization period in 12/31/2021 valuation
- Removed from Legacy FSRPs
  - Irving Fire
    - 27.3 amortization period in 12/31/2021 valuation using MVA

Systems Immediately Subject to 30-Year FSRP Formulation Requirement

These plans had amortization periods over 40 years for three consecutive annual actuarial valuations, or two consecutive actuarial valuations if the systems conduct the valuations every two or three years. This was the triggering mechanism prior to Sept. 1, 2021. However, the FSRPs were not submitted before Sept. 1, 2021, so the FSRP must now be developed under the new law, **targeting 30 years by Sept. 1, 2025**.

Systems Immediately Subject to an FSRP Formulation Requirement

Retirement System	Am Period	Date of AV	Am Period	Date of AV	Am Period	Date of most recent AV	FSRP Due Date
Midland Firemen's Relief & Retirement Fund[1]	44.7	12/31/2015	**Infinite**	**12/31/2017**	Infinite	12/31/2019	9/1/2025
Longview Firemen's Relief & Retirement Fund[2]	**Infinite**	**12/31/2018**	Infinite	12/31/2019	Infinite	12/31/2020	9/1/2025
Beaumont Firemen's Relief & Retirement Fund[1]	104.0	12/31/2016	**Infinite**	**12/31/2018**	Infinite	12/31/2020	9/1/2025
Dallas Employees' Retirement Fund[1]	**65**	**12/31/2019**	51	12/31/2020	50	12/31/2021	9/1/2025
Laredo Firefighters Retirement System	28.0	9/30/2016	43.0	9/30/2018	**56.8**	**9/30/2020**	9/1/2025
Sweetwater Firemen's Relief & Retirement Fund[3]	27.5	12/31/2016	63.3	12/31/2018	**68.9**	**12/31/2020**	9/1/2025
Atlanta Firemen's Relief & Retirement Fund	28.4	12/31/2016	Infinite	12/31/2018	**Infinite**	**12/31/2020**	9/1/2025
Galveston Firefighter's Relief & Retirement Fund[1]	26.8	12/31/2017	57.6	12/31/2019	**51.6**	**12/31/2021**	9/1/2025

[1] Plan previously submitted an FSRP or Revised FSRP under previous law.

[2] $46 million pension obligation bond has been passed but not yet sold.

[3] Plan previously completed an FSRP or Revised FSRP under previous law.

Orange font indicates the triggering valuation.

Pension Review Board

Systems at Risk of 30-Year FSRP Formulation Requirement

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

Systems at Risk of an FSRP - Not Yet Subject to FSRP Requirement

Retirement System	Am Period	Date of AV	Am Period	Date of AV	Am Period	Date of AV	Funded Ratio
Austin Employees Retirement System	40	12/31/2019	32	12/31/2020	**33**	**12/31/2021**	66.0%
Brownwood Firemen's Relief & Retirement Fund	36.1	12/31/2015	38.6	12/31/2017	**94.7**	**12/31/2019**	**42.8%**
Corsicana Firemen's Relief & Retirement Fund	28.9	12/31/2016	28.9	12/31/2018	**52.2**	**12/31/2020**	**54.7%**
Conroe Fire Fighter's Retirement Fund	39.0	12/31/2017	**Infinite**	**12/31/2018**	**Infinite**	**12/31/2019**	**58.4%**
Dallas Police & Fire Pension System (Combined Plan)	38.0	1/1/2019	**55.0**	**1/1/2020**	**63.0**	**1/1/2021**	**41.6%**
Odessa Firemen's Relief & Retirement Fund[1]	37.5	1/1/2020	27.7	1/1/2021	**34.3**	**1/1/2022**	**36.5%**

[1] Plan previously completed an FSRP or Revised FSRP under previous law.

Orange font indicates the amortization period above the applicable threshold.
Teal font indicates funded ratio less than 65%

Systems with Amortization Periods between 30-40 Years (not yet at risk)

These systems have not yet triggered the requirement to notify their sponsors that the plan's amortization period is above the FSRP threshold of 30 years. This list is intended to keep the committee apprised of plans that may receive a subsequent AV showing an amortization period above 30 years, thus becoming at-risk of triggering the FSRP requirement.

Systems not yet at Risk of an FSRP - Not Subject to FSRP Requirement

Retirement System	Am Period	Date of AV	Am Period	Date of AV	Am Period	Date of AV	Funded Ratio
Big Spring Firemen's Relief & Retirement Fund	36.2	12/31/2017	38.3	1/1/2019	33.7	1/1/2021	**54.7%**
Cleburne Firemen's Relief & Retirement Fund	28.8	12/31/2016	48.6	12/31/2018	37.3	12/31/2020	**59.6%**
Greenville Firemen's Relief & Retirement Fund[1]	55.0	12/31/2016	40.7	12/31/2018	36.6	12/31/2020	**42.6%**
Lubbock Fire Pension Fund	33.5	12/31/2016	52.9	12/31/2018	33.7	12/31/2020	69.5%
Lufkin Firemen's Relief & Retirement Fund[1]	33.1	12/31/2016	30.7	12/31/2018	31.9	12/31/2020	**50.7%**
Paris Firefighters' Relief & Retirement Fund	41.9	12/31/2016	32.1	12/31/2018	33.6	12/31/2020	**28.8%**

[1] Previously completed an FSRP or Revised FSRP under previous law. These plans would not be considered grandfathered with L-FSRPs.

Teal font indicates funded ratio less than 65%

Progress Report on Previously Submitted FSRPs – Legacy FSRPs

The following systems formulated and submitted an FSRP before Sept. 1, 2021. The table below outlines their progress towards the FSRP requirement.

Systems Still Working Towards Meeting the Target Amortization Period Requirement						
	FSRP Trigger		Current Progress[1]			
Retirement System	Am Period	Date	Am Period	Date	Target Date[2]	Next AV Expected
Plainview Firemen's Relief & Retirement Fund	79.7	12/31/2019	35.0[3]	12/31/2019	2031	2022
Fort Worth Employees' Retirement Fund	72.5	12/31/2015	42.0	12/31/2020	2029	2022
Wichita Falls Firemen's Relief & Retirement Fund – Revised FSRP	Infinite	1/1/2015	32.1	1/1/2022	2026	2024
Marshall Firemen's Relief & Retirement Fund – Revised FSRP	59.0	12/31/2018	41.0	12/31/2020	2028	2023

[1] Based on the most recent actuarial valuation or FSRP.

[2] The year in which a system must reach an amortization period target.

[3] FSRP submitted in Feb. 2021 shows additional city contributions through 2023, lowering the amortization period to 35 years.

Systems That Previously Completed FSRP Requirement

The following systems have submitted an FSRP or subsequent actuarial valuation that has lowered their amortization period below 30 years.

Systems that Have Submitted Post-FSRP Actuarial Valuations Showing Amortization Period at or Below 30 Years

Retirement System	FSRP Trigger		Completed Progress[1]		Target Date[2]
	Am Period	Date	Am Period	Date	
Galveston Employees' Retirement Plan for Police	55.1	1/1/2014	30	1/1/2019	2026
Irving Firemen's Relief & Retirement Fund - Revised FSRP	63.4	1/1/2014	27.3[3]	12/31/2021	2026
Orange Firemen’s Relief & Retirement Fund – Second Revised FSRP	Infinite	1/1/2019	20.7	1/1/2021	2026
University Park Firemen’s Relief & Retirement Fund – Revised FSRP	81.3	12/31/2012	28.8	12/31/2018	2026

[1] Based on the valuation in which the system completed its FSRP requirement.

[2] The year in which a system was originally expected to reach an amortization period of 40 years or less.

[3] Based on the market value of assets

Appendix F – Midland Firemen's Relief and Retirement Fund Intensive Review

Intensive Actuarial Review:

Midland Firemen's Relief and Retirement Fund

November 2021

Texas Pension Review Board

Table of Contents

Executive Summary

Introduction

This intensive actuarial review of Midland Firefighters' Relief and Retirement Fund ("Midland Fire") is intended to assist Midland Fire's board of trustees and the City of Midland with assessing the fund's ability to meet its long-term pension obligations.

The Pension Review Board (PRB) encourages the fund and city to review the findings and conclusions of this report and jointly adopt a forward-looking plan to address these issues. The PRB can provide technical assistance in formulating the plan.

Overview

Midland Fire is currently projected to run out of assets in 22 years. Between 2000 and 2019, the fund went from a stable funded ratio of 93.7 percent to 51.1 percent. Investment underperformance was the primary contributor to an increase in unfunded actuarially accrued liability (UAAL) since investments have underperformed their assumed rate of return of 7.5 percent by more than 2 percent, only achieving a 10-year compounded return of 5.1 percent over the last decade, despite a strong bull market during that same period. Inadequate contributions and assumption changes also exacerbated the UAAL increase since the reliance on investment returns to pay benefits increases as the funded ratio declines, which compounds the negative effects of underperforming assets.

Additionally, several aspects of Midland Fire's investment program and monitoring practices are concerning. The fund's board does not monitor the composite portfolio or have a formal policy to evaluate the program's performance and expenses, raising transparency and accountability concerns. The roles and responsibilities governing Midland Fire's investment program are vaguely defined. The fund has been knowingly submitting incomplete and inaccurate statutorily required investment return reports for years.

Finally, Midland Fire has potentially over-allocated to riskier and higher-fee real estate and alternative investments for a fund its size, which has contributed to the fund having the highest total fees in the state for 2019. These risky assets may be difficult or impossible to sell if the fund needs liquidity to support benefit payments, and they would most likely be sold at a steep loss especially during a market crisis, further lowering the funded ratio and fund stability.

Conclusion

Midland Fire and the city should hire a third-party to conduct a forensic audit, which should include a reconstruction of investment performance, fees, compliance review, and risk assessment to provide a solid foundation to create a funding soundness restoration plan (FSRP) and monitor progress. They should also conduct a governance audit to review best practices and increase transparency of board operations.

The fund and city should work together to balance increased contributions and benefit reductions to improve funding. For the longer term, a strong funding policy and FSRP should be adopted to restore and preserve fiscal health. The fund should also monitor investment managers' performance against benchmarks; adopt an asset allocation plan; and regularly review the fund's professional advisors.

Background

The Pension Review Board (PRB) conducts intensive studies of potential or existing problems that threaten the actuarial soundness of or inhibit an equitable distribution of benefits in one or more public retirement systems.[1] The PRB selected Midland Firemen's Relief and Retirement Fund ("Midland Fire") for review in April 2021 based on several criteria including the metrics shown below calculated as of December 31, 2019; the fact the fund was between eight and 20 months past due on several required reports; and the request of the board actuary. The PRB utilizes several key metrics, below and attached in the appendix, to determine and prioritize retirement systems for intensive actuarial review.

Amort. Period (Years)	Funded Ratio	UAAL as % of Payroll	Assumed Rate of Return	Payroll Growth Rate	Actual Cont. as % of ADC	Non-Investment Cash Flow as % of FNP	DROP as % of FNP
Infinite	51.10%	432.24%	7.50%	3.25%	69.68%	-5.33%	0.60%

Several key metrics showed concerning trends between 2000 and the end of 2019 when the fund was selected for review:

- The funded ratio decreased from 93.7 percent in 2000 to 51.1 percent at the end of 2019.
- The unfunded actuarial accrued liability (UAAL) increased from $3 million in 2000 to $87 million at the end of 2019.
- The UAAL as a percent of payroll is the ninth highest in the state.
- Its non-investment cashflow as a percent of (Fiduciary Net Position) FNP, which shows the strain on system assets to perform after contributions, expenses and benefits are netted out, was in the lowest quartile in the state.
- The fund reported a total expense ratio of 1.89 percent in 2019, the highest of any plan in the state.

Plan Profile (2019 AV)

Actuarial Accrued Liability: $177,602,061

Market Value of Assets: $84,848,966

Normal Cost: 26.30% of payroll

Contributions: 14.20% employee
22.20% employer

Membership: 209 active
173 annuitants

Social Security Participation: No

Additionally, the fund was significantly past due on several required reports and evaluations:

- 2019 Investment Returns and Assumptions Report (form PRB-1000): due July 31, 2020[2]
- Investment Practices and Performance Evaluation (IPPE): due June 1, 2020[3]
- Written funding policy: due February 1, 2020
- Funding Soundness Restoration Plan (FSRP) to be developed jointly with the city: due August 2019

[1] All citations to Texas statutes are as they appear on http://www.statutes.legis.texas.gov. Section 802.202(2), Texas Government Code.
[2] The 2019 Investment Returns and Assumptions Report has since been submitted to the PRB. However, it was incomplete, so the PRB staff had to calculate rolling returns.
[3] The IPPE has since been submitted to the PRB.

Key Findings

Midland Fire faces many serious issues ranging from limited to no investment governance; inconsistent and insufficient investment performance; and large, unexpected increases in benefit payments. <u>All of these factors increase the risk the fund will run out of money in as little as 10 to 12 years.</u>

The following information highlights the most pressing issues and critical findings from the PRB's review of Midland Fire's plan reports, board meetings, meetings with plan trustees and staff, and other available information.

Midland Fire lacks fundamental governance practices to administer its investment program, including portfolio monitoring and defining roles and responsibilities.

Midland Fire has limited investment monitoring practices and does not review composite fund investment performance, which is a core investing practice. Section 802.206, Texas Government Code outlines the fiduciary duty that a public retirement system's governing body shall monitor investment managers at frequent intervals. Midland Fire's current practice is to review individual investments only, and to do so only on occasion. Additionally, Midland Fire does not have monthly, quarterly, or annual processes to formally review composite fund performance, expenses, or liquidity. The fund's 2020 Investment Practices and Performance Evaluation (IPPE) also states "the plan does not have any formal policy for evaluating fund performance."[4] **It is deeply concerning that the governing body of an $85 million-dollar pension fund does not conduct structured monitoring or review of its assets.**

Midland Fire's board delegates the duty to carry out the investment program to its investment committee, but it does not identify clear roles and responsibilities. The committee makes decisions regarding the fund's complex investment portfolio that includes large allocations to real estate and alternative investments and then presents those decisions to the full board for approval. Given the fund's investments support more than $170 million in liabilities, the board and its committee assume a great amount of risk by managing them without developing even basic investment governance policies to guide their decision-making. It also has not sought assistance of professional advisors, such as an investment consultant, to assist in discharging its responsibilities to the fund.

Additionally, the fund lacks succession planning for key decision-making positions on the investment committee. This could raise concerns regarding the ability of the board to provide continuity of the investment program in the event of a change in board members. The lack of policies for Midland Fire is exacerbated by the fact that the institutional knowledge regarding the fund's investment program is concentrated within the investment committee members, some of whom have been serving on the board for decades. A detailed, written policy will help ensure both current and future boards and committees act consistently.

A well-constructed investment policy statement (IPS) and clearly established procedures form the foundation of any responsible investment management program. The Chartered Financial Analyst Institute's (CFAI) *Primer for Investment Trustees* explains the importance of an investment policy: "If the

[4] Midland Firemen's Relief and Retirement Fund, *Midland Firemen's Relief & Retirement Fund: SB 322 Review and Analysis,* accessed through PRB records. This document was submitted to the PRB as Midland Fire's 2020 IPPE.

trustees can't develop and convey a clear sense of what the Fund is attempting to achieve and how they expect staff members or outside advisers to go about reaching those objectives, then the investment program will be directionless and the trustees and staff will be prone to pursuing ineffective approaches that lead to unsatisfactory results."[5] Clearly documenting policies and procedures can also help mitigate transparency issues.

Midland Fire's IPS does not meet most of the basic industry standards set by the Government Finance Officers Association (GFOA) and the CFAI. This is especially concerning, given the fact that the Texas Local Firefighters Retirement Act (TLFFRA) governing statute requires a board to give special consideration to GFOA best practices when developing its investment policy.[6] Midland Fire's one-page IPS is not sufficient to regulate and monitor the complex investment program the board is managing. Midland Fire is currently lacking several long-term governing policies compared to the preferred investment practices from GFOA and echoed by the CFAI.[7]

Scope and investment objectives: There are no tailored objectives articulating the purpose or investment goals of the fund, such as meeting or exceeding a certain benchmark.

Roles and responsibilities: The IPS does not identify the roles of all persons involved in the investment program and instead just references the TLFFRA statute.

Performance measurement (benchmarking) and reporting: The IPS does not define these four key practices from the GFOA:

1. The frequency of reporting and monitoring
2. The way external and internal parties report investment results
3. The evaluation process, with clear definitions of strategies
4. The performance benchmarks for permissible asset classes, expectations, and criteria for investment manager performance measurement

Statement on managing risks of individual investments: The fund's IPS provides some explanation by describing the asset allocation policy ranges and their variance limit; however, it lacks definitions and management details.

Liquidity of investments: No discussion regarding investment liquidity or its importance.

Guidelines for other investment-related service providers: No discussion of how other investment-related service providers, such as investment managers, are evaluated.

Investment management guidelines: There is no section defining the selection criteria or process for managers or guidelines on how to implement a manager watch list or termination.

Cost management: No discussion on how to monitor or manage costs including fee transparency. Midland fire was the costliest compared to peers and its cost has doubled over the last decade.

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

6 Article 6243e Section 27, Vernon's Texas Civil Statutes.

7 Government Finance Officers Association, "Best Practices: Investment Policy," accessed Oct. 2021, https://www.gfoa.org/materials/investment-policy; CFA Institute, *Elements of an Investment Policy Statement for Institutional Investors,* accessed Oct. 2021, https://www.cfainstitute.org/-/media/documents/article/position-paper/investment-policy-statement-institutional-investors.ashx

Finally, as fiduciaries, there is a basic expectation for pension boards to be responsible stewards of good governance. Unfortunately, Midland Fire is behind on complying with numerous statutory requirements, including the basic trustee training requirement mandated by the Texas legislature. According to training reports submitted by the fund, Midland Fire's board is only 75 percent compliant with the PRB's Minimum Educational Training program. The program requires board members to take seven hours of foundational pension education the first year, and then four hours of continuing education every two years. This training is available for free on the PRB website. Failure to complete this basic education raises concerns regarding a trustee's clarity on general board responsibilities.

Transparency and accuracy concerns with Midland Fire's investment program limit members' and stakeholders' abilities to evaluate their benefit security.

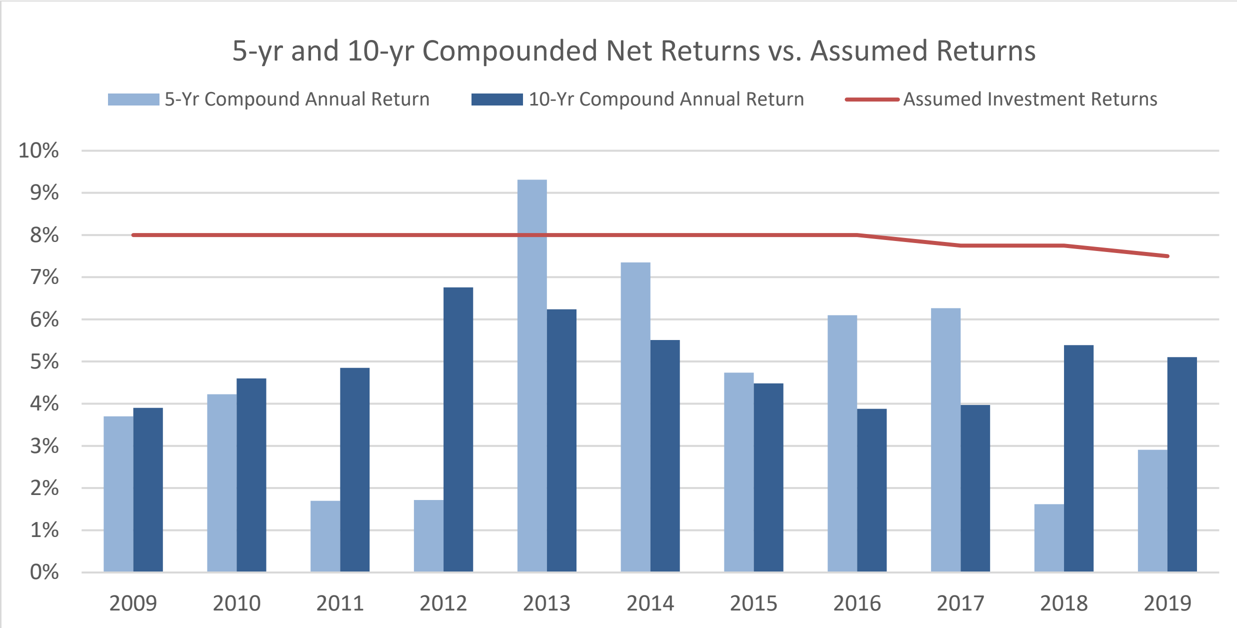
Midland Fire has recently revealed that it has been knowingly submitting incomplete and inaccurate statutorily required investment return reports for years. The fund's disclosure raises concerns regarding the reliability of any calculation or determination of investment returns and the overall health of the fund. It further points to issues concerning the fund's investment program management transparency, and accountability towards fund members, taxpayers, and other stakeholders.

Additionally it became clear that common reports or studies did not exist or were not readily available since the fund could not produce documentation regarding board due diligence to make investment decisions, investment performance reviews, actuarial studies, and other information. As a public pension fund subject to information requests, these types of documents are subject to public disclosure. Without transparent and accurate reports, outside parties, including plan members, are not able to properly determine the stability of a fund. The lack of transparency and accountability is a significant concern for Midland Fire.

Over the last decade the fund's investments have underperformed their assumed rate of return by more than two percent.

As previously mentioned, the fund has been submitting inaccurate statutorily required investment returns and assumptions reports and has not yet submitted its 2020 report. In addition to inaccuracy of historical data, the lack of compliance with this requirement further limits the information available to the fund members, PRB, and other stakeholders to evaluate the investment performance of the plan.

Based on the information reported to the PRB, over the 21 years ending December 31, 2019, Midland Fire has never achieved a 10-year compound return that meets or exceeds its assumed return and has only once exceeded its assumed rate over a five-year period. This results in an average 10-year annual return of just 5.1 percent, more than two percent less than the current assumed rate of return of 7.5 percent. When pension funds consistently overestimate their assumptions, they underestimate the funding issues they are facing. Further, if a plan does not achieve its assumed rate over the long term, it may indicate financial instability and could potentially result in unexpected contribution increases or benefit reductions in the future.

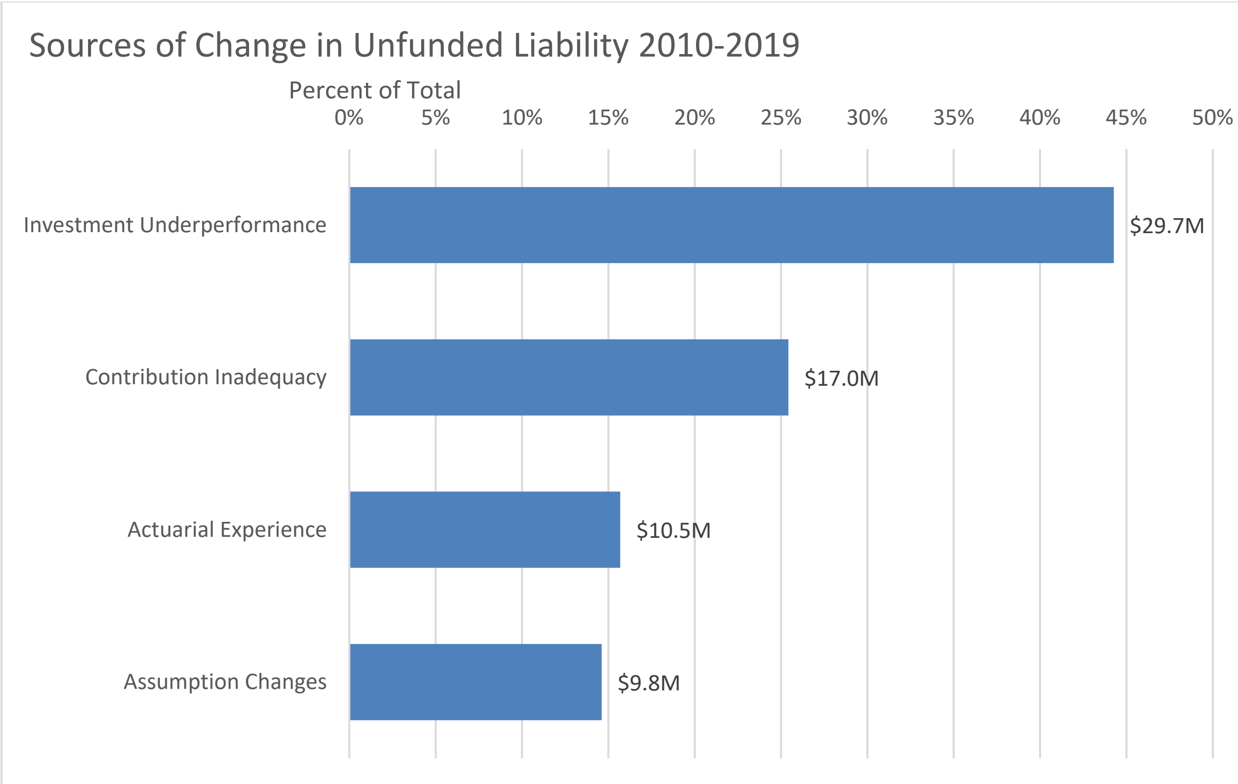


While the fund has rarely met its return assumption, it has also severely underperformed a simple passive index fund. Additionally, the index fund is close to no cost (0.07 percent expense ratio) while Midland Fire's investment only expense ratio was 1.43 percent in 2019.

Compounded Returns Comparison (as of 12/31/2019)	1-Year	3-Year	5-Year	10-Year
Midland Fire	9.86%	4.06%	2.91%	5.10%
Vanguard Balanced Index (60/40) *VBIAX*	21.79%	10.45%	8.05%	9.69%
Performance Difference	-11.93%	-6.39%	-5.15%	-4.58%

Midland Fire's IPPE also concluded that "active management has contributed value to the fund."[8] However, no explanation was provided, and the fund's average annual return is consistently below the assumed return. Past audited financial statements and investment committee minutes are vague and offer little understanding as to why the fund is underperforming and what actions are being taken to remedy the situation. As shown in *Sources of Change in Unfunded Liability 2010-2019*, investment underperformance is the leading driver in the increasing unfunded actuarially accrued liability from 2010 to 2019, representing 45 percent of the change.

[8] Midland Fire, *SB 322 Review and Analysis.*



The CFAI describes the importance of regular, thorough evaluation of a fund's performance relative to its investment objectives. Regular evaluation provides a board with a governance control mechanism through evidence reaffirming a successful investment strategy and feedback on the investment process. Midland Fire's board relies on its actuary to calculate an annual investment return to be included in the annual financial report, but the board does not consider portfolio-wide returns when evaluating the investment program. The board faces a difficult environment to effectively manage assets due to a combination of factors such as inaccurate reporting, lack of performance review on a composite basis, lack of clear objectives, and the utilization of a return calculation whose primary purpose is unrelated to portfolio monitoring. It should be noted that the historical long-term data available from the fund is either insufficient or inaccurate to perform a more detailed analysis of the causes for this underperformance.

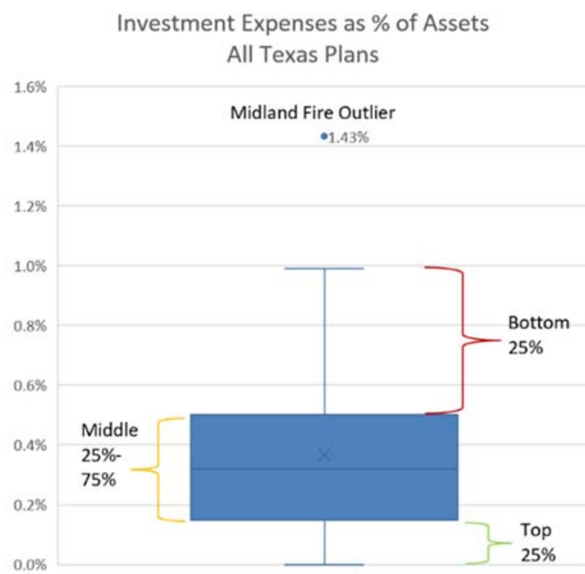
Among the highest in the state, Midland Fire's investment expenses have grown considerably since 2013, and the fund has no fee monitoring process.

> "You will exercise little influence over the outcome of most aspects of the Fund's investment program. Markets move in ways that are inherently unpredictable. **A key element of the Fund's investment performance over which you actually do exert considerable control, however, is the issue of fees and expenses.** As an investment trustee, you have the responsibility for seeing that the Fund's investments are managed in the most cost-effective manner possible."
>
> CFAI's *Primer for Investment Trustees*

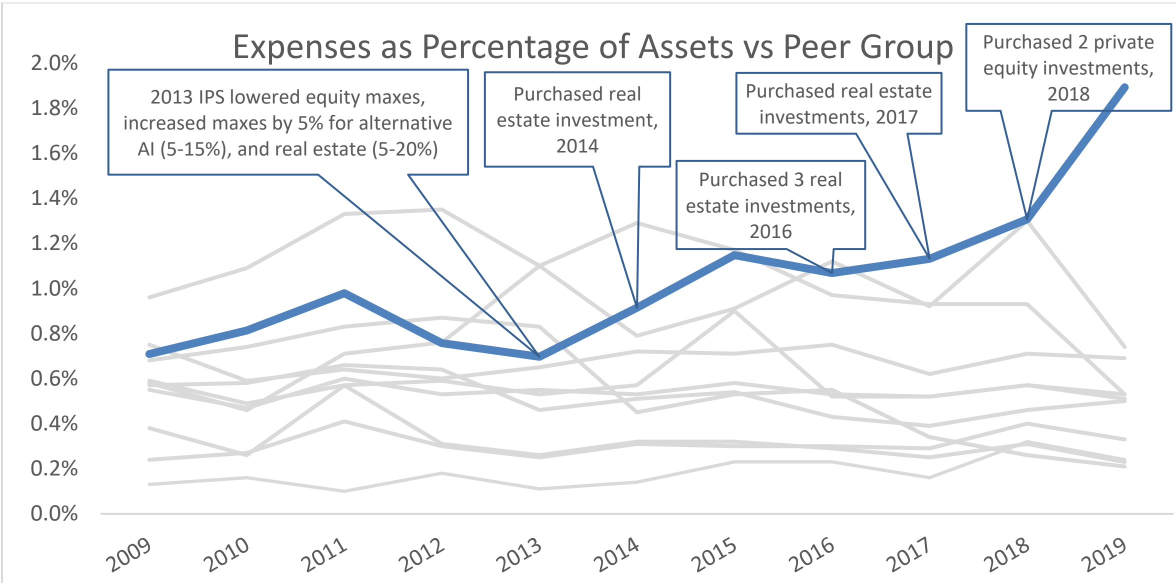
There are many things a board cannot control when managing an investment program, which makes it vitally important to act on factors it can control, especially investment expenses and asset allocation. Trustees are responsible for managing investments in a cost-effective way to provide some balance to the inherent unpredictability of markets. [9]

Based on data reported to the PRB in 2019, Midland Fire has the highest total expenses as a percentage of assets of all Texas plans, including plans with significantly more sophisticated investment programs. In fact, Midland Fire is the only plan outside the 75th percentile. In addition, the fund's investment expenses have increased steadily for the past decade and have more than doubled since 2009.

The chart *Expenses as a Percentage of Assets vs Peer Group* shows the significant growth of Midland Fire's expenses since 2013, along with board investment decisions, compared to peer systems. The percentage of expenses has grown over the last seven years as the board began to allocate more heavily to real estate and alternative investments. The rise in expenses appear to be a result of the 2013 IPS changes that lowered equity allocations and increased the maximum allocations to real estate and alternatives.



[9] Bailey and Richards, *A Primer for Investment Trustees, 78-9.*



Although expense review should be an important step in managing investments, Midland Fire does not assess its full fund's investment fees. Midland Fire's fee philosophy is contrary to leading industry standards: in conversations with the fund and staff, the PRB learned that fees are not a consideration in selecting investments for the fund, and that they are only compared to fees for similar investments. Only considering investments in respect to similar ones would imply that if the fund's asset allocation was largely focused on typically high-fee asset classes such as real estate and alternative investments, having high total fund fees would be acceptable.

While high investment fees do not imply poor investment decisions, high fees may act as a constant leak on assets, making it harder for the fund to achieve its stated investment return goals. It is imperative to consider fees when selecting investments to ensure the additional cost of higher fee investments provides sufficient value in performance. Given Midland Fire's poor investment returns, it is unlikely that the fees are justified through higher returns.

Furthermore, it is the fiduciary's responsibility to be prudent stewards of every dollar spent. However, the PRB could not identify a formal process for fee monitoring. In its 2020 Investment Performance Report, the PRB identified **the importance of fee review and documentation** as a central theme within the approximately fifty IPPEs.[10] Midland Fire's IPPE noted, "The Administrator for the system is responsible for monitoring and reporting fees to the board."[11] However, it is not clear how this is accomplished. Its IPPE also indicated that the investment fees were "in-line with industry averages," but no data was provided to show how the system ranked compared to peers or industry averages. A comparison of Midland Fire's total fees to Texas peers or to the 2019 National Conference on Public Employee

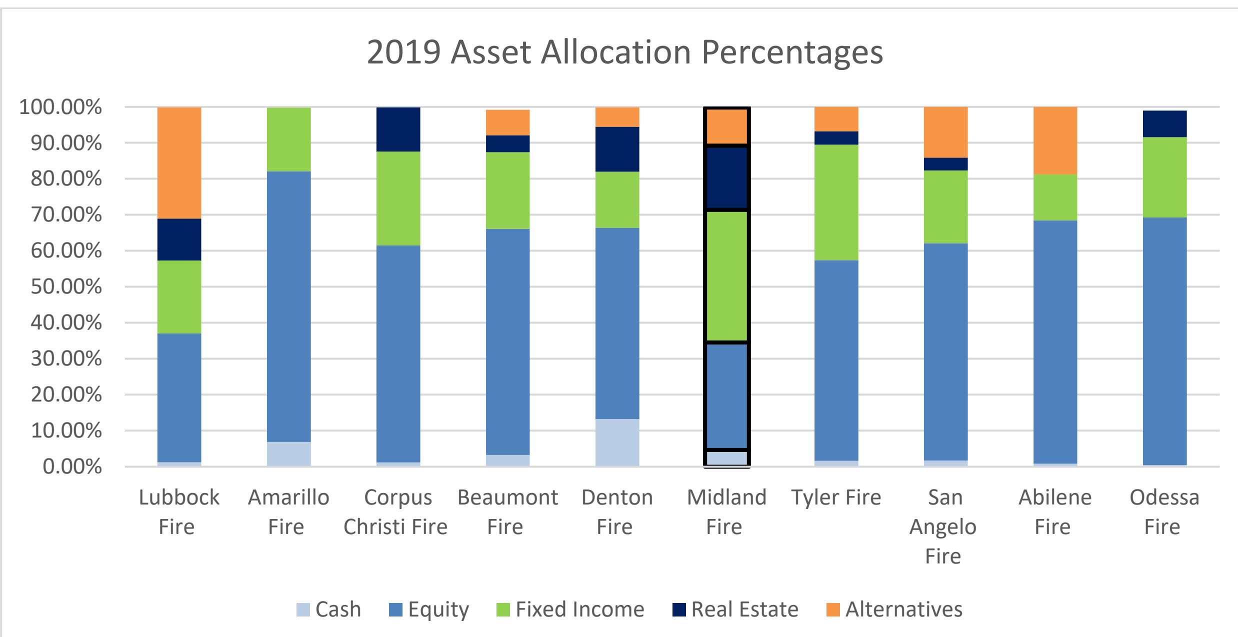
[10] Texas Pension Review Board, *Investment Performance Report: November 2020,* accessed Oct. 2021, https://www.prb.texas.gov/txpen/wp-content/uploads/2020/11/Investment-Practices-Report.pdf.

[11] Midland Fire, *SB 322 Review and Analysis.*

Retirement Systems' *Public Retirement Systems Study* shows an average total expense of 0.63 percent for non-social security eligible funds to Midland Fire's 1.89 percent.[12]

Midland Fire's asset allocation appears to be a poor fit for their size and liability constraint.

A pension fund's asset allocation is highly dependent on the size of its assets and liabilities. As assets grow, funds gain access to private and more complex investments. To invest in these products, investors must establish that they are accredited investors. Accredited investors must meet certain criteria to participate, such as having investments exceeding $5 million or expert qualifications, but they are also assuming more responsibility to perform investment due diligence. Since these investments are restricted, investors are expected to have sufficient investment experience, tools, resources, and knowledge to analyze the investments and risks. With such high investment expenses and underperforming investments, Midland Fire has potentially extended too far into real estate and alternative investments for a fund its size. Additionally, Midland Fire's asset allocation is complex and may not make sense for a smaller pension fund that does not have full-time staff or, at a minimum, an investment consultant to assist with selection and monitoring.



[12] National Conference on Public Employee Retirement Systems and Cobalt Community Research, *2019 NCPERS Public Retirement Systems Study,* accessed oct. 2021, https://www.ncpers.org/files/2019%20NCPERS%20Public%20Retirement%20Systems%20Study%20Report%20Final.pdf

Case Study: TLFFRA Peer System

In 2019, the peer system identified a desire to improve its asset allocation to reduce expenses as a percentage of assets from one percent, to be more in-line with the industry average of 0.6 percent (according to the 2018 NCPERS survey). Utilizing its investment consultant, the changes consisted of removing most alternative investments and replacing real estate with lower cost passive index funds. This decision was based on an analysis that showed the fund's biggest sources of fees were in private real estate, hedge funds, and international equity.

In its 2020 Investment Performance Report, the PRB stated that adjusting from complex real estate and alternatives to passive index investments could provide an additional benefit of reducing the work required to monitor and research investments for a smaller fund with limited resources.[13]

Midland Fire's target asset allocation includes up to 25 percent in international equities, 30 percent in real estate and 15 percent in alternative investments. Additionally, the fund appears to be taking a large amount of risk even in traditional asset classes. For example, the fund's traditional investments such as fixed income are invested in more risk-seeking selections such as high-yield and international bonds. Such large allocations to real estate and alternative investments increases the overall investment complexity, risk management needs, and evaluation requirements for assessing cost-effectiveness compared to peers with simpler asset allocations.

The large allocations to real estate and alternative investments also pose a potential liquidity risk, since these investments are generally intended to be held between five to 10 years. According to Midland Fire's 2019 annual financial report, the fund holds approximately 20 to 30 percent of its total portfolio in illiquid assets.[14,15] Further, Midland Fire's liabilities of more than $170 million—about two times its assets—and a negative non-investment cash flow of 5.33 percent of assets in 2019 increase the risk of a scenario that could force undesirable liquidations of investments to pay current benefits or expenses. The fund faced this scenario at the start of the pandemic in 2020 when the financial markets were volatile due to economic and public health uncertainties. Fortunately, that crisis was short-term partly due to assistance from the U.S. government and the Federal Reserve Bank, but such drastic interventions may not be available in the future.

Case Study: Harvard Endowment

Harvard's endowment fund provides an example of the risk with large allocations to illiquid investments. In 2008, the fund allocated 55 percent to hedge funds, private equity, and private real assets such as real estate. Only 30 percent was in more liquid assets such as developed equities and fixed income. The remainder was in emerging-market equities and high-yield bonds that during the great financial crisis would have required a discount to liquidate. The endowment was faced with a tough decision on how to meet its obligations but was able to resolve the issue.

[13] PRB, *Investment Performance Report*.

[14] Midland Firemen's Relief and Retirement Fund, *Financial Report: December 31, 2019,* accessed through PRB records.

[15] Generally, illiquid assets are assets valued at Level III and potential redemption periods of 30 days or longer.

Midland Fire has claimed its program follows an endowment model and its asset allocation and selection of investments are very similar to Harvard's endowment fund. Midland Fire could face a similar situation as Harvard based on its asset allocation, but the fund does not have the same level of financial expertise to help navigate problems. While large financial shocks, such as the great financial crisis, are uncommon, they do happen, and only one is enough to devastate an unprepared pension fund.

In addition, the fund does not perform stress testing, which could provide significant benefits considering the likelihood of funding deterioration and large, unexpected increases in distributions. Midland Fire has indicated its investment committee has performed asset-liability studies and considers liquidity when making investment decisions; however, the PRB has been unable to obtain documentation of this analysis. An asset allocation plan for a pension fund should consider factors such as need for income and liquidity, risk tolerance, monitoring ability and guidelines, and investment time horizons.[16]

If the fund were in a stronger financial position, its current asset allocation might not raise significant concern. However, the lack of consideration for pressing issues such as the absence of any asset growth for nearly a decade; a preference for risk-seeking investments; highly illiquid assets, projected negative cash flow illustrating a high likelihood of the need for greater liquidity; and reported exhaustion period raises considerable concerns.

Midland Fire faces significant risk of near-term exhaustion.

The Governmental Accounting Standards Board (GASB) requires single-employer defined benefit pension plans to compare projections of the plan's assets to projected benefit payments and identify the year when projected assets will no longer be sufficient to cover 100 percent of the projected benefit payments, if such a date exists.[17] This projected date, sometimes called the fund's exhaustion or depletion date, is the date the fund is expected to run out of money, potentially leaving participants vulnerable to not receiving promised benefits.

Midland Fire has reported an exhaustion date of 2043 in its 2019 GASB report—only 22 years away. The GASB calculation specifically excludes contributions expected to finance the benefits of new members hired after the 2019 valuation date, so the PRB estimates including all expected contributions would extend the life of the fund another 15 to 20 years, to approximately 2060. While this projection does not guarantee that the fund's assets will deplete in 22 or 39 years, all stakeholders should be aware of this issue and take it very seriously.

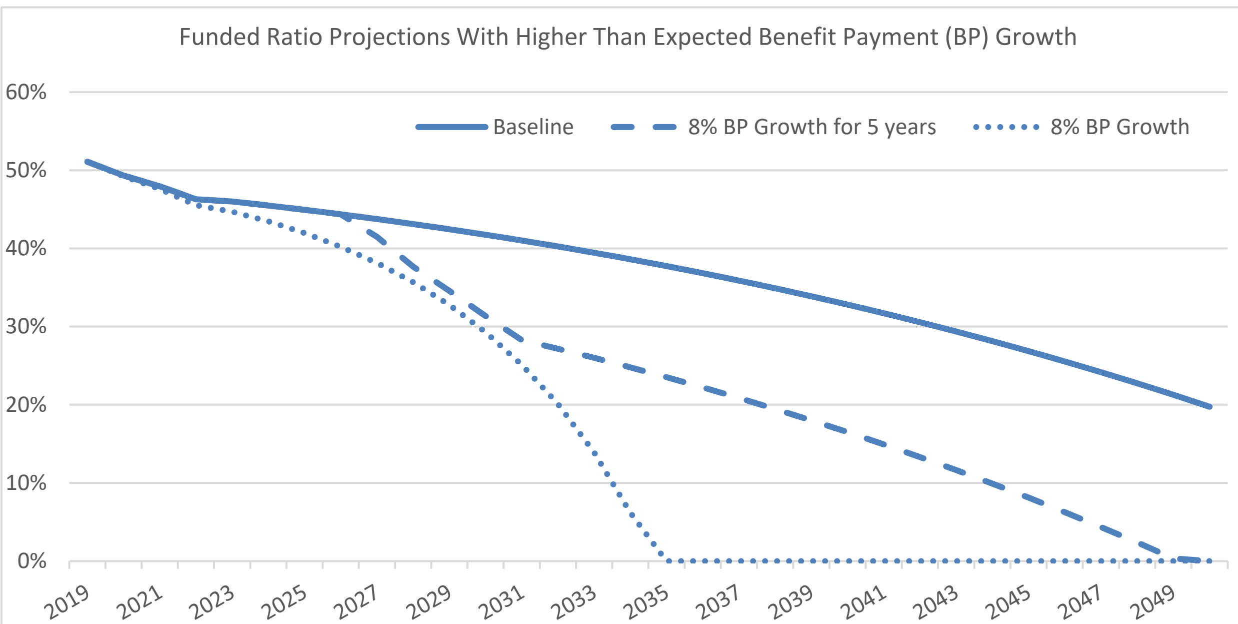
Additionally, the assumptions used for this projection can drastically influence the expected exhaustion date. In Midland Fire's case, the estimate assumes a consistent 7.5 percent return on assets and a 4 percent increase in benefit payments per year. However, total benefit payments for the fund have consistently increased an average of 8 to 10 percent per year over the past 20 years, while annuity payments (i.e., distributions without regard to the deferred retirement option plan and other lump sum

[16] GFOA, "Best Practices: Asset Allocation for Defined Benefit Pension Plans," accessed Oct. 2021, https://www.gfoa.org/materials/asset-allocation-for-defined-benefit-plans.
[17] Governmental Accounting Standards Board, "Summary - Statement No. 68," accessed Oct. 2021, https://www.gasb.org/jsp/GASB/Pronouncement_C/GASBSummaryPage&cid=1176160219492.

payments) have increased by approximately seven to eight percent per year over the same period. This is double the current assumed increase going forward.

Some of the fund's board members have indicated they believe it is a function of long-term understaffing, and the resulting in significant overtime translates to salary spiking, a rapid increase in an employee's compensation that can affect benefit calculations. The fund has further stated that issues with the city's payroll system have prevented it from fixing the problem. While the PRB is not able to evaluate this concern or the underlying causes of the benefit payment growth, it is evident that current projections of future benefit payment growth are significantly lower than the past 20 years of actual growth. If this trend is not addressed soon, the fund may find itself in dire circumstances.

Funded Ratio Projections With Higher Than Expected Benefit Payments (BP) Growth shows a simple stress test to illustrate the impact of higher-than-expected benefit payment growth rates. If benefit payments grew at a similar rate to the past 20 years, it would significantly accelerate the expected depletion of the fund, from 2060 to 2035. Further, even if the eight percent growth rate only continued for five more years, the expected exhaustion date would change to 2049. This should highlight the importance of quickly addressing this issue.



Of greater concern is the analysis above assumes assets consistently earn 7.5 percent per year. It does not consider the additional risks of underperformance that were previously mentioned or the risk of how the fund sets its asset allocation to target its return assumptions. A worst-case scenario analysis, factoring in the underperforming returns of less than 7.5 percent, would exacerbate the risk of the fund <u>running out of money in as little as 10 to 12 years.</u>

Midland Fire's board appears to be setting its asset allocation in a way to try to meet its actuarial return assumption of 7.5 percent per year. This is the reverse of how this assumption should be set and can cause a fund to take on too much risk. According to Actuarial Standard of Practice No. 27 and generally accepted actuarial standards of practice, investment allocation decisions should never be made with a goal of achieving a specific assumed rate of return. The assumed rate of return should only be calculated once an appropriate allocation and associated level of risk is determined. The asset allocation should be determined with consideration of expected future contributions and benefit payments and the amount of risk that the board feels appropriate. Based on an asset allocation using current capital market assumptions the actuary or investment consultant can determine what assumed rate of return can be recommended to the board. This is often an iterative process because, after reviewing the projections using an initial asset allocation, the board may consider making modifications depending on the level of risk associated with that allocation. The board cannot have a good understanding of the risk associated with its asset allocation without performing capital market projections.

With a significant risk of fund exhaustion, inconsistent investment performance averaging well below assumption targets, high investment expenses and increasing benefit payments, the board needs a plan that they can consistently follow and monitor its effectiveness.

Conclusions and Recommendations

Conduct an independent third-party forensic audit of Midland Fire's financial records to enhance efficiency of its investment program with increased focus on transparency and accountability.

The PRB recommends the fund and city to hire an independent firm specializing in forensic audits to evaluate and reconstruct the fund's financial records covering three years at a minimum, preferably five years. The evaluation should include a compliance review and risk assessment of the fund's investment program administration. This recommendation does not imply potential fraud or wrongdoing by Midland Fire.

A forensic evaluation could assess the overall effectiveness of the investment program. For example, the fund has indicated that it has been trying to fix some of the issues with its books and records to calculate composite investment returns for many years now without success, and they have stated that even the custodian bank has not been able to address this reporting issue. A forensic evaluation could include a reconstruction of financial records to help the fund to calculate composite investment returns and help resolve these issues, so the fund has a solid starting point to start making improvements.

The evaluation could also examine investment fees incurred over the past five years and assess and make recommendations regarding the fund's fee structure. During the intensive review process, it became deeply evident that accurate investment reports from Midland Fire were either unavailable or did not exist. This lack of transparency has allowed Midland Fire to avoid accountability to stakeholders, making it difficult to evaluate a nebulous investment program that lacks basic reporting information.

Considering the poor funding health of Midland Fire, recommending an analysis that may be costly was not easy; however, the board manages millions of dollars of firefighter and taxpayer money and is clearly facing trouble managing a complex investment program. Therefore, this recommendation is necessary. This money forms the foundation of many people's livelihoods in retirement, which is too important to handle without the highest fiduciary standards. Moreover, the cost can be justified given the persistent issues the fund has been struggling with for many years now: the lack of composite investment performance review; the depressed asset values; the unusually high fees; the very poor investment returns; the lack of availability of appropriate governance documents, especially for alternative investments; and the concerns regarding valuation methodologies used to assess the value of some of the alternative investments of the fund. Also, Section 802.206, Texas Government Code allows a plan sponsor to cover all or part of the cost of any professional evaluation services engaged by the fund.

Given the fund was aware of the reporting issues and allowed them to persist for years, it is imperative that a forensic audit is completed within a reasonable period to help the board and the city obtain a complete understanding of the fund's financial health before they engage in developing a remediation plan to address the current funding shortfall. Both the fund and city should jointly agree on the final selection of a third-party forensic auditor and determine the scope of the audit. This audit should be completed within six to nine months from the PRB's adoption of this review and its recommendations.

Conduct a governance audit by an independent third-party.

The PRB recommends the fund and the city jointly hire an independent third-party to conduct an audit of Midland Fire's governance structure and practices, with specific emphasis on the Midland Fire board. For public retirement systems, good governance generally means that decisions are made through processes that are consistent, well-documented, compliant with relevant statutes, and accessible to stakeholders. As illustrated through the findings of this review, Midland Fire's governance framework needs improvement in each of those areas.

As with the forensic audit, the PRB understands that a governance audit may create cost concerns for the plan, but at a minimum, Midland Fire should perform a governance review. Conducting some type of review is important, as a sound governance framework is pivotal to the success of a fund's investment program. Therefore, it would be highly beneficial for the fund to seek a thorough review of the board's governing documents and operating practices, including investment decision-making processes and practices with special consideration to the GFOA standards as outlined in the TLFFRA statute.

For example, the audit could review the following: board structure and oversight process, roles and responsibilities for board and staff, board operations, possible benefits of more frequent rotation of committee membership, board investment expertise, statutory compliance, and investment policy and other fund policies. As a result of the audit, the fund should be able to develop clear, long-term governance policies to guide the board to exercise its fiduciary duty including prudently selecting and managing investments and cost-effectively administering the fund so that efforts to improve fund health have a better chance of success. Long-term governance policies would also assist the fund with implementing a solid succession plan to pass on important practices to future board members.

Both the fund and city should jointly agree on the final selection of a third-party governance auditor and determine the scope of the audit. Additionally, the city can cover all or part of the cost of this audit and it should be completed within six to nine months from the PRB's adoption of this review and its recommendations.

Make use of professional expertise to guide investment program.

The PRB recommends the fund make use of investment professionals such as an investment consultant to assist the board and its investment committee to effectively manage the investment program. The fund has a complex investment program with significant exposure to alternative investments. An investment consultant could provide expert advice and guidance to the board on an ongoing basis regarding the entire investment program. The board can also seek a specialist who can focus on the program's alternative investment portfolio. Given asset allocation is one of the most important factors affecting investment performance, an experienced investment consultant could review the fund's current asset allocation based on its return objectives, risk tolerance, and cash flow needs to best structure the portfolio. A consultant could also help the board consider strategies that focus on using low cost, passive investments.

Based on the information gathered during the review, it appears the Midland Fire board and its investment committee are overly focused on operations relating to the investment program, including sourcing investments, manager selection, and monitoring individual investments. Additionally, on numerous occasions, the fund has identified that its staff and resources are limited; the fund has two dedicated staff members, and the board members are volunteers with full-time jobs. Considering these resource challenges, it would be unrealistic to expect the board to address the investment governance-related concerns laid out in this review without any professional help.

An investment consultant's services can be tailored to the needs of the fund and can include the following:

1. Establishing investment policy, objectives, and guidelines.
2. Assisting in determining appropriate asset class allocations and benchmarks.
3. Providing analytical input on the risk, return, correlation, and liquidity characteristics of asset classes and the overall fund portfolio.
4. Aiding in the selection and management of investments and investment managers.
5. Providing regular reports that review and evaluate fund investments and managers performance.
6. Performing any other tasks as deemed appropriate by the board.

Additionally, an investment consultant could assist Midland Fire's board and actuary perform useful analyses such as an asset-liability study and stress testing of the fund's investment portfolio. For a fund with a short time horizon and negative non-investment cash flow they should likely have a more liquid asset allocation. These types of analyses could provide necessary data for the fund's board to make appropriate asset allocation and liquidity need decisions to satisfy future benefits and guide its investment program in the right direction. Lastly, to identify additional areas of improvement, any investment consultant hired by the board should review the Midland Fire's 2020 Investment Practices and Performance Evaluation (IPPE) and the concerns raised by the PRB regarding this evaluation found in Appendix H of this report.

Develop a robust Funding Soundness Restoration Plan (FSRP) and Funding Policy that is sustainable and achievable.

The FSRP requirement was created in 2015 to allow systems and their sponsors to jointly develop a remediation plan to address funding issues and prevent putting members' benefits at serious risk. Additionally in 2019, all Texas pension plans were required to develop funding policies that target 100 percent funding. The policies were to be completed by January 2020. Midland Fire has not developed a funding policy and stated that it would be completed along with the FSRP, which was due in 2019.

This recommendation emphasizes the necessary first step to preventing both short- and long-term funding issues is developing a robust FSRP to mitigate further deterioration by identifying and addressing the causes of these issues. When developing the FSRP, the city and fund must consider that the legislature revised the FSRP provision in 2021 to require retirement systems to target a 30-year amortization period rather than the prior 40-year amortization period target.

To shore up funding, Midland Fire and the city should work together to determine the best balance between increased contributions and benefit reductions. It should be noted that a reduction in future benefit accruals will help prevent larger-than-expected near-term cash outflows. However, even at the modest four percent benefit payment growth currently expected, the fund still faces the threat of a potential asset exhaustion. Given current funding levels, an increase in contributions over the near term is also likely needed to stabilize the fund while other issues are addressed. These factors should be considered when creating the FSRP and funding policy; however, merely complying with the reporting requirements may not completely address the long-term risks faced by the fund. It is imperative that the fund begin working to mitigate the funding issues and work toward a long-term solution with the city with an FSRP and funding policy.

Commit to inform plan members of issues facing the fund, including distributing this review to them.

The PRB recommends the fund and city inform plan members of the concerns raised in this intensive review regarding the funding health of Midland Fire and recommendations made to address those concerns. Section 802.106(d), Texas Government Code requires all public retirement systems to provide each active and retired member with a summary of the financial condition of the fund if the actuary determines the funding is inadequate. The fund should also ensure that all plan members are fully aware of the FSRP and funding policy requirements and the potential plan design changes that may be considered to address both short and long-term funding issues. Plan members should be made aware of how the fund got to this position and should have a commitment from the board and city to develop meaningful, sustainable changes to the fund.

The fund and city should also commit to sending the forensic and governance audits to its members and publish those reports on its website. This would improve transparency by helping plan members and the public better understand and monitor how Midland Fire is managing issues stated in this report and any findings and recommendations made in the audits.

Keep the PRB and the Legislature informed of the progress.

The PRB recommends the fund and the city keep the PRB and the legislature informed of the progress on implementing these critical recommendations. The PRB can also provide technical assistance to help the fund and city aim towards improved fund health.

Appendix

A: Key Metrics

Metric	Amortization period (Infinite)
What it measures	Approximately how long it would take to fully fund the unfunded actuarial accrued liability (UAAL) based on the current funding policy.
Why it is important	Given the fund's current assumptions, an amortization period above 18 years indicates the contributions to the fund in the coming year are less than the interest accumulated for that same period and therefore the total UAAL is expected to grow over the near term. In addition, for a plan that contributes on a fixed-rate basis such as Midland Fire, the higher the amortization period, the more sensitive it is to small changes in the UAAL.
Peer comparison	Midland Fire currently is one of two plans with an infinite amortization period among peer TLFFRA plans.

Metric	Funded ratio (51.10%)
What it measures	The percent of a fund's actuarially accrued liabilities covered by its actuarial value of assets.
Why it is important	The lower the funded ratio, the fewer assets a fund has to pay its current and future benefit payments.
Peer comparison	Midland Fire's funded ratio is the third lowest in its peer TLFFRA plans.

Metric	UAAL as a percent of payroll (432.24%)
What it measures	The size of a plan's unfunded liability compared to the annual payroll of its active members.
Why it is important	Provides a way to compare plans of various sizes and expresses the outstanding pension debt relative to current personnel costs.
Peer comparison	The fund's UAAL as a percent of payroll is the eighth highest in the state.

Metric	Assumed rate of return (7.5%)
What it measures	The estimated annual rate of return on the fund's assets.
Why it is important	If actual future returns are lower than the assumed rate of return, future contributions will need to increase significantly, especially for a poorly funded plan. Midland Fire's assumed rate of return is 7.5 percent, while its actual 10-year investment rate of return for the period ending December 31, 2019, was only 5.10 percent.
Peer comparison	Midland Fire's assumed rate of return is higher than the national average of 7.18 percent.[18]

Metric	Payroll growth rate (3.25%)
What it measures	The estimated annual growth in the total payroll of active members contributing into the fund.
Why it is important	Contributions are calculated as a percent of active members' pay and are back-loaded based on the expected growth in total payroll. If payroll does not increase at this rate, actual contributions will not meet those expected in the Fund's actuarial valuations. Given the Fund's inactive and active liabilities are not fully funded; contributions below expected levels will have serious consequences on the Fund's long-term solvency.
Peer comparison	The fund's payroll growth rate of 3.25 percent is average for its peer group.

Metric	Actual contributions as a percent of actuarially determined contributions (69.68%)
What it measures	Whether the current employer contributions have met a theoretical minimum threshold.[19]
Why it is important	The employer's portion of the contribution is less than 70 percent of the amount needed to fund the fund on a rolling 30-year amortization period. The PRB's 2014 *Study of the Financial Health of Texas Public Retirement Systems* found that plans that have consistently received adequate funding are in a better position to meet their long-term obligations.
Peer comparison	This is the third largest shortfall percentage in its peer group.

[18] NASRA, *Issue Brief: Public Pension Plan Investment Return Assumptions*, February 2021.

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

Metric	Non-investment cash flow as a percent of fiduciary net position (-5.33%)
What it measures	Non-investment cash flow shows how much the fund is receiving through contributions in relation to its outflows: benefit payments, withdrawals and expenses.
Why it is important	Viewing this metric as a percent of total net assets, or fiduciary net position (FNP), in conjunction with the funded ratio and recognition of the relative maturity of a plan, provides information about the stability of a plan's funding arrangement.
Peer comparison	Midland Fire's non-investment cash flow as a percent of FNP is in the lowest quartile in the state. If this trend continues, the fund could face the potential risk of needing to liquidate a portion of existing assets to pay current benefits and/or expenses.

B: Plan Summary

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

Benefits

Retirement Eligibility	Age 50 and 20 Years of Service or; 25 Years of Service
Vesting	Graded 100% at 20 years
Benefit Formula	75% x Final Average Salary +$80 x YCS > 20 + $500/month supplemental benefit after reaching 50/20
Final Average Salary (FAS)	Highest 60 months
COLA	2%, after receiving benefits for 5 yrs provided fund's investment performance does not fall below rolling audited 5-yr avg of 8.25%
Retirement Benefit Options	4 DROP Options: 1. Forward DROP 2. Reverse DROP (a partial lump sum option) 3. Retro DROP or 4. Combined DROP (Forward and Retro DROP)
Social Security	No

Contributions

As of the 2019 actuarial valuation, active members of Midland Fire contribute 14.2 percent of pay while the City of Midland contributes 22.2 percent of pay.

Membership

Total Active Members	Retired Members	Terminated	Total Members	Active-to-Annuitant Ratio
227	185	8	420	1.23

TLFFRA Board Structure

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

Contribution and Benefit Decision-Making

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

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

Asset Allocation

Asset Allocation (as of 12/31/2019)					
Asset Class	**Equities**	**Fixed Income**	**Real Estate**	**Alternatives**	**Other***
Current Allocation	29.87%	36.87%	17.83%	10.60%	4.83%
Target Allocation	30-50%	10-30%	20-30%	5-15%	1-15%

*Other includes capital assets, receivables, and cash

Peer Group	2019	Cash	Equity	Fixed Income	Real Estate	Alternatives	RE+AI
Lubbock Fire Pension Fund	$ 211,548,454	1.20%	35.80%	20.30%	11.62%	30.92%	42.54%
Amarillo Firemen's Relief & Retirement Fund	$ 193,539,560	6.84%	75.25%	17.68%	0.00%	0.00%	0.00%
Corpus Christi Fire Fighters' Retirement System	$ 157,587,141	1.17%	60.29%	26.11%	12.28%	0.00%	12.28%
Beaumont Firemen's Relief & Retirement Fund	$ 120,726,075	3.26%	62.85%	21.27%	4.71%	7.09%	11.80%
Denton Firemen's Relief & Retirement Fund	$ 103,815,795	13.20%	53.21%	15.57%	12.50%	5.36%	17.86%
Midland Firemen's Relief & Retirement Fund	**$ 84,848,966**	**4.67%**	**29.87%**	**36.87%**	**17.83%**	**10.60%**	**28.43%**
Tyler Firefighters' Relief & Retirement Fund	$ 74,572,571	1.59%	55.79%	32.10%	3.73%	6.79%	10.52%
San Angelo Firemen's Relief & Retirement Fund	$ 71,680,768	1.69%	60.42%	20.22%	3.53%	14.14%	17.67%
Abilene Firemen's Relief & Retirement Fund	$ 55,688,061	0.82%	67.65%	12.74%	0.00%	18.79%	18.79%
Odessa Firemen's Relief & Retirement Fund	$ 44,792,901	0.46%	68.77%	22.33%	7.39%	0.00%	7.39%
Big Spring Firemen's Relief & Retirement Fund	$ 13,231,702	1.55%	13.85%	76.97%	0.00%	7.63%	7.63%

Investments

Investment	Class	Description[20]	Value per IPPE
Cash	Cash		$17,485,148
Harvest Interest II (Strategic Partner Fund)	Real Estate	Real estate fund	$6,615,239
Davis Fund	Real Estate	$413.5 million real estate fund invested in multiple real estate equity, joint-venture equity, debt, and CMBS securities. The fund closed in 2012 and is fully committed.	$937,931
Moriah SRC Pref	Real Estate	1.8% ownership, real estate type unknown	$76,500
CDK Beach House Jacksonville	Real Estate	45% ownership, Senior Living - Jacksonville, FL	$314,134
Moriah Hospitality	Real Estate	3.7% ownership, hotel and motel direct investment fund	$275,442
CDK Multi-Family	Real Estate	26.84% ownership, two properties left to sell	$2,557,241
101 N G Street, Midland, TX, 79701	Real Estate	Commercial building (barbershop)	$98,767
105 N G Street, Midland, TX, 79701	Real Estate	Office building (including fund offices)	$1,190,922
Silverado Autumn Leaves Westover Hills	Real Estate	Ashford Apartments (Carrollton, Texas)	$500,000
IM Multi-Family	Real Estate	No data provided in IPPE other than shown as 42.84% investor in CDK Multi-Family	$2,030,071
Glendower	Alternative	Closed $1.4B PE fund seeks to target GP restructuring transactions, as well as acquire limited partnership Interests In private equity funds and privately-held companies. Geographically, it looks to target opportunities on a global scale with a focus on North America and Europe. The fund may also consider opportunities focused on Asia and across the emerging markets, to a lesser extent.	$2,010,057
Greenspring V	Alternative	Private Equity investment primarily in tech companies	$1,837,507
Greenspring V-B	Alternative	Private Equity investment primarily in tech companies	$361,895
NBW Capital	Alternative	Advisor Managed Discretionary Account investing in publicly traded MLP strategy	$3,521,573
Westwood MLP	Alternative	MLP Mutual fund. Fund itself was closed and liquidated Aug 2019	$2,392,496
Westwood LC Value	Equity	Large Cap Value	$2,935,387
Westwood SMID Value	Equity	Small/Mid Cap Value	$2,749,288
Lazard International Equity SM	Equity	International Equity Small Cap MF (EAFE)	$7,404,865
Morgan Stanley Global International	Equity	International Equity MF	$5,692,633
SeaCrest Hybrid Fixed-Income	Fixed Income	80% Investment Grade FI/20% other income strategies	$729,938
Seacrest International Sovereign Debt	Fixed Income	Non-US dollar denominated debt 67% Developing/21% Developed/12% Cash	$10,272,102
Loomis Sayles Hybrid Fixed-Income	Fixed Income	Potential discretionary account Maximum <BBB: 50%, Maximum emerging markets debt: 40%, Maximum non-US dollar: 25%	$8,529,192
Westwood High-Yield Short-Term	Fixed Income	41% High Yield/25% Equity/23% Investment Grade/7% Convertibles/remaining small amounts	$9,982,421
Westwood High-Yield Fixed-Income	Fixed Income	41% High Yield/25% Equity/23% Investment Grade/7% Convertibles/remaining small amounts	$3,019,657

[20] Descriptions based on information provided in IPPE, supplemental documents from the fund, or independent PRB research.

Investment Returns

Rates of Return (as of 12/31/2019)			
Time Period	**1-year**	**3-year**	**10-year**
Gross Return[21]	N/A	N/A	N/A
Net Return[22]	9.86	4.06%	5.10%

Expense Breakdown

Fiscal Year ending 12/31/2019	
Fiduciary Net Position (FNP)	$84,848,970
Investment Expenses	$1,215,007
Investment Expenses % of FNP	1.43%
Administrative Expenses	$219,379
Administrative Expenses % of FNP	0.29%

C: Historical Trends

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

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

[21] 2019 Gross Returns are not available as Midland has not reported the 2019 gross return but did provide the net return.

[22] The 3-year and 10-year returns are PRB calculated as Midland has not submitted reported the rolling returns.

Assets and Liabilities

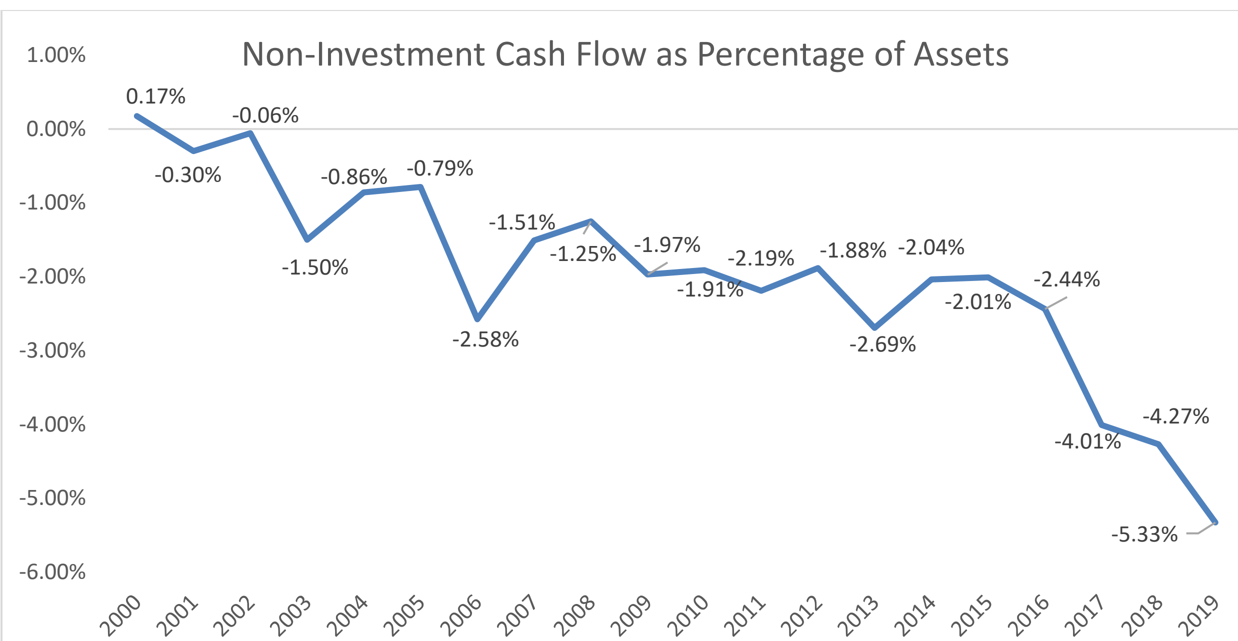
Funding Trends Funded Ratio, Assets, Liabilities and Year over Year Growth									
Valuation Year	2004	2006	2008	2010	2012	2014	2015	2017	2019
Funded Ratio	74.46%	73.36%	72.14%	78.10%	72.23%	66.82%	65.78%	60.91%	51.10%
Amortization Period (years)	35.2	47.2	47	41.2	86.3	59.1	44.7	Infinite	Infinite
UAAL (in millions)	$17.54	$21.34	$26.02	$19.78	$28.09	$38.96	$45.27	$58.95	$86.85
AVA (in millions)	$51.13	$58.78	$67.39	$70.55	$73.07	$78.48	$87.00	$91.86	$90.75
AVA Growth (YoY)	2.63%	7.22%	7.07%	2.32%	1.76%	3.64%	5.29%	2.75%	-0.60%
AAL (in millions)	$68.67	$80.12	$93.41	$90.34	$101.16	$117.44	$132.27	$150.81	$177.60
AAL Growth (YoY)	8.07%	8.01%	7.98%	-1.66%	5.82%	7.75%	6.12%	6.78%	8.52%

Midland Fire's actuarial accrued liability (AAL) nearly doubled between 2006 and 2019. During the same period, the actuarial value of assets (AVA) only increased by 54 percent. The fund was 94 percent funded in 2000 but fell to below 51 percent in 2019.

Cash Flow

Midland Fire was in the lowest quartile of non-investment cash flow in its peer group in 2019. Total contributions have grown on average by six percent annually since 2009 but are being outpaced by the average growth in yearly benefit disbursements of eight percent. Benefit disbursements and contribution refunds exceed the amount of contributions the fund receives by 25 percent on average.

A negative non-investment cash flow is not abnormal for mature defined benefit pension plans. However, a cash flow percentage this low is likely to be a drag on potential investment returns because a plan must either invest in a higher proportion of income-producing investments, which traditionally provide lower returns, or must liquidate existing assets to pay out current benefits or expenses.



D: Peer Group Key Metric Comparison

		Funding Val Metrics						Fiscal Year End Metrics			
Peer Group Plans	MVA	Am Period Date	Am Period	Funded Ratio	UAAL as % of Payroll	Assumed Interest	Payroll Growth	FYE	Actual Cont. as % of ADC	DROP as % of FNP	Non-Investment Cash Flow as % of FNP
Lubbock Fire Pension Fund	$224,469,634	12/31/2020	33.7	69.53%	241.07%	7.50%	3.25%	12/31/2019	94.45%	N/A	-2.15%
Amarillo Firemen's Relief & Retirement Fund	$193,539,560	12/31/2019	38.10	82.00%	185.22%	7.50%	3.00%	9/30/2019	91.52%	N/A	-3.59%
Corpus Christi Fire Fighters' Retirement System	$157,587,141	12/31/2018	29.80	60.21%	305.70%	7.50%	3.10%	12/31/2019	98.21%	N/A	-2.31%
Beaumont Firemen's Relief & Retirement Fund	$120,726,075	12/31/2018	Infinite	55.80%	457.43%	7.50%	3.00%	12/31/2019	48.14%	34.42%	-5.64%
Denton Firemen's Relief & Retirement Fund	$103,815,795	12/31/2019	18.30	80.79%	115.79%	6.75%	3.00%	9/30/2019	100.00%	N/A	1.60%
Midland Firemen's Relief & Retirement Fund	**$84,848,966**	**12/31/2019**	**Infinite**	**51.10%**	**432.24%**	**7.50%**	**3.25%**	**12/31/2019**	**69.68%**	**0.60%**	**-5.33%**
Tyler Firefighters' Relief & Retirement Fund	$74,572,571	12/31/2019	29.00	71.13%	240.14%	7.25%	3.00%	12/31/2019	108.31%	N/A	-3.10%
San Angelo Firemen's Relief & Retirement Fund	$71,680,768	12/31/2019	37.60	61.97%	339.34%	7.80%	3.50%	12/31/2019	95.30%	N/A	-2.25%
Abilene Firemen's Relief & Retirement Fund	$55,688,061	10/1/2019	31.40	49.07%	393.82%	7.50%	3.00%	9/30/2019	96.44%	N/A	-6.29%
Odessa Firemen's Relief & Retirement Fund	$44,792,901	1/1/2020	37.50	36.81%	544.63%	7.50%	3.50%	12/31/2019	69.92%	4.40%	-6.81%
Big Spring Firemen's Relief & Retirement Fund	$13,231,702	1/1/2019	38.33	53.22%	245.07%	7.75%	4.50%	12/31/2019	92.73%	N/A	-0.39%

E: Peer Group Sponsor Funding Comparison

Peer Group Plans	General Fund Expenditures (GFE)	EOY GF Bal	UAAL	Expected Employer Contributions	ADC	30-yr Shortfall	30-Y SF % of ADC	30-Y SF % of GFE
Lubbock Fire Pension Fund	$184,735,236	$74,948,958	$94,995,833	$7,824,216	$8,133,588	$309,372	3.80%	0.17%
Amarillo Firemen's Relief & Retirement Fund	$171,755,260	$64,062,524	$38,901,102	$4,372,795	$4,591,225	$218,430	4.76%	0.13%
Corpus Christi Fire Fighters' Retirement System	$232,388,294	$86,614,870	$99,896,125	$6,953,895	$6,953,895	$-	0.00%	0.00%
Beaumont Firemen's Relief & Retirement Fund	$124,739,204	$50,566,112	$88,543,261	$3,000,257	$6,232,792	$3,232,535	51.86%	2.59%
Denton Firemen's Relief & Retirement Fund	$115,291,908	$33,782,211	$23,333,103	$3,728,062	$3,472,136	$(255,926)	-7.37%	-0.22%
Midland Firemen's Relief & Retirement Fund	**$140,061,930**	**$123,576,144**	**$86,848,661**	**$4,460,529**	**$7,514,584**	**$3,054,055**	**40.64%**	**2.18%**
Tyler Firefighters' Relief & Retirement Fund	$72,283,287	$26,875,395	$29,442,082	$2,602,913	$2,745,136	$142,223	5.18%	0.20%
San Angelo Firemen's Relief & Retirement Fund	$82,050,627	$48,741,966	$42,886,258	$2,552,876	$2,830,912	$278,036	9.82%	0.34%
Abilene Firemen's Relief & Retirement Fund	$93,767,930	$34,456,289	$60,298,270	$3,253,586	$3,342,390	$88,804	2.66%	0.09%
Odessa Firemen's Relief & Retirement Fund	$89,247,303	$105,884,962	$74,245,186	$4,185,169	$3,995,227	$(189,942)	-4.75%	-0.21%
Big Spring Firemen's Relief & Retirement Fund	$21,923,239	$9,362,120	$10,439,548	$638,979	$702,877	$63,898	9.09%	0.29%

F: Peer Group Expense Comparison

Peer Group Plans	10 yr. return (Net)[23]	Active/ Annuitants	Average Benefit	NPL	Admin Expenses	Admin Exp as % of Assets	Investment Expenses	Inv Exp as % of Assets	Other Expenses	Total Expenses	Exp as % of Assets
Lubbock Fire Pension Fund	6.68%	1.34	$ 53,955	$ 81,471,416	$ 316,533	0.15%	$ 135,381	0.06%	-	$ 451,914	0.21%
Amarillo Firemen's Relief & Retirement Fund	9.87%	1.24	$ 57,058	$ 22,573,246	$ 66,525	0.03%	$ 586,263	0.30%	-	$ 652,788	0.33%
Corpus Christi Fire Fighters' Retirement System	7.57%	1.20	$ 41,322	$ 102,626,740	$ 316,029	0.20%	$ 502,933	0.32%	-	$ 818,962	0.52%
Beaumont Firemen's Relief & Retirement Fund	7.78%	0.98	$ 53,471	$ 188,787,980	$ 350,912	0.29%	$ 487,847	0.40%	-	$ 838,759	0.69%
Denton Firemen's Relief & Retirement Fund	9.33%	2.29	$ 50,083	$ 12,653,601	$ 71,427	0.07%	$ 178,458	0.17%	-	$ 249,885	0.24%
Midland Firemen's Relief & Retirement Fund	**5.10%**	**0.91**	**$ 55,118**	**$ 92,884,709**	**$ 219,379**	**0.26%**	**$ 1,215,007**	**1.43%**	**$171,028**	**$ 1,605,414**	**1.89%**
Tyler Firefighters' Relief & Retirement Fund	7.57%	1.39	$ 54,800	$ 24,382,604	$ 112,448	0.32%	$ 0	0.00%	$78,691	$ 191,139	0.54%
San Angelo Firemen's Relief & Retirement Fund	7.68%	1.18	$39,309	$41,077,950	$ 73,426	0.10%	$ 309,116	0.43%	-	$ 382,542	0.53%
Abilene Firemen's Relief & Retirement Fund	6.48%	1.10	$39,957	$ 63,054,590	$ 100,717	0.18%	$ 177,771	0.32%	-	$ 278,488	0.50%
Odessa Firemen's Relief & Retirement Fund	6.88%	0.89	$42,795	$ 69,999,260	$ 240,679	0.54%	$ 91,535	0.20%	-	$ 332,214	0.74%
Big Spring Firemen's Relief & Retirement Fund	7.22%	1.45	$25,855	$ 10,292,219	$ 70,623	0.53%	$ 0	0.00%	-	$ 70,623	0.53%

[23] All 10-year returns are as of the respective plan's 2019 fiscal year.

G: Peer Group Value of Benefits Comparison

Peer Group Plans	Retirement Age	YCS	(a) Multiplier as % of FAS	Normal Form of Payment	COLA	Social Security?	(b) Annuity Factor[24]	(a)*(b) PVFB as % of FAS
Lubbock Fire Pension Fund	50	20	69%	Life Annuity with J/S 66%	None	No	26.6	18.4
Amarillo Firemen's Relief & Retirement Fund	50	20	65%	Life Annuity	None	No	23.8	15.5
Corpus Christi Fire Fighters' Retirement System	54	20	52%	Life Annuity	None	No	22.0	11.4
Beaumont Firemen's Relief & Retirement Fund	50	20	63%	Life Annuity with J/S 75%	None	No	27.1	17.1
Denton Firemen's Relief & Retirement Fund	50	20	52%	Life Annuity with J/S 66%	None	Yes	26.6	13.8
Midland Firemen's Relief & Retirement Fund	**50**	**20**	**75%**	**Life Annuity with J/S 75%**	**None**	**No**	**27.1**	**20.3**
Tyler Firefighters' Relief & Retirement Fund	50	25	72%	Life Annuity with J/S 66%	None	No	26.6	19.0
San Angelo Firemen's Relief & Retirement Fund	50	20	66%	Life Annuity with J/S 72%	Deferred to 65 1.2%	No	30.4	20.1
Abilene Firemen's Relief & Retirement Fund	53	20	55%	Life Annuity with J/S 66%	None	No	25.4	14.0
Odessa Firemen's Relief & Retirement Fund	55	25	72%	Life Annuity	None	Yes	21.5	15.5
Big Spring Firemen's Relief & Retirement Fund	50	20	51%	Life Annuity with J/S 66%	None	No	26.6	13.6

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

H: PRB IPPE Review

Review of MFRRF IPPE and Investment Practices

Summary

The evaluation consists of responses to the questions in the PRB's informal *Guidance for Investment Practices and Performance Evaluation.* However, many of the responses are single word answers, include limited analysis, and/or do not address the intended subject matter. For example, for the question "Is an attorney reviewing any investment fee arrangements for alternative investments?" the response provided is "Sometimes. It depends." with no further discussion of the subject included elsewhere in the IPPE.

The following sections outline several questions and/or concerns regarding both current policies and procedures as well as the evaluation itself. Some of the listed items might be considered innocuous when viewed individually but are more concerning when considered as whole.

Investment Policy Statement

The IPPE provides an affirmative response to several questions regarding the content of the IPS but in general does not provide recommendations for improvement or reference to outside documents to explain how the IPS meets best practices or guidelines outlined in TLFFRA statute. The PRB notes:

1) TLFFRA statute Sections 27 and 28 direct boards to "adopt formal investment policies that emphasize safety and diversity as well as liquidity for benefit payments," and "give special consideration to the preferred investment practices of the Government Financial Officers Association [GFOA]."
2) The IPS is a one-page document that does not include many items that are considered best practice by the CFA Institute or the GFOA.
3) The IPPE indicates the "roles and responsibilities of those involved in governance, investing, consulting, monitoring and custody" are clearly outlined in the IPS. While the IPS refers to TLFFRA statute which directs boards to "adopt formal investment policies."
4) The IPPE indicates the IPS contains measurable investment manager performance goals by asset class. This information is not included the IPS. The IPS states, "Investment managers, once chosen, will be retained as long as the Board determines that the investment philosophy utilized and returns realized are appropriate for the long-term needs of the MFRRF."
5) The IPS does not identify the investment objective and time horizon which are specifically identified in many industry standards for best practice.
6) There are no formal or specific policies in place to review the overall effectiveness of the investment program. The IPPE indicates the Fund evaluates its overall portfolio performance based on whether it is "meeting actuarial assumptions."

Asset Allocation

1) Per Texas Government Code §802.109(a)(2)(A), the evaluation is required to include "a detailed review of the retirement system's investment asset allocation, including: the process for determining target allocations." The IPPE states there is a formal written policy, however the IPS/IPPE do not include the process.
2) Per Texas Government Code §802.109(a)(2)(C), the evaluation should assess "the appropriateness of selection and valuation methodologies of alternative and illiquid assets." The

IPPE does not discuss the valuation methodology of alternative or illiquid assets, nor does it discuss how the Fund's policies compare to industry standards. Reponses to relevant questions discuss how returns are calculated, not how the investments are selected or the assets themselves are valued.

3) The capital market assumptions provided in the evaluation need clarification regarding how the expectations were calculated. They appear to differ rather drastically from what is provided in the plan's annual financial audit and from other industry expert surveys. One specific example would be the expected 7.31% return on fixed income included in the IPPE vs. the MFRRF actuary's 3-4% expected return.
4) According to the 12/31/2019 audit, the Fund holds approximately 20-30% of its total portfolio in illiquid assets (generally assets valued at Level III and potential redemption periods of 30 days or longer) but there is very little discussion in the IPPE about the appropriateness of these assets or how the risk it presents to the long-term solvency of the Fund is evaluated, if at all.
5) In addition to a large allocation to illiquid assets, the liquid portion appears to be heavily allocated to higher risk investments, such has high-yield fixed income, international fixed income, including sovereign debt and emerging markets. However, the IPPE provides no discussion on the investment tilt to higher risk.

Fees and Commissions

1) The evaluation notes that the investment fees are "in-line with industry averages," however no data is provided to show how the system ranks compared to peers or industry averages and no explanation is provided for how this conclusion is drawn.

Manager Selection and Monitoring

1) Per Texas Government Code §802.109(a)(5), the evaluations should provide "a review of the retirement system's investment manager selection and monitoring process." The IPPE provides limited descriptions regarding how the managers are selected but does not "evaluate the appropriateness, adequacy, and effectiveness" of this approach, per statute.
2) The Fund invests a large percentage in direct real estate and other illiquid investments but appears to have very few, if any, formal policies on how to select, manage, or evaluate these complicated assets.

Other General Notes

1) The IPPE does not have a publication date which makes it difficult for the public stakeholders to understand the context of the analysis or period reviewed.
2) The evaluation references an asset/liability study performed in 2019, but the PRB was informed no formal study was conducted, so it is unclear how it could be considered part of the evaluation.
3) The evaluation provided a list (Tab 3) that discloses investment positions of the Fund. More explanation is needed on the following to aid in the usefulness of the document:
    a. It is unclear if the expected return is intended to be an annualized return or a total return since inception.
    b. The asset class expected return is the same as the investment return when normally there would be some return variance.
    c. The sum of individual asset values exceeds both the total reported at the bottom of the list as well as the value reported in the audit by a significant margin.
    d. Certain individual asset values exceed the value reported in the audit by a significant margin.

I: Midland Fire's Investment Policy Statement Approved 4/23/2020

MIDLAND FIREMEN'S RELIEF AND RETIREMENT FUND
STATEMENT OF INVESTMENT POLICIES
Revised 4/23/2020

The Midland Firemen's Relief and Retirement Fund (MFRRF) is subject to the provisions of Article 6243e, Vernon's Texas Civil Statutes, 45th Legislature, Regular session 1937, as revised. This statute describes an act relating to membership and credit in and benefits and administration of certain retirement systems for paid fire fighters. This Fund is directed by a Board of Trustees (Board) consisting of seven members.

The duties of the Trustees, approved delegations to investment managers and other fiduciaries, prohibited transactions, authorized transactions and liability for breach of fiduciary duties are all set forth in Article 6243e, Sections 27 and 28. These provisions are provided by MFRRF to all investment managers, advisors or consultants. MFRRF is to be managed with that care, skill, prudence and diligence that a prudent person familiar with such matters would use in like circumstances, i.e., it is to be managed under the prudent person provisions.

On December 19, 2012, the Board of Trustees of Midland Firemen's Relief and Retirement Fund gave the Investment Committee (collectively, not one individual) the authority to move a percentage of U.S. Equity to/from fixed income based on market conditions to hedge volatility (from stock to bond and back from bond to stock). All moves will be reported to the Board of Trustees at the upcoming Board Meeting.

On October 26, 2017, the Board of Trustees of Midland Firemen's Relief and Retirement Fund adopted a variance limit of asset classes. The Board recommends 1-15% in cash or cash equivalents (fully utilizing money market funds in the interim), 10-30% in bonds, 15-25% in U.S. equities (to include exposure to small, medium and large capitalization classes), 15-25% in emerging and developed international equities (to include exposure to small, medium and large capitalization classes), 20%-30% in Real Estate Class, 5-15% in alternative investments (that may include exposure to hedge fund, fund of funds, private equity, distressed debt and other alternative investment vehicles). If the variance limit, at anytime, falls outside the recommended amounts, such variance must be ratified by the Board of Trustees at the first regularly scheduled Board meeting following this occurrence. This recommendation is subject to change from time to time by Board action.

Investment managers, once chosen, will be retained as long as the Board determines that the investment philosophy utilized and returns realized are appropriate for the long-term needs of the MFRRF.

Investment managers must manage MFRRF assets according to their stated investment policies as presented to the Board. No deviation from stated policy is authorized unless first discussed with the Board and written approval from the Board is issued.

Investment managers must advise the Board in writing of any changes in the investment manager's organization, decision-making structure, ownership, investment style, key personnel or any other material change and state the anticipated impact on the investment manager's ability to provide the same style and type of management on a continuing basis.

Chairman	Vice Chairman	Treasurer/Secretary

J: Midland Fire's Investment Policy Statement Approved 10/25/2021

Investment Policy Statement
MIDLAND FIREMEN's RELIEF & RETIREMENT FUND

Approved on 10/25/2021

By Board of Trustees
This investment policy statement should be reviewed and updated at least annually. Any change to this policy should be communicated in writing on a timely basis to all interested parties.

EXECUTIVE SUMMARY

Type of Fund:	**Defined Benefit - Pension Fund**
Plan Sponsor:	**City of Midland, Texas**
Plan Name:	**Midland Firemen's Relief & Retirement Fund**
IRS Tax Identification:	**75-6065580**
Current Assets:	**$90,000,000**
Time Horizon:	**Greater than 30 years**
Return Objective:	**7.50% (4.50% over the Consumer Price Index)**

INVESTMENT STRUCTURE

This structure includes various asset classes, investment management styles, asset allocation and acceptable ranges that, in total, are designed to produce a sufficient level of overall diversification and total investment return potential over the long-term.

ASSET ALLOCATION

Asset Class	Minimum Weight	Maximum Weight	Target Weight
Equities	30%	50%	35%
Fixed Income	10%	30%	20%
Alternatives	15%	30%	35%
Cash & Equivalents	1%	10%	10%

BACKGROUND

The **Midland Firemen's Relief & Retirement Fund** is a pension fund established in 1941. The plan covers substantially all employees of the Midland Fire Department. Midland Firemen's Relief and Retirement Fund is governed by Article 6243e Vernon's Texas Civil Statutes and Chapter 802 of the Texas Government Code.

The Retirement Plan Board of Trustees will discharge its responsibilities under the Plan solely in the long-term interests of Plan participants and their beneficiaries.

PURPOSE

The purpose of this Investment Policy Statement (IPS) is to assist the Board of Trustees ("Board") in effectively supervising, monitoring and evaluating the investment of the Midland Firemen's Relief & Retirement Fund ("Plan") assets. This statement is set forth by the Board in order to:

1. State in a written document the Board's attitudes, expectations, objectives and guidelines for the investment of all Plan assets.
2. Set forth an investment structure for managing all Plan assets.
3. Encourage effective communications between the Board, the Consultant, investment managers, and/or custodian.

4. Establish formal criteria to select, monitor, evaluate and compare the performance results achieved by the various investment managers on a regular basis.
5. Establish procedures for selecting, monitoring, evaluating, and, if appropriate, replacing investment options.
6. Establish the relevant investment horizon for which Plan assets will be managed.
7. Manage Plan assets according to prudent standards and applicable laws, as established for such assets.

This IPS has been formulated, based upon consideration by the Board of the financial implications of a wide range of policies, and describes the prudent investment process the Board deems appropriate.

DUTIES AND RESPONSIBILITIES

Delegation of Authority

The Board members are fiduciaries and are responsible for directing and monitoring the investment management of Plan assets. As such, the Board is authorized to delegate certain responsibilities to professional experts in various fields. These include, but are not limited to:

1. Investment Consultant. The investment consultant may assist the Board in: Establishing investment policy, objectives, and guidelines; selecting investment options and managers; reviewing such options and managers over time; measuring and evaluating investment performance; and other tasks as deemed appropriate.
2. Investment Manager(s). If selected, the investment manager(s) has discretion to purchase, sell, or hold the specific securities that will be used to meet the Plan's investment objectives.
3. Custodian. The custodian will physically (or through agreement with a sub-custodian) maintain possession of securities owned by the Plan, collect dividend and interest payments, redeem maturing securities, and effect receipt and delivery following purchases and sales. The custodian may also perform regular accounting of all assets owned, purchased, or sold, as well as movements of assets into and out of the Plan accounts.
4. Additional specialists such as attorneys, auditors, actuaries, and others may be employed by the Board to assist in meeting its responsibilities and obligations to administer Plan assets prudently.

Investment managers will be held accountable to achieve the objectives herein stated. While it is not believed that the limitations will hamper investment managers, each manager should request modifications which they deem appropriate.

ASSIGNMENT OF RESPONSIBILITY

Board of Trustees

The Board is charged by law with the responsibility for the management of the assets of the Plan. The Board shall discharge its duties solely in the interest of the Plan, with the care, skill, prudence and diligence under the circumstances then prevailing, that a prudent man, acting in a like capacity and familiar with such matters would use in the conduct of an enterprise of a like character with like aims. The specific responsibilities of the Board relating to the investment management of Plan assets include:

1. Prepare and maintain this investment policy statement. Establishing investment objectives, policies and guidelines.
2. Prudently diversify the Plan's assets to meet an agreed upon risk/return profile. Projecting Plan's financial needs, determining risk tolerance and time horizon.
3. Prudently select investment options. Developing and enacting proper control procedures. For example, replacing an investment manager due to a fundamental change in investment management process, or failure to comply with established guidelines.
4. Control and account for all investment, record keeping and administrative expenses associated with the Plan.

5. Monitor and supervise all professional experts and investment options. Prudently and diligently selecting and monitoring qualified investment professionals, including investment manager(s), an investment consultant, and a custodian.
6. Avoid prohibited transactions and conflicts of interest.

Investment Consultant

The Board will retain an objective, third-party Investment Consultant ("Consultant") to assist the Board in managing the overall investment process. The Consultant will be responsible for guiding the Board through a disciplined and rigorous investment process to enable the Board to meet the fiduciary responsibilities outlined above.

The Consultant's role is that of a non-discretionary advisor to the Board of Trustees. Investment guidance concerning the investment management of Plan assets will be offered by the Consultant, and will be consistent with the investment objectives, policies, guidelines and constraints as established in this statement. Specific responsibilities of the Consultant include:

1. Assisting in the development and periodic review of investment policy.
2. Assisting with investment manager searches when requested by the Board.
3. Where applicable, providing "due diligence," or research, on the investment manager(s).
4. Assisting the board with monitoring the performance of the investment manager(s) to provide the Board with the ability to determine the progress toward the investment objectives.
5. Communicating matters of policy, manager research, and manager performance to the Board.
6. Reviewing Plan investment history, historical capital markets performance and the contents of this investment policy statement to any newly appointed members of the Board.

Investment Managers

As distinguished from the Board and Consultant, who are responsible for managing the investment process, investment managers are responsible for making investment decisions (security selection and price decisions). The specific duties and responsibilities of each investment manager are:

1. Manage the assets under their supervision in accordance with the guidelines and objectives outlined in their respective Service Agreements, Prospectus or Trust Agreement.
2. Exercise full investment discretion with regards to buying, managing, and selling assets held in the portfolios.
3. Unless otherwise stated, vote promptly all proxies and related actions in a manner consistent with the best interest and objectives of all clients as described in applicable account opening documents, provided proxy materials are available. Each investment manager shall keep detailed records of the voting of proxies and related actions and will comply with all applicable regulatory obligations.
4. Communicate to the Consultant all material changes pertaining to the fund it manages or the firm itself. Changes in ownership, organizational structure, financial condition, and professional staff are examples of changes that may require notification.
5. Effect all transactions for the Plan subject "to best price and execution." If a manager utilizes brokerage from the Plan assets to effect "soft dollar" transactions, detailed records will be kept in accordance with applicable regulations.
6. Use the same care, skill, prudence, and due diligence under the circumstances then prevailing that experienced investment professionals acting in a like capacity and fully familiar with such matters would use in like activities for like funds with like aims in accordance and compliance with all applicable laws, rules, and regulations.

Custodian

Custodians are responsible for the safekeeping of the Plan's assets. The specific duties and responsibilities of the custodian are:

1. Maintain separate accounts by legal registration.
2. Value the holdings.

3. Collect all income and dividends owed to the Plan.
4. Settle all transactions (buy-sell orders) initiated by the Investment Manager.
5. Provide monthly reports that detail transactions, cash flows, securities held and their current value, and change in value of each security and the overall portfolio since the previous report.

STATEMENT OF OBJECTIVES

This IPS has been arrived at upon consideration by the Board by a wide range of policies, and describes the prudent investment process the Board deems appropriate. This process includes offering various asset classes and investment management styles that, in total, are expected to offer participants a sufficient level of overall diversification and total investment return over the long-term. The objectives are:

1. Maintain a fully funded status with regard to the Accumulated Benefit Obligation and 90% of the Projected Benefit Obligation.
2. Have the ability to pay all benefit and expense obligations when due.
3. Maintain a “funding cushion” for unexpected developments and for possible future increases in benefit structure and expense levels.
4. Maintain flexibility in determining the future level of contributions.
5. Maximize return within reasonable and prudent levels of risk in order to minimize contributions.
6. Control costs of administering the plan and managing the investments.

Investment results are the critical element in achieving the investment objectives, while reliance on contributions is a secondary element. In accordance with this Investment Policy, the total return objective is 7.50%. The total return is annualized in timeframes over one year, and reviewed over a market cycle of 3-5 years. On a quarter-to-quarter basis, the actual returns will fluctuate and can be expected to exceed the benchmark about half the time.

Time Horizon

There is a requirement to maintain sufficient liquid reserves to provide for the payment of retirement benefits. Analysis of the cash flow projections of the Plan indicates benefit payments will exceed contributions for at least several years. The Board's Administrator will notify the Investment Consultant and/or Managers well in advance of the withdraw orders to allow sufficient time to build up necessary liquid reserves.

Risk Tolerance

The Board recognizes the difficulty of achieving the Plan's investment objectives in light of the uncertainties and complexities of contemporary investment markets. The Board also recognizes some risk must be assumed to achieve the Plan's long-term investment objectives. In establishing the risk tolerances of the IPS, the ability to withstand short and intermediate term variability were considered. These factors were:

1. Midland Firemen's Relief & Retirement Fund is in an industry that should experience milder fluctuations than the general economy. Midland Firemen's Relief & Retirement Fund believes it should be able to achieve above average growth during the next several years.
2. Midland Firemen's Relief & Retirement Fund's strong financial condition enables it to adopt a long-term investment perspective.
3. Demographic characteristics of participants suggest an above-average risk tolerance due to the younger-than-average work force.
4. Actuarial data related to future projected benefit payments, along with future projected expenses of the Plan, are significantly more than contributions received by the plan. Therefore, liquidity and income requirements are material over the next ten years, which the investment policy must consider.
5. Historically, the Plan assets have been accumulated to be at or slightly exceed the value of the Plan's total accrued benefit liability with a 30-year amortization period for the unfunded liability, allowing for a less aggressive risk profile. However, given the recent actuarial calculations, the Firemen and the City of Midland must work out a plan in terms of future contributions to the plan, and hiring the appropriate number of Firemen to the city as member of the Plan. This, and other actuary suggestions were made per the 2019 Actuarial Evaluation presented to the Fund.

In summary, Midland Firemen's Relief & Retirement Fund's prospects for the future, current financial condition, and several other factors, suggest collectively the Plan can tolerate some interim fluctuations in market value and rates of return in order to achieve long-term objectives.

Performance Objective

The desired investment objective is a long-term rate of return on assets that is at least 7.50%, which is 4.50% greater than the anticipated rate of inflation as measured by the Consumer Price Index (CPI) over the long term. The target rate of return for the Fund has been based upon the assumption that future real returns will approximate forward looking capital market assumptions provided by the Consultant for each asset class in the IPS. The board understands that variations to these capital market assumptions are expected and specific sectors or industries are more susceptible due to increased vulnerability to any single economic, political or regulatory development.

ASSET CLASS GUIDELINES

The Board believes long-term investment performance, in large part, is primarily a function of the mix of asset classes. History shows that while interest-generating investments, such as bond portfolios, have the advantage of relative stability of principal value, they provide little opportunity for real long-term capital growth due to their susceptibility to inflation. On the other hand, equity investments, such as common stocks, generally have a higher return potential but have the disadvantage of much greater year-by-year variability of return and potential for loss. From an investment decision-making point of view, this year-by-year variability may be worth accepting, provided the time horizon for the equity portion of the portfolio is sufficiently long (five years or greater). As a result, the following investments were selected in order to provide a diversified asset allocation.

Allowable Assets

1. Cash Equivalents
    - Treasury Bills
    - Money Market Funds
    - Commercial Paper
    - Banker's Acceptances
    - Repurchase Agreements
    - Certificates of Deposit
2. Fixed Income Securities
    - U.S. Government and Agency Securities
    - Corporate Notes and Bonds
    - Mortgage-Backed Bonds
    - Collateralized Mortgage Obligations
    - Mutual Funds
    - ETFs
3. Equity Securities
    - Common Stocks
    - American Depository Receipts (ADRs) of Non-U.S. Companies
    - Stocks of Non-U.S. Companies (Ordinary Shares) (If appropriate)
    - Mutual Funds
    - ETFs
4. Alternative Investments/Low Correlation Strategies
    - Real Assets
    - Real Estate

- Natural Resources, Energy, Timber
- Private Equity & Private Equity Fund of Funds
- Hedge Funds & Fund of Funds
- Managed Futures
- Commodities
- Specialty Fixed Income
    - Enhanced Fixed Income: High Yield, Convertibles, ABS
    - Fixed Income Securities of Foreign Governments and Corporations
    - Preferred securities
- Specialty Equity
    - Hedged Equity
    - Multi Strategy
    - Long/Short
    - Arbitrage

ASSET ALLOCATION GUIDELINES

The Board will ensure that investment management of the assets of the Plan shall be in accordance with the following asset allocation guidelines:
The Board will ensure that investment management of the assets of the Plan shall be in accordance with the following asset allocation guidelines:

1. Aggregate Plan Asset Allocation Guidelines (at market value)

Asset Class	Minimum Weighting	Maximum Weighting	Target Weighting
Equities	**30%**	**50%**	**40%**
Large Cap	10%	30%	10%
Mid Cap	5%	10%	5%
Small Cap	3%	10%	5%
International	15%	25%	20%
Fixed Income	**10%**	**30%**	**20%**
Short	5%	10%	5%
Intermediate	10%	20%	15%
Alternatives	**20%**	**35%**	**35%**
Cash & Equivalents	**1%**	**10%**	**5%**
Money Market	1%	10%	5%

2. The Board may employ investment managers whose investment disciplines require investment outside the established asset allocation guidelines. However, taken as a component of the aggregate Plan, such disciplines must fit within the overall asset allocation guidelines established in this statement.

Rebalancing

The Board and Consultant are expected to monitor the portfolio mix. Neither the upper nor the lower limits of the asset allocations are intended to require portfolio activity for the sole purpose of complying with the guidelines; however, deviation from these guidelines will be treated as discussion topics at the quarterly meetings with rebalancing considered at least annually. It is recommended that the target allocation be maintained so that the Plan will be able to achieve its long-term goals.

Diversification for Investment Managers

In order to achieve a prudent level of portfolio diversification, the securities of any one company or government agency should not exceed 10% of the total Fund, and no more than 20% of the total Fund should be invested in any one industry. With the exception of U.S. Government securities, no fixed income issue may exceed 15% of the market value of the fixed income portfolio.

Diversification for Alternative Investments

In order to achieve a prudent level of portfolio diversification, the investment of any one low correlation / alternative strategy should not exceed 10% of the total Fund.

Guidelines for Fixed Income Investments and Cash Equivalents

1. Total plan assets may be invested with a minimum 50% in investment grade bonds rated BBB or equivalent or better.
2. Plan assets may be invested only in commercial paper rated A1 or equivalent or better.
3. Money Market Funds selected shall contain securities whose credit rating at the absolute minimum would be rated investment grade by Standard and Poor's, and/or Moody's.

INVESTMENT MANAGER SELECTION

The Board selection of investment manager(s) must be based on prudent due diligence procedures. A qualifying investment manager must be a registered investment advisor under the Investment Advisers Act of 1940, or a bank or insurance company. The Board will apply the following due diligence criteria in selecting each investment manager.

1. *Regulatory oversight:* Each investment manager should be a regulated bank, an insurance company, a mutual fund organization, or a registered investment adviser.
2. *Correlation to style or peer group:* The product should be highly correlated to the asset class of the investment option. This is one of the most critical parts of the analysis since most of the remaining due diligence involves comparisons of the manager to the appropriate peer group.
3. *Performance relative to a peer group:* The product's performance should be evaluated against the peer group's median manager return, for 1-, 3- and 5-year cumulative periods.
4. *Performance relative to assumed risk:* The product's risk-adjusted performance (Alpha and/or Sharpe Ratio) should be evaluated against the peer group's median manager's risk-adjusted performance.
5. *Minimum track record:* The product's inception date should be greater than three years.
6. *Assets under management:* The product should have at least $75 million under management.
7. *Holdings consistent with style:* The screened product should have no more than 20% of the portfolio invested in "unrelated" asset class securities. For example, a Large-Cap Growth product should not hold more than 20% in cash, fixed income and/or international securities.
8. *Expense ratios/fees:* The product's fees are evaluated and considered given the proper risk/return attributes of each selected manager of their peer group. Expense ratios & fees are evaluated accordingly, and negotiated, when available, with each manager in order to best benefit the fund in terms of costs.
9. *Stability of the organization:* There should be no perceived organizational problems – the same portfolio management team should be in place for at least two years.

CONTROL PROCEDURES

Investment Manager Performance Review and Evaluation

The investment performance of total portfolios, as well as asset class components, will be measured by the Board, with the assistance of the Consultant against commonly accepted performance benchmarks. Consideration shall be given to the extent to which the investment results are consistent with the investment objectives, goals, and guidelines as set forth in this statement. The Board intends to evaluate the portfolio(s) over at least a three-year period, but reserves the right to terminate a manager for any reason including the following:

1. Investment performance which is significantly less than anticipated given the discipline employed and the risk parameters established, or unacceptable justification of poor results.
2. Failure to adhere to the terms and conditions of the investment management agreement.
3. Significant qualitative changes to the investment management organization.
4. Any legal, SEC and/or other regulatory agency proceedings affecting the manager.

Investment managers shall be reviewed by the Board regularly regarding performance, personnel, strategy, research capabilities, organizational and business matters, and other qualitative factors that may impact their ability to achieve the desired investment results.

The Board has determined it is in the best interest of the Plan that performance objectives be established for each investment manager. Investment Manager performance will be evaluated in terms of an appropriate market index (e.g. the S&P 500 stock index for large-cap domestic equity manager) and the relevant peer group (e.g. the large-cap growth mutual fund universe for a large-cap growth mutual fund).

	Asset Class	Index	Peer Group
Large Cap Equity	Blend	Russell 1000 / S&P 500	Large-Cap Blend
	Growth	Russell 1000	Large Cap Growth
	Value	Russell 1000 Value	Large- Cap Value
Mid- Cap Equity	Blend	Russell Midcap	Midcap Blend
	Growth	Russell Midcap Growth	Midcap Growth
	Value	Russell Midcap Value	Midcap Value
Small-Cap Equity	Blend	Russell 2000	Small-Cap Blend
	Growth	Russell 2000 Growth	Small-Cap Growth
	Value	Russell Midcap Value	Small-Cap Value
Multi-Caps	Blend	Russell 3000	Multi-Cap
International Equity	Developed	MSCI EAFE	Foreign Stock
	Emerging Markets	MSCI EM	Emerging Markets
Alternatives	Diversified Alternatives	HFRI Fund of Funds	Diversified Alternatives
Fixed Income	Short Bonds	Short Gov't/ Credit	Short Term Bond
	Intermediate-term Bond	Barclay Gov't/ Credit Intermediate/ Aggregate	Intermediate- Term Bond
	High Yield Bonds	LB High Yield BB	High Yield
Money Market	--	90 day T-Bills	Institutional Money Market

An Investment Manager may be placed on Watch and a thorough review and analysis of the investment manager may be conducted by the Board, when:

1. An Investment Manager performs below median for their peer group over a 1-, 3- and/or 5-year cumulative period.
2. An Investment Manager's 3-year risk adjusted return (Alpha and/or Sharpe) falls below the peer group's median risk adjusted return.
3. There is a change in the professionals managing the portfolio.
4. There is a significant decrease in the product's assets.
5. There is an indication the manager is deviating from his/her stated style and/or strategy.
6. There is an increase in the product's fees and expenses.
7. Any extraordinary event occurs that may interfere with the manager's ability to fulfill their role in the future.

Investment manager evaluation may include the following steps:

1. A letter to an investment manager asking for an analysis of their underperformance.
2. An analysis of recent transactions, holdings and portfolio characteristics to determine the cause for underperformance or to check for a change in style.
3. A meeting with the investment manager, which may be conducted on-site, to gain insight into organizational changes and any changes in strategy or discipline.

The decision to retain or terminate an investment manager cannot be made by a formula. It is the Board's confidence in the investment manager's ability to perform in the future that ultimately determines the retention of a manager.

Measuring Costs

The Board will review at least annually all costs associated with the management of the Plan's investment program, including (where applicable):

1. Expense fees of each investment option against the appropriate peer group.
2. Custody fees: The holding of the assets, collection of the income and disbursement of payments.
3. Whether the investment manager is demonstrating attention to "best execution" in trading securities.
4. Consulting & Administrative Fees: Costs of a consultant and administration of the Plan, including record keeping.

INVESTMENT POLICY REVIEW

The Board will review this IPS at least annually to determine whether stated investment objectives are still relevant and the continued feasibility of achieving the same. It is not expected that the IPS will change frequently. In particular, short-term changes in the financial markets should not require adjustments to the IPS.

This statement of investment policy is adopted on 10/25/2021 by the Board whose signatures appear below.

Board Trustees

Christy Wahland

October 25, 2021

Date

K: Comments from Midland Firemen's Relief and Retirement Fund and City of Midland

Midland Firemen's Relief and Retirement Fund
105 N. G, Suite 201, Midland, Texas 79701
432-704-5575

October 26, 2021

Robert Munter
Texas Pension Review Board
Investment Analyst
Email: Robert.munter@prb.texas.gov

Dear Mr. Munter:

Please accept this memo as a formal response to the preliminary draft of the Intensive Actuarial Review received from the Pension Review Board October 18, 2021. This response was approved by Midland Firemen's Relief and Retirement Fund Board of Trustees at the special board meeting October 25, 2021.

Midland Firemen's Relief and Retirement Fund Board of Trustees and the City of Midland are working together to identify and improve upon the issues that need to be addressed as specified in the PRB Review findings. The Board agrees that there are improvements to be made in various areas as identified in the PRB findings. Together, we are ready to move forward in these discussions to ensure that we are doing everything possible to restore the funding soundness and overall performance of the Plan and Board of Trustees.

Midland Firemen's Relief and Retirement Board of Trustees and the City of Midland will have representatives at the Pension Review Board Meeting, November 2, 2021.

Sincerely,

Brian McGary

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Office of the City Manager

October 25, 2021

Via Email: Robert.munter@prb.texas.gov
Robert Munter, CFA
Texas Pension Review Board
Investment Analyst
P.O. Box 13498
Austin, Texas 78711-3498

Re: *Preliminary Draft of Intensive Actuarial Review of the Midland Firemen's Relief and Retirement Fund*

Dear Mr. Munter,

Thank you for providing the City of Midland ("City") with a copy of the Texas Pension Review Board's ("PRB") preliminary draft of the intensive actuarial review (the "Preliminary Review") of the Midland Firemen's Relief and Retirement Fund (the "Midland Fire Fund"). Please allow this letter to serve as the City's response. As sponsor of the Midland Fire Fund, the City stands ready to continue to work with the Midland Fire Fund board of trustees to ensure the Midland Fire Fund is sustainable and sufficiently funded to provide benefits to Midland Fire Fund members.

The City is greatly concerned with the findings contained in the Preliminary Review. While the City notes that most of the findings are not related to the City's contribution to the Midland Fire Fund, I would like to specify certain actions the City has taken in the past in an effort to assist the Midland Fire Fund:

1. The City has worked to reduce overtime through staffing reorganization, over-hiring positions, and recruiting campaigns.
2. The City no longer makes one-time lump-sum merit payments to firefighters, but instead spreads the payment amounts over a period of either 6 or 12 months to help level peaks in pay.
3. In 2016, the City increased its contribution rate from 21.7% to 22.2%.
4. The City has offered to help pay for services from actuaries and consulting firms and the City continues to stand by that offer.

The City understands that in order to make the fund sustainable and affordable, the City and the Midland Fire Fund's board of trustees may have to increase contributions and/or reduce benefits in the future.

The City believes that an accurate reporting of the Midland Fire Fund's assets is imperative in order to move forward with an adequate funding plan. As stated above, the City will continue to offer to help the Midland Fire Fund retain and pay for required services from actuaries and consulting firms, including assistance with paying for a forensic audit as well as necessary policy and investment consultants.

The City of Midland is committed to our firefighters, and as sponsor of the Midland Firemen's Relief and Retirement Fund, the City has a great interest in the stability of the fund. The City is intent on working with the Midland Fire Fund to achieve a solution and is hopeful that this can be done with promptness and prudence.

Sincerely,

Robert Patrick

Robert Patrick
City Manager, City of Midland

Appendix G – Wichita Falls Firemen's Relief & Retirement Fund Intensive Review

Intensive Review:

Wichita Falls Firemen's Relief and Retirement Fund

October 2022

PENSION REVIEW BOARD

Table of Contents

Executive Summary

Introduction

The Texas Pension Review Board selected Wichita Falls Firemen's Relief and Retirement Fund (Wichita Falls Fire) as the next Texas public retirement system for intensive review. This intensive review is intended to assist the retirement system's board of trustees and the City of Wichita Falls in assessing the system's ability to meet its long-term pension obligation. Despite above average investment returns, the funded status has steadily deteriorated over the last twenty years. As the system's funding status deteriorated, it became subject to the funding soundness restoration plan (FSRP) requirement to create a plan to improve funding and reduce the funding period. The primary source of these funding problems were insufficient contributions, but without a commitment from the sponsor to increase contributions and members already paying nearly the full cost of their benefits, the system was left with few options to address the problems at their source. Instead, the system established a collection of unsustainable benefit changes and aggressive assumptions. Without an increase in contributions, the troubling funding reality remains, and the unsustainable changes will eventually exacerbate funding problems rather than improve them.

Overview

The system should consider adjusting assumptions and plan provisions to align with reasonable expectations, and the city should consider increasing contributions based on those future expectations. Several findings illustrate the challenges both face:

- In 2000, the Wichita Falls Fire total liability was 86 percent funded. As of 2020, there were not enough assets to fully fund the liability for current retirees.
- The city's method to determine contribution levels has led to insufficient contributions, which created the bulk of the unfunded liability. As actuarial assumptions were slow to react to changing demographics and plan provisions, the full extent of the funding problems was obscured by an artificially low funding period.
- As part of the 2018 FSRP, the system implemented a $100,000 benefit cap not indexed with inflation. The cap erodes the salary replacement level for future members, but the system did not change assumptions or methods as would normally be expected despite the cap representing a reduction in the value of benefits.
- The system's actuarial assumptions are aggressive compared to peers. Projections based on more sustainable plan provisions and moderate assumptions show that funding will not be adequate without substantial contribution increases.
- Even an investment program that is performing well must be adequately funded to allow contributions to grow and meet benefit obligations. The investment return assumption likely will need to be lowered as the retiree member group becomes the majority, requiring safer assets.

Conclusion

Increased contributions are key to reaching a sustainable funded status. The city has taken steps to address this mismatch with a planned contribution increase to 16.18 percent of payroll in fiscal year 2022 – 2023. However, this would still be slightly below the median contribution level for sponsors of peer systems. The city should consider contributing well above the median to make up for past years when contributions were below the actuarially determined contribution. Given that many of the system's assumptions will likely need to be adjusted in the near future, the PRB recommends the system and city continue working together to ensure appropriate assumptions, funding, and plan design for an equitable, sustainable retirement system to serve all stakeholders.

Background

The Texas Pension Review Board (PRB) selected Wichita Falls Firemen's Relief and Retirement Fund (Wichita Falls Fire) for an intensive review to examine challenges the retirement system is facing and to serve as a starting point to find solutions to those challenges. Wichita Falls Fire's projected fund exhaustion date and relatively aggressive actuarial valuation assumptions were the primary reasons the system was selected for review. This review is intended to assist the system's board and sponsor, the City of Wichita Falls, in assessing the system's ability to pay promised benefits for the firefighters serving the city. The review also serves as an educational resource and case study for other Texas public retirement systems and stakeholders that may be facing similar challenges.

Key Metrics

Intensive reviews assess issues regarding a system's actuarial soundness and equitable distribution of benefits.[1] Since financial health is dependent on a system's liabilities in relation to its assets, intensive reviews focus on both liabilities and assets, as well as funded status, actuarial methods and assumptions, and investment management practices and performance. To address equitable distribution of benefits, intensive reviews may also focus on the structure of benefits provided to different member groups and the quality of benefits provided for the level of employee contributions. The PRB uses nine key metrics to determine and prioritize retirement systems for intensive review. The PRB selected Wichita Falls Fire for review based on the 2020 actuarial valuation data before the 2022 information was available. Where appropriate, information from the January 1, 2022, actuarial valuation is included in the analysis.

Plan Profile (2020 AV)

Actuarial Accrued Liability: $93,066,282

Market Value of Assets: $52,839,714

Normal Cost: 13.38% of payroll

Contributions: 13% employee
13% employer

Membership: 159 active
146 annuitants

Social Security Participation: Yes

Assumptions: 4% payroll growth
7.75% rate of return

Most Recent FSRP: 2018

Amort. Period (Years)	Funded Ratio	UAAL as % of Payroll	Assumed Rate of Return	Payroll Growth Rate	Actual Cont. as % of ADC[2]	Non-Investment Cash Flow as % of FNP[3]	DROP as % of FNP[3]	Fund Exhaustion Date
43.3	56.78%	326%	7.75%	4%	78.69%	-5.68%	N/A	2051

Contribution, cash flow and fund exhaustion data are from the system's 12/31/2020 financial audit.

[1] §801.202(2), Texas Government Code.

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

[3] Financial net position

Wichita Falls Fire is one of a small number of Texas public retirement systems with a fund exhaustion date.

Public retirement systems are required to perform two periodic actuarial valuations. The accounting valuation must be completed in compliance with Governmental Accounting Standards Board (GASB) No. 67 and is used in the city's annual financial report. A fund exhaustion date, if applicable, will be included in the accounting valuation. The funding valuation is used to determine the funding needs of the plan. The amortization period, which signifies when the pension liability is projected to become fully funded, is included in the funding valuation.

Wichita Falls Fire is one of 12 Texas public retirement systems and two in its peer group with a fund exhaustion date in its accounting valuation.[4] At the fund exhaustion date, the system is projected to have no remaining assets available to pay monthly pension benefits. This means the city might have to begin a pay-as-you-go method where pension benefits are paid as part of the annual budget or risk defaulting on its obligations to Wichita Falls Fire retirees. The first option could potentially require a large portion of the city's budget, restricting its ability to pay for other necessary operations and services. The second option would undermine the retirement security of both active members and retirees who have served the community with the understanding they would be supported in retirement. Both options would likely affect the city's credit rating. It is possible that some middle ground could be reached by reducing a portion of retiree benefits to prevent the benefits being paid from exceeding the available amount of contributions without becoming insolvent,[5] but that outcome would still affect the retirement security of the members.

Unusually, the system has a finite amortization period in the funding valuation, while most plans with fund exhaustion dates have infinite amortization periods. The 2020 funding valuation projected the system to reach 100 percent funded status within 43 years using an open group projection, while the 2020 accounting valuation projected Wichita Falls Fire to exhaust all funds in 31 years and thereafter be unable to pay the promised monthly benefits. This dichotomy between the two valuations is likely due to the different approaches used in each calculation. The calculation of the accounting valuation fund exhaustion date excludes future new entrants from consideration, while the calculation of the funding valuation amortization period includes the impact of future new entrants. If future firefighters are the key to moving from fund depletion to full funding, it would likely cause intergenerational equity issues by placing significant burden on future firefighters.

Overall, Wichita Falls Fire's assumptions are among the most aggressive in the state.

Two valuation assumptions, the expected rate of return and payroll growth, are among the nine metrics the PRB uses to select systems for intensive review. Wichita Falls Fire's assumptions are among the most aggressive with both the expected rate of return and payroll growth assumptions measuring among the highest three in its metric in the state. Two other systems had a higher expected rate of return, but those assumptions were somewhat balanced by payroll growth rates significantly closer to the state average.

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[4] The selected peer group includes TLFFRA systems with payroll amounts between $8.8 million and $20.2 million and liabilities between $67.1 million and $121.4 million. See the appendix for additional peer system data.
[5] Section 16, Article 6243e, Vernon's Texas Civil Statutes.

Because contributions are paid as a percentage of payroll, higher payroll growth rate assumptions lead to higher assumed contributions, which in turn leads to a lower amortization period.

Findings

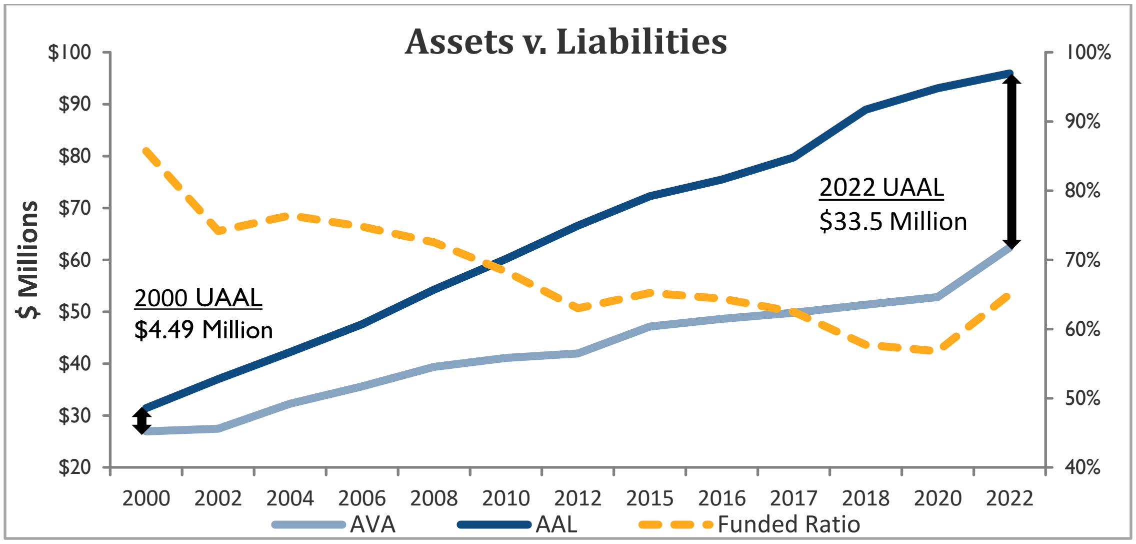
Wichita Falls Fire's funded status has steadily deteriorated over the last 20 years despite above average investment returns.

The graph, *Assets v. Liabilities,* depicts the system's growing unfunded liability and declining funded ratio over the last two decades. As of December 31, 2000, the system was projected to reach 100 percent funded status by January 1, 2017. However, by January 1, 2018, the funded status had steadily declined as illustrated by the following measures:

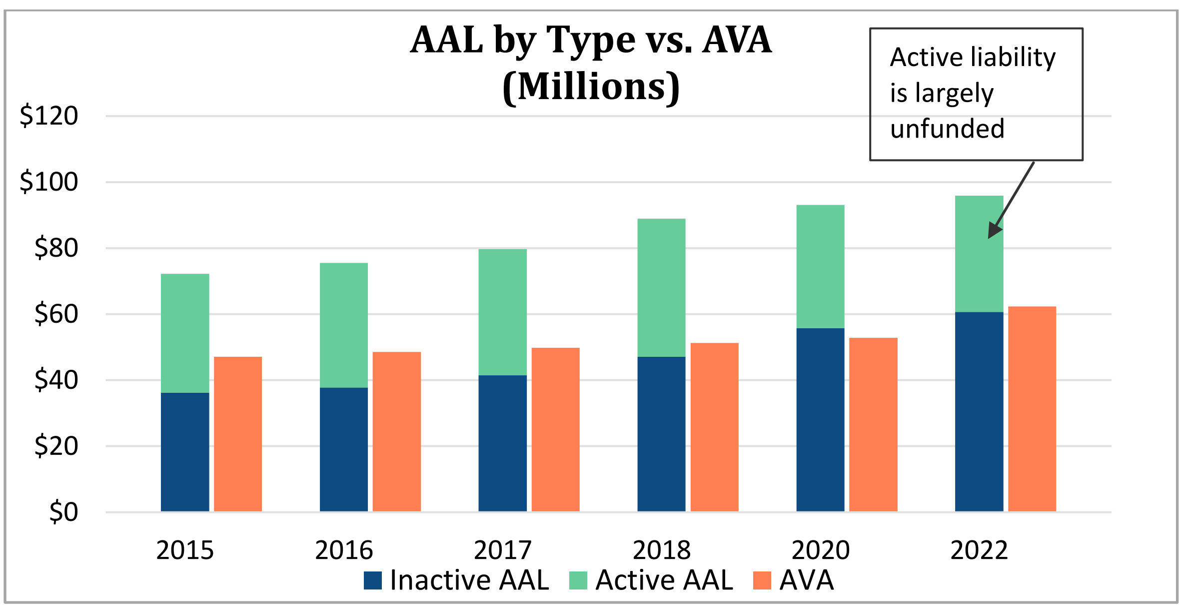
- Funded ratio decreased from 86 percent to 58 percent.
- Unfunded liability as a percentage of payroll increased from 77 percent to 317 percent.
- Amortization period increased from 16.9 years to infinite.
- Assets were projected to be depleted, meaning there would be no assets left in the trust to pay promised benefits by the depletion date.

Wichita Falls Fire submitted a Funding Soundness Restoration Plan (FSRP) in 2016 that included a new tier of reduced benefits for members hired after April 20, 2016. Mainly due to unfavorable demographic experience compared to assumptions, the amortization period increased from 43.7 in 2016 to 56.1 in 2018 prior to adopting more conservative assumptions. The amortization period then increased to infinite once these revised assumptions were adopted. As a result, the system fell out of compliance with its FSRP and became subject to a revised FSRP in 2018. This revised plan, completed in 2019, included more extensive changes than the 2016 FSRP. These changes decreased the amortization period sufficiently to remain under the allowable threshold at the time but did not improve the funded status. From 2018, when the system became subject to the revised FSRP, to January 1, 2022, the funded status decreased for a time before improving after robust asset returns in 2021 such that:

- Funded ratio increased from 58 percent to 65 percent.
- Unfunded liability as a percentage of payroll decreased from 317 percent to 268 percent.
- Amortization period decreased from infinite to 32.1 years.
- System continued to have a projected depletion date according to the latest available audit report based on the January 2020 actuarial valuation.



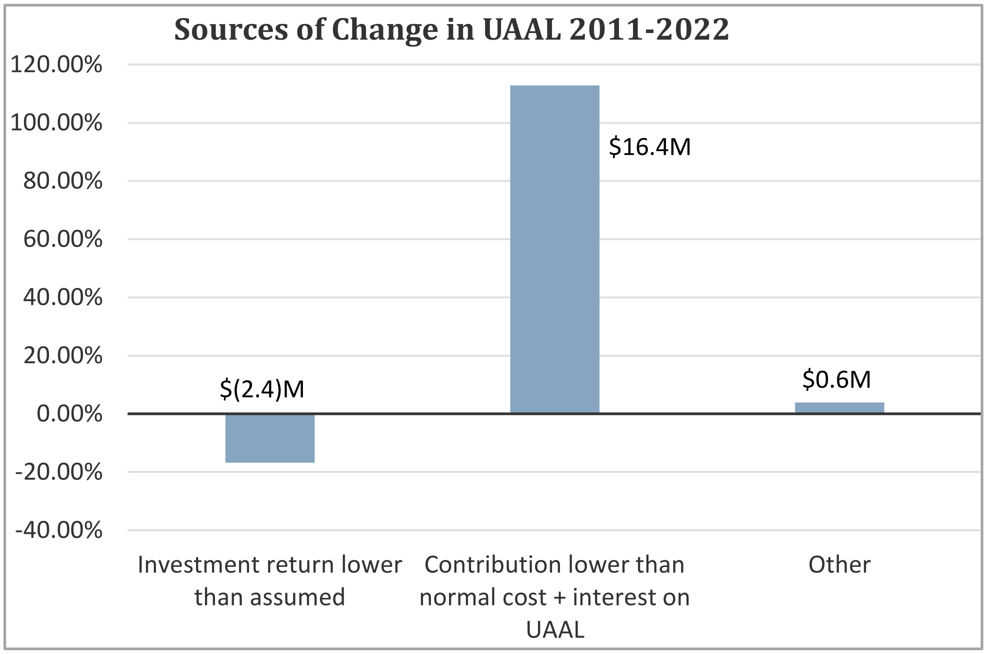
As of 2020, there were not enough assets to fully cover the retiree liability. After the sizable 2021 asset return, there were just enough assets, as of January 1, 2022, to cover the retiree liability as well as 5 percent of the active liability. Based on nationwide trends for early 2022, that percentage will likely drop back down to zero percent once the 2022 returns are reflected in the next actuarial valuation.[6] Retiree liabilities are typically prioritized because they must be paid the soonest, so little to no assets remain to cover the liability for active members. Actuarial methods are designed to fully fund liabilities for active firefighters by the time they retire. Otherwise, the city and active members will become responsible for funding both the remaining unfunded retiree liability on top of the liability for active members. The chart, *AAL by Type vs. AVA (Millions)*, shows funding trends for both active and inactive liabilities compared with the actuarial value of assets over time.



[6] Anthony Randazzo and Jonathan Moody, *State of Pensions 2022: Equable Institute's Annual Report,* Accessed July 26, 2022, https://equable.org/wp-content/uploads/2022/07/Equable-Institute_State-of-Pensions-2022_Final.pdf.

Insufficient contributions are by far the main source of Wichita Falls Fire's unfunded liability.

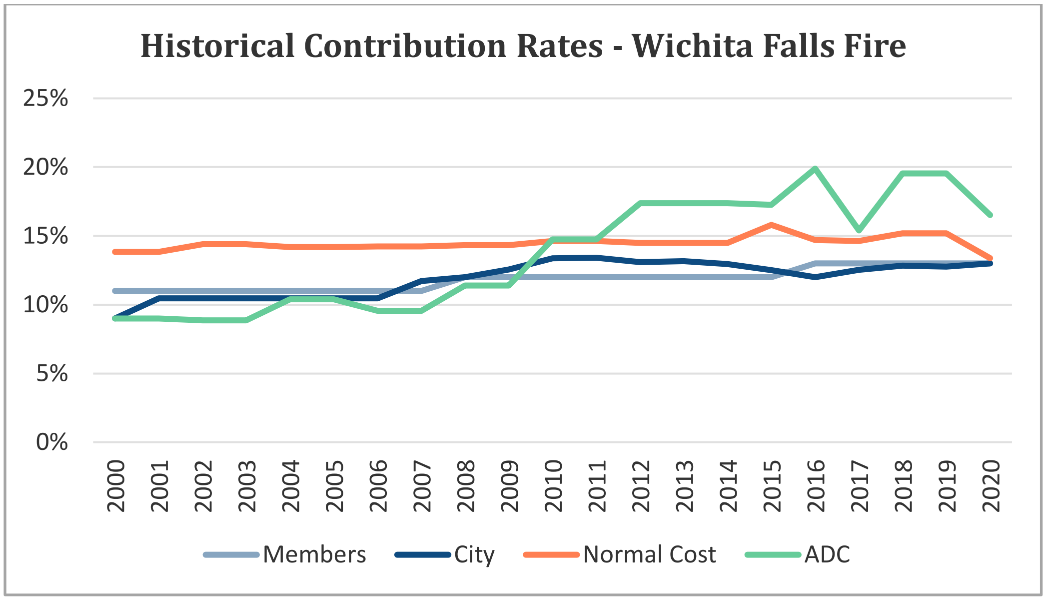
While investment returns have kept pace with assumptions, contributions have not kept pace with Wichita Falls Fire's funding needs. The PRB analyzed the annual changes in unfunded liability to allocate

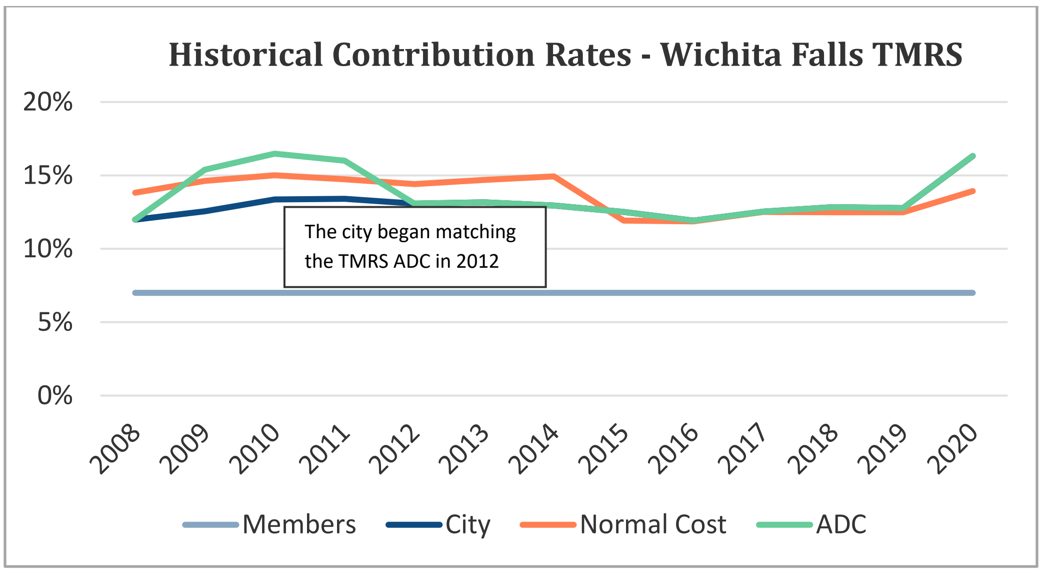


the changes into three categories, as shown in the graph, *Sources of Change in UAAL 2011-2022*. The first category, *investment return lower than assumed*, was calculated by comparing the actuarial value of assets to the prior year assets, contributions, disbursements and expected returns. The second category, *contributions lower than normal cost + interest on UAAL*, was calculated by comparing the actual contributions to the amount that would have been necessary to have no expected increase in the unfunded liability. Any remaining changes in unfunded liability during the period, such as assumption changes and demographic experience different than assumed, were labeled as *Other*.

City contribution levels have not been based on the system's actual funding needs.

From 2001 to 2019, the city matched its contribution to the Wichita Falls Fire fund to the Texas Municipal Retirement System (TMRS) contribution rate for Wichita Falls municipal employees. Until the 2008-2009 financial crisis, city contributions kept pace with the actuarially determined contribution (ADC) necessary to fully fund the plan within 30 years. When the TMRS contribution rate increased substantially in 2020, the city stopped matching the TMRS contribution rate for Wichita Falls Fire. The next two graphs show contribution rate trends for both members and the city over the last 20 years for both Wichita Falls Fire and for municipal employees covered through the city's TMRS plan.





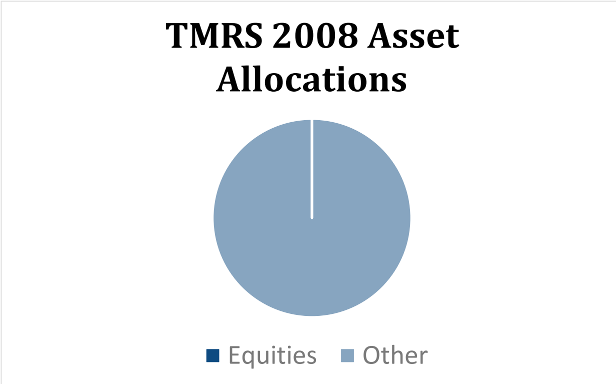
This failure to adjust contribution rates for Wichita Falls Fire exacerbated the gap between actual contributions and the system's ADC value, but matching contribution rates for firefighters to the contribution rates for municipal employees is not a prudent methodology for funding a pension benefit. Firefighters in general have lower turnover than municipal employees resulting in a larger portion of the membership ultimately receiving retirement benefits. Due to the physical demands of the job, firefighters typically retire at earlier ages than municipal employees, allowing a longer time to fund a municipal employee benefit that will be paid over a shorter period. For example, a long-service firefighter would likely retire by 57 years old, while a municipal employee with the same years of service may work into their seventies.[7]

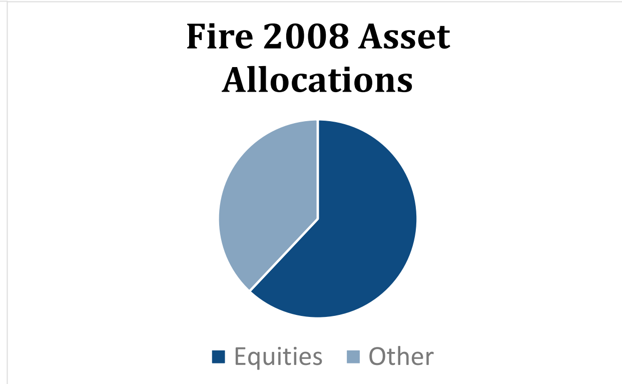
As a result, for each dollar of monthly retirement benefits at expected retirement age, the city can pay less per year for municipal and police employees than firefighters to fund the same benefit. Additionally, the structure makes the TMRS contribution rate unsuitable as a proxy to determine contributions for a retirement system with a completely different governing statute, plan structure, membership population, and investment history.

TMRS uses an actuarially determined contribution based on its own funded status and plan provisions. The actuarially determined contribution is calculated as the sum of the normal cost and an amortization of the unfunded liability. Since Wichita Falls' TMRS plan is better funded than the Wichita Falls Fire plan, with a roughly 84 percent funded ratio, its ADC is based on an amortization of a small unfunded amount. An ADC for Wichita Falls Fire would also have to fund the amortization of a larger unfunded amount since the funded ratio is only 65 percent.

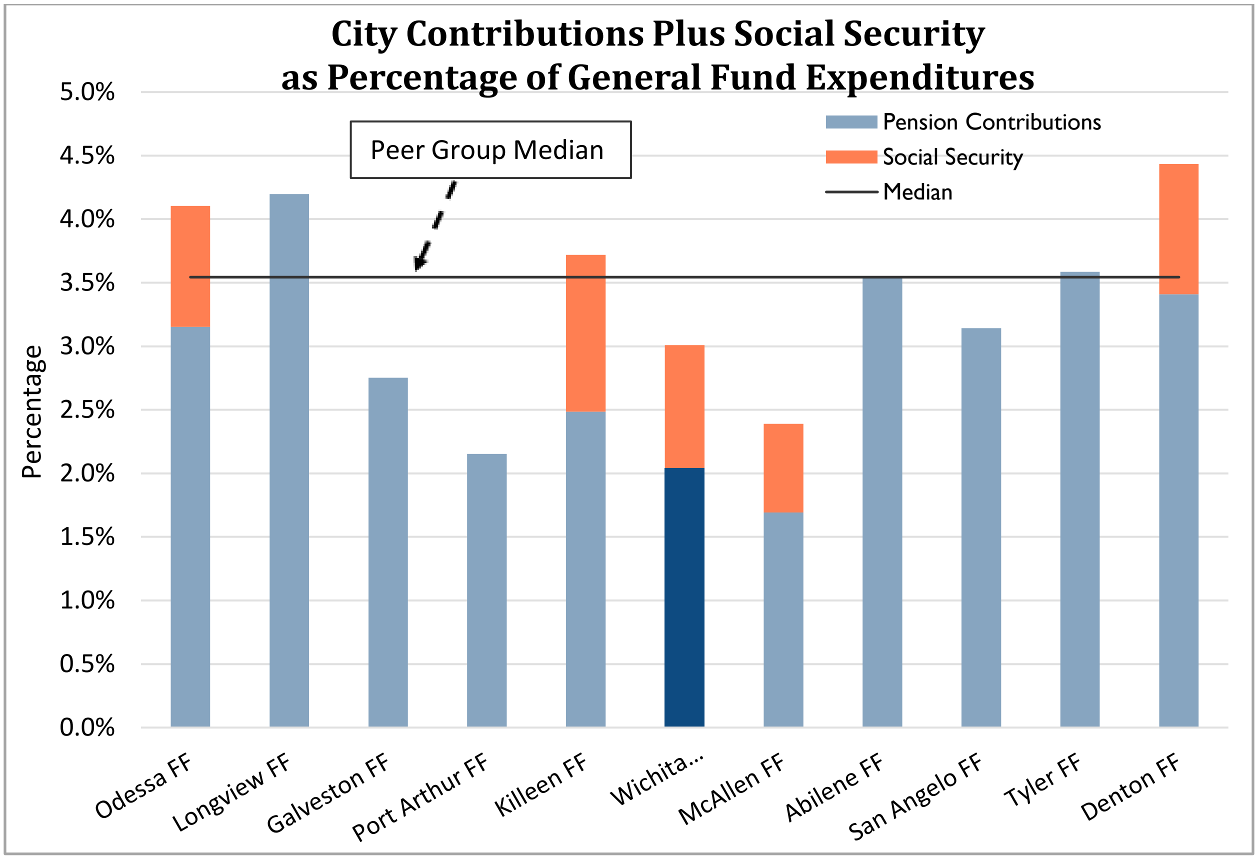
The 2008-2009 financial crisis also had a relatively minimal impact on TMRS and its member plans since the fund was not invested in equities at that time, while the Wichita Falls Fire plan had a substantial weight in equities. With those two vastly different allocations, the 2008 return was more than 12 percent lower for Wichita Falls Fire than for TMRS. Prior to the 2008 financial crisis, the Wichita Falls Fire plan ADC and Wichita Falls TMRS plan ADC were roughly equal. Afterwards, the city continued providing the same contribution rate to the two funds despite the ADC disparities from 2008 to 2019. Because the city continued to contribute far less than the Wichita Falls Fire ADC each year, the ADC continued to increase as a percentage of payroll. Then in 2020, when the Wichita Falls Fire plan ADC converged again with the Wichita Falls TMRS plan ADC, the city paid the ADC for its TMRS plan but did not pay the same for the Fire plan.

[7] A Wichita Falls firefighter aged 57 with 25 years of service is assumed to retire with 100 percent probability based on the assumptions included in the 2022 actuarial valuation. A similarly situated municipal or police employee benefitting from TMRS has only a 13 percent chance to retire, leaving a high likelihood the member will retire at a later age. In fact, even a 74-year-old employee with TMRS benefits has only a 30 percent chance to retire that year. TMRS benefits for Wichita Falls apply to both municipal employees and police. Police officers in the TMRS may share many retirement characteristics, such as average retirement age, with firefighters since they are also public safety employees. However, the civilian municipal employees in the same retirement system will affect the average characteristics of the Wichita Falls TMRS plan membership compared to Wichita Falls Fire.





The City of Wichita Falls allocates a similar percentage of the general fund expenditures to firefighter payroll, but the city contributes substantially less than peer firefighter pensions. If the city raised the pension contributions from its current 2 percent of general fund expenditures to the peer average of roughly 3 percent, the new city contribution rate as a percent of payroll would increase from 13 percent to 19.5 percent. The graph, *City Contributions Plus Social Security as Percentage of General Fund Expenditures,* accounts for differences among cities in terms of Social Security participation. Wichita Falls Fire and four peer systems participate in Social Security. Adding the 6.2 percent of Social Security payroll contribution for Wichita Falls Fire and its peer systems — Odessa Fire, Killeen Fire, McAllen Fire, and Denton Fire — brings the total city contribution closer to the peer median — 3 percent of general fund expenditures for Wichita Falls Fire versus 3.5 percent for the peer group median. Even factoring in Social Security payments, Wichita Falls still pays less into the fire pension fund than peer cities.



Wichita Falls Fire members already contribute 92 percent of the normal cost of their benefits.

Since pension benefits are a form of non-wage employer-sponsored compensation used to supplement salary, it is expected that members will pay a portion, but not all, of the cost to fund their benefits.[8] The normal cost is a good proxy for the expected annual cost of the pension benefit. The graph, *Employee Contributions Compared to Annual Cost of Benefits,* below compares the normal costs of peer systems to compare the annual cost of benefits, which were normalized to all use a 7.5 percent discount rate.[9] On average, members in peer plans pay 83 percent of the normal cost, while Wichita Falls Fire members pay 92 percent.

Although contributions must be increased to meet the system's funding needs, members should not be expected to pay more than the full cost of their benefits. Doing so creates intergenerational equity issues since current members would be paying for the benefits of past members in addition to full cost of their own. To mitigate this intergenerational equity issue, the city will likely need to consider paying the bulk of the additional contributions.

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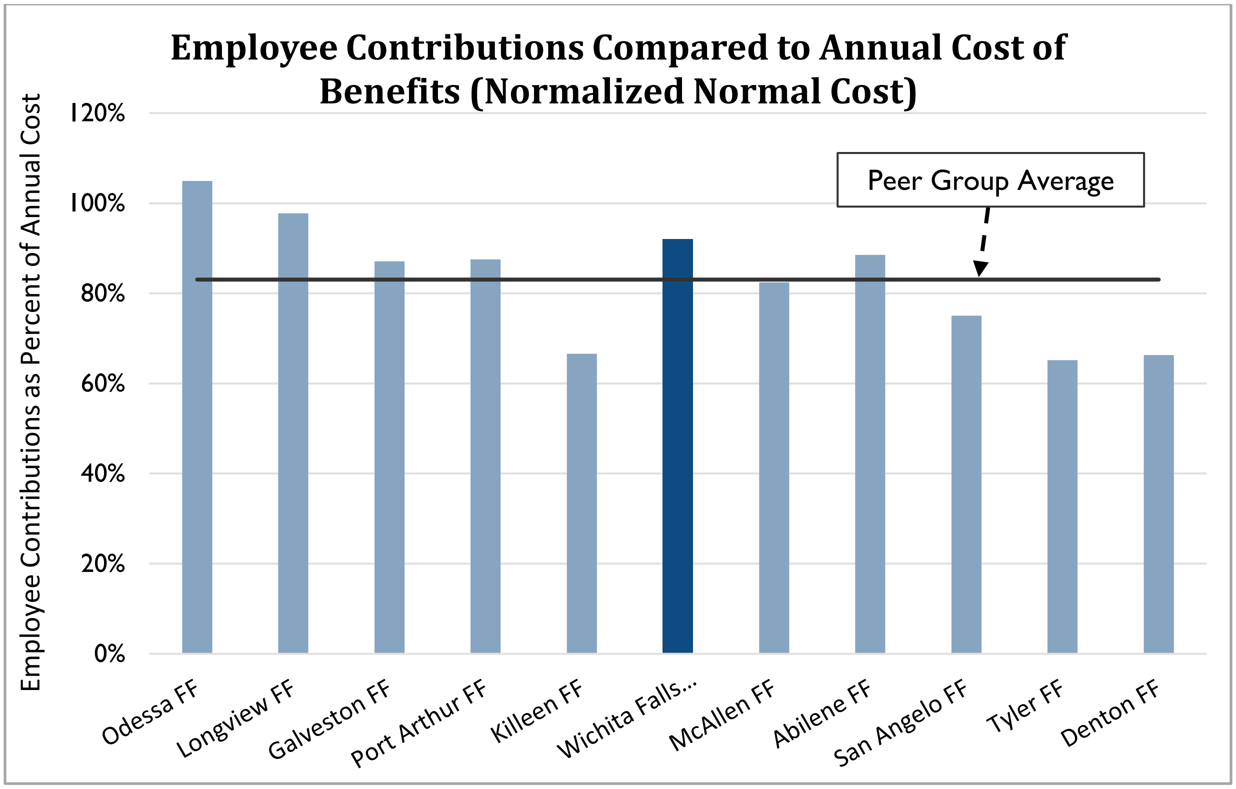
[8] "Glossary," United States Bureau of Labor Statistics, Accessed July 26, 2022, https://www.bls.gov/bls/glossary.htm

[9] Based on the present value sensitivity of a 38-year-old active member retiring at eligibility age, PubS_2010 mortality table with generational improvements based on scale MP2020 using factors calculated on the Annuity Factor Calculator on the Society of Actuaries website. Accessed July 26, 2022, https://afc.soa.org/#Calculator.



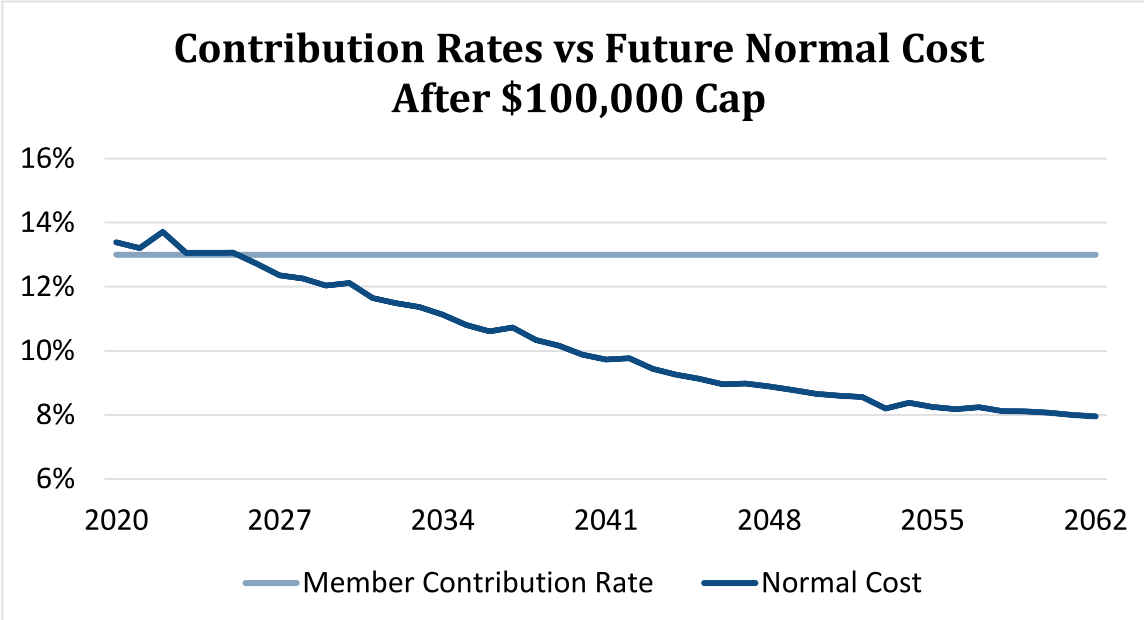
Wichita Falls Fire's $100,000 benefit cap used to decrease its amortization period does not appear sustainable and creates intergenerational inequity.

Following the original FSRP submitted in 2016, the system submitted a revised FSRP in 2019 consisting of three plan changes:

- Changed the normal retirement benefit to no longer continue partial payment to the surviving spouse after the retiree's death.
- Increased the period of final average compensation from three years to five years for members hired prior to April 21, 2016.
- Implemented a maximum accrued benefit cap of $100,000 per year, not indexed to inflation.

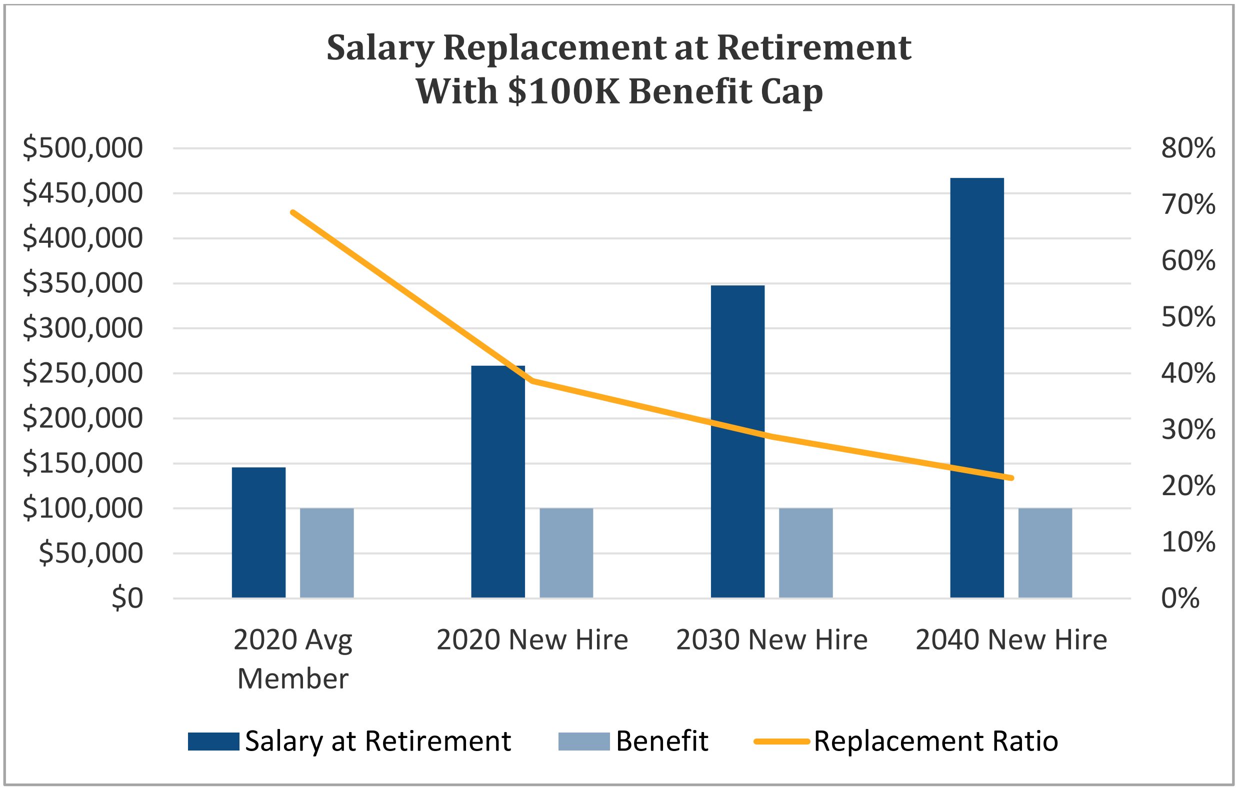
The main provision that decreased the amortization period from infinite to 43 was the $100,000 benefit cap. The cap is unlikely to be sustainable for two main reasons: the benefit for future hires will be worth less than the accumulated member contributions and the benefit will no longer replace a substantial percentage of a member's salary in their retirement years.

Members are already paying nearly the full value of their benefits. Now that the cap has been implemented, future hires are projected to pay 8 percent of salary to fund their own retirement benefits, plus an additional 5 percent toward assets to fund the plan's unfunded liability, which for Wichita Falls Fire is generally the cost of benefits for firefighters already retired. The graph, *Contribution Rates vs. Future Normal Cost After $100,000 Cap,* shows this trend over time because the amount of pay future members receive is assumed to continue increasing even as their benefits remain capped. In essence, the future members will be paying for their own benefits plus the benefits of the previous generation.



A defined benefit pension plan with a final average pay formula such as Wichita Falls Fire is typically designed to provide a reliable salary replacement in the member's retirement years. Under the Wichita Falls Fire formula prior to the 2018 changes, a member who worked 30 years from age 25 to 55 would receive 75 percent of their final average compensation in each year of retirement. The average current member in the 2020 actuarial valuation was 41 years old with 16 years of service, making $85,000. They would be projected to earn $146,000 at age 55 based on the valuation individual pay increase assumption. With the cap, they would be paid 68 percent since their benefits cannot exceed $100,000.

A 2020 new hire, on average, earns $55,000 at age 25 and would be projected to earn $259,000 at retirement based on the valuation individual pay increase assumption. Rather than receiving 75 percent of their final average salary, which would be $194,250, they would receive only 39 percent per year at retirement due to the cap. As shown in the graph below, the current plan design and assumptions mean the value of a member's benefit will decrease significantly over time. Indeed, the benefit cap degrades the salary replacement level for future members to just over 20 percent for a new hire in 2040.



This plan design appears to be unsustainable — as the replacement ratio decreases over time, the city will find it more and more difficult to hire and retain firefighters. At least one other Texas Local Fire Fighter Retirement Act (TLFFRA) system within a similar distance to the Dallas-Fort Worth metroplex recently had to consider benefit increases in response to current and prospective firefighters choosing to work for nearby fire departments where they could expect better benefits for lower contributions.

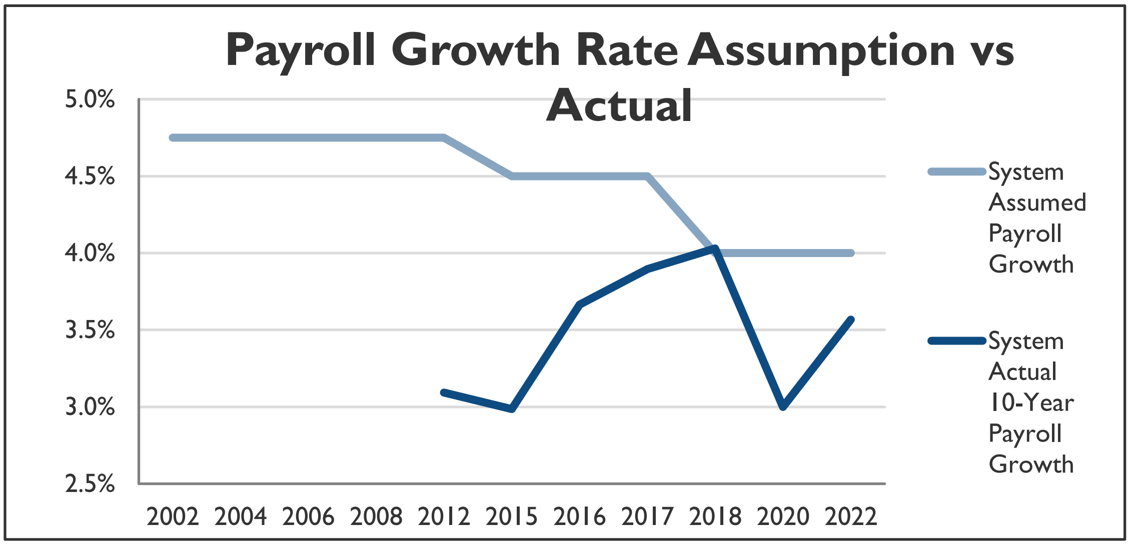
Actuarial assumptions and methods need to be reevaluated to align with actual experience and realistically assess Wichita Falls Fire's contribution needs.

To accurately forecast pension funding needs, assumptions used should be realistic. The following discussion describes multiple assumptions and methods Wichita Falls Fire should reevaluate to ensure these assumptions are updated based on plan experience, benefit changes, city demographics, and other relevant factors.

Payroll growth assumption is not supported by plan experience or city demographics.

The 2010 U.S. Census estimated that Wichita Falls, Texas had a population of 104,553 and had grown 0.3 percent in the previous decade.[10] The 2020 Census showed a population of 102,316, a decrease of 2.1 percent. This data suggests the city is not growing enough to support a growing fire department, which is demonstrated by the number of active firefighters since 2000. The active firefighter counts between 2000 and 2020 has steadily remained between 150 and 160 individuals.

[10] "Quick Facts: Wichita Falls city, Texas," United States Census Bureau, Accessed July 26, 2022, https://www.census.gov/quickfacts/wichitafallscitytexas.



Since the payroll growth assumption combines individual salary increases with future headcount projections, such a steady headcount does not support an aggressive payroll growth assumption. Given the population trends, it is reasonable to assume Wichita Falls Fire will experience future payroll growth lower than its current assumption. The payroll growth assumption was decreased twice in the last ten years, from 4.75 percent to 4.5 percent in 2015 and from 4.5 percent to 4 percent in 2018; the assumption remains, however, almost a full 100 basis points above the average for Texas public retirement systems. Nonetheless, the assumed growth rate continues to appear unreachable given that the 10-year payroll growth experience has reached 4 percent only once since 2010.[11] The graph below shows how the plan's payroll growth experience compares with actual growth over time.

An assumed payroll growth rate of 4 percent would generally imply an expected steady future increase in the number of firefighters. If the city were growing and supporting that population growth with new fire stations, a greater-than-average growth assumption would make sense. The census, however, showed no population increase from 2000 to 2020.[12] The city is unlikely to face a significant need for additional

Actuarial assumptions that appear as outliers when compared to other systems are not necessarily unreasonable.

For example, another TLFFRA system also has a payroll growth assumption of 4 percent, which is higher than most other Texas public retirement system's assumptions. The city's population growth is also much higher than most other Texas cities. Its population grew from 56,000 in 2010 to 90,000 in 2020. As long as the city's population growth is expected to continue and additional firefighters will be needed, such a payroll growth assumption may continue to be reasonable in the future.

[11] When a 10-year period was unavailable, 11 years were used.
[12] "Quick Facts: Wichita Falls city, Texas," United States Census Bureau, Accessed July 26, 2022, https://www.census.gov/quickfacts/wichitafallscitytexas.

firefighters without an increase in the city's population.

Demographic assumptions should be updated to reflect expectations based on current plan provisions including the $100,000 benefit cap.

Actuarial Standard of Practice (ASOP) 35 states that the actuary should account for certain factors when setting demographic assumptions, including "any features of the plan design or change in the plan design that may influence the assumption."

Wichita Falls Fire did not change the assumptions after implementing the $100,000 cap. As the pension benefit decreases in value from replacing 68 percent of salary to 21 percent of salary over time, the system has assumed that most firefighters will continue to be willing to work a long career in Wichita Falls, contributing a level of salary far exceeding the value of the benefits they will receive.

By keeping each of the payroll growth assumption and pre-retirement termination assumption level in the open group projection, the system has effectively assumed that the level of pension benefits plays no role in the recruitment and retention of firefighters. Nonetheless, these firefighters have other options for employment and can easily choose to either join a fire department in another city with more valuable benefits or accept a position in a different industry in Wichita Falls and the surrounding area. Even if the job required moving to a new location, it is reasonable to assume the Wichita Falls firefighters could be enticed by employment opportunities that came with a pension benefit worth three to four times the value of what they could expect from Wichita Falls Fire for the same level of contributions. Furthermore, the 20-year vesting requirement is unlikely to discourage early termination since, by terminating, the firefighters could take a refund of contributions worth more than the benefit they would receive after vesting.

Accordingly, the system's plan design appears unsustainable. Eventually, the system and city will likely need to modify the plan's benefits and financing arrangements.

Mortality improvement assumption underestimates the normal cost.

The system's mortality improvement assumption is one of the most aggressive among Texas public retirement systems. A mortality improvement measures the increased likelihood from one year to the next that a member or retiree at a given age will live another year. The more years of mortality improvements that are built into the valuation, the longer a retiree is expected to continue receiving monthly pension payments from the system.

Life Expectancies for a 65-Year-Old Male Retiree From Select Mortality Tables

Mortality Table[13]	Year	Life Expectancy
UP	1984	15
UP	1994	17
RP	2006	19
PubG	2010	20

[13] These are abbreviations for mortality tables commonly used by actuaries in the past.

As shown in the table, *Life Expectancy table for a 65-year-Old Male Retiree*, the expected lifetime of a 65-year-old male retiree has steadily increased since the 1980s, from 15 years in the 1984 table to 20 years in the 2010 table, a 33 percent increase. Actuaries have responded to this trend by including a mortality improvement assumption in actuarial valuations.

Life Expectancies for a 25-Year-Old Male Firefighter Projected to Retire at 65		
Mortality Table[13]	Improvements	Life Expectancy
PubG2010	None	20
PubG2010	5-Year Static	21
PubG2010	Generational	24

While most other systems used generational mortality improvements, Wichita Falls Fire used a static improvement over five years. In the 2010 table shown, a 25-year-old firefighter projected to retire at 65 would be expected to receive benefits for 24 years with generational improvements but only 21 years with the Wichita Falls Fire approach. The expected lifetime would be 20 years with no mortality improvements assumed.

As the table, *Mortality Improvements for a 40-Year-Old Firefighter Generational Approach vs. Wichita Falls Fire Approach*, demonstrates, with 40 fewer years of improvements for the 85-year-old, the Wichita Falls Fire valuation assumes a shorter lifespan and significantly fewer payments to the retiree. This produces a materially lower normal cost than the generational approach. The normal cost is estimated to be 2 percent of pay lower for a 40-year-old active firefighter and 4 percent of pay lower for a 25-year-old due to this approach.

Mortality Improvements For a 40-Year-Old Firefighter Generational Approach vs. Wichita Falls Fire Approach			
Age	Years to Reach Age	Generational Years of Improvement	Wichita Falls Years of Improvement
55	15	15	5
60	20	20	5
65	25	25	5
70	30	30	5
75	35	35	5
80	40	40	5
85	45	45	5

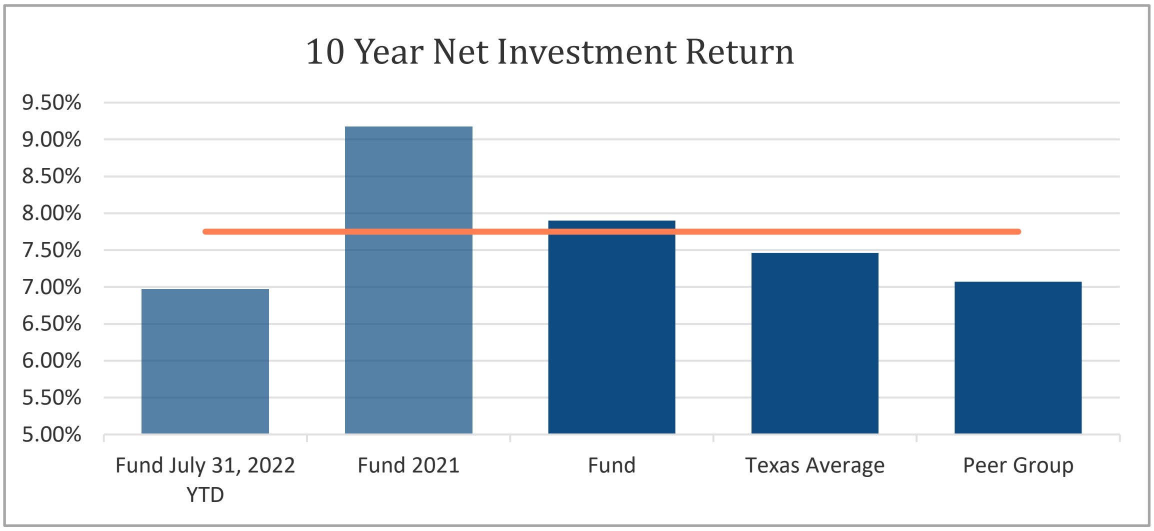
Wichita Falls Fire uses market value of assets instead of smoothing.

Wichita Falls Fire currently uses fair market valuation method, which means that the actuarial value of assets equals the market value of assets. The smoothing method would enable Wichita Falls Fire to phase in investment gains and losses over a fixed period, which is typically five years. Smoothing assets has the effect of leveling out sharp changes in the plan's funding level and required cost, and would also make the system less susceptible to falling out of compliance with their FSRP due to a market event.

Wichita Falls Fire's investment program has consistently met the system's return assumption but will need to prepare for changes based on maturing demographic trends.

Overall, the system's investment program has performed well while keeping investment expenses reasonable. Consistent investment performance with small drawdowns have provided stability to the assets by meeting its 7.75 percent assumption over time.

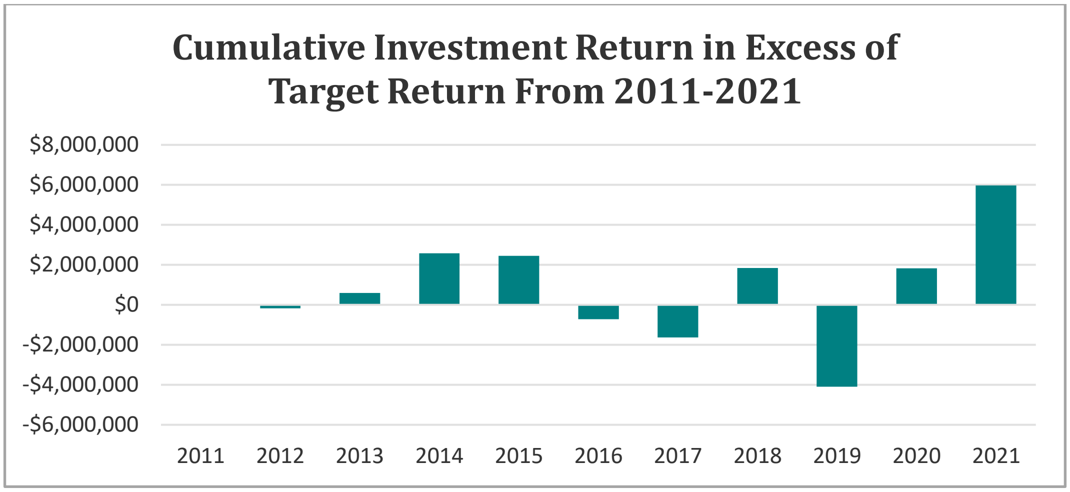
The system has even exceeded the average returns of both its peer group and Texas public retirement systems, as shown in the graph, *10-Year Net Investment Return*. Meeting return assumptions over the long term benefits the fund as investment returns typically provide roughly 60 percent of pension revenues, which makes it a crucial source for paying benefits.[14]



The Fund, Texas average, and peer group 10-year net investment returns use only 2020 data. The Fund 2021 is the fund's return for 2021. The Fund July 31, 2022, YTD is what the funds 10-year net investment return would be if nothing changes from that last date.

Consistent returns with minimal drawdowns are more important in the long run than having a handful of high return years. Pensions rely on the assumption that investments will, over a market cycle, meet their target return. Any year they return less than expected requires that missed gain in assets to be made up in the future, including the compounding growth that would have come from the missed gain. Over the past decade, Wichita Falls Fire has six times either met or drastically exceeded its return assumption. Otherwise, it had two years with positive returns with small underperformance compared to the target return, one year with less than 1 percent in returns, and only one negative-return drawdown year, as shown in the accompanying graph.

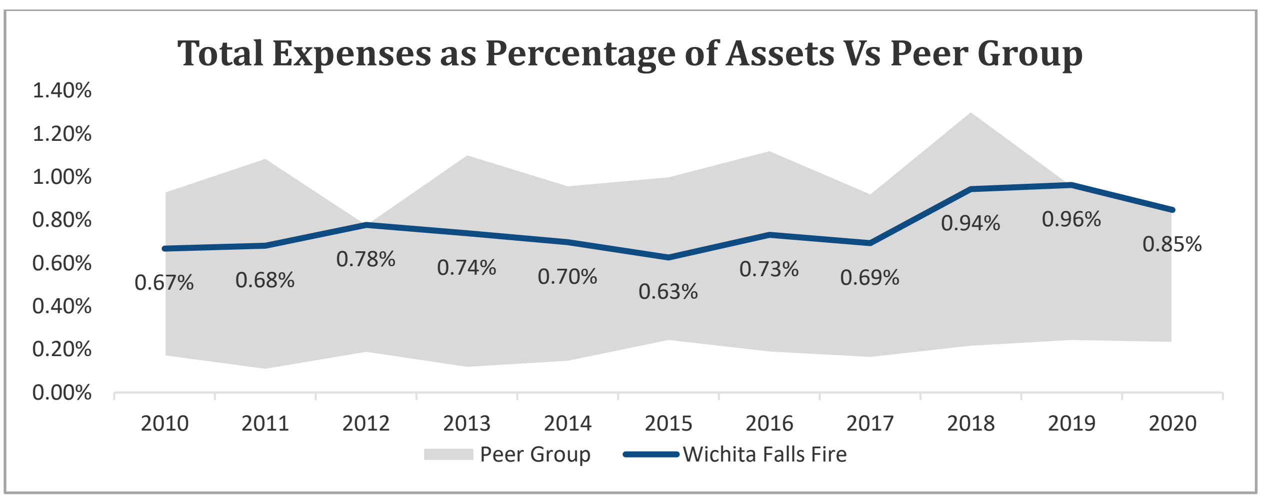
[14] "Investment," National Association of State Retirement System Administrators, Accessed July 26, 2022, https://www.nasra.org/investment.



The system's investment performance has remained consistent, with minimal downside, and has generally kept asset returns in a surplus over assumptions. This excess gives the system more assets capable of growing and supporting benefits and contributes to its ability to reach a fully funded status.

Wichita Falls Fire's total investment expenses, while at the top of its peer group, are still reasonable.

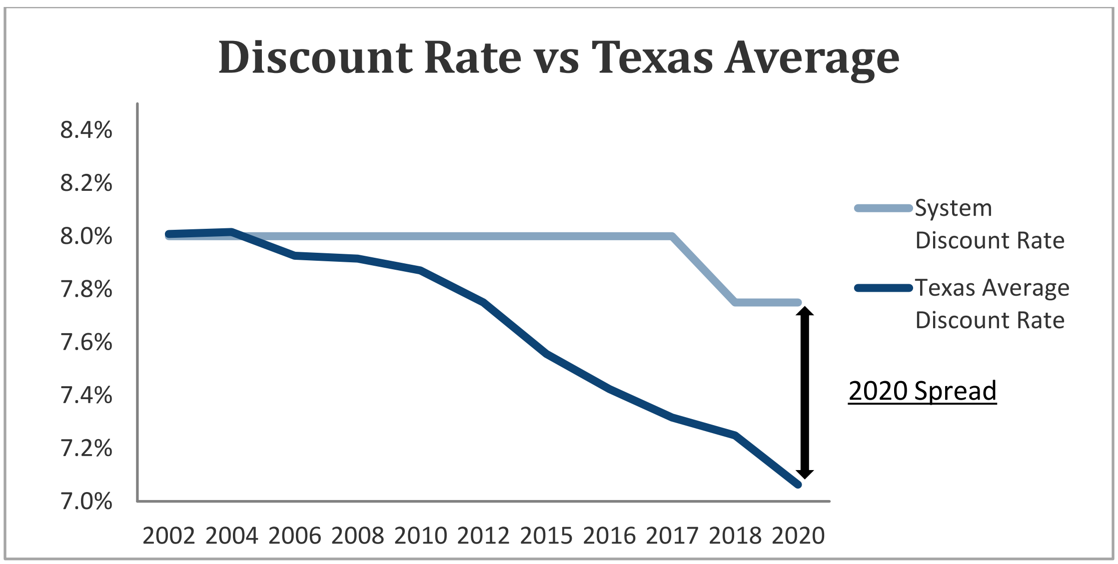
It is evident that the system has, over the years, made investment decisions that have kept expenses in line with peers and the national averages, which is usually around 0.6 percent.[15] The accompanying graph, *Total Expenses as Percentage of Assets Vs. Peer Group*, shows the system's investment expenses compared with peers. Low investment expenses help maximize investment returns and make it easier to meet return assumptions. Investment expenses are one of the few factors over which a pension fund has considerable control, and Wichita Falls Fire's management of fees suggests the overall investment program is following best practices by actively monitoring fees.



[15] *2021 NCPERS Public Retirement System Study,* National Conference on Public Employee Retirement Systems and Cobalt Community Research (February 2022), Accessed July 26, 2022, https://www.ncpers.org/files/ncpers-public-retirement-systems-study-2021.pdf

The system has kept fees in a narrow range over the past decade with elevated fees only beginning in 2018. The elevated fees are a result of allocations into alternative investments, such as private equity, that include performance fees. These performance fees generate higher expenses but are justified by the performance rates; the system is paying larger fees only because of the investments' large out-performance. Additionally, the system allocates 17.75 percent of their equity investments into a passive index fund with a very low net expense ratio of 0.03 percent. The asset allocation balance of returns, risk, and fees is an important design factor that needs to fit a system if it is to be properly managed. Wichita Falls Fire's allocation is in line with the average Texas retirement system as the alternative and real estate investments, which normally are more expensive, do not represent an overweight proportion of the assets.[16] In addition, the balance of passive investments compared to high fee alternatives allows the system to participate in the equity market, invest in higher expense active investments that are more likely to provide alpha, and keep the overall portfolio expenses at a reasonable level.

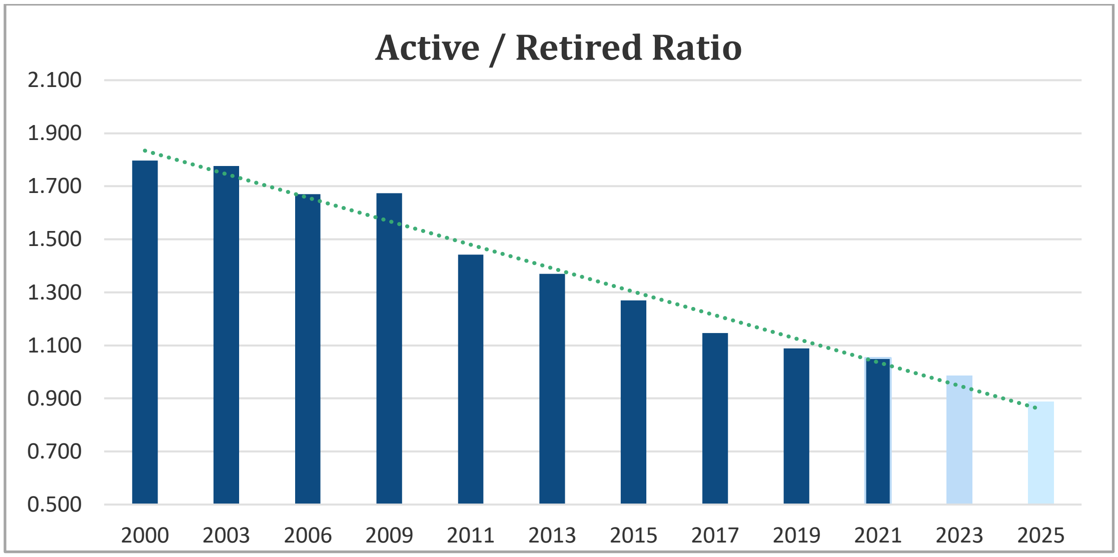
The system's return assumption may soon need adjustment due to shifting membership demographics, including a growing retiree headcount, demanding more conservative investments.

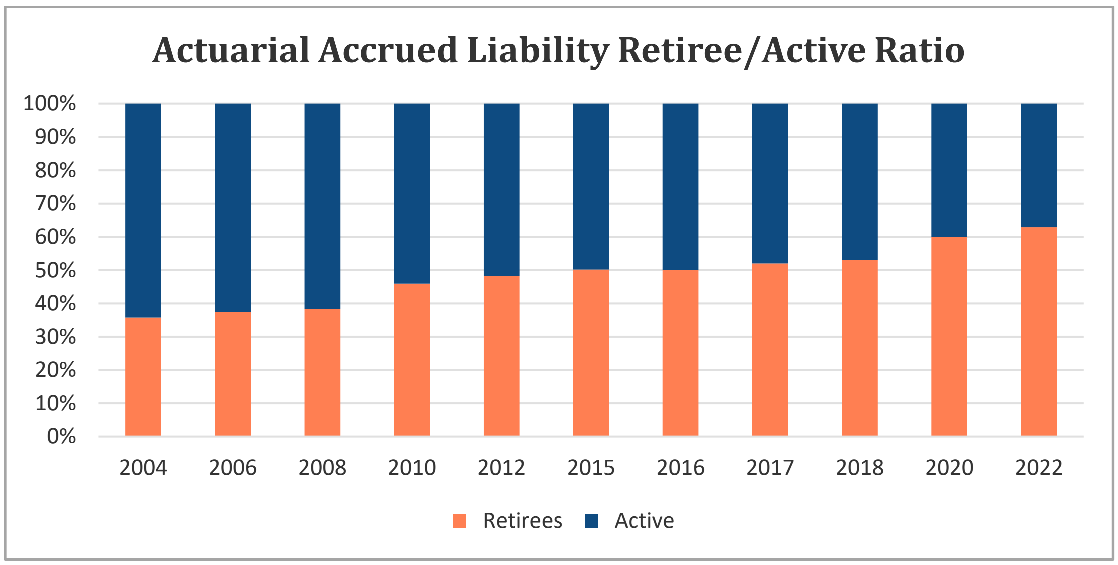


Wichita Falls Fire uses a 7.75 percent investment return assumption, which is somewhat aggressive for current capital market conditions that assume a rate closer to 7 to 7.25 percent.[17] The graph, *Discount Rate vs Texas Average,* compares the system's return assumption with the overall Texas pension system average since 2002. The current assumption is still reasonable as the system targets a 60/40 portfolio with its "safer" 40 percent of investments partially replaced by investments in alternatives. Additionally, the system's membership is largely younger, with a relatively high proportion of recently retired or active

[16] See appendix for Wichita Falls Fire's and peer group systems asset allocations.
[17] *Survey of Capital Market Assumptions: 2021 Edition,* Horizon Actuarial Services, LLC, Accessed July 26, 2022, https://www.horizonactuarial.com/uploads/3/0/4/9/30499196/rpt_cma_survey_2021_v0804.pdf.; *2021 NCPERS Public Retirement System Study,* National Conference on Public Employee Retirement Systems and Cobalt Community Research (February 2022), Accessed July 26, 2022, https://www.ncpers.org/files/ncpers-public-retirement-systems-study-2021.pdf.

members; this lower membership age temporarily allows a more risk-aggressive allocation. However, demographic trends show that the predominately younger, active membership is aging, and the retired membership is quickly becoming the largest group.





The previous two charts show that the age of the average member grows with the ratio of active to retiree members. This means the actuarial accrued liability (AAL) of retirees further eclipses that of the younger active members, which will in turn impact investment decisions.

Investment portfolio allocation adjustments are a normal aspect of how pension funds mature, but it does mean that the current Wichita Falls Fire investment strategy is not likely to be sustainable in the long term. The system's AAL is currently 62 percent attributable to the retirees of the plan, and the retiree portion is likely to continue growing as shifting demographics make current assumptions less suitable. With all things being the same, every year that the active-to-retiree ratio remains below one, aging retirees will represent a larger portion of the AAL and assets. For the portion of assets supporting active member liabilities, there is time to allow aggressive investment in assets seeking long-term growth because benefit payments for active firefighters will begin years or decades in the future. However, benefits for retirees are already in payment. The assets used to support those payments should be allocated to provide more consistent near-term returns or risk liquidity issues. This typically means a greater share of a system's portfolio should be invested in more conservative asset classes as retirees become a greater share of the liability; ensuring money is available to pay benefits each month takes priority over higher returns. This shift would necessitate more conservative investment decisions, which would most likely lead to lower investment return assumptions.

The growth in average membership age may be slowed or reversed in the future by additional hiring or local population growth, but the census results discussed previously in this report suggest this scenario is unlikely. Instead, the trend could likely be compounded by difficulty with hiring and retention related to the benefit cap, which could potentially necessitate investment changes sooner. The corresponding lower expected investment return would be exacerbated by forecasted capital market returns of roughly 7 percent for the next decade.[18]

Between the natural shift in priorities as average membership age increases, an uncertain stock market, and potential difficulty hiring, the system will likely find it necessary to reallocate its assets to a more conservatively invested portfolio with a decreased expected return on assets within the next 10 years, which will further increase the contribution needs. Fortunately, the investment program has shown it can meet current return objectives and manage expenses appropriately. This knowledge will be useful to navigate unpredictable markets and the changing needs of the system as membership ages, but it cannot replace sufficient contributions in the long term. An investment program needs to be adequately funded to provide the benefits that are promised. If benefits are not being prefunded appropriately, the investment program is starting with a disadvantage. Rather than contributions being given the time to generate returns, they will go towards backfilling the hole left by missed growth on past contributions or paying retiree benefits that were not prefunded.

Recommendations

Consider options to increase contributions to offset previous underfunding.

In general terms, the City of Wichita Falls and Wichita Falls Fire need to work together to determine how to address the system's deteriorating funded status, which should include increased contributions. The PRB has developed multiple scenarios as a resource for the city and the system that incorporate other relevant factors, such as potentially removing the benefit cap and modifying assumptions. These scenarios are for informational purposes only and are not meant as recommendations for specific contribution levels or assumptions.[19]

[18] *Survey of Capital Market Assumptions: 2021 Edition,* Horizon Actuarial Services, LLC.

[19] The projections shown in this section are meant to demonstrate the types of future events to consider when developing a contribution strategy, and how contributions may need to increase when such future events are considered. They are not intended for any other purpose. The projections are estimates based on limited information available including but not limited to a projection of normal costs from the January 1, 2020, actuarial

It is important to consider potential future decreases in assets and increases in liabilities when evaluating the effectiveness of a potential contribution level. With that in mind, four scenarios illustrate projected changes to assets and liabilities, with the following changes considered:

- Decrease in assets from $62.4 million on January 1, 2022, to $59 million on January 1, 2023, to reflect known bear market based on assets as of July 31, 2022.
- Observation of a 10 percent decrease in assets in 2042 because of a possible market event.
- Increases to city and member contributions.
- Removal of the $100,000 cap on benefits.
- Reducing the payroll growth assumption to 3.25 percent.
- Changing asset allocation in 2032 resulting in a 7.25 percent expected return thereafter.
- Changing the mortality improvement assumption to reflect generational mortality improvements.

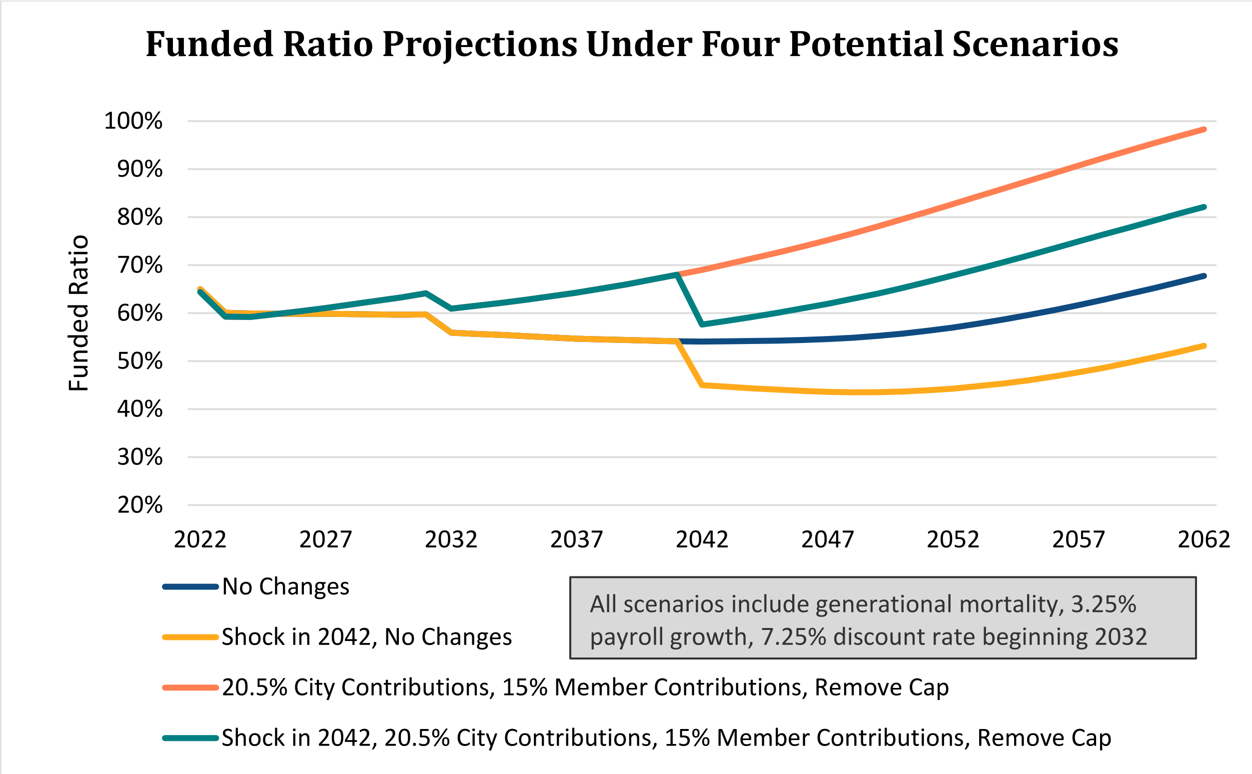
Four Potential Funded Status Outcomes
Taking Into Account Expected Future Changes

Scenario	20% City Contributions	15% Member Contributions	Remove $100,000 Cap	Asset Decrease in 2042	Generational Mortality	3.25% Payroll Growth	7.25% Discount Rate in 2032
Blue					✓	✓	✓
Yellow				✓	✓	✓	✓
Orange	✓	✓	✓		✓	✓	✓
Teal	✓	✓	✓	✓	✓	✓	✓

Due to the rapid maturing of the plan toward liabilities skewed heavily toward retirees, the system is expected to reallocate assets and reduce the discount rate by 2032. To meet the new statutory requirements and avoid preparing a new FSRP, the system must have an amortization period of 30 or fewer years when the discount rate is reduced.[20] Therefore, the system should develop a funding policy that would fully fund the liability by 2062 under those conditions. The orange line in the graph above depicts a scenario that would meet these criteria.

valuation provided by the system's actuary and the assets and liabilities shown in the January 1, 2022, actuarial valuation. The ultimate level of contributions should be determined based on projections and analysis provided by the system's actuary.

[20] If the system's funding period is above 30 years but below 40 years, the system would not trigger an FSRP immediately unless the funded ratio at that time was below 65 percent. If the system is not affected by the immediate triggers, it will have two or three actuarial valuations before triggering an FSRP. Depending on the system's valuation schedule, the system would have an additional three to six years to reduce the funding period before triggering an FSRP under the new requirements. More information can be found on the PRB website: https://www.prb.texas.gov/actuarial/funding-soundness-restoration-plan-fsrp/.



The two scenarios with additional contributions, orange and teal, reach funding levels between 80 percent and 100 percent even with the $100,000 cap removed. The city alerted staff that current budget discussions for fiscal year 2022-2023 includes a planned contribution increase from 13.25 to 16.18 percent. The two scenarios represented by the yellow and blue lines reflect contribution levels after the city's upcoming increase to 16.18 percent of payroll and reach funding levels between 50 percent and 70 percent when the normal cost remains at the level shown in the 2022 actuarial valuation.

The adequacy of potential contribution rates must be tested with funded status projections based on reasonable future expectations. All scenarios include a change to generational mortality, actual payroll growth of 3.25 percent per year, and an asset allocation change in 2032 causing the expected rate of return to decrease 50 basis points.

While the above scenarios reflect one potential asset shock in 2042, it is recommended that the system perform regular stress testing reflecting multiple potential iterations of economic, demographic and contribution conditions. Stress testing should be a regular part of reviewing portfolio performance and should be used as a gauge to help assess and manage the level of risk. The Society of Actuaries Blue Ribbon Panel on Public Pension Plan Funding recommends the use of stress testing to measure investment and contribution risks over a 30-year period.[18]

Adjust or remove the $100,000 benefit cap as part of determining the necessary long-term contribution level.

The benefit cap as currently valued makes the plan appear to be better funded than it is. By reflecting the current plan provisions with no future increases to the cap and no changes to the demographic assumptions, the funding period is not adequately representative of the system's funding needs.

To address these concerns, the system should consider implementing one of three options:

1. Remove the cap entirely from the plan provisions.
2. Amend the plan provisions to index the cap to increase with inflation.
3. Amend the cap to be a level percentage of compensation rather than a flat dollar amount.

Use an experience study and asset-liability study to adjust assumptions, estimate future changes, and determine necessary long-term contribution level.

The system is already planning to perform an experience study in late 2022. This will be a valuable step since the results of this study can provide a starting point to reevaluate the actuarial assumptions and determine what adjustments are necessary. Determining the most reasonable actuarial assumptions is necessary to establish the contribution levels needed to improve funding. The PRB encourages the system to specifically consider adjustments to certain assumptions as part of this process, as follows.

Consider decreasing payroll growth assumption.

Because the city population, the number of fire stations, and the city's firefighter headcount have remained constant for years, the system should consider amending the payroll growth assumption to reflect current demographic trends. This change would result in a contribution rate that is more closely aligned with the plan's actual cost.

Consider using a generational mortality improvement assumption.

The system is underestimating the normal cost compared to most other Texas systems using generational mortality improvements by assuming only five years of mortality improvements even for a 25-year-old new hire, who will likely live for 60 or more years. The system should consider moving to a generational mortality improvement assumption.

Adjust assumptions to reflect benefit cap.

If the $100,000 benefit cap continues to be modeled in the valuation as is with an open group projection, then demographic assumptions should reflect likely member behavior as the cap decreases in value each year. Such a change is in line with ASOP 35. Two potential changes can serve as a starting point to resolve this issue:

- Assume more pre-retirement terminations at each age, as some members may request a refund of contributions as they realize the accumulated contributions are worth more than the retirement benefit.

- Decrease the payroll growth assumption, as it is unlikely the city will be able to maintain the current firefighter headcount with pension provisions that replace only about 25 percent of a member's salary at retirement. The city could find it difficult to hire new firefighters, and even more difficult to retain the ones they do manage to hire.

Alternatively, the system could determine the amortization period using a closed group projection in which the normal cost is assumed to remain level in all years. This method would ensure the current normal cost of roughly 13 percent of payroll continues to be valued in the future rather than an ultimate rate of less than 8 percent. A closed group projection based on the current normal cost would resolve any need to model changing behaviors as the normal cost decreased in the future.

Evaluate need to adjust the return assumption by periodically performing asset-liability studies.

The system should consider conducting asset-liability studies, which model future asset and liability cash flows under various scenarios and determine if the asset allocation is sufficient to support the future benefit payment stream. These studies can be used occasionally to help the system evaluate its asset allocation and investment risks, which will help the system evaluate the appropriate investment return assumption. Specifically, the system is encouraged to perform a study focused on the demographic challenges the system is facing, which may include more conservative actuarial assumptions, lower capital market expectations, and an examination of the effects growing retiree liabilities will have on investment return assumptions and allocation.

> Case Study: Closed vs. Open Group Projection
>
> The only other Texas public pension system with a dollar cap similar to Wichita Falls Fire uses a closed group projection, which eliminates the decreasing normal cost. In a closed group projection, the current normal cost is used to determine the amortization period. Had that system used an open group projection, the normal cost likely would have decreased in every future year, like Wichita Falls Fire.

Submit a new FSRP prior to September 1, 2025, to avoid the stricter revised FSRP requirements.

Developing reasonable expectations of upcoming assumptions and plan provisions is imperative for the future actuarial soundness of the fund. However, changing these assumptions makes it likely Wichita Falls Fire will fall out of compliance with its legacy FSRP, so the system and sponsor would be required to prepare a new FSRP under the current law. This new FSRP could include all the necessary contribution increases or other plan changes to create a sustainable and equitable pension plan.

The FSRP requirement would not officially take effect until an actuarial valuation demonstrates that the system is no longer compliant with the legacy FSRP. Accordingly, the system and sponsor may find it advantageous to begin preparing an FSRP before triggering the requirement. This would allow them more time to evaluate the best options to improve funding and educate the membership in preparation for any necessary votes to adjust benefits or contributions as required by TLFFRA statute.

Additionally, completing an FSRP before September 1, 2025, would provide an opportunity to qualify for the exemption that would allow the system and its sponsoring city to prepare another standard FSRP rather than a revised FSRP with stricter requirements if the system's funding period exceeded 30 years during the 10 years after the new FSRP was completed.[21] If the FSRP was submitted after that date, they would need to use an actuarially determined contribution structure and be projected to reach full funding to qualify for the exemption.

The system and city also could take advantage of this option even without first triggering an FSRP by submitting a voluntary FSRP. And, if they triggered the FSRP requirement during the preparations, they could already have significant portions of the work completed.

Regardless of FSRP type completed, the system and sponsor must update the system's funding policy to reflect those changes. The goals of a funding policy are threefold: to establish clear and concrete funding objectives, to set boundaries on what is allowable for actuarial calculations, and to develop plans for both positive and negative experiences. The funding policy should strive to balance these goals to ensure member benefits are secure, contributions are predictable from year to year, and future taxpayers are not burdened with the costs of previous generations.[22]

Consider using a smoothed actuarial value of assets.

Since the PRB's new FSRP rules allow the amortization period to be calculated using the greater of the market value of assets or the actuarial value of assets, the system should strongly consider adding a smoothed actuarial value of assets. This method could help the system avoid a revised FSRP with no disadvantage.

[21] More information about the current FSRP statute and rules can be found on the PRB website: https://www.prb.texas.gov/actuarial/funding-soundness-restoration-plan-fsrp/.
[22] *Interim Study: Funding Policies for Fixed-Rate Pension Plans,* Texas Pension Review Board, January 2019, https://www.prb.texas.gov/txpen/wp-content/uploads/2019/02/Funding-Policy-Paper.pdf.

Appendix

Key Metrics Used to Select Wichita Falls Fire

Metric	Amortization period (43.3 years in 2020)
What it measures	Approximately how long it would take to fully fund the unfunded actuarial accrued liability (UAAL) based on the current funding policy.
Why it is important	Given the Fund's current assumptions, an amortization period above 17 years indicates the contributions to the Fund in the coming year are less than the interest accumulated for that same period and therefore the total UAAL is expected to grow over the near term. In addition, for a plan that contributes on a fixed-rate basis such as Wichita Falls Fire, the higher the amortization period, the more sensitive it is to small changes in the UAAL. This remains true given the information in the 2022 valuation.
Peer comparison	Wichita Falls Fire currently ranks third highest amongst its peer TLFFRA plans (TLFFRA plans between \$8.8M and \$20.2M payroll with liabilities between \$67.1M and \$121.4M).

Metric	Funded ratio (56.8% in 2020)
What it measures	The percent of a system's actuarially accrued liabilities covered by its actuarial value of assets.
Why it is important	The lower the funded ratio, the fewer assets a system has to pay its current and future benefit payments.
Peer comparison	Wichita Falls Fire's funded ratio is the fourth lowest in its peer group.

Metric	UAAL as a percent of payroll (326.0%)
What it measures	The size of a system's unfunded liability compared to the annual payroll of its active members.
Why it is important	Provides a way to compare systems of various sizes and expresses the outstanding "pension debt" relative to current personnel costs.
Peer comparison	The system's UAAL as a percent of payroll is the fifth highest in its peer group.

Metric	Assumed rate of return (7.75%)
What it measures	The estimated annual rate of return on the Fund's assets.
Why it is important	If actual future returns are lower than the assumed rate of return, future contributions will need to increase significantly, especially for a poorly funded plan. Wichita Falls Fire's assumed rate of return is 7.75%.
Peer comparison	Wichita Falls Fire's assumed rate of return is third highest in the state.

Metric	Payroll growth rate (4.00%)
What it measures	The estimated annual growth in the total payroll of active members contributing into the fund.
Why it is important	Contributions are calculated as a percent of active members' pay and are back-loaded based on the expected growth in total payroll. If payroll does not increase at this rate, actual contributions will not meet those expected in the Fund's actuarial valuations. Given the system's inactive and active liabilities are not fully funded; contributions below expected levels will have serious consequences on the Fund's long-term solvency.
Peer comparison	The Fund's payroll growth rate of 4.00% percent is the second highest in the state.

Metric	Actual contributions as a percent of actuarially determined contributions (78.69%)
What it measures	Whether the current employer contributions have met a theoretical minimum threshold.[23]
Why it is important	The employer's portion of the contribution is less than 79% of the amount needed to fund the system on a rolling 30-year amortization period. The PRB's 2014 Study of the Financial Health of Texas Public Retirement Systems found that plans that have consistently received adequate funding are in a better position to meet their long-term obligations.
Peer comparison	This is the third largest shortfall percentage in its peer group.

Metric	Non-investment cash flow as a percent of fiduciary net position (-5.68%)
What it measures	Non-investment cash flow shows how much the system is receiving through contributions in relation to its outflows: benefit payments, withdrawals and expenses.

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

Why it is important	Viewing this metric as a percent of total net assets (or fiduciary net position (FNP)), in conjunction with the funded ratio and recognition of the relative maturity of a plan, provides information about the stability of a plan's funding arrangement.
Peer comparison	Wichita Falls Fire's non-investment cash flow as a percent of FNP is the second lowest in its peer group. If this trend continues, the system could face the potential risk of needing to prematurely liquidate a portion of existing assets to pay current benefits and/or expenses.

Metric	Fund exhaustion date (2051)
What it measures	The date upon which there are projected to be no assets remaining to pay retiree monthly benefits.
Why it is important	Ensuring adequate assets are available to pay monthly benefits when due is the primary concern of any pension fund.
Peer comparison	Wichita Falls Fire is one of only two plans in its peer group with a projected fund exhaustion date.

Plan Summary

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

Benefits

Retirement Eligibility	Hired Prior to 4/21/16 – Age 50 with 20 Years of Credited Service Hired After 4/20/16 – Age 55 with 20 Years of Credited Service
Vesting	20 Years of Service
Benefit Multiplier	Hired Prior to 4/21/16 – 2.55% Hired After 4/20/16 – 2.50%
Average Salary	Average Compensation over the 130 consecutive pay periods of service which produces the highest average, multiplied by 2.167
Benefit Formula	Benefit Multiplier x Average Salary x Credited Service Limited to $100,000 not indexed with Inflation
Retroactive DROP Eligibility	Hired Prior to 4/21/16 – Age 55 with 25 Years of Credited Service Hired After 4/20/16 – Age 57 with 25 Years of Credited Service
Retroactive DROP Period	Maximum 24 Months

Contributions

As of the January 1, 2020, actuarial valuation, active members of Wichita Falls Fire contribute 13 percent of pay while the City of Wichita Falls contributes 13 percent of pay.

Membership

Total Active Members	Members/Beneficiaries in Pay	Terminated	Total Members	Active-to-Annuitant Ratio
159	147	5	311	1.08

TLFFRA Board Structure

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

Contribution and Benefit Decision-Making

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

TLFFRA allows the board of trustees for each system to modify the benefits (increases and reductions). However, a proposed addition or change must be approved by the actuary and a majority of participating plan members before taking effect. Benefit changes cannot deprive a member, retiree, or beneficiary of the right to receive vested accrued benefits.

Asset Allocation

Asset Allocation (as of 12/31/2020)					
Asset Class	**Equities**	**Fixed Income**	**Alternatives**	**Real Estate**	**Other***
Current Allocation	58.72%	25.91%	5.87%	8.81%	0.69%
Target Allocation	50.00%	30.00%	10.00%	10.00%	0.00%

*Other includes capital assets, receivables and cash

System	2020	Cash	Equity	Fixed Income	Real Estate	Alternatives	RE+AI
Odessa Firemen's Relief & Retirement Fund	$47,736,104	0.87%	70.60%	17.39%	11.11%	0.00%	11.11%
Longview Firemen's Relief & Retirement Fund	$49,440,856	3.84%	45.02%	9.97%	8.51%	29.12%	37.62%
Galveston Firefighter's Relief & Retirement Fund	$53,548,434	1.90%	64.24%	19.61%	2.68%	11.48%	14.16%
Port Arthur Firemen's Relief & Retirement Fund	$55,702,890	1.46%	65.32%	33.03%	0.00%	0.00%	0.00%
Killeen Firemen's Relief & Retirement Fund	$50,912,600	5.89%	57.35%	28.19%	4.28%	4.42%	8.70%
Wichita Falls Firemen's Relief & Retirement Fund	**$57,828,760**	**0.00%**	**58.75%**	**26.51%**	**8.85%**	**5.94%**	**14.79%**
McAllen Firemen's Relief & Retirement Fund	$57,956,228	0.43%	68.56%	5.10%	0.00%	25.88%	25.88%
Abilene Firemen's Relief & Retirement Fund	$56,393,440	6.14%	73.27%	20.24%	0.00%	0.93%	0.93%
San Angelo Firemen's Relief & Retirement Fund	$77,329,058	1.61%	67.21%	19.42%	0.22%	11.54%	11.76%
Tyler Firefighters' Relief & Retirement Fund	$81,054,656	3.17%	73.15%	22.17%	1.29%	0.00%	1.29%
Denton Firemen's Relief & Retirement Fund	$117,198,139	10.57%	60.88%	14.46%	11.22%	2.85%	14.06%

Investment Returns

Rates of Return (as of 12/31/2021)				
Time Period	**1-year**	**3-year**	**10-year**	**Since 1995**
Gross Return	15.22%	17.30%	9.84%	8.56%
Net Return	14.10%	16.34%	9.17%	8.02%

Historical Trends

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

Wichita Falls Fire's funded status has been steadily declining since 2000. Inadequate contributions have been the main cause of this decline.

Assets and Liabilities

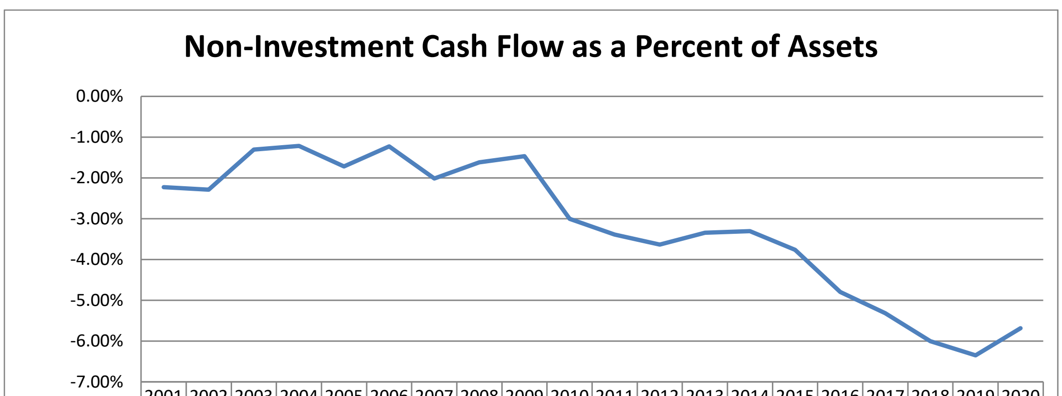
Funding Trends Funded Ratio, Amortization Period and Unfunded Liability as Percent of Payroll									
Valuation Year	2006	2008	2010	2012	2015	2016	2017	2018	2020
Funded Ratio	74.79%	72.54%	68.34%	63.00%	65.24%	64.38%	62.48%	57.70%	56.78%
Am Period (years)	34.6	24.8	38.9	63.2	105.9	43.7	49.4	Infinite	43.3
UAAL (% of payroll)	155.87%	167.15%	223.34%	274.94%	260.85%	252.24%	265.13%	316.54%	326.00%

The system was 86 percent funded in 2000 but fell to 57 percent in 2020.

Cash Flow

Wichita Falls Fire had the second lowest non-investment cash flow in its peer group. It has significantly decreased since 2015. Benefit disbursements and contribution refunds are worth more than double the value of contributions the fund receives.

A negative non-investment cash flow is not abnormal for mature defined benefit pension plans. However, a cash flow percentage this low is likely to be a drag on potential investment returns because a plan must either invest in a higher proportion of income-producing investments, which traditionally provide lower returns, or must liquidate existing assets to pay out current benefits or expenses. Moreover, a cash flow percentage this low also increases the likelihood of the system being required to prematurely liquidate its assets.



	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Cash Flow % of Assets	-2.2	-2.2	-1.3	-1.2	-1.7	-1.2	-2.0	-1.6	-1.4	-3.0	-3.3	-3.6	-3.3	-3.3	-3.7	-4.8	-5.3	-6.0	-6.3	-5.6

Peer Group Key Metric Comparison

		Funding Val Metrics						Fiscal Year End Metrics				
Peer Group Plans	**MVA**	**Am Period Date**	**Am Period**	**Funded Ratio**	**UAAL as % of Payroll**	**Assumed Interest**	**Payroll Growth**	**FYE**	**Actual Cont. as % of ADC**	**DROP as % of FNP**	**Non-Investment Cash Flow as % of FNP**	**Fund Exhaustion Date**
Odessa Firemen's Relief & Retirement Fund	$47,736,104	1/1/2021	27.7	37.18%	461.24%	7.50%	3.50%	12/31/2020	89.14%	0.73%	-8.12%	N/A
Longview Firemen's Relief & Retirement Fund	$49,440,856	12/31/2020	Infinity	40.02%	509.76%	7.50%	3.00%	12/31/2020	64.37%	N/A	-4.66%	2039
Galveston Firefighter's Relief & Retirement Fund	$49,030,850	12/31/2019	57.6	64.90%	294.44%	7.50%	2.85%	12/31/2020	80.19%	N/A	-2.98%	N/A
Port Arthur Firemen's Relief & Retirement Fund	$51,911,828	12/31/2019	27.3	74.99%	180.33%	7.50%	3.00%	12/31/2019	92.60%	N/A	-3.14%	N/A
Killeen Firemen's Relief & Retirement Fund	$43,947,220	9/30/2018	39.8	69.35%	131.39%	7.50%	3.00%	9/30/2020	93.23%	N/A	0.36%	N/A
Wichita Falls Firemen's Relief & Retirement Fund	**$52,839,710**	**1/1/2020**	**43.3**	**56.78%**	**326.00%**	**7.75%**	**4.00%**	**12/31/2020**	**78.69%**	**N/A**	**-5.68%**	**2051**
McAllen Firemen's Relief & Retirement Fund	$57,956,229	9/30/2020	27.7	69.50%	192.05%	7.50%	3.00%	9/30/2020	75.68%	N/A	-2.97%	N/A
Abilene Firemen's Relief & Retirement Fund	$55,688,060	10/1/2019	31.4	49.07%	393.82%	7.50%	3.00%	9/30/2020	96.76%	0.00%	-4.39%	N/A
San Angelo Firemen's Relief & Retirement Fund	$71,755,780	12/31/2019	37.6	61.97%	339.34%	7.80%	3.50%	12/31/2019	95.30%	N/A	-2.25%	N/A
Tyler Firefighters' Relief & Retirement Fund	$74,572,570	12/31/2019	29.0	71.13%	240.14%	7.25%	3.00%	12/31/2020	94.83%	N/A	-4.95%	N/A
Denton Firemen's Relief & Retirement Fund	$103,815,790	12/31/2019	18.3	80.79%	115.79%	6.75%	3.00%	12/31/2020	107.37%	N/A	0.76%	N/A

Peer Group Sponsor Funding Comparison

Peer Group Plans	General Fund Expenditures (GFE)	Expected Employer Contributions	Payroll ($Millions)	Contributions/ GFE	Payroll/ GFE
Odessa Firemen's Relief & Retirement Fund	$89,247,303	$2,814,543	$13.67	3.2%	15%
Longview Firemen's Relief & Retirement Fund	$60,795,056	$2,551,945	$13.85	4.2%	23%
Galveston Firefighter's Relief & Retirement Fund	$53,481,911	$1,471,714	$8.78	2.8%	16%
Port Arthur Firemen's Relief & Retirement Fund	$62,108,297	$1,337,739	$9.30	2.2%	15%
Killeen Firemen's Relief & Retirement Fund	$77,239,242	$1,919,225	$15.39	2.5%	20%
Wichita Falls Firemen's Relief & Retirement Fund	**$79,087,357**	**$1,615,395**	**$12.34**	**2.0%**	**16%**
McAllen Firemen's Relief & Retirement Fund	$116,400,08	$1,969,448	$13.11	1.7%	11%
Abilene Firemen's Relief & Retirement Fund	$96,343,197	$3,414,114	$15.31	3.5%	16%
San Angelo Firemen's Relief & Retirement Fund	$82,050,627	$2,577,835	$12.64	3.1%	15%
Tyler Firefighters' Relief & Retirement Fund	$75,556,716	$2,708,618	$12.26	3.6%	16%
Denton Firemen's Relief & Retirement Fund	$121,963,673	$4,158,368	$20.15	3.4%	17%

Peer Group Size ($Millions)			
Fund	Payroll	Actuarial Accrued Liability	Actuarial Value of Assets
Wichita Falls Fire	$12.3	$93.1	$52.8
Average	$13.3	$98.0	$58.9

Peer Group Expense Comparison

Peer Group Plans	10 yr. return (Net)	Active/ Annuitants	Average Benefit	NPL	Admin Expenses	Admin Exp as % of Assets	Investment Expenses	Inv Exp as % of Assets	Other Expenses	Total Expenses	Exp as % of Assets
Odessa Firemen's Relief & Retirement Fund	7.12%	1.09	$51,139	$69,999,260	$196,147	0.41%	$89,937	0.19%	0	$286,084	0.60%
Longview Firemen's Relief & Retirement Fund	5.84%	1.11	$43,394	$162,570,306	$73,839	0.15%	$128,154	0.26%	0	$201,993	0.41%
Galveston Firefighter's Relief & Retirement Fund	6.89%	1.25	$40,485	$18,974,664	$112,582	0.21%	$236,383	0.44%	0	$348,965	0.65%
Port Arthur Firemen's Relief & Retirement Fund	7.84%	1.20	$60,772	$12,248,220	$56,747	0.10%	$71,589	0.13%	0	$128,336	0.23%
Killeen Firemen's Relief & Retirement Fund	5.87%	2.95	$38,843	$19,243,744	$107,111	0.21%	$149,812	0.29%	0	$256,923	0.50%
Wichita Falls Firemen's Relief & Retirement Fund	**7.90%**	**1.08**	**$36,789**	**$80,142,060**	**$115,915**	**0.20%**	**$373,910**	**0.65%**	**0**	**$489,825**	**0.85%**
McAllen Firemen's Relief & Retirement Fund	7.39%	1.51	$38,613	$25,544,808	$38,950	0.07%	$387,842	0.67%	0	$426,792	0.74%
Abilene Firemen's Relief & Retirement Fund	5.83%	1.00	$38,277	$65,975,348	$101,730	0.18%	$196,365	0.35%	0	$298,095	0.53%
San Angelo Firemen's Relief & Retirement Fund	7.50%	1.16	$42,334	$39,991,102	$83,876	0.11%	$304,226	0.39%	0	$388,102	0.50%
Tyler Firefighters' Relief & Retirement Fund	7.65%	1.27	$43,079	$22,996,310	$46,062	0.06%	$628,582	0.78%	0	$674,644	0.83%
Denton Firemen's Relief & Retirement Fund	7.96%	2.21	$61,473	$11,134,689	$116,909	0.10%	$182,906	0.16%	0	$299,815	0.26%

Peer Group Value of Benefits Comparison

Peer Group Plans	Retirement Age	YCS	Multiplier as % of FAS	Normal Form of Payment	COLA	Social Security?	Normal Cost at Plan Discount Rate	Normalized Normal Cost at 7.50%
Odessa Firemen's Relief & Retirement Fund	55.0	25.0	0.72	Life Annuity	None	Yes	15.25%	15.25%
Longview Firemen's Relief & Retirement Fund	55.0	20.0	0.60	Life Annuity	None	No	17.01%	17.01%
Galveston Firefighter's Relief & Retirement Fund	50.0	20.0	0.60	Life Annuity with J/S 66%	None	No	20.66%	20.66%
Port Arthur Firemen's Relief & Retirement Fund	50.0	20.0	0.54	Life Annuity with J/S 66%	None	No	15.42%	15.42%
Killeen Firemen's Relief & Retirement Fund	50.0	25.0	0.70	Life Annuity with J/S 66%	None	Yes	17.43%	16.52%
Wichita Falls Firemen's Relief & Retirement Fund	55.0	20.0	0.50	Life Annuity	None	**Yes**	**13.38%**	**14.12%**
McAllen Firemen's Relief & Retirement Fund	50.0	20.0	0.58	Life Annuity with J/S 66%	None	Yes	16.98%	16.98%
Abilene Firemen's Relief & Retirement Fund	53.0	20.0	0.55	Life Annuity	**None**	No	17.17%	17.17%
San Angelo Firemen's Relief & Retirement Fund	55.0	25.0	0.66	Life Annuity with J/S 72%	1.2% after age 65	No	22.81%	24.65%
Tyler Firefighters' Relief & Retirement Fund	50.0	25.0	0.72	Life Annuity with J/S 66%	None	No	21.85%	20.71%
Denton Firemen's Relief & Retirement Fund	50.0	20.0	0.52	Life Annuity with J/S 66%	None	Yes	22.33%	19.01%

Comments from Wichita Falls Firemen's Relief and Retirement Fund

The PRB did not receive any comments on the initial draft from the Wichita Falls Firemen's Relief and Retirement Fund.

Comments from the City of Wichita Falls

Wichita Falls
TEXAS
Blue Skies. Golden Opportunities.

Jessica Williams, MPA, CPFO
Chief Financial Officer
City of Wichita Falls
1300 7th Street,
Wichita Falls, TX 76301
940-761-7476

September 8, 2022

Pension Review Board
P.O. Box 13498
Austin, TX 78711
512-463-3399

City of Wichita Falls Intensive Review

To Whom It May Concern,

In review of the draft Intensive Review, the City of Wichita Falls (City) thanks the Pension Review Board (PRB) for their review and recognizes the PRB's recommendations are for informational purposes only. The City provides the following comments.

The document presents data from both the 2020 Valuation and the 2022 Valuation creating confusion for the reader. At the onset of this project, the City indicated to the PRB that both a new valuation and an experience study were underway. The valuation, when complete, was presented to the PRB. It would be consistent to update the entirety of the report using the most recent valuation.

During the current budget process, the City of Wichita Falls increased the City contribution to the Wichita Falls Firefighters Pension Fund (fund) from 13.25% in fiscal year 2021-22 to 16.18% in fiscal year 2022-23. The City has worked closely with the Fund, the Fund's Actuary, and the Firefighters Association to make changes to improve the plan. In review of the 2022 valuation and considering recommendations from the PRB, it is the belief of the City and the Fund's Actuary that City contribution rates at 16.18% will decrease the total amortization period from 32.1 years to 24.5 years. The City therefore sees no need for further action at this time. The City and all affected parties will continue to work together to see that the funding of the plan increases and the amortization period decreases.

Neither the taxpayer, nor the City, may make changes to the Firefighters Pension Fund's self-determined benefits. Changes may only be made by a vote of the membership. This allows for an inequitable distribution of governance for all plan sponsors throughout the state. Plan sponsors are governed by representatives chosen by the people, through the election process, to represent the needs of their constituents. Any additional tax burden placed on taxpayers, due to the choices of these independent plans, must be both the responsibility of the member and, by agreement, the responsibility of the taxpayer.

The plan has consistently met or exceeded its benchmark returns, however, as noted in the Intensive Review, the fund lost considerable ground during the Great Recession. Following the Great Recession, the City of Wichita Falls entered into a historic drought, spanning over five years, which resulted in a decrease in population, stagnant growth and considerable financial challenges. As funds have been available, the City has made increases to the Fire Pension fund. The firefighters have voted to changed their benefits and have reduced the richness of the plan for some incoming members.

The City again thanks the PRB for their review and will consider the suggestions contained therein.

Sincerely,

Jessica Williams
Chief Financial Officer

Appendix H – Intensive Review Status Update

Midland Firemen's Relief and Retirement Fund	
Review Date:	November 2021
Initial Metrics (2019 AV)	Funding Period: Infinite Funded Ratio: 51.1%
PRB Recommendations	• Conduct an independent third-party forensic audit of Midland Fire's financial records to enhance efficiency of its investment program with increased focus on transparency and accountability. • Conduct a governance audit by an independent third party. • Make use of professional expertise to guide investment program. • Develop a robust Funding Soundness Restoration Plan (FSRP) and Funding Policy that is sustainable and achievable. • Commit to inform plan members of issues facing the fund, including distributing the intensive review to them. • Keep the PRB and the Legislature informed of the progress.
Updates since intensive review	
Changes	• Investment Policy Statement updated. • Selected current auditor to perform the forensic audit and governance audit recommended as part of the PRB Intensive Review. Audit activities were complete as of the end of October 2022, but the audit report is not yet finalized.
Metrics (2021-2022)	Funding period: no update Funded ratio: no update

Paris Firefighters Relief and Retirement Fund		
Review Date:		October 2019
Initial Metrics (2016 AV)		Funding period: 41.9 years Funded ratio: 35.64%
PRB Recommendations		• Consider increasing contributions to meet short-term funding needs. • Develop a strong funding policy to prevent address long-term funding issues. • Work with actuaries to select an appropriate investment assumption. • Review investment processes to improve asset returns. • Complete the minimum education requirements, seek advice from peer systems, and seek other educational opportunities for board members. • Seek advice from professional advisors and regularly review their performance.
Updates since intensive review		
2019-2020	**Changes**	• Lowered assumed rate of return from 7.5% to 7.25%. • Made several investment portfolio changes including adding passive investments.
	Metrics (2018 AV)	Funding period: 32.1 years Funded ratio: 30.5%
2021-2022	**Changes**	• Plan frozen and all current and future members moved into the Texas Municipal Retirement System (TMRS) as of October 1, 2022. • City issued $12.15M in pension obligation bonds (POBs) to pay down unfunded liabilities.
	Metrics (2020 AV)	Funding period: 33.6 years Funded ratio: 28.79%

<table>
<tr><th colspan="3">Odessa Firemen’s Relief and Retirement Fund</th></tr>
<tr><td colspan="2">Review Date:</td><td>October 2019</td></tr>
<tr><td colspan="2">Initial Metrics (2018 AV)</td><td>Funding period: 47.1 years
Funded ratio: 43.08%</td></tr>
<tr><td colspan="2">PRB Recommendations</td><td>• Evaluate the appropriate balance of contribution increases and benefit reductions.
• Perform scenario testing of different combinations of plan design changes and payment options.
• Develop a strong funding policy to restore and maintain fiscal health.
• Monitor investment managers performance against benchmarks.
• Regularly review outside consulting services.
• Adopt an asset allocation plan.</td></tr>
<tr><th colspan="3">Updates since intensive review</th></tr>
<tr><td rowspan="2">2019-2020</td><td>Changes</td><td>• Increased city contributions from 20% to 26% and lowered employee contributions from 18% to 16%.
• Lowered assumed rate of return from 7.75% to 7.5%.</td></tr>
<tr><td>Metrics (2020 AV)</td><td>Funding period: 37.5 years
Funded ratio: 36.81%</td></tr>
<tr><td rowspan="2">2021-2022</td><td>Changes</td><td>• Lowered assumed rate of return from 7.5% to 7.0%.
• Lowered payroll growth assumption from 3.5% to 3%.</td></tr>
<tr><td>Metrics (2022 AV)</td><td>Funding period: 34.3 years
Funded ratio: 36.48%</td></tr>
</table>

<table>
<tr><th colspan="3">Longview Firemen’s Relief and Retirement Fund</th></tr>
<tr><td colspan="2">Review Date:</td><td>October 2018</td></tr>
<tr><td colspan="2">Initial Metrics (2016 AV)</td><td>Funding period: 50.7 years
Funded ratio: 45.53%</td></tr>
<tr><td colspan="2">PRB Recommendations</td><td>• Regularly review actuarial assumptions against experience.
• Closely monitor investment performance including expenses and evaluate asset allocation decisions, particularly based on risk.
• Develop a more robust investment policy.
• Adopt a strong funding policy with an actuarially determined contribution (ADC) structure.
• Create a formal risk-/cost-sharing agreement and help reduce uncertainty for stakeholders.</td></tr>
<tr><th colspan="3">Updates since intensive review</th></tr>
<tr><td rowspan="2">2017-2018</td><td>Changes</td><td>• Removed deployment pay from benefit calculation and contributions.</td></tr>
<tr><td>Metrics (2017 AV)</td><td>Funding period: 40.2 years
Funded ratio: 46.05%</td></tr>
<tr><td rowspan="2">2019-2020</td><td>Changes</td><td>• Assumed rate of return lowered from 8% to 7.5%.
• City contributions increased from 18% to 19%.</td></tr>
<tr><td>Metrics (2019 AV)</td><td>Funding period: Infinite
Funded ratio: 39.35%</td></tr>
<tr><td rowspan="2">2021-2022</td><td>Changes</td><td>• City issued $45.6M in POBs to pay down unfunded liabilities.
• With the POB, the amortization period is 27.5 years and city contributions were lowered from 19% of payroll to 12% effective July 21, 2022.
• Memorandum of understanding between plan and city agreeing to:
  ○ no plan changes until funding period is less than 5 years, and
  ○ no plan changes can result in an increase in the funding period of more than 10 years</td></tr>
<tr><td>Metrics (2021 AV)</td><td>Funding period: Infinite
Funded ratio: 40.54%</td></tr>
</table>

Orange Firemen's Relief and Retirement Fund		
Review Date:		October 2018
Initial Metrics (2017 AV)		Funding period: 69.3 years Funded ratio: 49.86%
PRB Recommendations		• Closely monitor investment performance including expenses and evaluate asset allocation decisions. • Regularly review outside consulting services. • Regularly review actuarial assumptions against experience. • Develop written funding, investment, and benefit policies to create a formal risk-/cost-sharing agreement and help reduce uncertainty for stakeholders. • Ensure contributions are sufficient for funding needs, particularly consider an ADC structure.
Updates since intensive review		
2017-2018	**Changes**	• Plan agreed to consult peer pension systems for possible guidelines or examples of governance policies to help develop a governance policy between the Fund and the city. • Plan agreed to request the actuary to explain benefit reduction proposals to the fund members. • Plan adopted a motion to craft a request for proposal (RFP) for investment consultant services.
	Metrics (2018 FSRP analysis)	Funding period: 47 years Funded ratio: 54.12%
2019-2020	**Changes**	• Changed investment consultant to lower costs. • Lowered payroll growth assumption from 4% to 2.5%. • Increased city contributions from 14% to 14.5%, and member contributions from 12% to 12.5%. • Actuary performed a benefit analysis on the impact of potential changes in Oct 2019 which projects all the benefit and contribution changes to lower the funding period from infinite to 43.4 years.
	Metrics (2019 AV)	Funding period: Infinite Funded ratio: 46.28%
2021-2022	**Changes**	• Increased city contributions to 18.8% and member contributions to 13.8%.
	Metrics (2021 AV)	Funding period: 20.7 years Funded ratio: 56.59%

<table>
<tr><th colspan="3">Irving Firemen’s Relief and Retirement Fund</th></tr>
<tr><td colspan="2">Review Date:</td><td>October 2018</td></tr>
<tr><td colspan="2">Initial Metrics (2015 AV)</td><td>Funding period: 33 years
Funded ratio: 74.92%</td></tr>
<tr><td colspan="2">PRB Recommendations</td><td>• Conduct an asset-liability study of potential risks associated with existing asset mix and liabilities.
Perform scenario testing of large DROP withdrawals coupled with potential adverse investment experience.
• Develop written funding, investment, and benefit policies to create a formal risk-/cost-sharing agreement and help reduce uncertainty for stakeholders.
• Ensure contributions are sufficient for funding needs, particularly consider an ADC structure.</td></tr>
<tr><td colspan="3">Updates since intensive review</td></tr>
<tr><td rowspan="2">2017-2018</td><td>Changes</td><td>• Lowered assumed rate of return from 8.25% to 7.5%.
• Lowered payroll growth assumption from 4.25% to 3.5%.</td></tr>
<tr><td>Metrics (2017 AV)</td><td>Funding period: Infinite
Funded ratio: 71.61%</td></tr>
<tr><td rowspan="2">2019-2020</td><td>Changes</td><td>• Lowered assumed rate of return from 7.5% to 7%.
• Lowered payroll growth assumption from 3.5% to 2.75%.
• Lowered the interest rate on the DROP (currently: 3.3%, from: 6.25%).
• Members no longer receive interest on their DROP account when they leave the department.
• Final average salary raised from 3 years to 5 years.
• Added a second-tier benefit.
• City increased contributions from 16.75% to 20.25%.</td></tr>
<tr><td>Metrics (2019 AV)</td><td>Funding period: 43.6 years
Funded ratio: 65.41%</td></tr>
<tr><td rowspan="3">2021-2022</td><td>Changes</td><td>• City issued $80M in POBs to pay down unfunded liabilities.
• City increased its contributions from 20.25% to 26% starting in 2022 and has agreed that any time the ADC is lower than 26%, the city and fund will equally share in payment of the ADC. Any time the ADC is greater than or equal to 26% the members will contribute 13% with the city funding the remaining amount.
• Increases to ADC due to benefit enhancements will be paid by the members.</td></tr>
<tr><td>Metrics (2021 AV)</td><td>• Funding period: 37 years
• Funded ratio: 63.82%</td></tr>
<tr><td>Metrics (2022 Supp. Analysis after paying down unfunded liability with POB proceeds)</td><td>• Funding period: 23 years
• Funded ratio: 91%</td></tr>
</table>

<table>
<tr><th colspan="3">Beaumont Firemen's Relief and Retirement Fund</th></tr>
<tr><td colspan="2">Review Date:</td><td>April 2018</td></tr>
<tr><td colspan="2">Initial Metrics (2016 AV)</td><td>Funding period: 104 years
Funded ratio: 67.53%</td></tr>
<tr><td colspan="2">PRB Recommendations</td><td>• Develop a funding policy that requires payment of an ADC.
• Conduct an asset-liability study of potential risks associated with existing asset mix and liabilities. Perform scenario testing of large PROP withdrawals coupled with potential adverse investment experience.
• Adopt a formal risk/cost-sharing framework to guide stakeholders in how benefit and contribution levels will be modified under different economic conditions.</td></tr>
<tr><th colspan="3">Updates since intensive review</th></tr>
<tr><td rowspan="2">2019-2020</td><td>Changes</td><td>• Employee and city contributions will increase from 15.5% to 18% in steps until 2023.</td></tr>
<tr><td>Metrics (2018 AV)</td><td>Funding period: Infinite
Funded ratio: 55.8%</td></tr>
<tr><td rowspan="2">2021-2022</td><td>Changes</td><td>• Added a new benefit tier for employees hired after January 1, 2022.</td></tr>
<tr><td>Metrics (2020 AV)</td><td>Funding period: Infinite
Funded ratio: 55.44%</td></tr>
</table>

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<tr><th colspan="3">Marshall Firemen’s Relief and Retirement Fund</th></tr>
<tr><td colspan="2">Review Date:</td><td>April 2018</td></tr>
<tr><td colspan="2">Initial Metrics (2016 AV)</td><td>Funding period: 56.4 years
Funded ratio: 42.02%</td></tr>
<tr><td colspan="2">PRB Recommendations</td><td>• Adopt a formal risk/cost-sharing framework with trigger mechanisms that guide stakeholders in how benefit and contribution levels will be modified under different economic conditions.
• Develop a funding policy that requires payment of an ADC, or at minimum, that fully funds the plan over 30 years or less.
• Regularly review actuarial assumptions against experience.
• Closely monitor investment performance including expenses and evaluate asset allocation decisions.</td></tr>
<tr><td colspan="3">Updates since intensive review</td></tr>
<tr><td rowspan="2">2018</td><td>Changes</td><td>• Retirement eligibility age moved from 50 to 53 for new hires after December 31, 2018.
• Increased 10-year vesting period to 20-year period for new hires after 12/31/2018.
• City approved contributions to be made to the fund at the end of the year for vacancies that exist throughout the year effective December 31, 2018.
• 0.75% city contribution increase effective January 1, 2019.</td></tr>
<tr><td>Metrics</td><td>Funding period: No change.
Funded ratio: No change.</td></tr>
<tr><td rowspan="2">2019-2020</td><td>Changes</td><td>• Employee contributions increased from 14% to 16% on January 1, 2021.</td></tr>
<tr><td>Metrics (2018 AV)</td><td>Funding period: 59 years
Funded ratio: 36.66%</td></tr>
<tr><td rowspan="2">2021-2022</td><td>Changes</td><td>• Lowered assumed rate of return from 7.5% to 7.25%.
• Lowered payroll growth assumption from 4% to 3.75%.</td></tr>
<tr><td>Metrics (2020 AV)</td><td>Funding period: 41 years
Funded ratio: 40.19%</td></tr>
</table>

<table>
<tr><th colspan="3">Galveston Employees' Retirement Plan for Police</th></tr>
<tr><td colspan="2">Review Date:</td><td>January 2018</td></tr>
<tr><td colspan="2">Initial Metrics (2017 AV)</td><td>Funding period: 48.7 years
Funded ratio: 42.1%</td></tr>
<tr><td colspan="2">PRB Recommendations</td><td>• Use the FSRP process to develop a funding policy that requires payment of an ADC, or at minimum, that fully funds the plan over 30 years or less.
• Regularly review actuarial assumptions against experience.
• Closely monitor investment performance including expenses and evaluate asset allocation decisions, including from a risk perspective.</td></tr>
<tr><th colspan="3">Updates since intensive review</th></tr>
<tr><td rowspan="2">2017-2018</td><td>Changes</td><td>• At the September 2018 PRB Actuarial Committee meeting, both the city and the plan provided the PRB with preliminary proposals for a funding policy that would include paying an ADC with a closed 30-year funding period.</td></tr>
<tr><td>Metrics (2018 AV)</td><td>Funding period: 31.4 years
Funded ratio: 39.31%</td></tr>
<tr><td rowspan="2">2019-2020</td><td>Changes</td><td>• House Bill 2763 (86R) made statutory funding policy and governance updates to the plan. The bill set member and city contribution rates at 12% and 18%, respectively, through 2024, after which a contribution policy based on an ADC rate will begin. The system adopted a funding policy with an ADC based on a closed layered 30-yr period targeting full funding by 2049.</td></tr>
<tr><td>Metrics (2020 AV)</td><td>Funding period: 28 years
Funded ratio: 36.44%</td></tr>
<tr><td rowspan="2">2021-2022</td><td>Changes</td><td>• No changes reported to the PRB.</td></tr>
<tr><td>Metrics (2021 AV)</td><td>Funding period: 27 years
Funded ratio: 38.01%</td></tr>
</table>

Greenville Firemen's Relief and Retirement Fund		
Review Date:		January 2018
Initial Metrics (2014 AV)		Funding period: 70.4 years Funded ratio: 48.94%
PRB Recommendations		• Develop and maintain robust FSRP (when necessary) and a funding policy that requires payment of an ADC, or at minimum, that fully funds the plan over 30 years or less. • Regularly review actuarial assumptions against experience. • Closely monitor investment performance including expenses and evaluate asset allocation decisions, including from a risk perspective.
Updates since intensive review		
2017-2018	**Changes**	• System informed the PRB that an RFP had been issued for actuarial services.
	Metrics (2016 AV)	Funding period: 55 years Funded ratio: 47.69%
2019-2020	**Changes**	• City contributions increased from 19.3% to 21.3%. • Removed deployment pay from benefit calculation and contributions.
	Metrics (2018 AV)	Funding period: 40.7 years Funded ratio: 46.61%
2021-2022	**Changes**	• Lowered assumed rate of return from 7.75% to 7.5%.
	Metrics (2020 AV)	Funding period: 36.6 years Funded ratio: 42.64%

Appendix I – Public Retirement System Compliance with Minimum Educational Training Requirements report

Public Retirement System Compliance with Minimum Educational Training Requirements
Texas Pension Review Board

This report contains MET compliance information reported to the PRB for Texas public retirement system trustees' and system administrators' most recently completed training cycle.

Compliant: has successfully completed previous training cycle
Not Compliant: has been not compliant in one or more previous training cycles
In Progress: working toward completion of first training cycle
Exempt: systems that have met the criteria for their system administrators to be exempt from MET requirements

Abilene Firemen's Relief & Retirement Fund		**37.5% Compliant**
Name	**Trustee Type**	**Compliance Status**
Baker Bryant	Active	Compliant
Kevin Johnson	Active	Compliant
Cadon Barrett	Active	Not Compliant
Mike Rains	CFO	Not Compliant
Weldon Hurt	Mayor Designee	Not Compliant
Jack Rich	Citizen	Not Compliant
Mike Whalen	Citizen	Not Compliant
System Administrator:	Rodney Goodman	Compliant

Amarillo Firemen's Relief & Retirement Fund		**37.5% Compliant**
Name	**Trustee Type**	**Compliance Status**
Brandon Mason	Active	Compliant
Dean Frigo	Citizen	Compliant
Laura Storrs	CFO designee	Compliant
Chad Munkres	Active	Not Compliant
Chris Shelburne	Active	Not Compliant
Joseph Peterson	Mayor Designee	Not Compliant
Rodney Ruthart	Citizen	Not Compliant
System Administrator:	Debbie Reid	Not Compliant

Arlington Employees Deferred Income Plan		**57% Compliant**
Name	**Trustee Type**	**Compliance Status**
Gincy Thoppil	Active	Compliant
Lemuel Randolph	Active	Compliant
Pete Jamieson	Retired	Compliant
Yoko Matsumoto	Active	Compliant
Don Crowson	Active	Not Compliant
Gilbert Perales	Active	Not Compliant
Mike Finley	Active	Not Compliant
System Administrator:	Exempt	

Atlanta Firemen's Relief & Retirement Fund		**50% Compliant**
Name	**Trustee Type**	**Compliance Status**
Randy Sanders	Citizen	Compliant
Ricky Draper	Active	Compliant
Travis Ransom	Mayor	Compliant
Alton Endsley	Citizen	Not Compliant
Danica Porter	CFO	Not Compliant
Mark Hill	Active	Not Compliant
System Administrator:	Exempt	

Austin Employees' Retirement System		**100% Compliant**
Name	**Trustee Type**	**Compliance Status**
Leslie Pool	City Council Member	Compliant
Diana Thomas	City Manager Designee	Compliant
Kelly Crook	City Council Appt. Citizen	Compliant
Dick Lavine	City Council Appt. Citizen	Compliant
Michael Granof	Board Appt. Citizen	Compliant
Brad Sinclair	Active Elected Member	Compliant
Amy Hunter	Active Elected Member	Compliant
Chris Noak	Active Elected Member	Compliant
Yuejiao Liu	Active Elected Member	Compliant
Michael Benson	Retired Elected Member	Compliant
Anthony B. Ross, Sr.	Retired Elected Member	Compliant
System Administrator:	Chris Hanson	Compliant

Austin Fire Fighters Relief & Retirement Fund		**100% Compliant**
Name	**Trustee Type**	**Compliance Status**
Belinda Weaver	Treasurer	Compliant
John Bass	Fund Member	Compliant
Jeremy Burke	Fund Member	Compliant
Doug Fowler	Fund Member	Compliant
Steve Adler	Mayor	Compliant
System Administrator:	Anumeha Kumar	In Progress

Austin Police Retirement System		**75% Compliant**
Name	**Trustee Type**	**Compliance Status**
Belinda Weaver	City Manager Designee	Compliant
Carl Zimmerman	Retired Member	Compliant
Chesley Wood	Board Appointee	Compliant
Michael Granof	City Council Appointee	Compliant
Kathie Tovo	Designated Council Member	Compliant
Keith Harrison	Retired Member	Compliant
Diana Thomas	Director of Finance Designee	Compliant
Christopher Salacki	Police Member	Compliant
Michael Cowden	Police Member	Not Compliant
Nick Moore	Police Member	Not Compliant
Sheldon "Scott" Askew	Police Member	Not Compliant
System Administrator:	Pattie Featherston	Compliant

Beaumont Firemen's Relief & Retirement Fund		**87.5% Compliant**
Name	**Trustee Type**	**Compliance Status**
Brian Hebert	Active	Compliant
Carl Whitehead, Jr.	Active	Compliant
Clint Cheshire	Active	Compliant
Todd Simoneaux	CFO	Compliant
Kevin Nectoux	Citizen	Compliant
Chris Catalina	Mayor Designee	In Progress
Laura Clark	Citizen	Not Compliant
System Administrator:	Joni Hanley	Compliant

Big Spring Firemen's Relief & Retirement Fund		**85.7% Compliant**
Name	**Trustee Type**	**Compliance Status**
Cecil Cevallos	Citizen	Compliant
Chad Pederson	Active	Compliant
Chanley Delk	Active	Compliant
Jake Sparks	Active	Compliant
Paul Brown	Citizen	Compliant
Sandy Smith	CFO	In Progress
Todd Darden	Mayor Designee	Not Compliant
System Administrator:	Exempt	

Brazos River Authority Retirement Plan		100% Compliant
Name	**Trustee Type**	**Compliance Status**
Ford Taylor	BRA Board Member	Compliant
John Luton	BRA Board Member	Compliant
Jen Henderson	BRA Board Member	Compliant
Royce Lesley	Board of Directors	Compliant
Christine Glese	BRA Board Member	In Progress
System Administrator:	David Thompson	Compliant

Brownwood Firemen's Relief & Retirement Fund		66.67% Compliant
Name	**Trustee Type**	**Compliance Status**
John Cadenhead	Active	Compliant
Joe Stieber	Active	Compliant
Melanie Larose	Finance Director	Compliant
William Campbell	Active	Compliant
Jesse Mendoza	Mayor's Designee	In Progress
Carey Stewart	Citizen	Not Compliant
Robert Myers	Citizen	Not Compliant
System Administrator:	Exempt	

Capital MTA Retirement Plan for Administrative Employees		0% Compliant
Name	**Trustee Type**	**Compliance Status**
Donna Simmons	Active	Not Compliant
Elaine Timbes	Active	Not Compliant
Gerardo Castillo	Active	Not Compliant
John Hodges	Retired	Not Compliant
Lea Sandoz	Active	Not Compliant
System Administrator:	Exempt	

Capital MTA Retirement Plan for Bargaining Unit Employees		16.7% Compliant
Name	**Trustee Type**	**Compliance Status**
Brent Payne	Retiree - Bargaining Unit	Compliant
Michael "Kevin" Conlan	Sponsor - Employer	Not Compliant
Kerri Butcher	Sponsor - Employer	Not Compliant
Donna Simmons	Employer	Not Compliant
Greg Talley	Active-Bargaining Unit	Not Compliant
Lawrence Prosser	Active - Bargaining Unit	Not Compliant
System Administrator:	Exempt	

Cleburne Firemen's Relief & Retirement Fund		**85.7% Compliant**
Name	**Trustee Type**	**Compliance Status**
Eddie Norton	Citizen	Compliant
Howard Lillagore	Active	Compliant
John Harrell	Active	Compliant
Sean Herren	Active	Compliant
Steve Polasek	Mayor Designee	Compliant
Troy Lestina	CFO	Compliant
Roger Trussell	Citizen	Not Compliant
System Administrator:	Exempt	

Colorado River Municipal Water District Defined Benefit Retirement Plan &		**71.4% Compliant**
Name	**Trustee Type**	**Compliance Status**
Steve Mackey	Employer	Compliant
John Grant	Active	Compliant
John Womack	Active	Compliant
Richard Steel	Employer	Compliant
Cole Walker	Employer	In Progress
Karla Oliva	Active	Not Compliant
Mireya Castilaw	Active	Not Compliant
System Administrator:	Exempt	

Conroe Fire Fighters' Retirement Fund		**42.8% Compliant**
Name	**Trustee Type**	**Compliance Status**
Marcus Winberry	Mayor Designee	Compliant
Steve Cottar	Active	Compliant
Tom Garvey	Active	Compliant
Cary Wortham	Citizen	Not Compliant
Joe Craig	Active	Not Compliant
Russell Moss	Citizen	Not Compliant
Steve Williams	CFO	Not Compliant
System Administrator:	Exempt	

Corpus Christi Fire Fighters' Retirement System		**87.5% Compliant**
Name	**Trustee Type**	**Compliance Status**
Constance Sanchez	CFO	Compliant
Darron Bergstrom	Citizen	Compliant
Javier Jasso	Active	Compliant
Laurelyn Pohlmeier	Citizen	Compliant
Ernest Rivas	Active	Compliant
Penn Thomas	Mayor Designee	Compliant
Randy Smart	Active	Not Compliant
System Administrator:	Gracie Flores	Compliant

Corpus Christi Regional Transportation Authority		33.3% Compliant
Name	**Trustee Type**	**Compliance Status**
Matthew Woolbright	Active	Compliant
Philip Skrobarczyk	Active	Compliant
Eloy Salazar	Active	Compliant
Anna Jimenez	Active	Not Compliant
Dan Leyendecker	Active	Not Compliant
Lynn Alison	Active	Not Compliant
Patricia Dominguez	Active	Not Compliant
Gabi Canales	Active	Not Compliant
Edward Martinez	Citizen	Not Compliant
System Administrator:	Exempt	

Corsicana Firemen's Relief & Retirement Fund		42.8% Compliant
Name	**Trustee Type**	**Compliance Status**
Bobby Willingham	Citizen	Compliant
Connie Standridge	City Manager/Admin	Compliant
Kevin Putman	Active	Compliant
Brandy Harrison	Citizen	Not Compliant
Don Denbow	Mayor	Not Compliant
Johnny Pattison	Active	Not Compliant
Travis Ellington	Active	Not Compliant
System Administrator:	Exempt	

CPS Energy Pension Plan		100% Compliant
Name	**Trustee Type**	**Compliance Status**
Belinda Siller	Retired	Compliant
Amelia Badders	Active	Compliant
Paul Escamilla	Active	Compliant
Paul White	Active	Compliant
Domingo Villarreal	Active	Compliant
Debra Wainscott	Active	Compliant
Benjamin Jordan	Active	Compliant
Gautam Shringarpure	Active	Compliant
James Boston	Active	In Progress
System Administrator:	Cheryl Yager	In Progress

Dallas County Hospital District Retirement Income Plan		**8.3% Compliant**
Name	**Trustee Type**	**Compliance Status**
Farida Minner	Active	Compliant
Jeff Tillotson	Active	Not Compliant
Jesse Vallejo	Active	Not Compliant
Michael Williams	Active	Not Compliant
Marjorie Petty	Active	Not Compliant
Paula Dobbs-Wiggins	Active	Not Compliant
Robert Martinez	Active	Not Compliant
Don O'Bannon	Active	Not Compliant
Lisa Sutter	Active	Not Compliant
Elizabeth Palacios	Active	Not Compliant
John Proctor	Active	Not Compliant
Ramon Migiuez	Active	Not Compliant
System Administrator:	Exempt	

Dallas Employees' Retirement Fund		**87.5% Compliant**
Name	**Trustee Type**	**Compliance Status**
Carla Brewer	Active	Compliant
Henry Talavera	Citizen - Council Appointed	Compliant
John Peavy	Citizen	Compliant
Sunil King	Member Appointed	Compliant
Tina Richardson	Active	Compliant
Mark Swann	City Auditor	Compliant
T. Dupree Scovell	Citizen - Council Appointed	Not Compliant
System Administrator:	Cheryl Alston	Compliant

Dallas Police & Fire Pension System-Combined Plan		**90.9% Compliant**
Name	**Trustee Type**	**Compliance Status**
Armando Garza	Active	Compliant
Nicholas Merrick	Citizen Mayor-Appointed	Compliant
Kenneth Haben	Retired - Police	Compliant
Mark Malveaux	Mayoral Appointee	Compliant
Michael Brown	Citizen	Compliant
Steve Idoux	Citizen	Compliant
Nancy Rocha	Non-Member-Elected	In Progress
Tony Scavuzzo	Non-Member-Elected	In Progress
Marcus Smith	Non-Member-Elected	In Progress
William Quinn	Citizen Mayor-Appointed	Not Compliant
System Administrator:	Kelly Gottschalk	Compliant

Dallas/Fort Worth Airport Board DPS Retirement Plan		**90.9% Compliant**
Name	**Trustee Type**	**Compliance Status**
Ben Leal	Citizen	Compliant
Vincent Hall	Citizen	Compliant
Mario Quintanilla	Citizen	Compliant
Raj Narayanan	Citizen	Compliant
Vernon Evans	Citizen	Compliant
William Meadows	Active	Compliant
Gloria Tarpley	Citizen	Compliant
Mattie Parker	Active	Compliant
Eric Johnson	Dallas Mayor	Compliant
Henry Borbolla III	Active	Not Compliant
System Administrator:	Maruchy Cantu	Compliant

DART Employees' Defined Benefit Retirement Plan & Trust		**50% Compliant**
Name	**Trustee Type**	**Compliance Status**
Larry Knott	Active-Elected	Compliant
Nicole Fontayne-Bardowell	Active Employer	Compliant
Reginald Moore	Active-Elected	Compliant
David Leininger	Employer-Chair Appointment	Not Compliant
Jesse Oliver	Employer- President Appointed	Not Compliant
Joseph Costello	Active Employer	Not Compliant
William Velasco	Chair Appointee	Not Compliant
System Administrator:	Philip Perez	Compliant

Denison Firemen's Relief & Retirement Fund		**100% Compliant**
Name	**Trustee Type**	**Compliance Status**
Landon Lindsey	Active	Compliant
Lee Thornton	Citizen	Compliant
Aaron Mallory	Active	Compliant
Laurie Alsabbagh	Secretary-Treasurer	In Progress
Ross Brown	Active	In Progress
Janet Gott	Mayor	Not Compliant
Adam Doty	Citizen	Not Compliant
System Administrator:	Zera Taylor	Not Compliant

Denton Firemen's Relief & Retirement Fund		**0% Compliant**
Name	**Trustee Type**	**Compliance Status**
Charlie Parker	Citizen	Not Compliant
David Reeder	Active	Not Compliant
Derek Oswald	Active	Not Compliant
Donald Manes	Active	Not Compliant
Richard Smith	Citizen	Not Compliant
David Gaines	Director of Finance	Not Compliant
Erik Clark	Mayor Appointee	Not Compliant
System Administrator:	Gary Calmes	Not Compliant

City of El Paso Employees Retirement Trust		**80% Compliant**
Name	**Trustee Type**	**Compliance Status**
Diana Nunez	Active Participant	Compliant
Isabel Salcido	City Representative	Compliant
Karl Rimkus	Active Participant	Compliant
Mario Hernandez	Active Participant	Compliant
Matt Kerr	Citizen	Compliant
Isaura Valdez	Active	Compliant
Deborah Hamlyn	Retired	In Progress
Joe Molinar	City Representative	Not Compliant
Rene Pene	Citizen	Not Compliant
System Administrator:	Robert Ash	Compliant

El Paso Firemen & Policemen’s Pension Fund		**100% Compliant**
Name	**Trustee Type**	**Compliance Status**
Daniel Roy	Trustee	Compliant
Gary Borsch	Citizen	Compliant
Jerry Armendariz	Active	Compliant
John Schneider	Active Police	Compliant
Lee Banks	Citizen	Compliant
Leila Melendez	Citizen	Compliant
Paul Thompson	Active Fire	Compliant
Ricci Carson	Active Fire	Compliant
Sean Shelton	Active Police	Compliant
Susanna Visconti	Citizen	Compliant
William Veliz	Citizen	Compliant
System Administrator:	Tyler Grossman	Compliant

Employees Retirement System of Texas		**100% Compliant**
Name	**Trustee Type**	**Compliance Status**
Brian Barth	Elected Member	Compliant
Catherine Melvin	Elected Member	Compliant
Craig Hester	Appointed by Chief Justice	Compliant
Neika Clark	Elected Member	Compliant
James Kee	Appointed by Speaker	Compliant
John R. Rutherford	Appointed by Governor	In Progress
System Administrator:	Porter Wilson	Compliant

Fort Worth Employees' Retirement Fund		**78.6% Compliant**
Name	**Trustee Type**	**Compliance Status**
Lloyd Cook	Active Police	Compliant
Loraine Coleman	Active Employee - Group C	Compliant
Andrea Wright	Active Employee - Group D	Compliant
Kevin Foster	Retired Police Officer	Compliant
Marsha Anderson	Retired General Employee	Compliant
Doug Wilson	Council Appointment	Compliant
Reginald Zeno	City CFO	Compliant
Stephen Stegint	Active Firefighter	In Progress
Landon Stallings	Retired Firefighter	In Progress
Steve Purvis	Council Appointment	In Progress
Jesus Payan	Council Appointment	Not Compliant
Steve Litke	Council Appointment	Not Compliant
Jim Lacamp	Council Appointment	Not Compliant
System Administrator:	Benita Falls Harper	Compliant

Galveston Employees' Retirement Fund		**75% Compliant**
Name	**Trustee Type**	**Compliance Status**
Don Davison	Citizen	Compliant
Jeff Ammerman	Trustee	Compliant
Mike Loftin	Active	Compliant
Rodney Low	Trustee	Compliant
Lewis Rosen	Citizen	In Progress
James Patterson	Citizen	Not Compliant
Robert Simmons	Active	Not Compliant
System Administrator:	Jacque Vasquez	Compliant

Galveston Employees' Retirement Plan for Police		88.9% Compliant
Name	**Trustee Type**	**Compliance Status**
Andre Mitchell	Active	Compliant
Daniel Buckley	Active	Compliant
Destin Sims	Active	Compliant
Hal Rochkind	Citizen	Compliant
Matthew Cauley	Active	Compliant
Mike Loftin	Council Appointment	Compliant
Richard Moore	Citizen	Compliant
Geoffrey Gainer	Active	Not Compliant
System Administrator:	Jacque Vasquez	Compliant

Galveston Firefighter's Relief & Retirement Fund		87.5% Compliant
Name	**Trustee Type**	**Compliance Status**
Carol Gaylord	Citizen	Compliant
Gregg Riley	Active	Compliant
John Ovalle	Citizen	Compliant
Travis Hill	Active	Compliant
James Kothmann	Active	Compliant
Mike Loftin	CFO	Compliant
Clint Wayne Brown	Mayor Rep	Not Compliant
System Administrator:	Rebecca Johnson	Compliant

Galveston Wharves Pension Plan		0% Compliant
Name	**Trustee Type**	**Compliance Status**
Dr. Craig Brown	Active	Not Compliant
Laura Camciougl u	Active	Not Compliant
Mark Murchison	CFO	Not Compliant
Rodger Rees	Active	Not Compliant
Albert Shannon	Active	Not Compliant
E.L."Ted" O'Rourke	Active	Not Compliant
Elizabeth Beeton	Active	Not Compliant
Harry Maxwell, Jr., CPA	Active	Not Compliant
Richard DeVries	Active	Not Compliant
Todd Sullivan	Active	Not Compliant
System Administrator:	Exempt	

Greenville Firemen's Relief & Retirement Fund		0% Compliant
Name	**Trustee Type**	**Compliance Status**
Derek Sheets	Active	Not Compliant
Greg Parsons	Citizen	Not Compliant
Glenn Wieghat	Active	Not Compliant
Jay Pratt	Active	Not Compliant
David Dreiling	Mayor	Not Compliant
Howard Winans	Citizen	Not Compliant
Summer Spurlock	CFO	Not Compliant
System Administrator:	Exempt	

Guadalupe-Blanco River Authority		87.5% Compliant
Name	**Trustee Type**	**Compliance Status**
Anna Daniels	Employee	Compliant
Scott Kolbe	Active	Compliant
Kenneth Motl	Employer	Compliant
Lauren Willis	Active	Compliant
Emanual Valdez	Employer	Compliant
William Carbonara	Employer	Compliant
Mike Urrutia	Active	Not Compliant
System Administrator:	Randy Staats	Compliant

Harlingen Firemen's Relief & Retirement Fund		87.5% Compliant
Name	**Trustee Type**	**Compliance Status**
Cirilo Rodriguez Jr.	Citizen	Compliant
Gabriel Gonzalez	Employer	Compliant
Gary Tipton	Active	Compliant
Mario Alvarado	Active	Compliant
Samuel Albritton	Active	Compliant
Robert Rodriguez	Employer	Compliant
Owen Flinn	Citizen	Not Compliant
System Administrator:	Nanette Fox	Compliant

Harris County Hospital District Pension Plan		50% Compliant
Name	**Trustee Type**	**Compliance Status**
Alicia Reyes	Active	Compliant
Marcia Johnson	Active	Compliant
Arthur Bracey	Active	Compliant
Lawrence Finder	Active	Compliant
Andrea Caracostis	Active	Not Compliant
Ewan Johnson	Active	Not Compliant
Barbie Robinson	Active	Not Compliant
Mia Mends	Active	Not Compliant
Jennifer Tijerina	Active	Not Compliant
System Administrator:	Kari McMichael	In Progress

Houston Firefighters' Relief & Retirement Fund		100% Compliant
Name	**Trustee Type**	**Compliance Status**
Albertino "AL" May	Citizen Member	Compliant
Arif Rasheed	City Treasurer Designee	Compliant
Brett Besselman	Active	Compliant
David Lantrip	Retired Firefighter	Compliant
David Riegor	Active	Compliant
Ernest Wotring	Mayor's Representative	Compliant
Gerard Daniels	Active	Compliant
Lisa Slagle	Citizen Member	Compliant
Pete Ng	Active	Compliant
Stephen Whitehead	Active	Compliant
System Administrator:	Timothy Schauer	Compliant

Houston MTA Non-Union Pension Plan		87.5% Compliant
Name	**Trustee Type**	**Compliance Status**
Arthur Smiley, III	Active	Compliant
Debbie Sechler	Active	Compliant
Heidi Davis	Citizen	Compliant
Marcus Smith	Citizen	Compliant
Reynaldo Reza	Citizen	Compliant
Thomas Jasien	Active	Compliant
Jason Simpson	Citizen	Not Compliant
System Administrator:	Daniel Weber	Compliant

Houston MTA Workers Union Pension Plan		100% Compliant
Name	**Trustee Type**	**Compliance Status**
Arthur Smiley, III	Active	Compliant
Auturo Jackson	Employer	Compliant
Debbie Sechler	Employer	Compliant
Horace Marves	Active	Compliant
John Bland	Retired	Compliant
J. Cruz Torres	Retired	Compliant
System Administrator:	Daniel Weber	Compliant

Houston Municipal Employees Pension System		91.7% Compliant
Name	**Trustee Type**	**Compliance Status**
Barbara Chelette	Board Appointee	Compliant
David Donnelly	Mayoral Appointee	Compliant
Denise Castillo-Rhodes	City Council Appointee	Compliant
Edward Hamb II	Controller Appointee	Compliant
Lenard Polk	Active	Compliant
Lonnie Vara	Retired	Compliant
Roderick Newman	Retired	Compliant
Roy Sanchez	Active	Compliant
Sherry Mose	Active	Compliant
Rhonda Smith	Active	Compliant
Adrian Patterson	City Council Appointee	Not Compliant
System Administrator:	David Long	Compliant

Houston Police Officers' Pension System		85.7% Compliant
Name	**Trustee Type**	**Compliance Status**
David Coleman	Active	Compliant
Dwayne Ready	Active	Compliant
George Guerrero	Active	Compliant
Melissa Dubowski	CFO Designee	Compliant
Terry Bratton	Retired	Compliant
Don Sanders	Mayor's Representative	Not Compliant
System Administrator:	Patrick Franey	Compliant

Irving Firemen's Relief & Retirement Fund		100% Compliant
Name	**Trustee Type**	**Compliance Status**
Dan Post	Citizen	Compliant
David Florance	Active	Compliant
Jacob Rives	Secretary/Treasurer	Compliant
Jill McAdams	City Appointed	Compliant
Micah Johnson	Active	Compliant
Bret Starr	Active	Compliant
Kenneth Wallace	Citizen	Compliant
System Administrator:	Kelly Slater	Compliant

Irving Supplemental Benefit Plan		80% Compliant
Name	**Trustee Type**	**Compliance Status**
Andrew Bah	Active	Compliant
Brad Duff	Active/Elected	Compliant
David Cardenas	Active/Elected	Compliant
Jill McAdams	Active	Compliant
Kuruvilla Oommen	Active	Compliant
Teresa Adrian	Active	Compliant
Loretta Helm	Active	In Progress
Rodney Adams	Active	Not Compliant
Oscar Ward	Active/Elected	Not Compliant
System Administrator:	Exempt	

JPS Pension Plan - Tarrant County Hospital District		100% Compliant
Name	**Trustee Type**	**Compliance Status**
Ignacio Zamarron	Active	Compliant
John Graves	Active	Compliant
Mike Olson	Active	Compliant
David Byrom	Active	Compliant
Sam Schultz	Active	Compliant
Sharon Clark	Active	Compliant
Kody Gann	Active	Compliant
John Henderson	Active	Compliant
Thomas Nordwick	Active	In Progress
System Administrator:	Lea Anne Porter	Compliant

Killeen Firemen's Relief & Retirement Fund		100% Compliant
Name	**Trustee Type**	**Compliance Status**
Gerald Pittman	Active	Compliant
Jerry Sutton	Citizen	Compliant
Jonathan Locke	CFO	Compliant
Otis Evans	Citizen	Compliant
Scotty Jones	Active	Compliant
Timothy Rabroker	Active	Compliant
Daniel Corbin	Mayor Designee	Compliant
System Administrator:	Jennifer Hanna	Compliant

Laredo Firefighters Retirement System		75% Compliant
Name	**Trustee Type**	**Compliance Status**
Alberto Chapa	Active	Compliant
Jesus Esparza	CFO	Compliant
Louis Vaillancourt	Citizen	Compliant
Oscar Lopez	Mayor Appointee	Compliant
Robert Santos	Citizen	Compliant
John Hourigan	Active	Not Compliant
Norberto Gonzalez	Active Firefighter	Not Compliant
System Administrator:	Jaime Jasso	Compliant

Longview Firemen's Relief & Retirement Fund		100% Compliant
Name	**Trustee Type**	**Compliance Status**
Andy Parker	Active	Compliant
Angela Coen	CFO	Compliant
Brian Jones	Active	Compliant
Kolby Beckham	Active	Compliant
Maria Mills	Citizen	Compliant
Vickie Boggio	Citizen	Compliant
Wray Wade	Mayor Designee	In Progress
System Administrator:	Pam Randolph	Compliant

Lower Colorado River Authority Retirement Plan		85.7% Compliant
Name	**Trustee Type**	**Compliance Status**
Aimee Lerman	Employee Representative	Compliant
Dale Jurecka	Employee Representative	Compliant
David Smith	CFO	Compliant
Jim Travis	GM Executive Appointee	Compliant
Stephen Kellicker	Employee Representative	Compliant
Michael Allen	Board of Director Appointee	Not Compliant
System Administrator:	Laura Flores	Compliant

Lower Neches Valley Authority Employees Benefit Plan		100% Compliant
Name	**Trustee Type**	**Compliance Status**
Nancy Conway	Active	Compliant
Scott Hall	Active	Compliant
Steve Lucas	Active	Compliant
System Administrator:	Annette Purington	Compliant

Lubbock Fire Pension Fund		**71.4% Compliant**
Name	**Trustee Type**	**Compliance Status**
Blu Kostelich	CFO	Compliant
Jon Wheeler	Active	Compliant
Eric McDonald	Citizen	Compliant
Kevin Pounds	Active	Compliant
Steve Exter	Mayor Designee	Compliant
Cade Holt	Active	Not Compliant
David McEndree	Citizen	Not Compliant
System Administrator:	Exempt	

Lufkin Firemen's Relief & Retirement Fund		**100% Compliant**
Name	**Trustee Type**	**Compliance Status**
Hilary Walker	Citizen	Compliant
Jimmy Ragsdale	Active	Compliant
John Thannisch	Citizen	Compliant
Levi Cole	Active	Compliant
William "Bill" Gates	Active	Compliant
Wes Taylor	Mayor's Designated Rep	Compliant
Kevin Gee	CFO	In Progress
System Administrator:	Cristi Elmore	Compliant

Marshall Firemen's Relief & Retirement Fund		**37.5% Compliant**
Name	**Trustee Type**	**Compliance Status**
Nikki Smith	CFO Designee	Compliant
Scott Simmons	Active	Compliant
David Scholl	Citizen	Not Compliant
Glenn Bickerdike	Citizen	Not Compliant
Amy Ware	Mayor	Not Compliant
Justin Stanley	Active	Not Compliant
Joseph Hudson	Active	Not Compliant
System Administrator:	Debra Jones	Compliant

McAllen Firemen's Relief & Retirement Fund		**57% Compliant**
Name	**Trustee Type**	**Compliance Status**
Abel Leal	Citizen	Compliant
Javier Gutierrez	Active	Compliant
Jose Castillo	Citizen	Compliant
Leonard Dalhberg	Active	Compliant
Roel "Roy" Rodriguez	Mayor Designee	Not Compliant
Leocadio Mendoza	Active	Not Compliant
Sergio Villasana	CFO	Not Compliant
System Administrator:	Exempt	

Midland Firemen's Relief & Retirement Fund		75% Compliant
Name	**Trustee Type**	**Compliance Status**
Matt Marshall	Active	Compliant
David Stacy	Active	Compliant
James Martin	Active	Compliant
Christy Weakland	CFO	Compliant
Michael Pardue	Citizen	In Progress
Patrick Payton	Mayor	Not Compliant
Alan Meyers	Citizen	Not Compliant
System Administrator:	Shera Crow	Compliant

Nacogdoches County Hospital District Retirement Plan		0% Compliant
Name	**Trustee Type**	**Compliance Status**
Anita Kite	Active	Not Compliant
Farrar Bentley	Active	Not Compliant
Fred Groover	Active	Not Compliant
James Stockman, Jr.	Active	Not Compliant
Lisa King	Active	Not Compliant
Rhonda McCabe	Employer	Not Compliant
Ryan Head, MD	Active	Not Compliant
Sean Hightower	Active	Not Compliant
System Administrator:	Exempt	

Northeast Medical Center Hospital Retirement Plan		100% Compliant
Name	**Trustee Type**	**Compliance Status**
Roger Brown	Retirement Committee	In Progress
System Administrator:	Exempt	

Northwest Texas Healthcare System Retirement Plan		0% Compliant
Name	**Trustee Type**	**Compliance Status**
Mitchell Normand	HR Director	Not Compliant
System Administrator:	Exempt	

Odessa Firemen's Relief & Retirement Fund		100% Compliant
Name	**Trustee Type**	**Compliance Status**
Ben Marts	Active	Compliant
James "Jay" Kirk	Citizen	Compliant
Kathy McIntyre	Citizen	Compliant
Peggy Dean	Mayor Designee	Compliant
Seth Boles	CFO Designee	Compliant
Travis Jones	Active	Compliant
Erik Brown	Active	Compliant
System Administrator:	Jill Contreras	Compliant

Orange Firemen's Relief & Retirement Fund		50% Compliant
Name	**Trustee Type**	**Compliance Status**
Cheryl Zeto	CFO	Compliant
Jason Maddox	Active	Compliant
Jordan Bennett	Active	Compliant
Sarah Hunter	Mayor Designee	Compliant
Donald Gravett	Active	Not Compliant
John Tallant	Citizen	Not Compliant
Walter Riedel	Citizen	Not Compliant
System Administrator:	Amanda Secor	Not Compliant

Paris Firefighters' Relief & Retirement Fund		28.6% Compliant
Name	**Trustee Type**	**Compliance Status**
Bob Rast	Chair	Compliant
Sandy Collard	Mayor Designee	Compliant
Austin Sugg	Active	Not Compliant
Casey Ressler	Citizen	Not Compliant
Gene Anderson	CFO	Not Compliant
Kenny Dority	Citizen	Not Compliant
Thomas McMonigle	Vice Chair	Not Compliant
System Administrator:	Exempt	

Plainview Firemen's Relief & Retirement Fund		57% Compliant
Name	**Trustee Type**	**Compliance Status**
David Sells	Active	Compliant
Charles Starnes	Mayor Designee	Compliant
Sarianne Beversdorf	CFO	Compliant
Albert Perez	Citizen	Compliant
Bobby Gipson	Active	Not Compliant
Kevin Whisenant	Citizen	Not Compliant
Randall "Shane" Rowell	Active	Not Compliant
System Administrator:	Exempt	

Plano Retirement Security Plan		**100% Compliant**
Name	**Trustee Type**	**Compliance Status**
Abby Owens	Active Employee	Compliant
Chris Biggerstaff	Active	Compliant
Karen Rhodes	Active	Compliant
Myra Conklin	Active	Compliant
Sean Sullivan	Citizen	Compliant
Jerry Smith	Retiree	In Progress
System Administrator:	Jenny Zeilfelder	Compliant

Port Arthur Firemen's Relief & Retirement Fund		**57% Compliant**
Name	**Trustee Type**	**Compliance Status**
Mercer Nessour	Active	Compliant
Kandy Daniel	CFO	In Progress
Thurman Bill Bartie	Mayor	In Progress
Bernard Brown	Citizen	Not Compliant
Dall Kole	Active	Not Compliant
Paul Washburn	Active	Not Compliant
System Administrator:	Debra Jones	Compliant

Port of Houston Authority Retirement Plan		**100% Compliant**
Name	**Trustee Type**	**Compliance Status**
Clyde Fitzgerald	Active	Compliant
Dean Corgey	Active	Compliant
Richard Campo	Active	Compliant
Roy Mease	Active	Compliant
Stephen DonCarlos	Active	Compliant
Wendolynn Cloonan	Active	Compliant
Cheryl Creuzot	Active	In Progress
System Administrator:	Roland Gonzalez	In Progress

Refugio County Memorial Hospital District Retirement Plan		**0% Compliant**
Name	**Trustee Type**	**Compliance Status**
Sandra Ermis	Active	Not Compliant
System Administrator:	Exempt	

Retirement Plan for Employees of Brownsville Navigation District		**40% Compliant**
Name	**Trustee Type**	**Compliance Status**
Margie Recio	Active	Compliant
Zeus Yanez	Active	In Progress
Eduardo Campirano	Active	Not Compliant
John Wood	Employer-Elected Commissioner	Not Compliant
Jaime Martinez	Active	Not Compliant
System Administrator:	Exempt	

San Angelo Firemen's Relief & Retirement Fund		**50% Compliant**
Name	**Trustee Type**	**Compliance Status**
Cory Word	Active	Compliant
Michael Anderson	Active	Compliant
Vincent Young	Active	Compliant
Ana Henderson	Citizen	Not Compliant
Brian Dunn	Mayor Designee	Not Compliant
Steve Cecil	Citizen	Not Compliant
Tina Dierschke	CFO	Not Compliant
System Administrator:	Ron Partusch	Compliant

San Antonio Fire & Police Pension Fund		**70% Compliant**
Name	**Trustee Type**	**Compliance Status**
Clayton Perry	City Council- Sponsor	Compliant
James Foster	Active Police	Compliant
Jim Smith	Active Police	Compliant
Justin Rodriguez	City Council	Compliant
Larry Reed	Retired Fire	Compliant
Shawn Griffin	Active Fire	In Progress
Dr. Adriana Garcia	City Council Member	Not Compliant
Dean Pearson	Active Fire	Not Compliant
Harry Griffin	Retired Police	Not Compliant
System Administrator:	Warren Schott	Compliant

San Antonio Metropolitan Transit Retirement Plan		**41.7% Compliant**
Name	**Trustee Type**	**Compliance Status**
Ayda Gonzalez		In progress
Kevin Wolff		In progress
Javier Paredes		In progress
Melanie Tawil		In progress
Paul Basaldua		In progress
Athalie Malone		Not Compliant
Louis Cooper		Not Compliant
Fernando Reyes		Not Compliant
Laura Cabanilla		Not Compliant
Robert "Bob" Comeaux		Not Compliant
Akeem Brown		Not Compliant
System Administrator:	Cathy Schnitzer	Not Compliant

San Benito Firemen Relief & Retirement Fund		**0% Compliant**
Name	**Trustee Type**	**Compliance Status**
Adan Gonzalez	Active	Not Compliant
Belen Pena	CFO	Not Compliant
Boris Esparza	Active	Not Compliant
Caleb Silva	Citizen	Not Compliant
Ida Martinez	Citizen	Not Compliant
Rafael Perez	Active	Not Compliant
Ricardo Guerra	Mayor	Not Compliant
System Administrator:	Ana Tinsley	Not Compliant

Sweetwater Firemen's Relief & Retirement Fund		**50% Compliant**
Name	**Trustee Type**	**Compliance Status**
Gail Rose	Citizen	Compliant
Grant Madden	Mayor Designee	Compliant
Russell Reeves	Active	Compliant
Brad Payne	Active	Not Compliant
Patty Torres	CFO	Not Compliant
Chris Kiser	Citizen	Not Compliant
Tad Baird	Active	Not Compliant
System Administrator:	Debra Jones	Compliant

Teacher Retirement System of Texas		**100% Compliant**
Name	**Trustee Type**	**Compliance Status**
Christopher Moss	State Board of Education	Compliant
David Corpus	State Board of Education	Compliant
James Nance	Retiree	Compliant
Jarvis Hollingsworth	Direct Appointee	Compliant
John Elliott	Appointed by the Governor	Compliant
Michael Ball	Active	Compliant
Nanette Sissney	Active	Compliant
Robert Walls Jr.	Governor Direct Appointment	Compliant
System Administrator:	Brian Guthrie	Compliant

Temple Firemen's Relief & Retirement Fund		**100% Compliant**
Name	**Trustee Type**	**Compliance Status**
Blake Stapp	Citizen	Compliant
Bryan Daniel	CFO	Compliant
Daniel Meyer	Active	Compliant
Jason Haltom	Secretary	Compliant
Matthew Byrd	Active	Compliant
Patrick Kelly	Retired	Compliant
Randy Ramsey	Mayor Designee	Compliant
System Administrator:	Exempt	

Texarkana Firemen's Relief & Retirement Fund		**75% Compliant**
Name	**Trustee Type**	**Compliance Status**
Clay Roberts	Citizen	Compliant
Rick Wisdom	Mayor Designee	Compliant
Scott Daniel	Active	Compliant
Tim Martin	Active	Compliant
Lane Peeples	Active	In Progress
Jodie Lee	CFO Designee	Not Compliant
David Cook	Citizen	Not Compliant
System Administrator:	Debra Jones	Compliant

Texas City Firemen's Relief & Retirement Fund		**75% Compliant**
Name	**Trustee Type**	**Compliance Status**
Jennifer Price	CFO	Compliant
Joe Tumbleson	Active	Compliant
Andrew Blue	Active	Compliant
Royce Medina	Active	Compliant
Andrew Marcellus	Citizen	In Progress
Bob Senter	Citizen	Not Compliant
Dedrick Johnson	Mayor	Not Compliant
System Administrator:	Debra Jones	Compliant

Texas County & District Retirement System		100% Compliant
Name	**Trustee Type**	**Compliance Status**
Mary Louise Nicholson	Tarrant County	Compliant
Deborah Hunt	Williamson C.A.D.	Compliant
Tammy Biggar	Fannin County	Compliant
Chris Davis	Cherokee County	Compliant
Susan Fletcher	Collin County	Compliant
Kara Sands	Nueces County	Compliant
Chris Taylor	Tarrant County	Compliant
Holly Williamson	Harris County	Compliant
Sammy Farias	Bee County	In Progress
System Administrator:	Amy Bishop	Compliant

Texas Emergency Services Retirement System		70% Compliant
Name	**Trustee Type**	**Compliance Status**
Matthew Glaves	Retired	Compliant
Rod Ryalls	Active Member	Compliant
Virginia "Jenny" Moore	Active	Compliant
Jerry Romero	Finance Member	Compliant
Nathan Douglas	Active	Compliant
Brian Smith	Active	In Progress
Edward Keenan	Active Member	Not Compliant
Stephanie Wagner	Investment	Not Compliant
Pilar Rodriguez	Trustee	Not Compliant
System Administrator:	Tiffany White	In Progress

Texas Municipal Retirement System		100% Compliant
Name	**Trustee Type**	**Compliance Status**
Anali Alanis	Active	Compliant
Bill Philibert	Active	Compliant
David Landis	Active	Compliant
Jesus Garza	Active	Compliant
Juan "Johnny" Huizar	Active	Compliant
Robert "Bob" Scott	Active	Compliant
System Administrator:	David Wescoe	Compliant

The Woodlands Firefighters' Retirement System		50% Compliant
Name	**Trustee Type**	**Compliance Status**
Anthony Fasone	Citizen	Compliant
Jeff Johnston	Active	Compliant
Kellan Shaw	CFO	In Progress
Doug Adams	Active	Not Compliant
Erik Secrest	Active	Not Compliant
Andrew Pitre	Citizen	Not Compliant
Karen Dempsey	Mayor Designee	Not Compliant
System Administrator:	Jennifer Hanna	Compliant

Travis County ESD #6 Firefighter's Relief & Retirement Fund		37.5% Compliant
Name	**Trustee Type**	**Compliance Status**
Brad King	Active	Compliant
Scott Falltrick	Active	Compliant
Graham Taylor	Active	Not Compliant
Jeff Timlin	Citizen	Not Compliant
Jim DeWitt	CFO	Not Compliant
Paula Barr	Mayor Designee	Not Compliant
Rick White	Citizen	Not Compliant
System Administrator:	Ana Tinsley	Not Compliant

Tyler Firemen's Relief & Retirement Fund		37.5% Compliant
Name	**Trustee Type**	**Compliance Status**
David Admire	Active	Compliant
James Branch	Active	Compliant
Darren McCawley	Active	Not Compliant
Keidric Trimble	CFO	Not Compliant
Leesa Hedge	Citizen	Not Compliant
Steve Kean	Mayor Designee	Not Compliant
Steve Roosth	Citizen	Not Compliant
System Administrator:	James Mullicane	Compliant

University Health System Pension Plan		11% Compliant
Name	**Trustee Type**	**Compliance Status**
Christopher Hurley	Active	Compliant
Carlos Resendez	Citizen	Not Compliant
David Wallace	Citizen	Not Compliant
Ira Smith	Board of Manager Volunteer	Not Compliant
Kevin Harris	Citizen	Not Compliant
Robert Engberg	Board of Manager Volunteer	Not Compliant
Steven Klaffke	Citizen	Not Compliant
Theresa Scepanski	Active	Not Compliant
System Administrator:	George Hernandez Jr	Not Compliant

University Park Firemen's Relief & Retirement Fund		0% Compliant
Name	**Trustee Type**	**Compliance Status**
Brandon Ferguson	Active	Not Compliant
Dustin Lewis	Active	Not Compliant
Robert Abel	Active	Not Compliant
Ashley Cook	Citizen	Not Compliant
Civic Yip	Mayor Designee	Not Compliant
Mike Williams	Citizen	Not Compliant
Tom Tvardzik	CFO	Not Compliant
System Administrator:	Exempt	

Waxahachie Firemen's Relief & Retirement Fund		57% Compliant
Name	**Trustee Type**	**Compliance Status**
Gary Myers	Active	Compliant
Lee Stratham	Citizen	Compliant
Matt Dorsey	Active	Compliant
Scott Safford	Active	Compliant
David Hill	Mayor Designee	Not Compliant
John Tillery	Citizen	Not Compliant
Charles Harris	CFO	Not Compliant
System Administrator:	Exempt	

Weslaco Firemen's Relief & Retirement Fund		75% Compliant
Name	**Trustee Type**	**Compliance Status**
David Cuellar	Active	Compliant
Florentino Vela	Active	Compliant
Fred Reyes	CFO Designee	Compliant
Maria Garcia	Citizen	In Progress
John Pena	Active	In Progress
David Suarez	Mayor	Not Compliant
Jim Hiebert	Citizen	Not Compliant
System Administrator:	Debra Jones	Compliant

Wichita Falls Firemen's Relief & Retirement Fund		62.5% Compliant
Name	**Trustee Type**	**Compliance Status**
John Luig	Citizen	Compliant
Ray Wood	Active	Compliant
Travis Skelton	Active/Firefighter	Compliant
Trent Mays	Fire Fighter	Compliant
Jessica Williams	City Finance Officer	Not Compliant
Michelle Riggins	Citizen	Not Compliant
Stephen Santellana	Mayor	Not Compliant
System Administrator:	James Duncan	Compliant

Appendix J – Texas Local Fire Fighters Retirement Act Pension Report

Texas Local Fire Fighters Retirement Act (TLFFRA) Pension Report

May 2022

Texas Pension Review Board

Texas Pension Review Board

May 3, 2022

Ladies and gentlemen:

The Texas Pension Review Board (PRB) is pleased to present its *Texas Local Fire Fighters Retirement Act Pension Report* (TLFFRA Report), May 2022. This publication provides general and comparative pension-related information on TLFFRA systems, including current financial, actuarial, and benefits data. Further, several graphs are included to summarize certain key indicators of plan financial health.

The PRB would like to thank the TLFFRA systems for their assistance in preparing this report. We look forward to working with all interested parties during the year and hope that this report will serve as a useful reference.

The PRB is honored to serve the State of Texas and is firmly committed to its mission to help ensure that Texas public retirement systems are properly managed and responsibly funded to meet their long-term pension obligations.

Sincerely,

Amy Cardona
Interim Executive Director

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About the Texas Pension Review Board

The Texas Pension Review Board (PRB) was established in 1979 as the state's oversight body for Texas public retirement systems at the state and local level. The PRB's service population consists of the members, trustees, and administrators of 347 public retirement plans; state and local government officials; and the general public.

The PRB monitors the financial and actuarial soundness of 100 actuarially funded defined benefit public retirement systems in Texas, as well as their compliance with state reporting requirements under Chapter 802 of the Texas Government Code. The agency also oversees 247 defined contribution and pay-as-you-go volunteer firefighter systems across the state. However, these retirement systems are only required to register with the PRB and submit plan description information.

Board Composition

The board is composed of seven governor-appointed members, including three persons who have experience in the fields of securities investment, pension administration, or pension law and are not members or retirees of a public retirement system; one active public retirement system member; one retired member of a public retirement system; one person who has experience in the field of governmental finance; and one member who is an actuary.

Primary Duties

The agency's general duties as stated in Section801.202, Texas Government Code are:

(1) conduct a continuing review of public retirement systems, compile and compare information about benefits, creditable service, financing, and the administration of systems;

(2) conduct intensive studies of potential or existing problems that threaten the actuarial soundness of or inhibit an equitable distribution of benefits in one or more public retirement systems;

(3) provide information and technical assistance on pension planning to public retirement systems on request; and

(4) recommend policies, practices, and legislation to public retirement systems and appropriate governmental entities. Additionally, the PRB is charged with developing and administering an educational training program for trustees and system administrators of Texas public retirement systems.

About the Texas Local Fire Fighters Retirement Act (TLFFRA)

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. TLFFRA 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. 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. Sponsoring municipalities of TLFFRA systems must meet a statutory minimum contribution rate but may adopt by ordinance a higher contribution rate than set in statute. Currently, there are 42 retirement systems organized under TLFFRA.

Volunteer TLFFRA Systems

Volunteer members are eligible for full retirement at the age of 55 with 20 years of service and receive a benefit of $25 per month for the remainder of their life. Survivor, death, and disability benefits are also included under the TLFFRA statute. The volunteer benefit is funded through both employer and employee contributions. A majority of the volunteer TLFFRA pension systems do not have a trust fund balance; therefore, they are considered pay-as-you-go-systems. The employer contribution is the total amount of benefits paid to retirees and beneficiaries in a calendar year. The volunteer firefighters contribute a very small amount each year (some volunteer TLFFRA systems require their members to pay an annual contribution of five dollars). The employer may at any time make the member contributions. There are currently 81 volunteer TLFFRA plans registered with the PRB.

PRB Duties for TLFFRA Systems

TLFFRA Training

The PRB is required to provide technical assistance, training, and information to members of the boards of trustees for TLFFRA plans. The agency works with the TLFFRA systems to present at their trustee training and annual conferences. The PRB has also developed online training, and the online training portal can be found here or on the PRB website.

TLFFRA Appeals to SOAH

The PRB is also designated as the facilitator of appeals from plan members to the State Office of Administrative Hearings (SOAH). The PRB created a procedure for the referral of TLFFRA appeals to SOAH and posted the *TLFFRA Notice of Appeal Form* on the PRB website for the convenience of TLFFRA systems and their members. To date, the PRB has referred five TLFFRA appeals to SOAH.

TLFFRA Specialist

Bryan Burnham is the designated PRB TLFFRA specialist who provides assistance to TLFFRA plans. Bryan can be contacted at bryan.burnham@prb.texas.gov.

Executive Summary

This report provides general and comparative pension-related data for paid and part-paid retirement systems organized under the Texas Local Fire Fighters Retirement Act (TLFFRA). TLFFRA plans are statutorily required to report financial, actuarial, benefit, investment, and contact information to the Pension Review Board (PRB). This report is designed to allow TLFFRA systems and their stakeholders to compare key data with peer systems. There are several graphs included which summarize certain key indicators of financial health.

Based on the information received by the PRB, the following trends can be observed:

- **Actuarial assumption changes.** Since the publication of the PRB's 2020 TLFFRA Report, the median payroll growth rate assumption decreased from 3.5 percent to 3 percent, the median inflation assumption decreased from 2.88 percent to 2.75 percent, and the median investment rate of return remained at 7.5 percent (see pages 6-7). The national median investment rate of return is 7 percent, according to the "Public Pension Plan Investment Return Assumptions," published by the National Association of State Retirement Administrators in March of 2022.
- **Amortization period decreases.** The amortization period groupings have improved compared to the prior report, with four fewer plans with infinite funding periods and only one additional plan in the 40+ group compared to 2020. Amortization periods have generally decreased with the median amortization period decreasing from 39.2 years in the 2020 report to 33.7 years (see pages 13-14, 16-21). The median decrease of 5.51 years in amortization period, despite the more conservative payroll growth assumption (median decrease of 0.5 percent), demonstrates that plans are making positive changes to better fund benefits over time.
- **Increased unfunded actuarial accrued liability (UAAL).** The total actuarial value of assets (AVA) increased by $151 million while total actuarial accrued liability (AAL) increased by $324 million, resulting in an approximate UAAL increase of $173 million since the 2020 report (see page 28). The median UAAL as percentage of payroll increased by 26 percent. The median funded ratio increased by 0.11 percent. The lack of material improvement in funded status demonstrates that the improvements in amortization period discussed above are dependent on changes to *future* contribution rates and benefits rather than *current*, possibly signifying a larger burden placed on younger members and future hires.
- **Further decreasing non-investment cash flow.** The total non-investment revenue (contributions and miscellaneous income) increased by $18 million from the 2020 report while total non-investment disbursements (benefit payments/withdrawals and non-investment expenses) increased by $37.57 million, resulting in a decrease in total non-investment cash flow on both a nominal and percent-of-assets basis from -2.6 percent to -3 percent (see page 30). If this trend continues plans will need to rely more on investment returns to meet distribution needs.
- **Net investment returns approaching market expectations.** One-year returns averaged 11.83 percent (based primarily on 2020 fiscal year-end results), an increase of 14.33 percent since the 2020 report (based primarily on 2018 fiscal year-end results), while 10-year and longer term returns averages reached 6.94 percent and 7.07 percent respectively, which is in line with national averages and overall market expectations (see pages 39-41).
- **Changing asset allocation over the past decade.** Investments in fixed income fell from 24.55 percent in 2010 to 21.86 percent, equities increased from 48.96 percent to 59.36 percent, and alternative investments grew from 1.53 percent to 9.1 percent (see page 42).

Actuarial

Actuarial Assumptions and Methods

System	AV Effective Date	Actuarial Cost Method	Asset Valuation Method	Investment Rate of Return	Inflation	Payroll Growth Rate
Abilene	10/1/2019	Entry Age Normal	5-Year Smoothing	7.50%	2.50%	3.00%
Amarillo	12/31/2019	Entry Age Normal	5-Year Smoothing	7.50%	2.75%	3.00%
Atlanta	12/31/2020	Entry Age Normal	5-Year Smoothing	7.00%	2.75%	2.75%
Beaumont	12/31/2020	Entry Age Normal	5-Year Smoothing	7.50%	3.00%	3.00%
Big Spring	1/1/2021	Entry Age Normal	5-Year Smoothing	7.75%	3.00%	4.50%
Brownwood	12/31/2019	Entry Age Normal	5-Year Smoothing	7.00%	3.00%	3.00%
Cleburne	12/31/2020	Entry Age Normal	5-Year Smoothing	7.35%	2.50%	3.00%
Conroe	12/31/2019	Entry Age Normal	5-Year Smoothing	7.50%	2.50%	4.00%
Corpus Christi	12/31/2020	Entry Age Normal	5-Year Smoothing	7.25%	2.75%	2.75%
Corsicana	12/31/2020	Entry Age Normal	5-Year Smoothing	7.00%	2.75%	2.75%
Denison	12/31/2019	Entry Age Normal	5-Year Smoothing	7.50%	2.75%	2.75%
Denton	12/31/2019	Entry Age Normal	5-Year Smoothing	6.75%	2.50%	3.00%
Galveston	12/31/2019	Entry Age Normal	5-Year Smoothing	7.50%	2.85%	2.85%
Greenville	12/31/2020	Entry Age Normal	5-Year Smoothing	7.50%	3.00%	4.00%
Harlingen	9/30/2019	Entry Age Normal	Market Value of Assets	7.75%	2.50%	3.50%
Irving	12/31/2019	Entry Age Normal	5-Year Smoothing	7.00%	2.75%	2.75%
Killeen	9/30/2020	Entry Age Normal	5-Year Smoothing	7.25%	2.75%	2.75%
Laredo	9/30/2020	Entry Age Normal	5-Year Smoothing	7.40%	2.75%	2.75%
Longview	12/31/2020	Entry Age Normal	3-Year Smoothing	7.50%	2.30%	3.00%
Lubbock	12/31/2020	Entry Age Normal	5-Year Smoothing	7.50%	2.50%	3.25%
Lufkin	12/31/2020	Entry Age Normal	5-Year Smoothing	7.25%	2.75%	2.75%
Marshall	12/31/2020	Entry Age Normal	Market Value of Assets	7.25%	N/A	3.75%
McAllen	9/30/2020	Entry Age Normal	5-Year Smoothing	7.50%	3.00%	3.00%
Midland	12/31/2019	Entry Age Normal	5-Year Smoothing	7.50%	3.00%	3.25%
Odessa	1/1/2021	Entry Age Normal	5-Year Smoothing	7.50%	3.00%	3.50%
Orange	1/1/2021	Entry Age Normal	Market Value of Assets	7.75%	2.00%	2.50%
Paris	12/31/2020	Entry Age Normal	5-Year Smoothing	7.25%	2.75%	3.50%
Plainview	12/31/2019	Entry Age Normal	5-Year Smoothing	7.50%	2.50%	3.25%
Port Arthur	12/31/2019	Entry Age Normal	5-Year Smoothing	7.50%	3.00%	3.00%
San Angelo	12/31/2019	Entry Age Normal	5-Year Smoothing	7.80%	2.50%	3.50%
San Benito	9/30/2019	Entry Age Normal	Market Value of Assets	7.50%	2.50%	4.00%

Actuarial Assumptions and Methods

System	AV Effective Date	Actuarial Cost Method	Asset Valuation Method	Investment Rate of Return	Inflation	Payroll Growth Rate
Sweetwater	12/31/2020	Entry Age Normal	5-Year Smoothing	8.00%	3.00%	3.00%
Temple	9/30/2020	Entry Age Normal	5-Year Smoothing	7.75%	3.75%	3.75%
Texarkana	12/31/2019	Entry Age Normal	5-Year Smoothing	7.60%	3.00%	3.00%
Texas City	12/31/2020	Entry Age Normal	5-Year Smoothing	7.25%	2.75%	3.00%
The Woodlands[1]	1/1/2020	Entry Age Normal	Market Value of Assets	7.00%	2.50%	N/A
Travis County ESD #6	12/31/2019	Entry Age Normal	5-Year Smoothing	7.00%	2.75%	3.00%
Tyler	12/31/2019	Entry Age Normal	5-Year Smoothing	7.25%	3.00%	3.00%
University Park	12/31/2020	Entry Age Normal	5-Year Smoothing	7.25%	2.75%	N/A
Waxahachie	10/1/2020	Entry Age Normal	Market Value of Assets	7.00%	2.50%	4.00%
Weslaco	9/30/2020	Entry Age Normal	5-Year Smoothing	7.25%	2.50%	3.25%
Wichita Falls	1/1/2020	Entry Age Normal	Market Value of Assets	7.75%	3.00%	4.00%
			Median:	**7.50%**	**2.75%**	**3.00%**
			Average:	**7.39%**	**2.75%**	**3.21%**

[1] This plan uses a level dollar actuarial amortization method.

Actuarial Valuation Summary as of Valuation Date

System	Certified Actuary	Actuarial Valuation Date	Actuarial Value of Assets (AVA)	Actuarial Accrued Liability (AAL)	Unfunded Actuarial Accrued Liability (UAAL)	Funded Ratio (% Funded)	Covered Payroll	UAAL/ Payroll Ratio (%)	Amortization Period (Years)
			(a)	(b)	(b) - (a) = (c)	(a)/(b)	(d)	(c) / (d)	
Abilene	Foster & Foster	10/1/2019	$58,101,370	$118,399,640	$60,298,270	49.07%	$15,310,993	393.82%	31.4
Amarillo	Rudd & Wisdom Inc	12/31/2019	$177,211,710	$216,112,800	$38,901,104	82.00%	$21,002,856	185.22%	38.1
Atlanta	Rudd & Wisdom	12/31/2020	$4,551,940	$5,883,934	$1,331,994	77.36%	$607,518	219.25%	Infinite
Beaumont	GRS	12/31/2020	$119,785,254	$216,057,280	$96,272,026	55.44%	$21,458,382	448.65%	Infinite
Big Spring	Dean Actuaries LLC	1/1/2021	$13,874,163	$25,370,435	$11,496,272	54.69%	$4,501,839	255.37%	33.69
Brownwood	Rudd & Wisdom	12/31/2019	$4,461,500	$10,437,441	$5,975,941	42.75%	$2,006,471	297.83%	94.7
Cleburne	Foster & Foster Inc	12/31/2020	$22,795,644	$38,258,137	$15,462,493	59.58%	$4,987,401	310.03%	37.3
Conroe	Retirement Horizons	12/31/2019	$29,523,182	$50,548,428	$21,025,244	58.41%	$10,505,724	200.13%	Infinite
Corpus Christi	Rudd & Wisdom	12/31/2020	$167,695,254	$275,220,684	$107,525,430	60.93%	$35,823,542	300.15%	21.5
Corsicana	Rudd & Wisdom	12/31/2020	$10,419,140	$19,051,592	$8,632,452	54.69%	$3,132,131	275.61%	52.2
Denison	Rudd & Wisdom	12/31/2019	$17,982,600	$23,884,176	$5,901,574	75.29%	$3,481,241	169.53%	12.2
Denton	Rudd & Wisdom	12/31/2019	$98,109,260	$121,442,370	$23,333,104	80.79%	$20,151,688	115.79%	18.3
Galveston	Rudd and Wisdom Inc	12/31/2019	$47,792,470	$73,637,950	$25,845,484	64.90%	$8,777,846	294.44%	57.6
Greenville	Definiti	12/31/2020	$14,545,855	$34,110,864	$19,565,009	42.64%	$4,844,917	403.83%	36.6
Harlingen	Retirement Horizons Inc	9/30/2019	$33,712,924	$52,241,628	$18,528,704	64.53%	$6,675,326	277.57%	38
Irving	Foster & Foster	12/31/2019	$190,715,520	$291,554,850	$100,839,330	65.41%	$37,714,120	267.38%	43.6

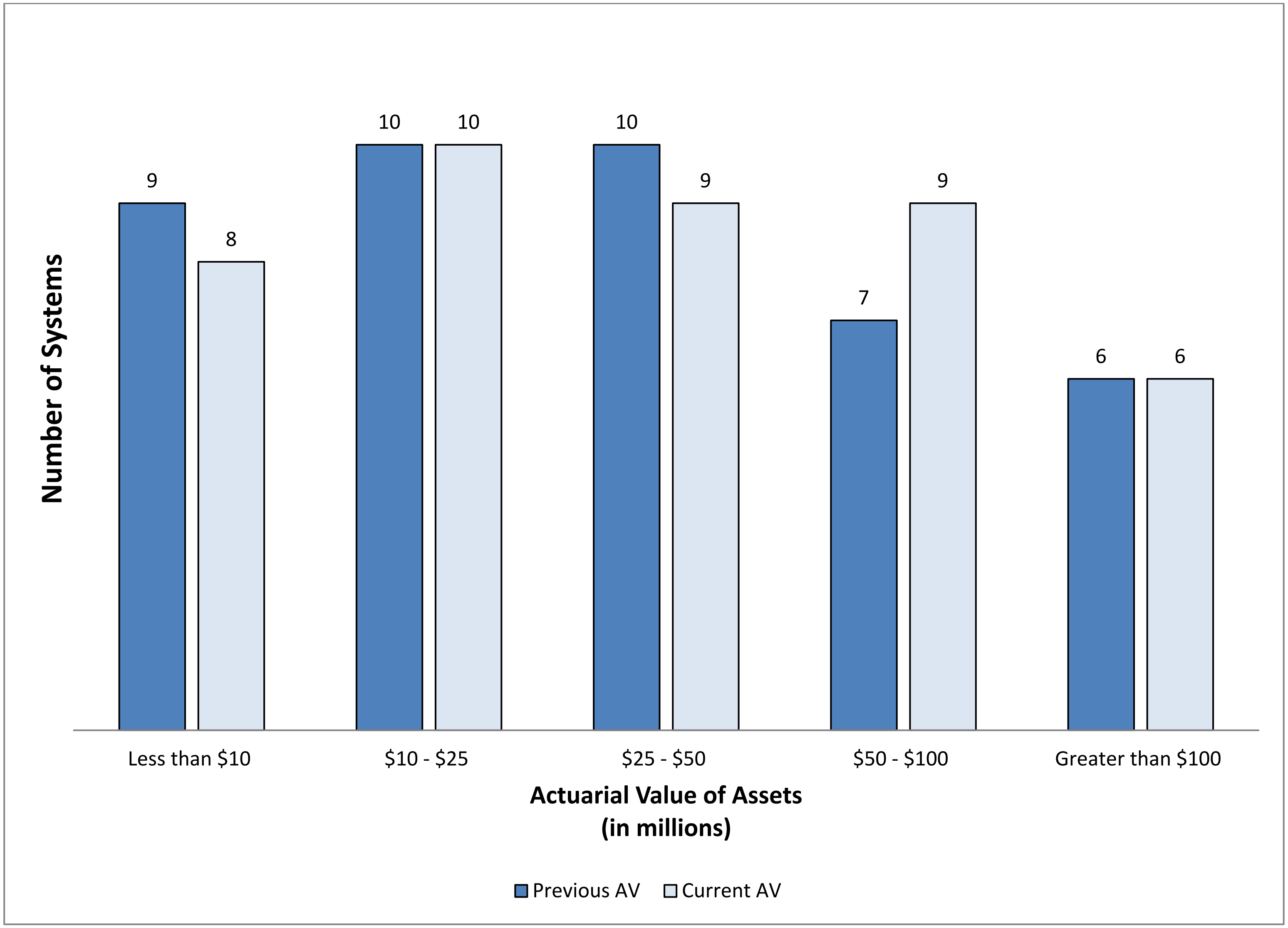
Actuarial Valuation Summary as of Valuation Date

System	Certified Actuary	Actuarial Valuation Date	Actuarial Value of Assets (AVA)	Actuarial Accrued Liability (AAL)	Unfunded Actuarial Accrued Liability (UAAL)	Funded Ratio (% Funded)	Covered Payroll	UAAL/ Payroll Ratio (%)	Amortization Period (Years)
			(a)	(b)	(b) - (a) = (c)	(a)/(b)	(d)	(c) / (d)	
Killeen	Rudd & Wisdom	9/30/2020	$50,538,707	$71,869,509	$21,330,802	70.32%	$15,387,077	138.63%	28.4
Laredo	Rudd & Wisdom	9/30/2020	$176,451,340	$296,081,500	$119,630,160	59.60%	$40,062,456	298.61%	56.8
Longview	Foster & Foster	12/31/2020	$47,120,577	$117,747,195	$70,626,618	40.02%	$13,854,989	509.76%	Infinite
Lubbock	Rudd & Wisdom	12/31/2020	$216,774,365	$311,770,198	$94,995,833	69.53%	$35,973,408	264.07%	33.7
Lufkin	Rudd & Wisdom	12/31/2020	$20,424,423	$40,295,254	$19,870,831	50.69%	$5,657,886	351.21%	31.9
Marshall	Definiti	12/31/2020	$8,905,327	$22,158,263	$13,252,936	40.19%	$2,899,527	457.07%	41
McAllen	Rudd & Wisdom	9/30/2020	$57,383,124	$82,561,401	$25,178,277	69.50%	$13,110,143	192.05%	27.7
Midland	Rudd & Wisdom	12/31/2019	$90,753,400	$177,602,060	$86,848,664	51.10%	$20,092,472	432.24%	Infinite
Odessa	Foster & Foster	1/1/2021	$43,943,904	$118,189,090	$74,245,180	37.18%	$16,096,804	461.24%	27.7
Orange	Foster & Foster	1/1/2021	$9,765,510	$17,257,431	$7,491,921	56.59%	$2,842,141	263.60%	20.7
Paris	Definiti	12/31/2020	$4,567,572	$15,862,735	$11,295,163	28.79%	$2,871,131	393.40%	33.6
Plainview	Retirement Horizons Inc	12/31/2019	$5,989,437	$17,622,588	$11,633,150	33.99%	$2,018,139	576.43%	79.7
Port Arthur	Rudd and Wisdom	12/31/2019	$50,280,560	$67,052,428	$16,771,865	74.99%	$9,300,617	180.33%	27.3
San Angelo	Foster & Foster	12/31/2019	$69,872,460	$112,758,720	$42,886,256	61.97%	$12,637,998	339.34%	37.6
San Benito	Retirement Horizons Inc	9/30/2019	$3,927,895	$6,451,289	$2,523,394	60.89%	$1,364,654	184.91%	26.1
Sweetwater	Foster & Foster	12/31/2020	$9,435,391	$14,930,949	$5,495,558	63.19%	$1,711,845	321.03%	68.9

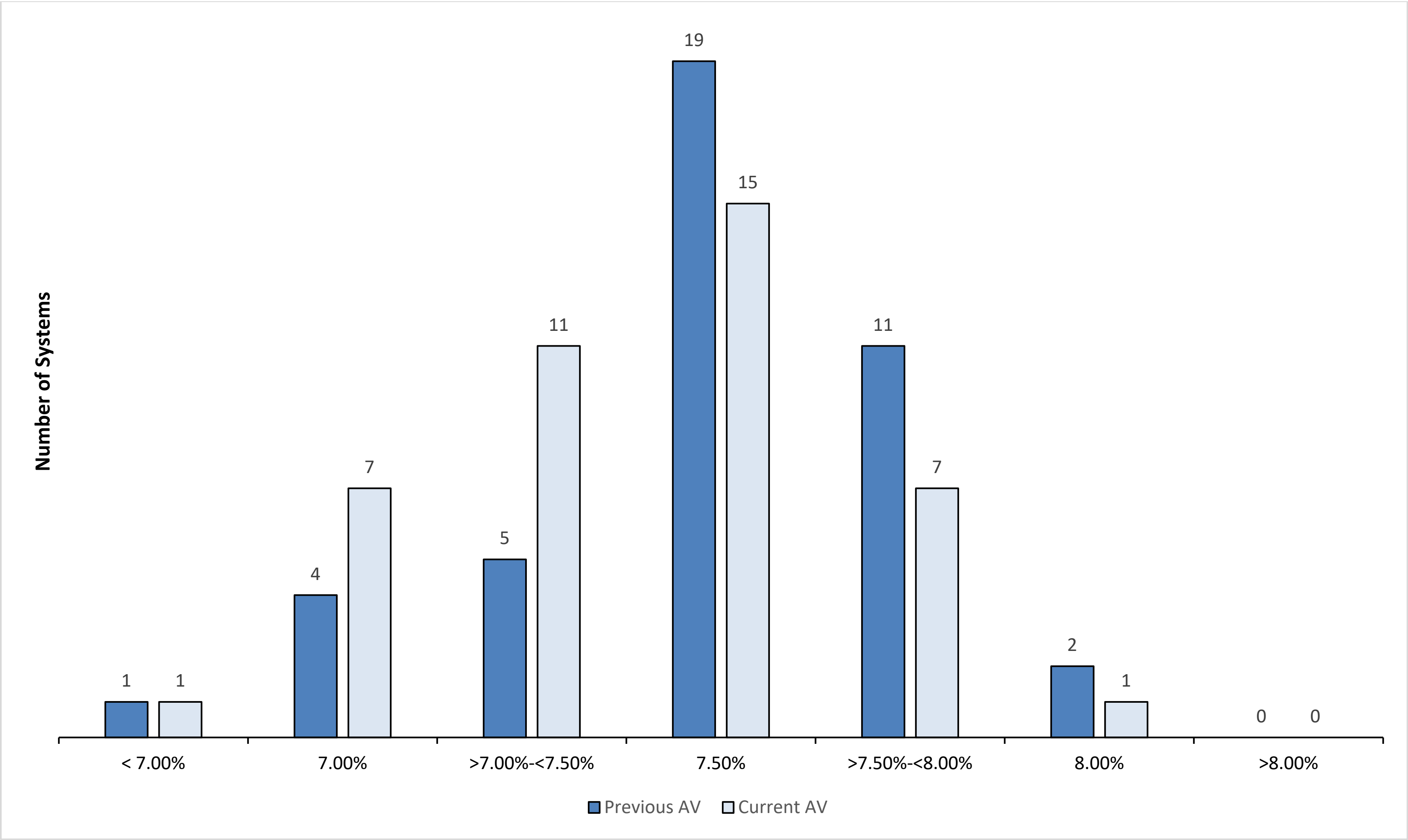
Actuarial Valuation Summary as of Valuation Date

System	Certified Actuary	Actuarial Valuation Date	Actuarial Value of Assets (AVA)	Actuarial Accrued Liability (AAL)	Unfunded Actuarial Accrued Liability (UAAL)	Funded Ratio (% Funded)	Covered Payroll	UAAL/ Payroll Ratio (%)	Amortization Period (Years)
			(a)	(b)	(b) - (a) = (c)	(a)/(b)	(d)	(c) / (d)	
Temple	Definiti	9/30/2020	$47,731,470	$67,708,340	$19,976,864	70.50%	$9,733,785	205.23%	26.6
Texarkana	Rudd and Wisdom	12/31/2019	$35,443,388	$44,298,320	$8,854,932	80.01%	$4,380,137	202.16%	58.3
Texas City	Rudd and Wisdom Inc	12/31/2020	$16,853,934	$37,166,769	$20,312,835	45.35%	$5,845,298	347.51%	28.2
The Woodlands	Retirement Horizons	1/1/2020	$42,315,852	$39,546,188	($2,769,663)	107.00%	$12,462,053	-22.22%	Fully Funded
Travis County ESD #6	Rudd & Wisdom	12/31/2019	$26,598,292	$30,015,942	$3,417,649	88.61%	$7,050,634	48.47%	4.6
Tyler	Rudd and Wisdom	12/31/2019	$72,534,800	$101,976,880	$29,442,082	71.13%	$12,260,544	240.14%	29
University Park	Rudd & Wisdom	12/31/2020	$11,317,536	$26,786,829	$15,469,293	42.25%	$3,338,205	463.40%	26.75
Waxahachie	Definiti LLC	10/1/2020	$19,854,398	$26,520,572	$6,666,173	74.86%	$5,395,613	123.55%	17.5
Weslaco	Definiti	9/30/2020	$13,554,752	$18,500,452	$4,945,699	73.27%	$4,938,442	100.10%	16.3
Wichita Falls	Foster & Foster	1/1/2020	$52,839,710	$93,066,280	$40,226,570	56.78%	$12,339,595	326.00%	43.3

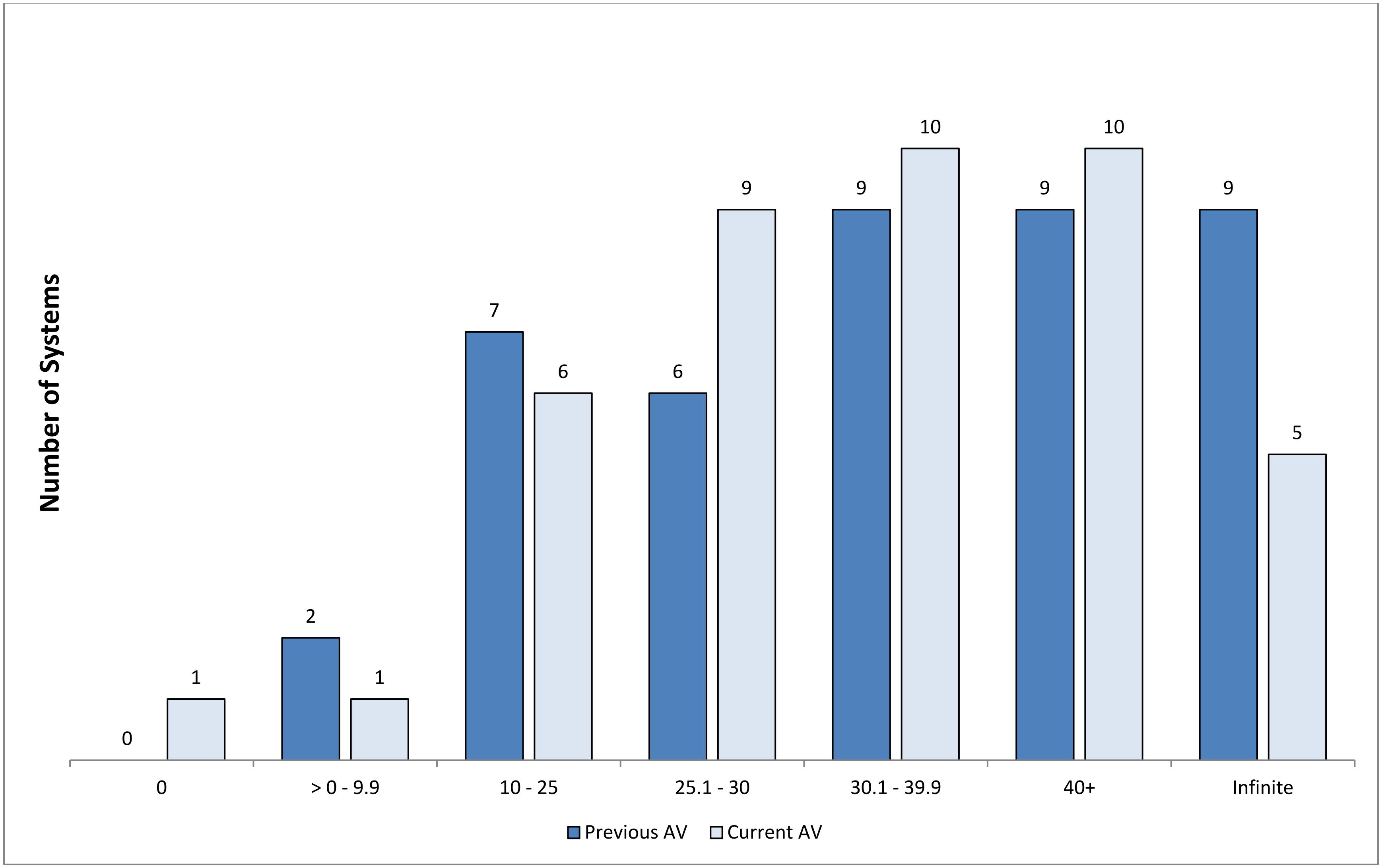
Systems Grouped by Asset Value
(Last Two Actuarial Valuations)



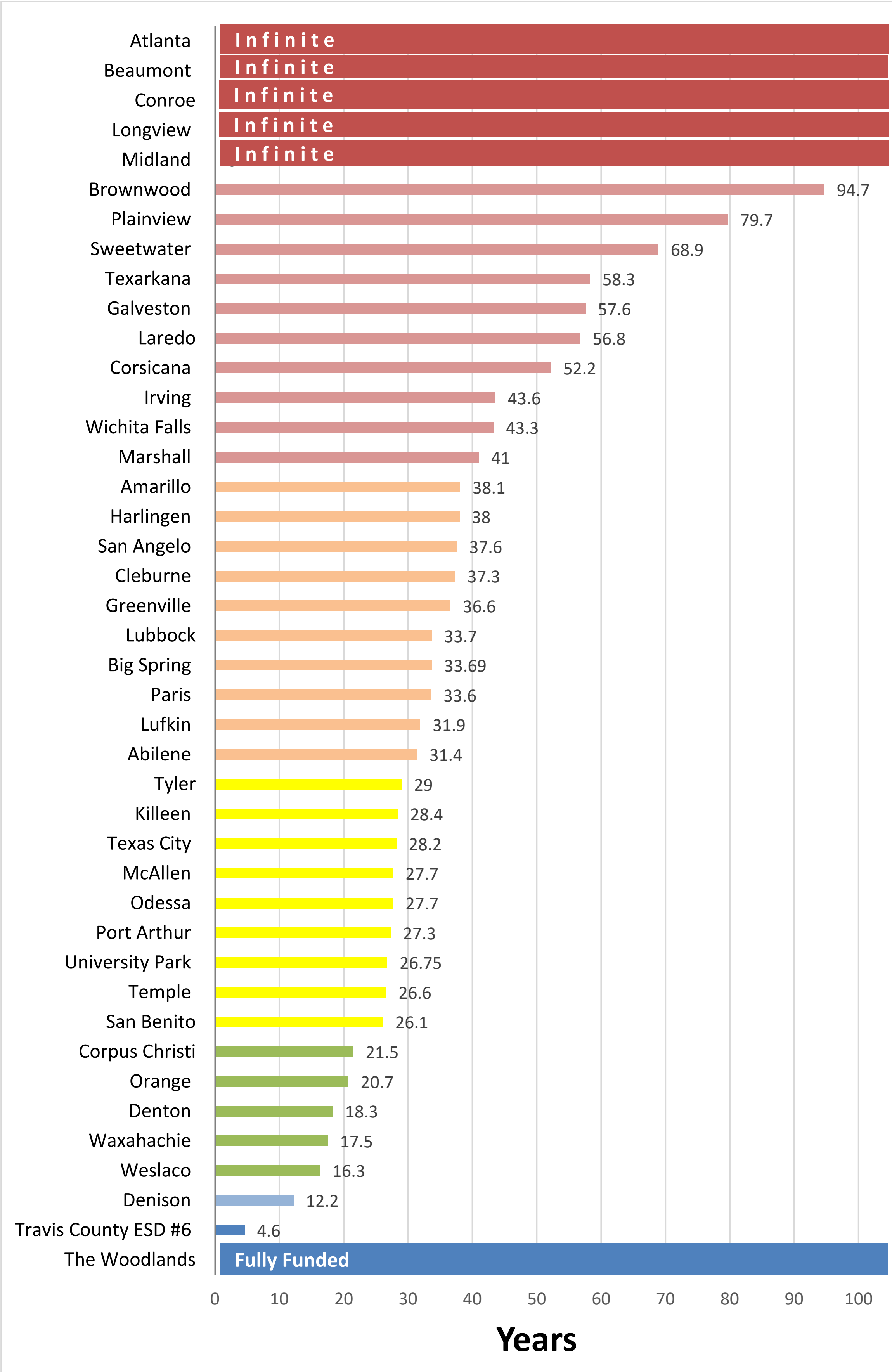
Systems Grouped by Discount Rates
(Last Two Actuarial Valuations)



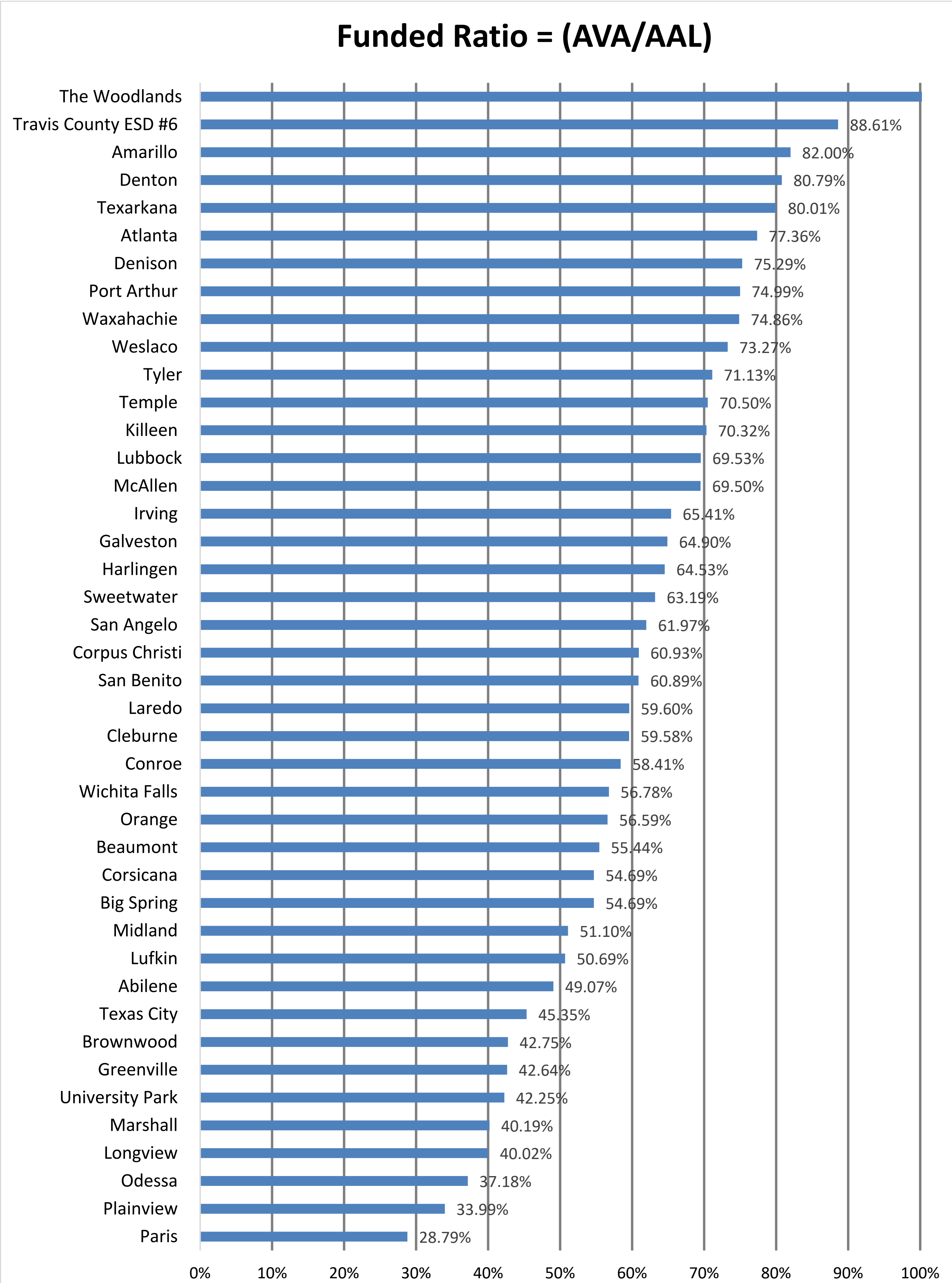
Systems Grouped by Amortization Period Ranges
(Last Two Actuarial Valuations)



Amortization Period by System
As of Most Recent Actuarial Valuation



Actuarial Funded Ratio by System
As of Most Recent Actuarial Valuation



Schedule of Actuarial Funding Progress (Three Most Recent Valuations)

System	Actuarial Valuation Date	Actuarial Value of Assets (AVA) in millions	Actuarial Accrued Liability (AAL) in millions	Unfunded Actuarial Accrued Liability (UAAL) in millions	Funded Ratio (% Funded)	Covered Payroll in millions	UAAL - Payroll Ratio (UAAL/Payroll)	Amortization Period (Years)
		(a)	(b)	(b) - (a)	(a) / (b)	(c)	(b - a) / (c)	
Abilene	10/1/2015	$56.62	$100.04	$43.41	56.60%	$13.73	316.19%	31.5
	10/1/2017	$59.43	$106.71	$47.29	55.69%	$13.84	341.79%	31.9
	10/1/2019	$58.10	$118.40	$60.30	49.07%	$15.31	393.82%	31.4
Amarillo	12/31/2015	$149.12	$182.25	$33.13	81.82%	$19.21	172.47%	34.5
	12/31/2017	$165.44	$203.07	$37.63	81.47%	$20.26	185.69%	43.5
	12/31/2019	$177.21	$216.11	$38.90	82.00%	$21.00	185.22%	38.1
Atlanta	12/31/2016	$3.95	$4.81	$0.86	82.13%	$0.63	136.63%	28.4
	12/31/2018	$4.18	$5.22	$1.04	80.03%	$0.56	184.83%	Infinite
	12/31/2020	$4.55	$5.88	$1.33	77.36%	$0.61	219.25%	Infinite
Beaumont	12/31/2016	$109.97	$162.84	$52.87	67.53%	$19.25	274.69%	104.0
	12/31/2018	$111.77	$200.31	$88.54	55.80%	$19.36	457.43%	Infinite
	12/31/2020	$119.79	$216.06	$96.27	55.44%	$21.46	448.65%	Infinite
Big Spring	1/1/2017	$11.03	$20.11	$9.08	54.86%	$3.77	241.05%	36.2
	1/1/2019	$11.87	$22.31	$10.44	53.22%	$4.26	245.07%	38.3
	1/1/2021	$13.87	$25.37	$11.50	54.69%	$4.50	255.37%	33.7
Brownwood	12/31/2015	$3.68	$8.24	$4.56	44.63%	$1.77	257.78%	36.1
	12/31/2017	$4.17	$9.25	$5.09	45.03%	$1.93	263.23%	38.6
	12/31/2019	$4.46	$10.44	$5.98	42.75%	$2.01	297.83%	94.7
Cleburne	12/31/2016	$22.29	$33.43	$11.14	66.68%	$4.24	262.59%	28.8
	12/31/2018	$21.73	$36.46	$14.72	59.61%	$4.54	324.13%	48.6
	12/31/2020	$22.80	$38.26	$15.46	59.58%	$4.99	310.03%	37.3
Conroe	12/31/2017	$25.87	$41.71	$15.84	62.03%	$8.82	179.50%	39.0
	12/31/2018	$26.95	$46.43	$19.48	58.05%	$9.28	209.84%	Infinite
	12/31/2019	$29.52	$50.55	$21.03	58.41%	$10.51	200.13%	Infinite

Schedule of Actuarial Funding Progress (Three Most Recent Valuations)

System	Actuarial Valuation Date	Actuarial Value of Assets (AVA) in millions	Actuarial Accrued Liability (AAL) in millions	Unfunded Actuarial Accrued Liability (UAAL) in millions	Funded Ratio (% Funded)	Covered Payroll in millions	UAAL - Payroll Ratio (UAAL/Payroll)	Amortization Period (Years)
		(a)	(b)	(b) - (a)	(a) / (b)	(c)	(b - a) / (c)	
Corpus Christi	12/31/2016	$141.14	$227.14	$86.00	62.14%	$35.82	265.57%	23.1
	12/31/2018	$151.14	$251.03	$99.90	60.21%	$32.68	305.70%	29.8
	12/31/2020	$167.70	$275.22	$107.53	60.93%	$35.82	300.15%	21.5
Corsicana	12/31/2016	$9.23	$17.36	$8.14	53.14%	$3.85	211.44%	28.9
	12/31/2018	$9.31	$18.38	$9.07	50.67%	$4.14	218.76%	28.9
	12/31/2020	$10.42	$19.05	$8.63	54.69%	$3.13	275.61%	52.2
Denison	12/31/2015	$16.38	$22.02	$5.64	74.37%	$3.10	182.33%	27.1
	12/31/2017	$17.52	$22.68	$5.16	77.26%	$3.32	155.45%	15.8
	12/31/2019	$17.98	$23.88	$5.90	75.29%	$3.48	169.53%	12.2
Denton	12/31/2015	$72.69	$89.94	$17.25	80.82%	$14.97	115.26%	31.6
	12/31/2017	$84.41	$102.85	$18.44	82.07%	$17.62	104.60%	14.6
	12/31/2019	$98.11	$121.44	$23.33	80.79%	$20.15	115.79%	18.3
Galveston	12/31/2016	$43.34	$63.69	$20.35	68.04%	$7.92	257.06%	Infinite
	12/31/2017	$44.33	$64.10	$19.77	69.16%	$7.96	248.42%	26.8
	12/31/2019	$47.79	$73.64	$25.85	64.90%	$8.78	294.44%	57.6
Greenville	12/31/2016	$13.70	$28.72	$15.02	47.69%	$3.88	387.00%	55.0
	12/31/2018	$13.48	$28.92	$15.44	46.61%	$4.19	368.76%	40.7
	12/31/2020	$14.55	$34.11	$19.57	42.64%	$4.84	403.83%	36.6
Harlingen	12/31/2015	$27.70	$43.89	$16.19	63.12%	$6.56	246.71%	Infinite
	9/30/2017	$31.22	$47.26	$16.04	66.06%	$6.44	248.99%	59.1
	9/30/2019	$33.71	$52.24	$18.53	64.53%	$6.68	277.57%	38.0
Irving	12/31/2015	$184.78	$246.66	$61.87	74.92%	$27.07	228.54%	46.5
	12/31/2017	$207.49	$289.75	$82.26	71.61%	$32.63	252.13%	Infinite
	12/31/2019	$190.72	$291.55	$100.84	65.41%	$37.71	267.38%	43.6

Schedule of Actuarial Funding Progress (Three Most Recent Valuations)

System	Actuarial Valuation Date	Actuarial Value of Assets (AVA) in millions	Actuarial Accrued Liability (AAL) in millions	Unfunded Actuarial Accrued Liability (UAAL) in millions	Funded Ratio (% Funded)	Covered Payroll in millions	UAAL - Payroll Ratio (UAAL/Payroll)	Amortization Period (Years)
		(a)	(b)	(b) - (a)	(a) / (b)	(c)	(b - a) / (c)	
Killeen	9/30/2016	$37.42	$53.65	$16.23	69.74%	$14.18	114.49%	22.8
	9/30/2018	$42.97	$61.96	$18.99	69.35%	$14.45	131.39%	39.8
	9/30/2020	$50.54	$71.87	$21.33	70.32%	$15.39	138.63%	28.4
Laredo	9/30/2016	$134.25	$221.98	$87.73	59.28%	$35.06	263.00%	28.0
	9/30/2018	$155.51	$259.78	$104.27	59.86%	$36.90	282.55%	43.0
	9/30/2020	$176.45	$296.08	$119.63	59.60%	$40.06	298.61%	56.8
Longview	12/31/2018	$41.56	$104.30	$62.74	39.85%	$13.36	469.68%	Infinite
	12/31/2019	$44.35	$112.72	$68.37	39.35%	$13.55	504.54%	Infinite
	12/31/2020	$47.12	$117.75	$70.63	40.02%	$13.85	509.76%	Infinite
Lubbock	12/31/2016	$194.66	$268.02	$73.35	72.63%	$30.50	240.47%	33.5
	12/31/2018	$199.27	$281.44	$82.17	70.80%	$34.09	241.06%	33.0
	12/31/2020	$216.77	$311.77	$95.00	69.53%	$35.97	264.07%	33.7
Lufkin	12/31/2016	$15.15	$32.46	$17.32	46.66%	$5.00	346.11%	33.1
	12/31/2018	$17.33	$35.51	$18.18	48.81%	$5.20	349.28%	30.7
	12/31/2020	$20.42	$40.30	$19.87	50.69%	$5.66	351.21%	31.9
Marshall	12/31/2016	$7.71	$18.35	$10.64	42.02%	$2.67	398.51%	56.4
	12/31/2018	$7.28	$19.86	$12.58	36.66%	$2.93	429.30%	59.0
	12/31/2020	$8.91	$22.16	$13.25	40.19%	$2.90	457.07%	41.0
McAllen	10/1/2016	$48.26	$69.83	$21.57	69.11%	$11.52	187.25%	33.4
	9/30/2018	$51.90	$76.14	$24.24	68.16%	$12.33	196.53%	Infinite
	9/30/2020	$57.38	$82.56	$25.18	69.50%	$13.11	192.05%	27.7
Midland	12/31/2015	$87.00	$132.27	$45.27	65.78%	$17.10	264.77%	44.7
	12/31/2017	$91.86	$150.81	$58.95	60.91%	$16.26	362.54%	Infinite
	12/31/2019	$90.75	$177.60	$86.85	51.10%	$20.09	432.24%	Infinite

Schedule of Actuarial Funding Progress (Three Most Recent Valuations)

System	Actuarial Valuation Date	Actuarial Value of Assets (AVA) in millions	Actuarial Accrued Liability (AAL) in millions	Unfunded Actuarial Accrued Liability (UAAL) in millions	Funded Ratio (% Funded)	Covered Payroll in millions	UAAL - Payroll Ratio (UAAL/Payroll)	Amortization Period (Years)
		(a)	(b)	(b) - (a)	(a) / (b)	(c)	(b - a) / (c)	
Odessa	1/1/2019	$43.89	$111.71	$67.83	39.29%	$11.92	569.08%	77.5
	1/1/2020	$43.36	$117.81	$74.45	36.81%	$13.67	544.63%	37.5
	1/1/2021	$43.94	$118.19	$74.25	37.18%	$16.10	461.24%	27.7
Orange	1/1/2017	$8.15	$16.35	$8.20	49.86%	$2.44	336.03%	69.3
	1/1/2019	$7.96	$17.20	$9.24	46.28%	$2.56	360.64%	Infinite
	1/1/2021	$9.77	$17.26	$7.49	56.59%	$2.84	263.60%	20.7
Paris	12/31/2016	$5.33	$14.96	$9.63	35.64%	$2.58	373.34%	41.9
	12/31/2018	$4.66	$15.29	$10.63	30.50%	$2.78	382.48%	32.1
	12/31/2020	$4.57	$15.86	$11.30	28.79%	$2.87	393.40%	33.6
Plainview	12/31/2015	$5.83	$15.61	$9.78	37.33%	$2.16	453.72%	31.6
	12/31/2017	$6.22	$16.51	$10.29	37.67%	$1.99	517.48%	44.8
	12/31/2019	$5.99	$17.62	$11.63	33.99%	$2.02	576.43%	79.7
Port Arthur	12/31/2015	$45.29	$58.08	$12.79	77.97%	$7.96	160.73%	18.3
	12/31/2017	$48.84	$65.81	$16.97	74.22%	$9.30	182.37%	23.7
	12/31/2019	$50.28	$67.05	$16.77	74.99%	$9.30	180.33%	27.3
San Angelo	12/31/2015	$61.47	$93.63	$32.16	65.65%	$11.46	280.71%	38.5
	12/31/2017	$66.07	$101.77	$35.70	64.92%	$12.26	291.10%	31.3
	12/31/2019	$69.87	$112.76	$42.89	61.97%	$12.64	339.34%	37.6
San Benito	12/31/2015	$3.30	$5.46	$2.15	60.52%	$1.37	156.71%	21.7
	9/30/2017	$3.50	$5.77	$2.27	60.68%	$1.49	152.30%	21.8
	9/30/2019	$3.93	$6.45	$2.52	60.89%	$1.36	184.91%	26.1
Sweetwater	12/31/2016	$8.44	$12.05	$3.62	69.99%	$1.58	229.12%	27.5
	12/31/2018	$8.77	$13.72	$4.95	63.94%	$1.68	294.74%	63.3
	12/31/2020	$9.44	$14.93	$5.50	63.19%	$1.71	321.03%	68.9

Schedule of Actuarial Funding Progress (Three Most Recent Valuations)

System	Actuarial Valuation Date	Actuarial Value of Assets (AVA) in millions	Actuarial Accrued Liability (AAL) in millions	Unfunded Actuarial Accrued Liability (UAAL) in millions	Funded Ratio (% Funded)	Covered Payroll in millions	UAAL - Payroll Ratio (UAAL/Payroll)	Amortization Period (Years)
		(a)	(b)	(b) - (a)	(a) / (b)	(c)	(b - a) / (c)	
Temple	9/30/2016	$42.27	$56.28	$14.00	75.12%	$8.49	164.97%	28.4
	9/30/2018	$44.23	$60.63	$16.39	72.96%	$9.06	181.02%	28.6
	9/30/2020	$47.73	$67.71	$19.98	70.50%	$9.73	205.23%	26.6
Texarkana	12/31/2015	$33.10	$37.89	$4.79	87.37%	$4.02	118.93%	16.3
	12/31/2017	$35.25	$40.84	$5.58	86.32%	$4.51	123.72%	15.0
	12/31/2019	$35.44	$44.30	$8.85	80.01%	$4.38	202.16%	58.3
Texas City	12/31/2016	$15.85	$31.47	$15.62	50.37%	$5.19	301.18%	28.0
	12/31/2018	$15.83	$34.47	$18.64	45.92%	$5.34	348.98%	41.1
	12/31/2020	$16.85	$37.17	$20.31	45.35%	$5.85	347.51%	28.2
The Woodlands	1/1/2018	$32.22	$30.40	($1.82)	105.98%	$11.90	-15.28%	0.0
	1/1/2019	$32.84	$33.56	$0.73	97.84%	$11.94	6.08%	3.6
	1/1/2020	$42.32	$39.55	($2.77)	107.00%	$12.46	-22.22%	0.0
Travis County ESD	12/31/2015	$12.61	$17.60	$5.00	71.61%	$5.70	87.70%	5.8
	12/31/2017	$19.01	$21.80	$2.79	87.20%	$5.78	48.27%	3.3
	12/31/2019	$26.60	$30.02	$3.42	88.61%	$7.05	48.47%	4.6
Tyler	12/31/2015	$64.89	$85.53	$20.64	75.87%	$11.58	178.30%	21.6
	12/31/2017	$69.57	$91.33	$21.76	76.18%	$11.52	188.81%	25.5
	12/31/2019	$72.53	$101.98	$29.44	71.13%	$12.26	240.14%	29.0
University Park	12/31/2016	$10.15	$23.08	$12.94	43.96%	$3.34	387.63%	Infinite
	12/31/2018	$10.46	$24.12	$13.66	43.36%	$3.10	441.37%	28.8
	12/31/2020	$11.32	$26.79	$15.47	42.25%	$3.34	463.40%	26.8
Waxahachie	10/1/2016	$14.20	$21.24	$7.04	66.86%	$4.27	164.84%	25.4
	10/1/2018	$17.43	$23.85	$6.42	73.08%	$4.87	131.82%	18.9
	10/1/2020	$19.85	$26.52	$6.67	74.86%	$5.40	123.55%	17.5

Schedule of Actuarial Funding Progress (Three Most Recent Valuations)

System	Actuarial Valuation Date	Actuarial Value of Assets (AVA) in millions	Actuarial Accrued Liability (AAL) in millions	Unfunded Actuarial Accrued Liability (UAAL) in millions	Funded Ratio (% Funded)	Covered Payroll in millions	UAAL - Payroll Ratio (UAAL/Payroll)	Amortization Period (Years)
		(a)	(b)	(b) - (a)	(a) / (b)	(c)	(b - a) / (c)	
Weslaco	9/30/2016	$9.44	$13.78	$4.33	68.53%	$3.90	111.07%	14.1
	9/30/2018	$11.41	$15.85	$4.44	71.99%	$4.36	101.90%	14.1
	9/30/2020	$13.55	$18.50	$4.95	73.27%	$4.94	100.10%	16.3
Wichita Falls	1/1/2017	$49.80	$79.71	$29.91	62.48%	$11.28	265.13%	49.4
	1/1/2018	$51.32	$88.95	$37.63	57.70%	$11.89	316.54%	Infinite
	1/1/2020	$52.84	$93.07	$40.23	56.78%	$12.34	326.00%	43.3

Plan Contributions

System	Plan Status[1]	Fiscal Year End	Covered Payroll	Total NC (% of Pay)[2,3]	EE Cont (% of Pay)[3]	ER Normal Cost (% of Pay)[3]	Amort Pmt (% of Pay)[3]	ER Rec Cont (% of Pay)[3,4]	Actual ER Cont (% of Pay)[5]	Actual ER Cont Type	Percentage of Rec Cont Paid
				(a)	(b)	(c) = (a) - (b)	(d)	(e) = (c) + (d)	(f)		(f) / (e)
Abilene	Active	9/30/2020	$15,310,993	17.17%	15.20%	1.97%	19.86%	21.83%	21.02%	Fixed	96%
Amarillo	Active	12/31/2020	$21,002,856	25.36%	14.00%	11.36%	10.50%	21.86%	19.73%	Fixed	90%
Atlanta	Active	12/31/2020	$564,372	19.96%	13.00%	6.96%	9.64%	16.60%	15.91%	Fixed	96%
Beaumont	Active	12/31/2020	$21,458,382	20.83%	16.50%	4.33%	24.77%	29.10%	15.74%	Fixed	54%
Big Spring	Active	12/31/2020	$4,259,859	17.53%	13.00%	4.53%	11.97%	16.50%	16.67%	Fixed	101%
Brownwood	Active	12/31/2020	$2,006,471	16.15%	8.00%	8.15%	16.93%	25.08%	20.62%	Fixed	82%
Cleburne	Active	12/31/2019	$4,542,683	20.27%	14.00%	6.27%	19.16%	25.43%	22.30%	Other	88%
Conroe	Active	12/31/2019	$9,281,517	21.89%	13.24%	8.65%	11.26%	19.91%	16.51%	Fixed	83%
Corpus Christi	Active	12/31/2020	$32,678,080	16.11%	13.10%	3.01%	18.27%	21.28%	25.75%	Fixed	121%
Corsicana	Active	12/31/2020	$4,143,829	14.97%	14.00%	0.97%	14.13%	15.10%	15.84%	Fixed	105%
Denison	Active	12/31/2020	$3,481,241	12.90%	13.25%	0.00%	18.35%	18.00%	19.36%	Fixed	108%
Denton	Active	12/31/2020	$20,151,688	22.33%	12.60%	9.73%	7.50%	17.23%	20.19%	Actuarial	117%
Galveston	Active	12/31/2020	$8,777,846	20.66%	18.00%	2.66%	18.54%	21.20%	16.77%	Fixed	79%
Greenville	Active	12/31/2020	$4,844,917	18.15%	16.30%	1.85%	21.68%	23.53%	21.48%	Fixed	91%
Harlingen	Active	9/30/2020	$6,675,326	19.06%	15.00%	4.06%	14.68%	18.74%	17.76%	Fixed	95%
Irving	Active	12/31/2020	$37,714,120	22.16%	13.00%	9.16%	13.78%	22.94%	16.97%	Fixed	74%
Killeen	Active	9/30/2020	$14,453,300	17.02%	11.00%	6.02%	7.96%	13.98%	13.93%	Fixed	100%
Laredo	Active	9/30/2020	$36,904,230	20.90%	15.00%	5.90%	17.65%	23.55%	22.07%	Fixed	94%

Plan Contributions

System	Plan Status[1]	Fiscal Year End	Covered Payroll	Total NC (% of Pay)[2,3]	EE Cont (% of Pay)[3]	ER Normal Cost (% of Pay)[3]	Amort Pmt (% of Pay)[3]	ER Rec Cont (% of Pay)[3,4]	Actual ER Cont (% of Pay)[5]	Actual ER Cont Type	Percentage of Rec Cont Paid
				(a)	(b)	(c) = (a) - (b)	(d)	(e) = (c) + (d)	(f)		(f) / (e)
Longview	Active	12/31/2020	$13,550,559	17.14%	16.69%	0.45%	29.24%	29.69%	19.24%	Fixed	65%
Lubbock	Active	12/31/2020	$35,973,408	22.15%	14.98%	7.17%	15.44%	22.61%	21.30%	Other	94%
Lufkin	Active	12/31/2020	$5,657,886	16.69%	14.20%	2.49%	21.11%	23.60%	23.50%	Fixed	100%
Marshall	Active	12/31/2020	$2,899,527	18.38%	16.00%	2.38%	23.01%	25.39%	20.13%	Fixed	79%
McAllen	Active	9/30/2020	$12,334,389	16.89%	12.00%	4.89%	12.31%	17.20%	13.60%	Fixed	79%
Midland	Active	12/31/2019	$16,260,968	25.98%	14.20%	11.78%	20.08%	31.86%	26.49%	Fixed	83%
Odessa	Active	12/31/2020	$13,670,388	15.07%	16.00%	0.00%	30.13%	29.20%	27.28%	Fixed	93%
Orange	Active	12/31/2020	$2,562,631	12.24%	12.50%	0.00%	23.45%	23.19%	17.85%	Fixed	77%
Paris	Active	12/31/2020	$2,778,015	9.63%	16.00%	0.00%	21.11%	14.74%	14.00%	Fixed	95%
Plainview	Active	12/31/2019	$2,018,139	15.06%	15.00%	0.06%	33.67%	33.73%	26.58%	Fixed	79%
Port Arthur	Active	12/31/2020	$9,300,617	15.42%	13.50%	1.92%	10.84%	12.76%	17.19%	Other	135%
San Angelo	Active	12/31/2020	$12,637,998	22.81%	18.28%	4.53%	17.87%	22.40%	20.71%	Fixed	92%
San Benito	Active	9/30/2020	$1,364,654	13.14%	12.00%	1.14%	9.96%	11.10%	10.89%	Fixed	98%
Sweetwater	Active	12/31/2020	$1,678,539	23.01%	17.00%	6.01%	17.64%	23.65%	18.29%	Fixed	77%
Temple	Active	9/30/2020	$9,055,803	19.67%	15.00%	4.67%	10.29%	14.96%	15.59%	Fixed	104%
Texarkana	Active	12/31/2020	$4,380,137	23.26%	13.50%	9.76%	12.29%	22.05%	20.40%	Fixed	93%
Texas City	Active	12/31/2020	$5,342,188	14.30%	16.00%	0.00%	20.40%	18.70%	19.75%	Fixed	106%
The Woodlands	Active	12/31/2018	$11,904,079	22.66%	12.00%	10.66%	0.00%	10.66%	11.75%	Fixed	110%

Plan Contributions

System	Plan Status[1]	Fiscal Year End	Covered Payroll	Total NC (% of Pay)[2,3]	EE Cont (% of Pay)[3]	ER Normal Cost (% of Pay)[3]	Amort Pmt (% of Pay)[3]	ER Rec Cont (% of Pay)[3,4]	Actual ER Cont (% of Pay)[5]	Actual ER Cont Type	Percentage of Rec Cont Paid
				(a)	(b)	(c) = (a) - (b)	(d)	(e) = (c) + (d)	(f)		(f) / (e)
Travis Co. ESD #6	Active	12/31/2020	$7,050,634	27.59%	20.00%	7.59%	2.75%	10.34%	19.92%	Fixed	193%
Tyler	Active	12/31/2020	$12,260,544	21.85%	13.50%	8.35%	14.04%	22.39%	22.09%	Fixed	99%
University Park	Closed	12/31/2019	$3,095,821	15.45%	10.00%	5.45%	38.64%	44.09%	29.44%	Actuarial	67%
Waxahachie	Active	9/30/2020	$4,869,681	17.92%	12.00%	5.92%	6.70%	12.62%	16.25%	Other	129%
Weslaco	Active	9/30/2020	$4,938,442	15.61%	12.00%	3.61%	5.69%	9.30%	12.14%	Fixed	131%
Wichita Falls	Active	12/31/2020	$12,339,595	13.38%	13.00%	0.38%	16.14%	16.52%	12.58%	Fixed	76%

[1] Plan status indicates whether plan is active (admitting new hires), closed to new hires (but still accruing benefits), or frozen (not accruing benefits).

[2] Normal cost includes any explicit provisions for administrative expenses.

[3] Values may differ from that reported by the system due to differences in timing and/or rounding. For systems that do not indicate the fiscal year associated with these value, they are based on the most recently reported valuation date on or before the beginning of the fiscal year.

[4] Recommended contribution needed for the system to achieve and maintain an amortization period that does not exceed 30 years, in accordance with §802.101(a), Texas Government Code.

[5] Actual contribution rate is determined as the employer contributions made to the plan during the fiscal year divided by the covered payroll shown. This may differ from the plan's stated contribution rate due to differences between actual and assumed covered payroll.

Plan Membership

System	Effective Date	Active Members	Total Annuitants	Terminated Members	Total Members	Actives / Annuitants
Abilene	9/30/2020	200	201	1	402	1.00
Amarillo	12/31/2020	279	225	3	507	1.24
Atlanta	12/31/2020	21	23	3	47	0.91
Beaumont	12/31/2020	228	233	1	462	0.98
Big Spring	12/31/2020	66	45	1	112	1.47
Brownwood	12/31/2019	33	25	0	58	1.32
Cleburne	12/31/2020	63	43	5	111	1.47
Conroe	12/31/2019	125	39	4	168	3.21
Corpus Christi	12/31/2020	438	332	12	782	1.32
Corsicana	12/31/2020	42	39	0	81	1.08
Denison	12/31/2018	52	52	8	112	1.00
Denton	12/31/2020	203	92	6	301	2.21
Galveston	12/31/2020	116	93	0	209	1.25
Greenville	12/31/2020	56	67	1	124	0.84
Harlingen	9/30/2019	104	82	3	189	1.27
Irving	12/31/2020	371	211	3	585	1.76
Killeen	9/30/2020	227	77	12	316	2.95

Plan Membership

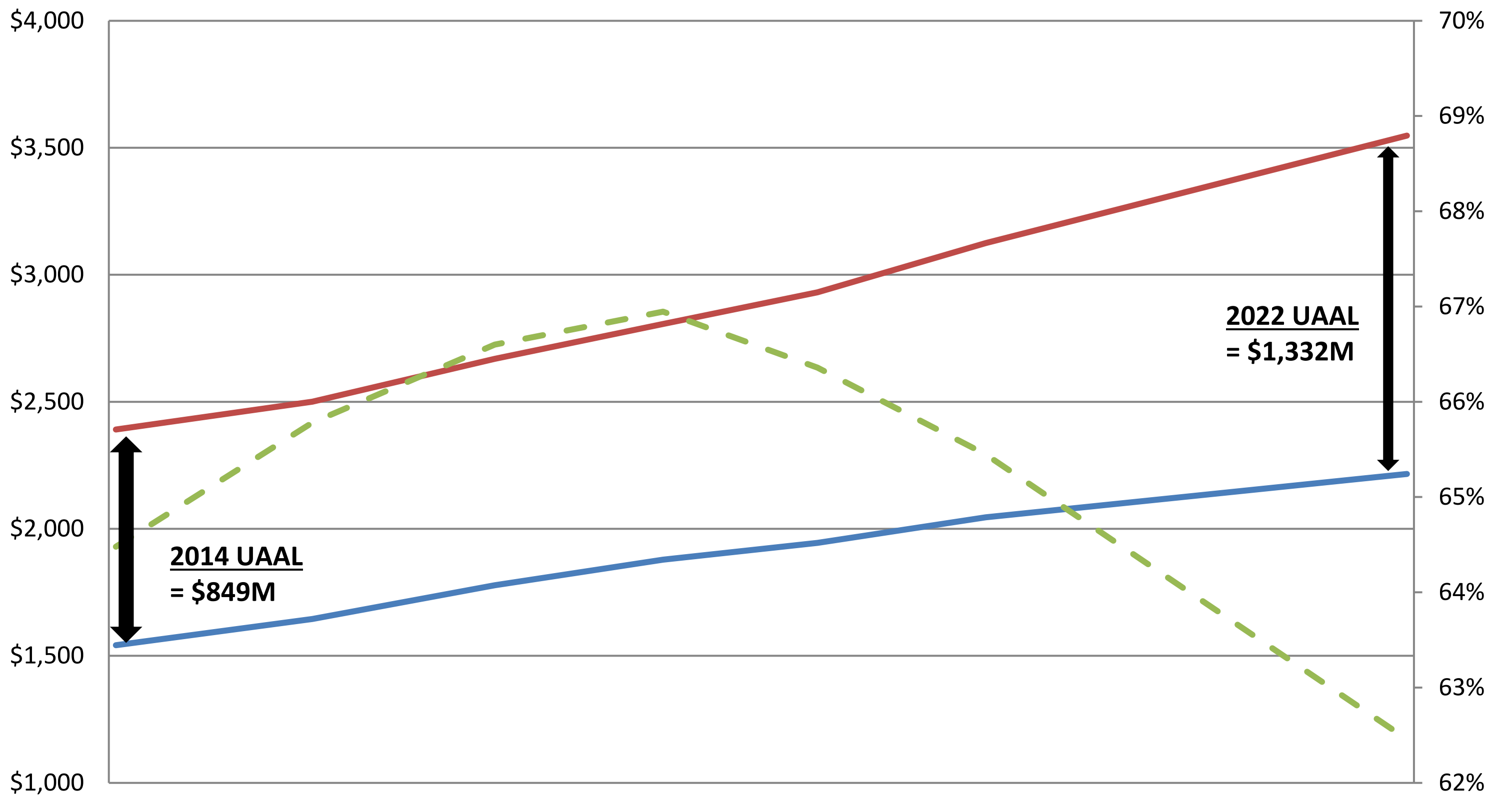
System	Effective Date	Active Members	Total Annuitants	Terminated Members	Total Members	Actives / Annuitants
Laredo	9/30/2020	410	158	0	568	2.59
Longview	12/31/2020	170	153	6	329	1.11
Lubbock	12/31/2020	425	329	3	757	1.29
Lufkin	12/31/2020	84	58	2	144	1.45
Marshall	12/31/2020	45	39	10	94	1.15
McAllen	9/30/2020	177	117	5	294	1.51
Midland	12/31/2018	209	173	10	392	1.21
Odessa	1/1/2021	204	188	17	409	1.09
Orange	12/31/2020	36	39	1	76	0.92
Paris	12/31/2020	48	40	8	96	1.20
Plainview	12/31/2019	32	39	2	73	0.82
Port Arthur	12/31/2019	104	73	11	188	1.42
San Angelo	12/31/2019	175	148	4	327	1.18
San Benito	9/30/2020	26	12	2	40	2.17
Sweetwater	12/31/2019	25	25	1	51	1.00
Temple	9/30/2020	122	100	3	225	1.22
Texarkana	12/31/2020	76	65	0	141	1.17

Plan Membership

System	Effective Date	Active Members	Total Annuitants	Terminated Members	Total Members	Actives / Annuitants
Texas City	12/31/2020	71	58	0	130	1.22
The Woodlands	12/31/2020	143	5	0	148	28.60
Travis County ESD #6[1]	12/31/2019	94	0	0	94	N/A
Tyler	12/31/2020	154	121	0	275	1.27
University Park	12/31/2018	29	49	0	78	0.59
Waxahachie	10/1/2020	60	35	2	97	1.71
Weslaco	9/30/2019	68	27	0	95	2.52
Wichita Falls	12/31/2019	159	146	5	310	1.09

[1] This plan was created in 2007 and has no annuitants as of the effective date of its latest membership report.

Aggregate AVA to AAL Comparison
(in millions)



	8/28/2014	10/8/2015	11/3/2016	11/16/2017	10/4/2018	10/17/2019	4/1/2022
AVA	$1,542	$1,645	$1,778	$1,879	$1,945	$2,045	$2,216
AAL	$2,391	$2,500	$2,669	$2,806	$2,931	$3,125	$3,548
Funded Ratio	64.48%	65.78%	66.60%	66.95%	66.36%	65.45%	62.46%

This chart shows the changes in the aggregate actuarial value of assets (AVA) and actuarial accrued liability (AAL) for all TLFFRA systems. The values in the chart are the values as reported in PRB Actuarial Valuation Reports over the last seven years and reflect the most recent actuarial valuation on file with the PRB as of that date. The actuarial funded ratio, which is the ratio of AVA to AAL, is graphed on the secondary (right) vertical axis.

Financial

Market Value of Assets for All Paid and Part-Paid Systems
As of Most Recent Annual Financial Report

Revenue	
Employer Contributions	$89,562,530
Member Contributions	$67,942,446
Miscellaneous Contributions[1]	$4,651
Investment Income	$252,723,434
Miscellaneous Income[1]	$458,987
Total Revenue	**$410,692,048**
Disbursements	
Benefits Paid	$218,990,712
Contributions Withdrawn[2]	$6,206,054
Administrative Expenses	$3,551,321
Investment Expenses[3]	$8,110,087
Miscellaneous Expenses[4]	$139,225
Total Disbursements	**$236,997,399**
Gross Total Assets of All Systems	**$2,365,694,726**
Total Liabilities of All Systems[5]	**$2,336,664**
Total Net Assets of All Systems	**$2,363,358,074**

[1] *Only a few systems report additional revenue, which has been noted here as miscellaneous contributions/income.*

[2] *Contributions withdrawn include withdrawals and refunds of member contributions.*

[3] *Not all systems disclose investment expenses; the total here reflects the total investment expenses reported.*

[4] *Only a few systems report additional expenses, which has been noted here as miscellaneous expenses.*

[5] *This includes financial liabilities, such as payables and securities lending obligation to return collateral. Total liabilites does not include the actuarial accrued liability.*

Market Value of Assets Breakdown by System

System	Fiscal Year End	Combined Revenue	Combined Disbursements	Total (Gross) Assets	Total Liabilities[1]	Total Net Assets
Abilene	9/30/2020	$8,697,177	$7,991,800	$56,721,084	$327,646	$56,393,440
Amarillo	12/31/2020	$45,678,847	$13,935,530	$225,552,373	$269,496	$225,282,877
Atlanta	12/31/2020	$693,676	$320,903	$4,773,829	$30,203	$4,743,626
Beaumont	12/31/2020	$25,725,900	$13,951,104	$132,571,768	$76,897	$132,494,871
Big Spring	12/31/2020	$2,032,873	$1,418,176	$15,015,349	$0	$15,015,349
Brownwood	12/31/2020	$1,285,104	$531,510	$5,408,855	$0	$5,408,855
Cleburne	12/31/2020	$3,748,279	$2,883,764	$22,900,165	$30,914	$22,869,251
Conroe	12/31/2020	$6,231,641	$2,525,138	$33,277,105	$9,395	$33,267,710
Corpus Christi	12/31/2020	$35,250,995	$16,151,333	$176,959,790	$272,983	$176,686,800
Corsicana	12/31/2020	$2,905,437	$1,497,896	$11,311,372	$450	$11,310,922
Denison	12/31/2020	$2,632,024	$1,777,148	$21,080,017	$0	$21,080,017
Denton	12/31/2020	$19,337,698	$5,955,354	$117,304,028	$105,889	$117,198,139
Galveston	12/31/2020	$9,142,271	$4,624,687	$53,555,219	$6,785	$53,548,434
Greenville	12/31/2020	$3,515,990	$2,714,261	$15,119,399	$23,348	$15,096,051
Harlingen	9/30/2020	$4,729,352	$3,706,585	$34,771,064	$35,371	$34,735,692
Irving	12/31/2020	$25,002,060	$37,195,958	$183,698,635	$89,199	$183,609,436
Killeen	9/30/2020	$8,579,879	$3,529,176	$51,185,250	$272,650	$50,912,600

Market Value of Assets Breakdown by System

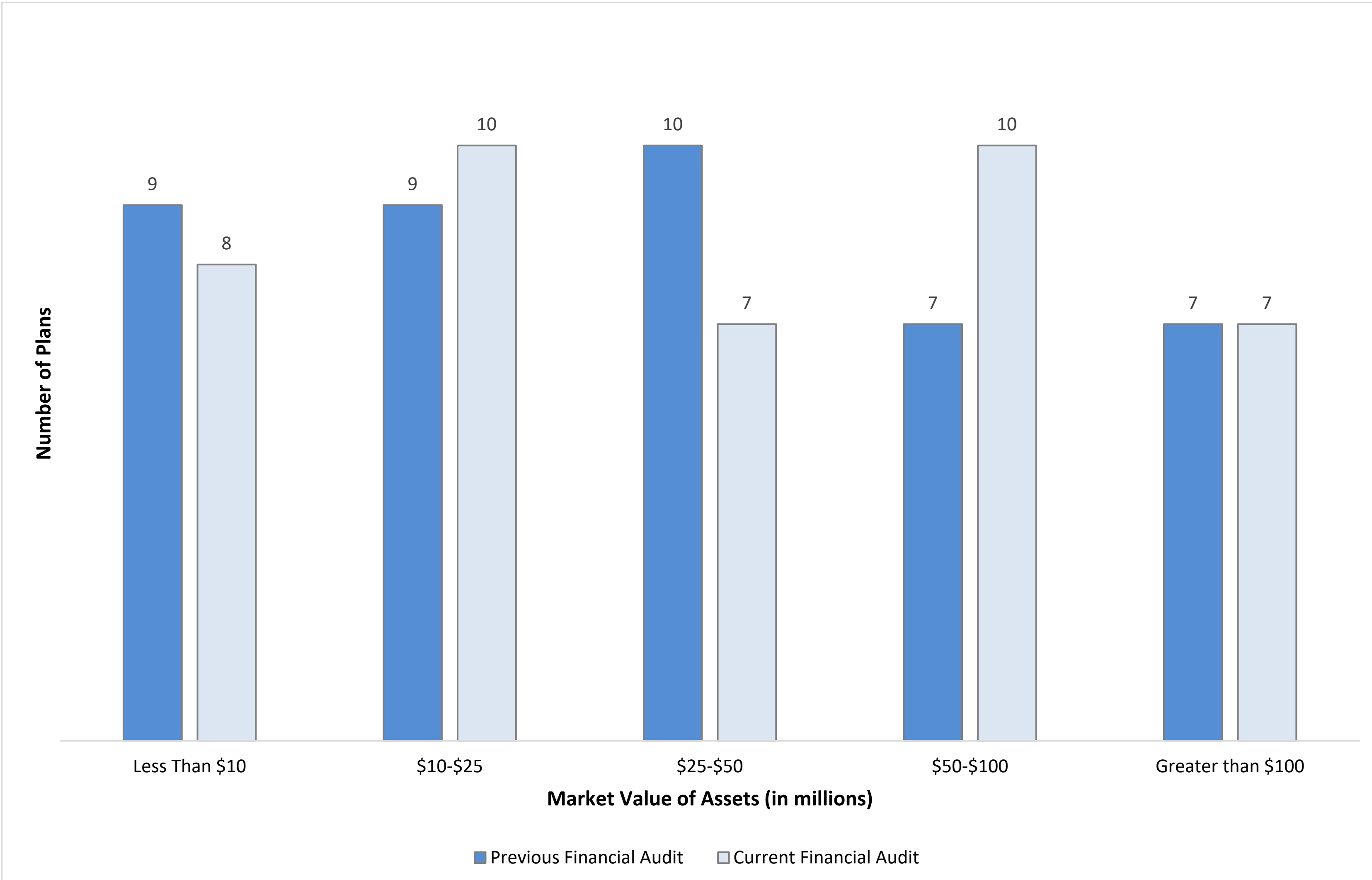
System	Fiscal Year End	Combined Revenue	Combined Disbursements	Total (Gross) Assets	Total Liabilities[1]	Total Net Assets
Laredo	9/30/2020	$21,717,159	$13,044,817	$167,757,140	$86,558	$167,670,600
Longview	12/31/2020	$10,852,911	$7,191,841	$49,440,856	$0	$49,440,856
Lubbock	12/31/2020	$33,378,980	$20,457,800	$224,469,634	$0	$224,469,634
Lufkin	12/31/2020	$4,566,059	$2,075,255	$21,494,644	$28,090	$21,466,554
Marshall	12/31/2020	$1,974,212	$1,341,579	$8,905,327	$0	$8,905,327
McAllen	9/30/2020	$8,930,027	$4,945,925	$57,956,228	$0	$57,956,228
Midland	12/31/2020	$13,040,339	$11,543,996	$86,401,604	$56,295	$86,345,309
Odessa	12/31/2020	$12,843,474	$9,900,269	$47,751,504	$15,400	$47,736,104
Orange	12/31/2020	$2,057,421	$1,272,727	$9,796,724	$70,054	$9,726,670
Paris	12/31/2020	$1,363,760	$1,090,451	$4,771,549	$445	$4,771,104
Plainview	12/31/2020	$1,578,379	$1,115,323	$6,701,823	$0	$6,701,823
Port Arthur	12/31/2020	$9,267,368	$5,476,307	$55,702,890	$0	$55,702,890
San Angelo	12/31/2020	$12,809,897	$7,161,607	$77,329,058	$0	$77,329,058
San Benito	9/30/2020	$506,215	$401,295	$4,032,816	$1	$4,032,815
Sweetwater	12/31/2020	$1,688,614	$966,222	$9,841,254	$99,321	$9,741,933
Temple	9/30/2020	$7,358,893	$4,510,589	$48,418,256	$0	$48,418,256
Texarkana	12/31/2020	$7,293,544	$2,778,830	$40,947,985	$30,782	$40,917,203

Market Value of Assets Breakdown by System

System	Fiscal Year End	Combined Revenue	Combined Disbursements	Total (Gross) Assets	Total Liabilities[1]	Total Net Assets
Texas City	12/31/2020	$3,785,927	$2,637,233	$17,645,655	$21,300	$17,624,355
The Woodlands	12/31/2020	$7,601,831	$153,545	$35,534,338	$0	$35,534,338
Travis County ESD #6	12/31/2020	$14,927,506	$8,445,420	$81,132,631	$77,975	$81,054,656
Tyler	12/31/2020	$2,620,570	$1,658,113	$11,874,208	$17,400	$11,856,808
University Park	9/30/2020	$2,964,876	$1,217,521	$18,358,655	$0	$18,358,655
Waxahachie	9/30/2020	$1,597,001	$694,489	$12,832,351	$0	$12,832,351
Weslaco	12/31/2020	$11,341,929	$6,391,123	$57,855,599	$26,839	$57,828,760
Wichita Falls	12/31/2020	$10,721,057	$346,309	$52,945,550	$254,978	$52,690,572

[1] *Includes financial liabilities, such as payables and securities lending obligation to return collateral. Total liabilites does not include the actuarial accrued liability.*

Systems Grouped by Asset Value
(Last Two Annual Financial Reports)



GASB Disclosure Information

System	Fiscal Year End	Total Pension Liability (TPL)	Fiduciary Net Position (FNP)	Net Pension Liability (NPL)	FNP as a Percentage of TPL (% Funded)	Preliminary Discount Rate	TPL Discount Rate	NPL at Discount Rate -1%	NPL at Discount Rate +1%
		(a)	(b)	(a) - (b)	(b) / (a)				
Abilene	9/30/2020	$122,368,780	$56,393,440	$65,975,340	46.08%	7.50%	7.50%	$79,658,500	$54,474,290
Amarillo	12/31/2020	$223,999,878	$225,282,877	($1,282,999)	100.57%	7.50%	7.50%	$25,734,298	-$23,974,321
Atlanta	12/31/2020	$8,092,551	$4,743,624	$3,348,927	58.62%	7.40%	4.47%	$4,567,665	$2,364,064
Beaumont	12/31/2020	$307,618,439	$132,500,871	$175,117,568	43.07%	7.50%	3.91%	$217,483,234	$140,443,514
Big Spring	12/31/2020	$25,370,435	$15,015,349	$10,355,086	59.18%	7.75%	7.75%	$13,551,920	$7,740,861
Brownwood	12/31/2020	$10,983,464	$5,408,856	$5,574,608	49.25%	7.00%	7.00%	$6,970,244	$4,416,591
Cleburne	12/31/2020	$38,258,137	$22,869,250	$15,388,887	59.78%	7.35%	7.35%	$19,898,541	$11,621,757
Conroe	12/31/2020	$81,774,104	$33,267,710	$48,506,394	40.68%	7.50%	4.89%	$61,670,311	$37,913,208
Corpus Christi	12/31/2020	$269,022,660	$176,686,800	$92,335,860	65.68%	7.50%	7.50%	$122,089,110	$67,269,240
Corsicana	12/31/2020	$19,455,196	$11,310,922	$8,144,274	58.14%	7.00%	7.00%	$10,789,596	$5,971,856
Denison	12/31/2020	$25,787,791	$21,080,015	$4,707,776	81.74%	7.50%	7.50%	$7,911,022	$2,053,024
Denton	12/31/2020	$128,332,828	$117,198,139	$11,134,689	91.32%	6.75%	6.75%	$27,865,557	-$3,066,318
Galveston	12/31/2020	$72,523,098	$53,548,434	$18,974,664	73.84%	7.50%	7.50%	$31,932,829	$15,161,026
Greenville	12/31/2020	$34,110,864	$15,096,050	$19,014,814	44.26%	7.50%	7.50%	$22,990,859	$15,667,706
Harlingen	9/30/2020	$54,727,492	$34,735,692	$19,991,800	63.47%	7.75%	7.75%	$262,237,140	$14,755,821
Irving	12/31/2020	$282,650,226	$183,609,436	$99,040,790	64.96%	7.00%	7.00%	$134,205,369	$69,711,181

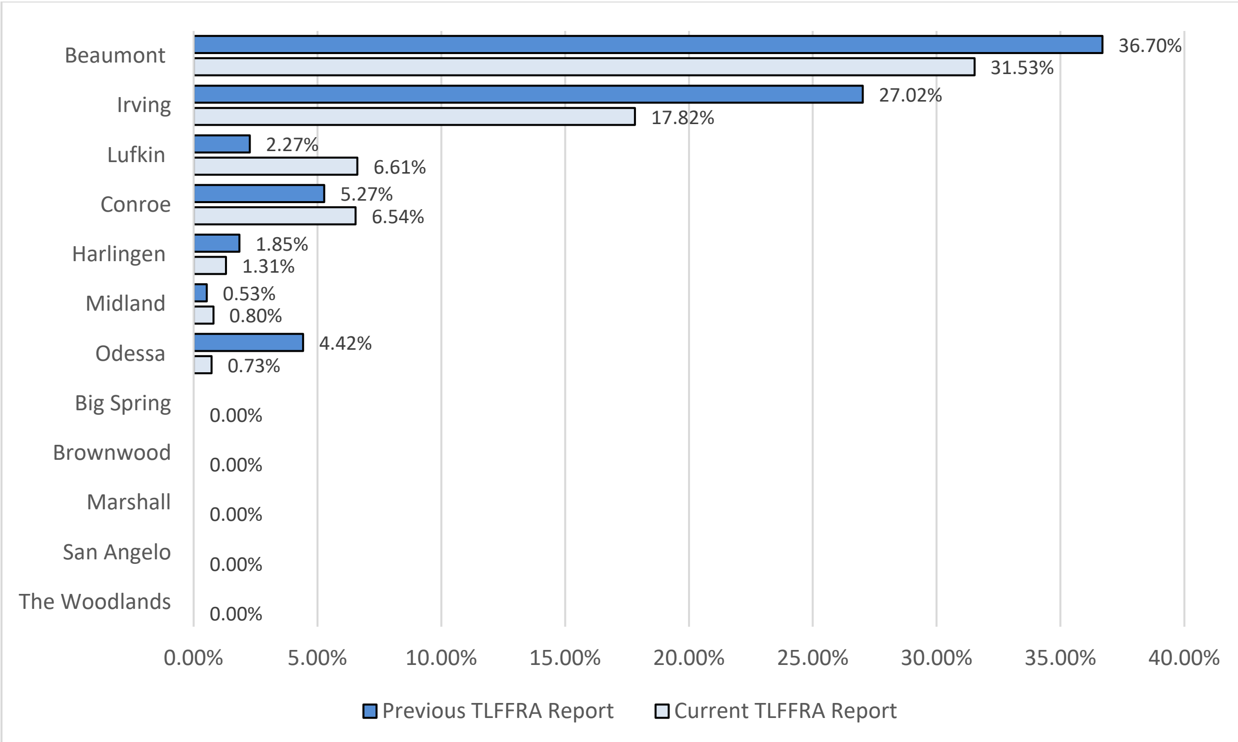
GASB Disclosure Information

System	Fiscal Year End	Total Pension Liability (TPL)	Fiduciary Net Position (FNP)	Net Pension Liability (NPL)	FNP as a Percentage of TPL (% Funded)	Preliminary Discount Rate	TPL Discount Rate	NPL at Discount Rate -1%	NPL at Discount Rate +1%
		(a)	(b)	(a) - (b)	(b) / (a)				
Killeen	9/30/2020	$70,156,344	$50,912,600	$19,243,744	72.57%	7.50%	7.50%	$29,693,124	$10,659,380
Laredo	9/30/2020	$291,367,550	$167,670,600	$123,696,950	57.55%	7.50%	7.50%	$162,152,210	$91,843,830
Longview	12/31/2020	$212,011,162	$49,440,856	$162,570,306	23.32%	7.50%	2.90%	$198,748,641	$133,674,456
Lubbock	12/31/2020	$311,770,198	$224,469,634	$87,300,564	72.00%	7.50%	7.50%	$125,957,066	$55,081,304
Lufkin	12/31/2020	$38,855,124	$21,466,554	$17,388,570	55.25%	7.50%	7.50%	$21,606,400	$13,843,028
Marshall	12/31/2020	$22,158,263	$8,905,327	$13,252,936	40.19%	7.25%	7.25%	$16,181,087	$10,828,427
McAllen	9/30/2020	$83,501,040	$57,956,228	$25,544,812	69.41%	7.50%	7.50%	$35,833,868	$16,944,600
Midland	12/31/2020	$336,376,749	$86,345,309	$250,031,440	25.67%	7.50%	2.95%	$309,688,686	$203,014,661
Odessa	12/31/2020	$117,735,370	$47,736,104	$69,999,266	40.55%	7.50%	7.50%	$84,100,580	$58,268,124
Orange	12/31/2020	$17,026,553	$9,726,670	$7,299,883	57.13%	7.75%	7.75%	$9,196,138	$5,713,936
Paris	12/31/2020	$15,862,735	$4,771,104	$11,091,631	30.08%	7.25%	7.25%	$12,795,460	$9,661,244
Plainview	12/31/2020	$18,177,563	$6,701,823	$11,475,740	36.87%	7.50%	7.50%	$13,568,131	$9,740,556
Port Arthur	12/31/2020	$67,951,110	$55,702,890	$12,248,220	81.97%	7.50%	7.50%	$19,758,917	$5,914,987
San Angelo	12/31/2020	$117,412,084	$77,420,982	$39,991,102	65.94%	7.80%	7.80%	$53,510,049	$28,605,273
San Benito	9/30/2020	$6,754,732	$4,032,815	$2,721,917	59.70%	7.50%	7.50%	$3,587,673	$2,001,584
Sweetwater	12/31/2020	$14,930,948	$9,741,932	$5,189,016	65.25%	8.00%	8.00%	$6,905,241	$3,752,206

GASB Disclosure Information

System	Fiscal Year End	Total Pension Liability (TPL)	Fiduciary Net Position (FNP)	Net Pension Liability (NPL)	FNP as a Percentage of TPL (% Funded)	Preliminary Discount Rate	TPL Discount Rate	NPL at Discount Rate -1%	NPL at Discount Rate +1%
		(a)	(b)	(a) - (b)	(b) / (a)				
Temple	9/30/2020	$67,708,340	$48,418,256	$19,290,084	71.51%	7.75%	7.75%	$27,204,048	$12,613,751
Texarkana	12/31/2020	$46,019,024	$40,917,203	$5,101,821	88.91%	7.60%	7.60%	$10,114,951	$881,589
Texas City	12/31/2020	$36,050,957	$17,624,355	$18,426,602	48.89%	7.50%	7.50%	$22,614,122	$14,964,360
The Woodlands	12/31/2020	$44,985,132	$52,690,572	($7,705,440)	117.13%	7.00%	7.00%	-$563,075	-$13,605,883
Travis County ESD #6	12/31/2020	$34,083,357	$35,534,338	($1,450,981)	104.26%	7.00%	7.00%	$3,991,768	-$5,900,237
Tyler	12/31/2020	$104,050,966	$81,054,656	$22,996,310	77.90%	7.25%	7.25%	$35,209,086	$12,522,434
University Park	12/31/2020	$25,549,062	$11,856,807	$13,692,255	46.41%	7.50%	7.50%	$16,700,453	$11,174,425
Waxahachie	9/30/2020	$26,520,572	$19,854,398	$6,666,174	74.86%	7.00%	7.00%	$9,871,875	$3,571,360
Weslaco	9/30/2020	$18,500,452	$12,832,351	$5,668,101	69.36%	7.25%	7.25%	$8,642,153	$3,260,529
Wichita Falls	12/31/2020	$137,970,820	$57,828,760	$80,142,060	41.91%	7.75%	4.47%	$99,501,281	$64,244,423

DROP Balance as a Percentage of Assets



System	Fiscal Year End	DROP Balance	Fiduciary Net Position (FNP)	DROP Balance as a Percent of FNP
Beaumont	12/31/2020	$41,783,080.00	$ 132,500,871.00	31.53%
Irving	12/31/2020	$32,718,810.00	$ 183,609,436.00	17.82%
Lufkin	12/31/2020	$1,419,348.00	$ 21,466,554.00	6.61%
Conroe	12/31/2020	$2,176,053.00	$ 33,267,710.00	6.54%
Harlingen	9/30/2020	$453,842.00	$ 34,735,692.00	1.31%
Midland	12/31/2020	$689,062.00	$ 86,345,309.00	0.80%
Odessa	12/31/2020	$346,449.00	$ 47,736,104.00	0.73%
Big Spring	12/31/2020	$0.00	$ 15,015,349.00	0.00%
Brownwood	12/31/2020	$0.00	$ 5,408,856.00	0.00%
Marshall	12/31/2020	$0.00	$ 8,905,327.00	0.00%
San Angelo	12/31/2020	$0.00	$ 77,420,982.00	0.00%
The Woodlands	12/31/2020	$0.00	$ 52,690,572.00	0.00%

Net Investment Rates of Return by System

System	Effective Date	1-Year	3-Year	10-Year	30-Year/Oldest Available %	30-Year/Oldest Available Date	Assumed Rate of Return
Abilene	9/30/2020	5.28%	4.90%	5.83%	6.22%	1/1/1994	7.50%
Amarillo	12/31/2020	20.04%	13.19%	10.58%	9.31%	1/1/1995	7.50%
Atlanta	12/31/2020	10.79%	6.70%	6.56%	6.24%	1/1/1995	7.40%
Beaumont	12/31/2020	16.13%	10.60%	8.18%	8.86%	N/A	7.50%
Big Spring	12/31/2020	13.38%	8.74%	7.36%	8.16%	1/1/1995	7.75%
Brownwood[1]	12/31/2020	13.88%	8.63%	6.14%	N/A	1/1/1995	7.00%
Cleburne	12/31/2020	10.26%	5.46%	6.66%	5.97%	6/4/2008	7.35%
Conroe[1]	12/31/2020	8.41%	6.56%	5.48%	N/A	1/1/1995	7.50%
Corpus Christi	12/31/2020	13.42%	7.85%	7.85%	7.82%	1/1/1995	7.25%
Corsicana	12/31/2020	16.15%	8.24%	6.05%	4.93%	1/1/1995	7.00%
Denison	12/31/2020	6.76%	10.05%	8.61%	7.16%	1/1/1995	7.50%
Denton	12/31/2020	11.68%	9.26%	7.96%	7.83%	1/1/1995	6.75%
Galveston	12/31/2020	11.91%	7.60%	6.89%	6.94%	1/1/1995	7.50%
Greenville	12/31/2020	11.07%	7.21%	7.03%	6.89%	1/1/1995	7.50%
Harlingen	9/30/2020	7.21%	6.58%	7.26%	8.40%	4/1/1995	7.75%
Irving	12/31/2020	8.60%	6.50%	7.70%	6.60%	1/1/1995	7.00%
Killeen	9/30/2020	10.34%	7.08%	5.87%	5.83%	10/1/1994	7.50%

Net Investment Rates of Return by System

System	Effective Date	1-Year	3-Year	10-Year	30-Year/Oldest Available %	30-Year/Oldest Available Date	Assumed Rate of Return
Laredo	9/30/2020	4.39%	4.32%	5.89%	4.95%	9/30/1994	7.50%
Longview	12/31/2020	12.88%	8.76%	5.84%	6.75%	1/1/1995	7.50%
Lubbock	12/31/2020	9.58%	7.77%	6.54%	7.81%	1/1/1995	7.50%
Lufkin	12/31/2020	11.84%	7.43%	6.88%	5.41%	1/1/1995	7.50%
Marshall	12/31/2020	11.29%	7.41%	7.00%	6.48%	1/1/1995	7.25%
McAllen	9/30/2020	10.55%	7.94%	7.39%	7.77%	10/31/1994	7.50%
Midland[1,2]	12/31/2019	9.86%	4.06%	5.10%	N/A	1/1/1995	7.50%
Odessa[1]	12/31/2020	16.90%	9.81%	7.12%	10.50%	N/A	7.50%
Orange	12/31/2020	13.25%	8.27%	6.95%	6.88%	1/1/1995	7.75%
Paris	12/31/2020	10.37%	6.61%	4.78%	5.75%	1/1/1995	7.25%
Plainview[2]	12/31/2019	20.77%	9.67%	6.43%	5.28%	1/1/1995	7.50%
Port Arthur	12/31/2020	11.81%	7.81%	7.84%	7.48%	1/1/1995	7.50%
San Angelo	12/31/2020	10.51%	7.38%	7.50%	7.62%	1/1/1995	7.80%
San Benito[1]	9/30/2020	4.16%	5.51%	4.54%	N/A	1/1/2006	7.50%
Sweetwater	12/31/2020	11.18%	7.26%	6.78%	7.99%	1/1/1995	8.00%
Temple[1]	9/30/2020	10.02%	7.22%	6.87%	N/A	12/30/2001	7.75%
Texarkana	12/31/2020	15.44%	9.29%	7.63%	8.12%	1/1/1995	7.60%

Net Investment Rates of Return by System

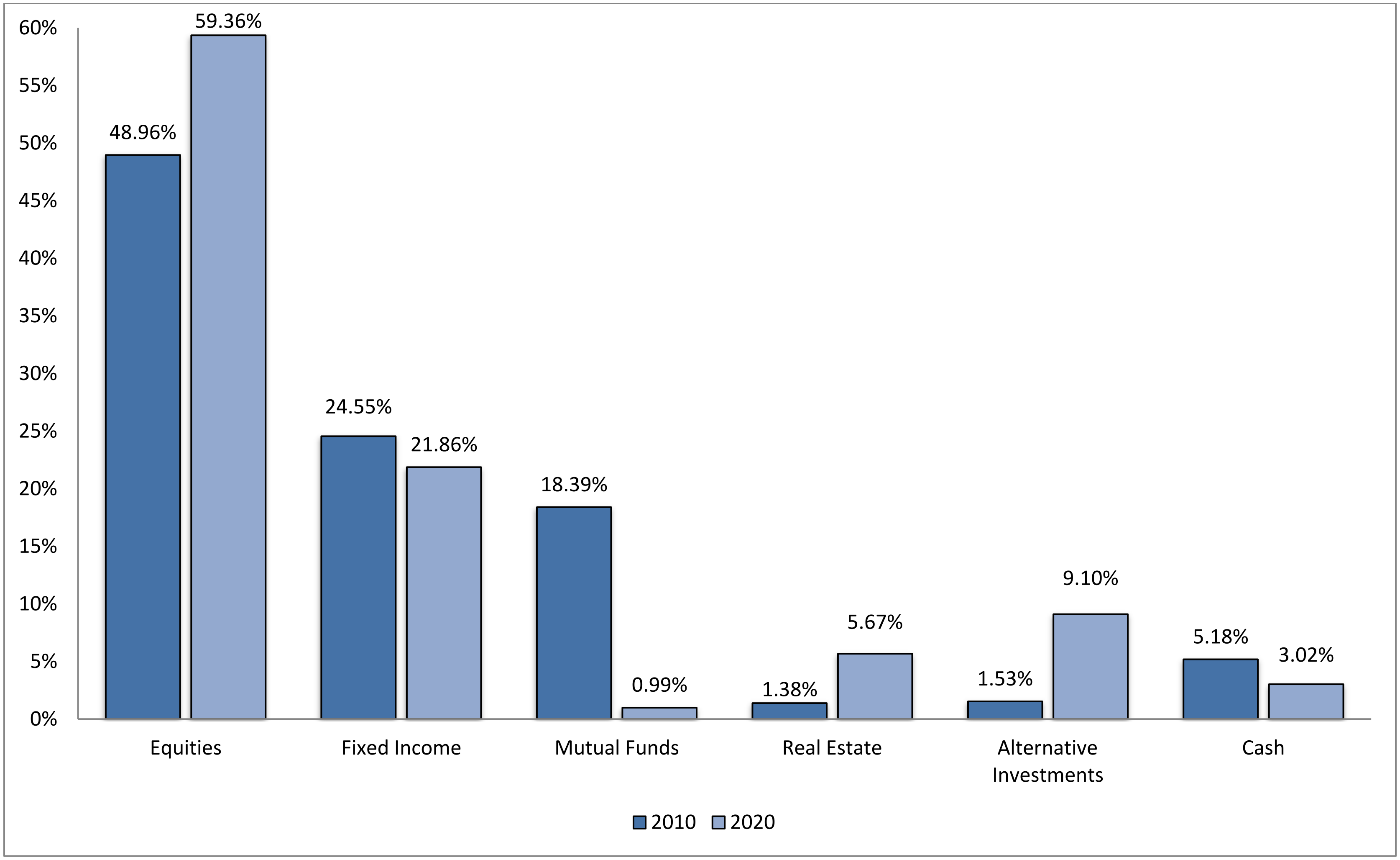
System	Effective Date	1-Year	3-Year	10-Year	30-Year/Oldest Available %	30-Year/Oldest Available Date	Assumed Rate of Return
Texas City	12/31/2020	10.58%	7.05%	6.43%	5.93%	1/1/2007	7.50%
The Woodlands[3]	12/31/2020	17.25%	9.50%	N/A	6.89%	1/1/2015	7.00%
Travis County ESD #6	12/31/2020	15.51%	9.67%	8.00%	8.08%	1/1/2009	7.00%
Tyler	12/31/2020	13.47%	8.06%	7.65%	7.53%	1/1/1995	7.25%
University Park[2]	12/31/2019	19.05%	7.75%	6.83%	6.21%	1/1/1995	7.50%
Waxahachie	9/30/2020	7.82%	6.45%	6.78%	5.76%	10/1/1994	7.00%
Weslaco	9/30/2020	2.45%	4.00%	5.42%	4.95%	10/1/1994	7.25%
Wichita Falls	12/31/2020	15.05%	9.54%	7.90%	7.79%	1/1/1995	7.75%
	Median:	**11.18%**	**7.60%**	**6.92%**	**6.94%**	**N/A**	**7.50%**
	Average:	**11.83%**	**7.76%**	**6.94%**	**7.07%**	**N/A**	**7.44%**

[1] The plan did not provide the PRB with a 30-year/oldest available rate of return in its latest PRB-1000 report.

[2] The plan has not reported FY 2020 returns as of this time and the shown 2019 numbers are not included in the Median and Average calculations.

[3] The plan was less than 10 years old as of the end of FY 2020, thus it does not have annualized rolling rate of return data for 10 or more years.

Asset Allocation for TLFFRA Systems
2010 vs. 2020 (% of Total Assets)



*While mutual funds are not an asset class, the PRB did not receive sufficient information from certain retirement systems to identify the asset classes for investments reported as mutual funds.

Benefits

Benefit Summaries

Systems	Tier	Eligible Members	Eligibility Requirements (Age/YCS)	Benefit Formula	Final Average Salary	COLA	Retirement Benefit Options	Social Security
Abilene	Tier 1	Hired on/before 2/1/2019	50/20	Years of Credited Service x 3% x Final Average Salary + YCS x 3% for YCS btwn 20 and 21.5 + $80 x YCS > 21.5	Highest 36 months	None	Retro DROP	No
	Tier 2	Hired after 2/1/2019	53/20	Years of Credited Service x 2.75% x Final Average Salary + $80 per month for YCS > 20	Highest 60 months	None	Retro DROP	No
Amarillo	Tier 1	Hired before 1/1/2018	50/20	Years of Credited Service x 3.45% x Final Average Salary	Highest 60 months, but not less than highest 36 months as of 12/31/2017	None	Retro DROP	No
	Tier 2	Hired on/after 1/1/2018	50/20	Years of Credited Service <= 20 x 3.25% x Final Average Salary + 2.5% x Final Average Salary x YCS >20	Highest 60 months	None	Retro DROP	No
Atlanta	Tier 1	Hired before 10/1/2014	50/20	61% x Final Average Salary, min $1,000 + $93 x YCS > 20	Highest 60 months	None	Retro DROP	No
	Tier 2	Hired on/after 10/1/2014	55/20	61% x Final Average Salary, min $1,000 + $93 x YCS > 20	Highest 60 months	None	Retro DROP	No
Beaumont		All	50/20	63.15% x Final Average Salary + $123 x YCS > 20	Highest 60 months	Ad hoc, as determined by actuary based on financial condition of the fund.	Retro DROP	No
Big Spring		All	50/20	Years of Credited Service x 2.55% x Final Average Salary	Greater of: highest 60 months or 3-year avg as of 12/31/06	None	Forward DROP or Partial Lump Sum Option.	No
Brownwood		All	50/20	50% x Final Average Salary + $54.50 x YCS > 20	Highest 60 consecutive months	None	Forward or Retro DROP	Yes
Cleburne	Tier 1	Hired before 9/1/2020	50/20	(3.1% x Final Average Salary x Years of Credited Service (max 20ycs)) + (2% x Final Avg Salary x YCS (above 20 years). Cap of 92%	Final 84 Months	None	Retro DROP	No
	Tier 2	Hired on or after 9/1/2020	50/20	(2.9% x Final Average Salary x Years of Credited Service (max 20ycs)) + (1.9% x Final Avg Salary x YCS (above 20 years). Cap of 92%	Final 84 months	None	Retro DROP	No
Conroe		All	50/20	67.5% x Final Average Salary + $69 x YCS > 20 before 12/31/2010 and $110 x YCS > 20 earned after 12/31/2010	Highest 60 months	Future COLAs to be placed on ballot for firefighter election at discretion of the Board.	Forward DROP	Yes

Benefit Summaries

Systems	Tier	Eligible Members	Eligibility Requirements (Age/YCS)	Benefit Formula	Final Average Salary	COLA	Retirement Benefit Options	Social Security
Corpus Christi		All	54/20	The greater of: 52% x Final Average Salary + $150 x Years of Credited Service or $137 x YCS	Highest 60 months	Ad hoc based on financial condition of the retirement system shown in actuarial valuation.	Retro DROP	No
Corsicana		All	50/20	53% x Final Average Salary + $90 x YCS > 20	Highest 60 months	None	Retro DROP	Yes
Denison		All	50/20	Years of Credited Service x 2.65% x Final Average Salary	Highest consecutive 24 months	None	None	No
Denton		All	50/20	Years of Credited Service x 2.59% x Final Average Salary	Highest 36 months	Ad hoc based on financial condition of the fund as determined by the fund actuary.	Retro DROP	Yes
Galveston		All	50/20	Years of Credited Service x 3% x Final Average Salary	Highest 60 months	0.6% compounded, not to exceed CPI-U increase, only applies to members receiving benefits as of 3/1/2018.	Retro DROP	No
Greenville		All	50/20	Years of Credited Service <= 20 x 3.15% x Final Average Salary + $63 x YCS > 20	Highest 36 months	None	Retro DROP	No
Harlingen	Tier 1	Hired on or before 4/1/2019	50/20	65.5% x Final Average Salary + $65/month for YCS > 20 on or before 4/30/2019 and $50/month for each YCS > 20 (max 30 YCS) after 4/30/2019	Highest 60 months	None	Forward or Retro DROP	No
	Tier 2	Hired after 4/1/2019	50/20	2.50% x Years of Service x Final Average Salary	Highest 60 months	None	Forward or Retro DROP	No
Irving	Tier 1	All	50/20	Years of Credited Service x 3.175% x Final Average Salary for YCS <= 21 + $60 x YCS > 21	Highest 60 months	Option for a Service Retirement Benefit with COLA.	Retro DROP, Interest credit: 3.3%, Mandated withdrawal from DROP upon retirement after 1/1/2021 and interest paid on remaining DROP balance until retiree reaches age 70 then interest credit is 0% with no withdrawal mandate. Employee contributions credited.	No
	Tier 2	All	54/20	Years of Credited Service x 3% x Final Average Salary for YCS <= 21	Highest 60 months	Option for a Service Retirement Benefit with COLA.	Retro DROP, no employee contributions credited, no interest	No

Benefit Summaries

Systems	Tier	Eligible Members	Eligibility Requirements (Age/YCS)	Benefit Formula	Final Average Salary	COLA	Retirement Benefit Options	Social Security
Killeen		All	55/20 or 50/25	58.4% x Final Average Salary + 2.275% x Final Average Salary for YCS > 20	Highest 60 months	None	Retro DROP	Yes
Laredo		All	50/20	Years of Credited Service x 3.03% x Final Average Salary	Highest 78 consecutive biweekly pay periods within final 104 biweekly pay periods	Ad hoc based on financial condition of the system as determined by the actuary.	Retro DROP. Plan offers an increasing payment form option.	No
Longview	Tier 1	Hired before 1/1/2016	50/20	80% x Final Average Salary + $80 x YCS > 20	Members with >= 20 YCS as of 1/22/2013: highest consecutive 78 biweekly pay periods; members with < 20 YCS as of 1/22/2013: highest consecutive 130 biweekly pay periods	None	Retro DROP	No
	Tier 2	Hired on/after 1/1/2016	55/20	Years of Credited Service (max 25 years) x 3.0% x Final Average Salary + $80 x YCS > 25	Highest consecutive 130 biweekly pay periods	None	Retro DROP	No
Lubbock		All	50/20	68.92% x Final Average Salary + $335.05 x YCS > 20	Final consecutive 104 biweekly pay periods	None	Retro DROP or early Retro DROP	No
Lufkin	Tier 1	Hired before 9/1/2005	50/10	Years of Credited Service <= 20 x 3.35% x Final Average Salary + $66 x YCS > 20	Highest consecutive 60 months	None	Forward or Retro DROP	No
	Tier 2	Hired btwn 9/1/2005 and 6/24/2013	50/15	Years of Credited Service <= 20 x 3.35% x Final Average Salary + $66 x YCS > 20	Highest consecutive 60 months	None	Forward or Retro DROP	No
	Tier 3	Hired btwn 6/25/2013 and 1/4/2016	52/20	Years of Credited Service <= 20 x 3.35% x Final Average Salary + $66 x YCS > 20	Highest consecutive 60 months	None	Forward or Retro DROP	No
	Tier 4	Hired on/after 1/5/2016	55/20	Years of Credited Service <= 20 x 3.35% x Final Average Salary + $66 x YCS > 20	Highest consecutive 60 months	None	Forward or Retro DROP	No
Marshall	Tier 1	Hired before 1/1/2019	50/10	Years of Credited Service <= 20 x 3.125% x Final Average Salary + $65 x YCS > 20	Final 36 months	None	Forward DROP	No
	Tier 2	Hired on/after 1/1/2019	53/20	Years of Credited Service <= 20 x 3.125% x Final Average Salary + $65 x YCS > 20	Final 36 months	None	Forward DROP	No
McAllen		All	50/20	Years of Credited Service x 2.9% x Final Average Salary + (greater of: 2.9% x FAS or $58 x YCS 21 & 22) + $58 x YCS > 22	Highest 60 months	None	Retro DROP	Yes

Benefit Summaries

Systems	Tier	Eligible Members	Eligibility Requirements (Age/YCS)	Benefit Formula	Final Average Salary	COLA	Retirement Benefit Options	Social Security
Midland		All	50/20 or 25 YCS	75% x Final Average Salary + $80 x YCS > 20 + $500/month supplemental benefit after reaching 50/20	Highest 60 Months	2% simple, after receiving benefits for 5 yrs provided fund's investment performance does not fall below rolling audited 5-yr avg of 8.25%.	4 DROP Options: Forward DROP or Reverse DROP (a partial lump sum option) or Retro DROP or Combined DROP (Forward and Retro DROP)	No
Odessa	Tier 1	Hired before 1/1/2017	50/20	**Frozen Benefit**: Final Average Salary x 3.6% x YCS as of 12/31/16, <= 20 + $107 x YCS > 20 as of 12/31/16 + supplemental benefit ($500 month for reaching 50/20 as of 12/31/16) **Service Retirement Benefit:** Final Average Salary x 2.88% x YCS after 12/31/2016, <=25	For benefits accrued before 1/1/17: Highest 5 years within final 10 years as of 12/31/16; for benefits accrued on/after 1/1/17: Final 5 years	Automatic Fixed Dollar or Fixed Percentage. Ad hoc for members who do not meet requirements for automatic COLA 1% of monthly frozen benefit.	3 DROP Options: Forward DROP for members who met eligibility requirements on/before before 12/31//16.	Yes
	Tier 2	Hired on/after 1/1/2017	55/25	Final Average Salary x 2.88% x YCS after 12/31/2016, <=25	Final 5 years	None	None	Yes
Orange		All	50/20	Years of Credited Service <= 20 x 2.60% x Final Average Salary + $91 x YCS > 20	Highest 60 months	None	Retro DROP	Yes
Paris		All	55/20 or Rule of 80 with 20 YCS	Years of Credited Service x $94, min $500/month	Highest 5 years	None	Retro DROP	No
Plainview	Tier 1	Hired before 10/1/1994	50/20	63.75% x Final Average Salary **+** $78 x YCS > 20 (max 15 years)	Highest 60 months	None	Retro DROP	No
	Tier 2	Hired on/after 10/1/1994 but before 1/1/2018	53/20	63.75% x Final Average Salary **+** $78 x YCS > 20 (max 15 years)	Highest 60 months	None	Retro DROP	No
	Tier 3	Hired on or After 1/1/2018	54	(2.5% x Final Average Salary x YCS (<= 20 years)) + (2.8% x Final Average Salary x YCS > 20 <= 25) + $78 x YCS > 20	Highest 60 months	None	Retro DROP	No
Port Arthur		All	50/20	Years of Credited Service <= 20 x 2.7% x Final Average Salary + $125 x YCS > 20	Highest 60 months	None	Retro DROP	No
San Angelo	Tier 1	Hired before 5/1/1986	50/20	67.5% x Final Average Salary + $230 x YCS > 20	Highest 48 months	1.2% compounded after age 61.	Forward DROP or Retro DROP	No
	Tier 2	Hired on/after 5/1/1986	50/20	66.0% x Final Average Salary + $230 x YCS > 20	Highest 48 months	1.2% compounded after age 61.	Forward DROP or Retro DROP	No

Benefit Summaries

Systems	Tier	Eligible Members	Eligibility Requirements (Age/YCS)	Benefit Formula	Final Average Salary	COLA	Retirement Benefit Options	Social Security
San Benito		All	52/20	45.0% x Final Average Salary + $70 x YCS > 20	Highest 60 months	None	Partial Lump Sum Option of up to 24 months of benefit	Yes
Sweetwater	Tier 1	Hired before 8/1/2017	50/20	Years of Credited Service <= 20 x 3.95% x Final Average Salary + $50 x YCS > 20	Highest consecutive 72 pay periods	None	Retro DROP	No
	Tier 2	Hired on/after 8/1/2017	50/20	Years of Credited Service <= 20 x 3.5% x Final Average Salary + $50 x YCS > 20	Highest consecutive 120 pay periods	None	Retro DROP	No
Temple		All	50/20	65.75% x Final Average Salary + $98 x YCS > 20	Highest 60 months	None	Retro DROP	No
Texarkana		All	50/20	Years of Credited Service x 3.09% x Final Average Salary	Highest 36 months	None	Retro DROP	No
Texas City	Tier 1	Hired before 1/1/1996	50/20	(Years of Credited Service before 1/1/2006 x 3.5% x Final Average Salary) + (Years of Credited Service on/after 1/1/2006 x 3.0% x Final Average Salary) + $116 x YCS > 20	Final 60 Months	An ad hoc based on financial condition of the fund as determined by the actuary.	Retro DROP	No
	Tier 2	Hired btwn 1/1/1996 and 12/31/2005	53/20	Years of Credited Service x 3.0% x Final Average Salary (for YCS < 20) + $116 x YCS > 20	Final 60 Months	An ad hoc based on financial condition of the fund as determined by the actuary.	Retro DROP	No
	Tier 3	Hired on/after 1/1/2006	55/20	Years of Credited Service x 3.0% x Final Average Salary (for YCS < 20) + $116/month for YCS > 20	Final 60 Months	An ad hoc based on financial condition of the fund as determined by the actuary	Retro DROP	No
The Woodlands		Hired upon the effective date 1/1/2015, unless 36 years old or older, hired after the effective date and is under the age of 36.	52/20	Final Average Salary x 2.5% x 20 + Final Average Salary x 3.0% x YCS > 20	Highest 36 months within 120 months	None	Forward DROP	Yes
Travis County ESD #6		All	55/20	Years of Credited Service <= 20 x 3.00% x Final Average Salary + 2.15% x Final Average Salary x YCS > 20	Highest 60 Months	None	None	No

Benefit Summaries

Systems	Tier	Eligible Members	Eligibility Requirements (Age/YCS)	Benefit Formula	Final Average Salary	COLA	Retirement Benefit Options	Social Security
Tyler	Tier 1	Members with >= 20 YCS on 1/1/2005	55/20 or 50/25	71.50% x Final Average Salary + $113 x YCS > 20	Highest 60 Months	Ad hoc based on financial condition of the fund as determined by the actuary.	Retro DROP or Partial Lump Sum Option of up to 48 months of benefit.	No
	Tier 2	Members with < 20 YCS on 1/1/2005	55/20 or 50/25	71.50% x Final Average Salary + $113 x YCS > 20	Highest 60 Months	Ad hoc based on financial condition of the fund as determined by the actuary.	Retro DROP or Partial Lump Sum Option of up to 48 months of benefit.	No
University Park		Hired before 9/1/2017	50/20	60% x Final Average Salary for YCS <=20 + $80 x YCS > 20	Highest 60 Months	None	Retro DROP	Yes
Waxahachie	Tier 1	Hired before 7/1/2005	50/20	Years of Credited Service x 2.6% x Final Average Salary + 1.3% for YCS > 27	Highest 60 Months	Ad hoc based on financial condition of the fund as determined by the actuary.	Retro DROP	Yes
	Tier 2	Hired on/after 7/1/2005	55/20	Years of Credited Service x 2.6% x Final Average Salary + 1.3% for YCS > 27	Highest 60 Months	Ad hoc based on financial condition of the fund as determined by the actuary.	Retro DROP	Yes
Weslaco		All	55/20	53% x Final Average Salary (min $1000) + $132 month for YCS > 20	Highest 60 Months	None	Partial Lump Sum Option of up to 24 months of benefit.	Yes
Wichita Falls	Tier 1	Hired before 4/20/2016	50/20	Years of Credited Service x 2.55% x Final Average Salary (maximum of $100,000 per year)	Highest 130 consectutive pay periods	None	Retro DROP	Yes
	Tier 2	Hired on/after 4/20/2016	55/20	Years of Credited Service x 2.50% x Final Average Salary (maximum of $100,000 per year)	Highest 130 consecutive pay periods	Member may elect to receive actuarially equivalent benefit that increases annually at either 0.5% or 1% per year.	Retro DROP	Yes

DROP Features

System	Type of DROP	Interest Credit	DROP Maximum Duration	COLA Credited	Employee Contribution Credited	Spouse Continue After Death	Withdraw (how often, min/max)	Comments
Abilene	Retro	None	3 years	No	Yes	Yes	1-4 equal annual installments.	
Amarillo	Retro	None	Later of: the date participant meets eligibility reqs. for DROP, or 2 years prior to retirement	No	Yes	Yes	Max 5 payments within 36 months of date of termination of employment.	
Atlanta	Retro	None	2 years	No	Yes	Yes	Lump sum payment or max 5 payments within 36 months of date of termination of employment.	
Beaumont	Retro	None	5 Year or 7 Year	No	Yes	Yes	Lump sum payment or max 5 payments within 36 months of date of termination of employment.	
	PROP	Yes; interest rate of 3% per year effective 1/1/2021. PROP can no longer be participated in after 12/31/2020	Until member reaches age 70.5	No	No	Yes	Annual payments over three years.	Member who elects a Retro DROP on/after 1/1/06 can elect to leave all/part of lump sum in fund. On/after 1/1/10, a retiring/retired member can elect to defer receipt of monthly benefit and have it accumulate in PROP. May accumulate until age 70.
Big Spring	Forward	Option 1: 4% compounded annually	Option 1: 5 years	No	Yes	Yes	The sum of i) monthly benefit amount times the number of months of the DROP period, and ii) total of any member contributions made during the DROP period. Must be paid within 3 years in no more than 3 installments.	
	Immediate	None	N/A (reduced benefit and lump sum elected upon retirement)	No	No	No	Reduced annuity and a lump sum equal to 24 times the reduced benefit. Must be paid over 3 years in no more than 3 installments.	
Brownwood	Forward	None	2 years	Yes (see comment)	Yes	Yes	Lump sum payment or payment in no more than 13 installments with the first installment not later than 13 months after leaving DROP and final installment not more than 121 months after leaving DROP.	Member may participate in DROP at most two times. On COLA, 2008 Plan Design states: "Any increases to retiree benefits will be reflected in the benefits accumulated within the DROP

DROP Features

System	Type of DROP	Interest Credit	DROP Maximum Duration	COLA Credited	Employee Contribution Credited	Spouse Continue After Death	Withdraw (how often, min/max)	Comments
Brownwood (cont.)	Retro	None	2 years	No	Yes	Yes	Lump sum payment or max 5 payments within 36 months of date of termination of employment.	
Cleburne	Retro	None	60 months for employees hired before 9/1/2020; 36 months for employees hired on or after 9/1/2020	Yes	Yes	Yes	Lump sum payment or max 3 payments within 26 months of date of termination of employment.	
Conroe	Forward	None	7 years	No	Yes	Yes	Lump sum payment or max 5 payments within 36 months of date of termination of employment.	
Corpus Christi	Retro	None	3 years with 54/20 or 4 years with 56/22	No	Yes	Yes	Lump sum payment or max 5 payments within 36 months of date of termination of employment.	
Corsicana	Retro	None	3 years	No	Yes	Yes	Lump sum payment or max 5 payments within 36 months of date of termination of employment.	
Denison	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No DROP offered.
Denton	Retro	None	4 years	No	Yes	Yes	Lump sum payment or max 5 payments within 36 months of date of termination of employment.	
Galveston	Retro	None	3 years	No	Yes	Yes	Lump sum payment or max 5 payments within 36 months of date of termination of employment.	
Greenville	Retro	None	2 years	No	Yes	Yes	Lump sum payment.	
Harlingen	Forward	None credited after 8/1/2006	3 years	No	Yes, credited to firefighter's special DROP account	Yes	Lump sum payment or payment in no more than 3 installments with the first installment not more than 13 months after leaving DROP and final installment not more than 37 months after leaving DROP.	
	Retro	None	N/A: reduced benefit and lump sum elected upon retirement	No	No	Yes	Monthly benefit equals 84 percent of the regular monthly amount payable for service retirement. In addition, member receives a lump sum payment upon retirement, equal to 24 times monthly reduced benefit.	Election of Retro DROP precludes election of DROP.

DROP Features

System	Type of DROP	Interest Credit	DROP Maximum Duration	COLA Credited	Employee Contribution Credited	Spouse Continue After Death	Withdraw (how often, min/max)	Comments
Irving	Retro	3.3% interest credit, no interest after retiree reaches age 70. No interest credited for members hired on or after January 1, 2021.	108 months	No	Yes for members hired before 1/1/2021.	Yes	Mandate withdrawal of DROP upon retirement for those who retire after 1/1/2021 and pay interest on remaining DROP balance until retiree reaches age 70- then interest goes to 0% with no mandate to withdraw.	
Killeen	Retro	None	2 years	No	Yes	Yes	Lump sum payment or max 5 payments within 36 months of date of termination of employment.	
Laredo	Retro	None	2 years	No	Yes	Yes	Lump sum payment or max 5 payments within 36 months of date of termination of employment.	
Longview	Retro	None	3 years	No	Yes	Yes	Lump sum payment.	
Lubbock	Retro	None	2 years	No	Yes	Yes	Lump sum payment or max 5 payments within 36 months of date of termination of employment.	
	Early Retro	None	2 years	No	Yes	Yes	Lump sum payment or max 5 payments within 36 months of date of termination of employment.	
Lufkin	Forward	None	6 years	No	Yes, credited to firefighter's retirement account	Yes	Lump sum payment.	
	Retro	None	3 years	No	Yes	Yes	Lump sum payment.	Election of Retro DROP precludes election of DROP.
Marshall	Forward	None	3 years	No	Yes	Yes	Lump sum payment.	
McAllen	Retro	None	2 years	No	Yes	N/A	Lump sum payment.	
Midland	Forward	4% compounded annually; no interest after conclusion of DROP period	3 years	No	Yes	Yes	No more than 3 installments within 3 years.	
	Reverse	None	N/A: reduced benefit and lump sum elected upon retirement	No	No	N/A	No more than 3 installments within 3 years.	

DROP Features

System	Type of DROP	Interest Credit	DROP Maximum Duration	COLA Credited	Employee Contribution Credited	Spouse Continue After Death	Withdraw (how often, min/max)	Comments
Midland (cont.)	Retro	4% compounded annually; no interest after conclusion of DROP period	3 years	No	Yes	Yes	No more than 3 installments within 3 years.	
	Combined Forward & Retro	4% compounded annually; no interest after conclusion of DROP period	Must retire within 3 years of Combined DROP	No	Yes	Yes	No more than 3 installments within 3 years.	
Odessa	Forward *closed to members who did not meet eligibility requirement on/before 12/31/16.	4% compounded annually for DROP elections made before 1/1/17; None for DROP elections made on/after 1/1/17	3 years	No	Yes	Yes	1-5 payments over a 5 year period DROP shall be fully paid at earliest of 5th payment or end of 5-year period.	
Orange	Retro	None	3 years	No	Yes	Yes	Lump sum or max 5 payments within 36 months of date of termination of employment.	
Paris	Retro	None	2 years	No	Yes	No	Lump sum payment.	
Plainview	Retro	None	2 years with 50/20 if hired prior to 10/1/94; 2 years with 53/20 if hired on or after 10/1/94	No	Yes	Yes	Lump sum or max 5 payments within 36 months of date of termination of employment.	
Port Arthur	Retro	None	3 years	No	Yes	Yes	Lump sum payment.	
San Angelo	Forward	6% annual rate; no interest after date of employment termination	4 years	No	Yes	Yes	Lump sum payment or maximum of 3 payments within 25 months of date of termination of employment.	Election of the Forward DROP precludes election of the Retro DROP.
	Retro	6% annual rate; no interest after date of employment termination	4 years	No	Yes	Yes	Lump sum payment or maximum of 3 payments within 25 months of date of termination of employment.	
San Benito	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No DROP offered.
Sweetwater	Retro	None	2 years	No	No	Yes	Lump sum payment.	
Temple	Retro	None	2 years	No	Yes	Yes	Lump sum payment or maximum of 5 payments within 36 months of the firefighter's date of termination of employment.	

DROP Features

System	Type of DROP	Interest Credit	DROP Maximum Duration	COLA Credited	Employee Contribution Credited	Spouse Continue After Death	Withdraw (how often, min/max)	Comments
Texarkana	Retro	None	3 years	Yes (see note)	Yes	Yes	Lump sum payment or maximum of 5 payments within 36 months of the firefighter's date of termination of employment.	Ad hoc benefit increase for members electing a Retro DROP benefit calculation date prior to 10/1/2014. Additional ad hoc benefit increase if Retro DROP benefit calculation date is prior to 11/1/2012.
Texas City	Retro	None	30 months	Yes	Yes	Yes	Lump sum payment or maximum of 5 payments within 36 months of the firefighter's date of termination of employment.	
The Woodlands	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No DROP offered.
Travis Co. ESD #6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No DROP offered.
Tyler	Retro	None	3 years with 55/20 or 5 years with 57/22	No	Yes	Yes	Lump sum payment or maximum of 5 payments within 36 months of the firefighter's date of termination of employment.	
University Park	Retro	None	2 years	No	Yes	Yes	Lump sum payment or maximum of 5 payments within 36 months of the firefighter's date of termination of employment.	
Waxahachie	Retro	None	1 year at 55/21 or 2 years at 55/22 or 3 years at 55/23	No	Yes	Yes	Lump sum payment.	
Weslaco	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No DROP offered.
Wichita Falls	Retro	None	2 years	No	No	N/A	Receipt of lump sum must be completed during the first four calendar years of retirement.	

Directory

System Contact Information

System	Chairperson	Address	City	ZIP Code	Phone	Website
Paid and Part-Paid Plans						
Abilene	Baker Bryant	102 Cedar St. Ste 100	Abilene	79601	(325) 665-8447	www.abilenefirepension.com
Amarillo	Brandon Mason	PO Box 1971	Amarillo	79105	(806) 378-3040	www.afrrf.com
Atlanta	Ricky Draper	PO Box 1030	Atlanta	75551	(903) 796-2303	www.atlantatxfirepension.org
Beaumont	Brian Hebert	1515 Cornerstone Ct	Beaumont	77706	(409) 866-1526	www.beaumontfirepension.com
Big Spring	Chanley Delk	310 Nolan	Big Spring	79720	(432) 263-4036	www.bigspringfire.com
Brownwood	Walter Middleton	PO Box 1389	Brownwood	76804	(325) 646-5775	www.brownwoodtexas.gov
Cleburne	John Harrell	114 W Wardville	Cleburne	76033	(817) 645-0965	www.ci.cleburne.tx.us
Conroe	Steve Cottar	P.O. Box 497	Conroe	77305	(936) 756-5917	www.conroefirepension.com
Corpus Christi	Javier Jasso	711 N Carancahua Ste 724	Corpus Christi	78401	(361) 882-1486	www.ccfirepension.com
Corsicana	Kevin Putman	200 N 12th St	Corsicana	75110	(903) 654-4815	www.cityofcorsicana.com
Denison	Landon Lindsey	PO Box 347	Denison	75021	(903) 465-2720	www.cityofdenison.com
Denton	Derek Oswald	PO Box 2375	Denton	76202	(940) 349-8200	www.dentonfirepension.com
Galveston	Travis Hill	6511 Stewart Rd Unit 4 B	Galveston	77551	(409) 740-0881	www.galvestonfirepension.com
Greenville	Derek Sheets	PO Box 1049	Greenville	75403	(903) 457-2940	www.ci.greenville.tx.us
Harlingen	Mario Alvarado	PO Box 2207	Harlingen	78551	(956) 216-5704	www.harlingenfirepension.com
Irving	David Florance	845 W Irving Blvd	Irving	75060	(972) 721-4858	www.irvingfirepension.com
Killeen	Jerry Sutton	PO Box 10849	Killeen	76547	(254) 931-0338	www.ci.killeen.tx.us
Laredo	Alberto Chapa	PO Box 3069	Laredo	78044	(956) 717-8018	www.laredofire.com
Longview	Kolby Beckham	411 N Fredonia St Ste 110	Longview	75601	(903) 212-4357	www.longviewfirepension.com
Lubbock	Cade Holt	4223 85th Street	Lubbock	79423	(806) 762-1590	www.lubbockfirepensionfund.com
Lufkin	Levi Cole	PO Box 190	Lufkin	75902	(936) 630-0555	www.lufkinfirepension.com
Marshall	Joseph Hudson	601 S Grove	Marshall	75670	(903) 935-4526	www.marshalltexas.net/Departments/Fire
McAllen	Manuel Vargas	201 N 21st St	McAllen	78501	(956) 681-2500	www.mcallen.net
Midland	David Stacy	105 North G, Suite 201	Midland	79701	(432) 685-7213	www.midlandfrrf.com
Odessa	Travis Jones	1921 E 37th St	Odessa	79762	(432) 614-2491	www.odessafire.com
Orange	Donald Gravett	PO Box 520	Orange	77631	(409) 781-2192	www.orangetexas.net
Paris	Bob Rast	1444 N Main	Paris	75460	(903) 784-9225	www.paristexas.gov
Plainview	Kevin Whisenant	911 Quincy St	Plainview	79072	(806) 291-1247	www.ci.plainview.tx.us
Port Arthur	Mercer Nessour	PO Box 1089	Port Arthur	77641	(409) 983-8734	www.portarthurfirepension.com
San Angelo	Cory Word	306 W 1st St	San Angelo	76903	(325) 657-4355	www.safiredept.com

System Contact Information

System	Chairperson	Address	City	ZIP Code	Phone	Website
Paid and Part-Paid Plans (Continued)						
San Benito	Caleb Silva	201 S Sam Houston Blvd	San Benito	78586	(956) 792-2883	www.cityofsanbenito.com
Sweetwater	Brad Payne	PO Box 588	Sweetwater	79556	(409) 828-0425	www.sweetwaterfirepension.com
Temple	Daniel Meyer	PO Box 6101	Temple	76503	(254) 774-5834	www.templefirepension.com
Texarkana	Tim Martin	PO Box 1967	Texarkana	75504	(409) 828-0425	www.texarkanafirepension.com
Texas City	Joe Tumbleson	1801 9th Ave N	Texas City	77590	(719) 643-5714	www.texas-city-tx.org
The Woodlands	Doug Adams	P.O. Box 497	Conroe	77305	(936) 537-4475	www.twfrs.org
Travis County ESD #6	Scott Falltrick	124 White Fox Cove	Round Rock	78664	(512) 663-6804	www.tcesd6pension.com
Tyler	Darren McCawley	1718 W Houston St	Tyler	75702	(903) 535-0005	www.cityoftyler.org
University Park	Dustin Lewis	3800 University Blvd	Dallas	75205	(214) 987-5380	www.uptexas.org
Waxahachie	Gary Myers	407 Water St	Waxahachie	75168	(972) 937-1200	www.waxahachie.com
Weslaco	Jaime Hernandez	PO Box 8188	Weslaco	78599	(409) 828-0425	www.weslacofdpension.com
Wichita Falls	Ray Wood	624 Indiana Ave Ste 305	Wichita Falls	76301	(940) 761-7901	www.wichitafallsfirepension.com

System	Chairperson	Address	City	ZIP Code	Phone	Website
Volunteer Plans						
Arlington	Jeff Williams	101 W Abram St 3rd Floor	Arlington	76010	(817) 459-6403	www.arlington-tx.gov/fire
Bay City	Robert Nelson	1901 5th St	Bay City	77414	(979) 245-2137	www.cityofbaycity.org
Beeville	Frank Dominguez	400 N Washington	Beeville	78102	(361) 358-4641	www.beevilletx.org/fire_department.php
Belton	Marion Grayson	PO Box 120	Belton	76513	(254) 933-5817	www.ci.belton.tx.us
Benavides	Sijfredo Flores	PO Box R	Benavides	78341	(361) 256-3283	N/A
Bowie	Bill Miller	203 Walnut St	Bowie	76230	(940) 872-1114	www.cityofbowietx.com/77/Fire-Department
Bronte	Paul Gohman	PO Box 370	Bronte	76933	(915) 473-3501	www.brontetexas.org
Caddo Mills	Dwayne Pattison	PO Box 490 2313 Main Street	Caddo Mills	75135	(903) 527-3116	www.cityofcaddomills.com/
Canton	LouAnn Everett	PO Box 245	Canton	75103	(903) 567-2826	www.cantontx.gov/fire-department
Chillicothe	Cathy Young	PO Box 546	Chillicothe	79225	(940) 852-5211	N/A
Cisco	Tammy Douglas	109 W 6th St	Cisco	76437	(254) 442-3078	www.ciscofd.com
Clifton	Richard Spitzer	PO Box 231	Clifton	76634	(254) 675-8337	www.cityofclifton.org/page/fire-department.aspx
Cockrell Hill	Luis D. Carrera	4125 W Clarendon Dr	Dallas	75211	(214) 330-6333	www.cockrellhillfd.com
College Station	Karl Mooney	PO Box 9960	College Station	77842	(979) 764-3552	www.cstx.gov
Colorado City	Tim Boyd	PO Box 912	Colorado City	79512	(325) 728-5331	www.coloradocitytexas.org

System Contact Information

System	Chairperson	Address	City	ZIP Code	Phone	Website
Volunteer Plans (Continued)						
Comanche	Mary Boyd	114 W Central	Comanche	76442	(325) 356-2616	www.cityofcomanchetexas.net/
Commerce	Wyman Williams	1119 Alamo St	Commerce	75428	(903) 886-1100	www.commercetx.org
Cooper	Darren Braddy	91 North Side Sq	Cooper	75432	(903) 395-2217	cityofcoopertx.municipalimpact.com/
De Kalb	Lowell Walker	110 E Grizzly	De Kalb	75559	(903) 667-2410	www.dekalbtx.org/
Decatur	Martin Woodruff	PO Box 1299	Decatur	76234	(940) 627-3684	www.decaturfd.com
Donna	Rick Morales	307 S 12th St	Donna	78537	(956) 464-2121	www.cityofdonna.org/departments/fire-department
Eden	Agapito Torres	PO Box 915	Eden	76837	(325) 869-2211	www.edentexas.com
Elsa	Alonzo Perez	PO Box 422	Elsa	78543	(956) 262-2793	www.cityofelsa.net/
Ennis	Angeline Juenemann	PO Box 220	Ennis	75120	(972) 875-3473	www.ennistx.gov/
Floresville	Cecelia Gonzalez-Dippel	1120 D St	Floresville	78114	(830) 393-3105	www.floresvilletx.gov/
Franklin	Molly Hedrick	PO Box 421	Franklin	77856	(979) 828-5831	www.cityoffranklintx.com/departments/firedepartment
Gatesville	Gary Chumley	110 N 8th St	Gatesville	76528	(254) 865-8951	www.gatesvilletx.govoffice2.com
Goldthwaite	Mike McMahan	PO Box 450	Goldthwaite	76844	(325) 648-3186	https://visitgoldthwaite.com/
Granger	Trevor Cheatheam	PO Box 367	Granger	76530	(512) 859-2755	www.cityofgranger.org/Fire_Department.html
Grapeland	Balis Dailey	PO Box 567	Grapeland	75844	(936) 687-2115	www.grapeland.com
Hamlin	E.C. Ice III	PO Box 157	Hamlin	79520	(325) 576-2711	N/A
Hemphill	Robert Hamilton	PO Box 788	Hemphill	75948	(409) 787-2251	www.hemphill.govoffice2.com
Henderson	John Fullen	400 W Main St	Henderson	75652	(903) 657-6551	www.hendersontx.us
Henrietta	Howard Raeke	PO Box 491	Henrietta	76365	(940) 538-4316	www.cityofhenrietta.com/departments/
Hico	Eddie Needham	PO Box 533	Hico	76457	(254) 796-4620	www.hico-tx.com/
Hughes Springs	James C. Samples	PO Box 805	Hughes Springs	75656	(903) 639-7519	www.hughesspringstxusa.com/fire.html
Jacksboro	Alton Morris	112 W Belknap St	Jacksboro	76458	(940) 567-6321	www.cityofjacksboro.com
Jacksonville	Randy Gorham	PO Box 1390	Jacksonville	75766	(903) 586-3510	www.jacksonville-texas.com
Junction	Russell Hammonds	730 Main St	Junction	76849	(325) 446-2622	www.cityofjunction.com/
Karnes City	Leroy T. Skloss	314 E Calvert Ave	Karnes City	78118	(830) 780-3422	www.kcvfd.org
Kaufman	Jeff Jordan	209 S Washington St	Kaufman	75142	(972) 932-2216	www.kaufmantx.org
Kenedy	James Sutton	303 W Main St	Kenedy	78119	(830) 583-2230	cityofkenedy.org

System Contact Information

System	Chairperson	Address	City	ZIP Code	Phone	Website
Volunteer Plans (Continued)						
Lampasas	Misti Talbert	408 S. Main	Lampasas	76550	(512) 556-3446	www.lampasas.org/
Leonard	Steven Bolin	PO Box 1270	Leonard	75452	(903) 587-3334	www.cityofleonard.net
Los Fresnos	Polo Narvaez	200 N Brazil	Los Fresnos	78566	(956) 371-2870	N/A
Mason	Brent Hinckley	PO Box 68	Mason	76856	(325) 347-6449	www.mason.tx.citygovt.org/
McGregor	Jimmy Hering	PO Box 192	McGregor	76657	(254) 840-2806	www.mcgregor-texas.com
McKinney	George Fuller	222 N Tennessee St	McKinney	75069	(972) 547-7567	www.mckinneytexas.org
McLean	Tanner Hess	PO Box 212	McLean	79057	(806) 779-2481	N/A
Memphis	Joe Davis	721 Robertson St	Memphis	79245	(806) 259-3001	N/A
Monahans	David Cutbirth	112 W 2nd St	Monahans	79756	(432) 943-4343	www.monahans.org
Mount Pleasant	Tracy Craig	728 E Ferguson Rd.	Mount Pleasant	75455	(903) 575-4144	www.mpcity.net
Muenster	Tim Felderhoff	PO Box 208	Muenster	76252	(940) 759-2236	www.ci.muenster.tx.us
Navasota	Bert Miller	PO Box 910	Navasota	77868	(936) 825-6490	www.navasotatx.gov
Nocona	Robert Fenoglio	100 Cooke St	Nocona	76255	(940) 825-4100	www.nocona.org
Olney	Phil Jeske II	PO Box 546	Olney	76374	(940) 564-5616	www.olneytexas.com
Paducah	Zack Osburn	PO Box 759	Paducah	79248	(806) 492-3713	www.paducahtx.net
Pecos City	David Flores	PO Box 929	Pecos	79772	(432) 445-3519	www.townofpecoscitytx.com
Pittsburg	David Abernathy	200 Rusk St	Pittsburg	75686	(903) 856-3621	www.pittsburgtexas.com
Port Lavaca	Jack Whitlow	PO Box 105	Port Lavaca	77979	(361) 552-9793	www.portlavaca.org
Ralls	Don Hamilton	800 Avenue I	Ralls	79357	(806) 253-2558	N/A
Robert Lee	Allyson Crenshaw	PO Box 26	Robert Lee	76945	(325) 453-2831	www.robertleetexas.com
Robstown	Gilbert Gomez	101 East Main	Robstown	78380	(361) 387-4589	www.cityofrobstown.com
Rockdale	John King	PO Box 586	Rockdale	76567	(512) 446-2511	rockdalecityhall.com
Round Rock	Craig Morgan	221 E Main	Round Rock	78664	(512) 218-5432	www.roundrocktexas.gov
Runge	Homer Lott Jr.	PO Box 206	Runge	78151	(830) 239-4121	N/A
Rusk	Angela Raiborn	408 N Main St	Rusk	75785	(903) 683-5794	www.rusktx.org
Sealy	Janice Whitehead	PO Box 517	Sealy	77474	(979) 885-3511	www.ci.sealy.tx.us
Silsbee	Gary Strahan	105 S 3rd St	Silsbee	77656	(409) 385-2863	www.cityofsilsbee.com
Silverton	Lane Garvin	PO Box 250	Silverton	79257	(806) 823-2125	N/A
Smithville	Scott Saunders	PO Box 449	Smithville	78957	(512) 237-3282	www.ci.smithville.tx.us
Stephenville	Doug Svien	356 N Belknap St	Stephenville	76401	(254) 918-1277	www.stephenvilletx.gov/departments/fire
Sulphur Springs	Lesa Smith	125 Davis Street	Sulphur Springs	75482	(903) 885-7541	www.sulphurspringstx.org/departments/

System Contact Information

System	Chairperson	Address	City	ZIP Code	Phone	Website
Volunteer Plans (Continued)						
Taft	Pedro Lopez	PO Box 416	Taft	78390	(361) 528-3512	N/A
Three Rivers	Felipe Q. Martinez	PO Box 398	Three Rivers	78071	(361) 786-2528	www.threeriverstx.org
Throckmorton	Will Carroll	PO Box 640	Throckmorton	76483	(940) 849-4411	www.throckmortontx.org
Tulia	Dusty George	PO Box 847	Tulia	79088	(806) 995-3547	www.tuliatexas.org
Valley Mills	Jerry Wittmer	PO Box 641	Valley Mills	76689	(254) 932-5101	www.vmtx.us
Weatherford	Paul Paschall	PO Box 255	Weatherford	76086	(817) 598-4000	www.ci.weatherford.tx.us
White Deer	Kent Kelp	PO Box 98	White Deer	79097	(806) 883-4191	www.whitedeer.us/
Winters	Lisa Yates	310 S Main St	Winters	79567	(325) 754-4424	www.cityofwinters.net

System Contractor Information

Abilene

Service Provided	Firm Name	Contact Name	Email	Phone
Actuary	Foster & Foster	Brad Heinrichs	brad.heinrichs@foster-foster.com	(239) 433-5500
Attorney	Hund, Krier, Wilkerson & Wright, P.C.	Kimberly Wilkerson	kwilkerson@hkwwlaw.com	(806) 783-8700
Auditor	Roberts & McGee, CPA	Stacey McGee	stacey.mcgee@rm-cpa.net	(325) 701-9502
Investment Consultant	AndCo Consulting	Tony Kay	tonyk@andcoconsulting.com	(972) 996-2280
Investment Custodian / Bank	Frost Bank	Ed Peschke	Ed.Peschke@frostbank.com	(817) 420-5626
Investment Manager	American Realty Advisors	Todd Fowler	tfowler@aracapital.com	(312) 905-2002
Investment Manager	Deerpath Capital Management, LP	Robert Van Eyck	Rvaneyck@deerpathcapital.com	(646) 786-1021
Investment Manager	BlackRock Advisors, LLC	Angela Wascom-Gantt	Angela.wascom-gantt@blackrock.com	(212) 810-5300
Investment Manager	Invesco Advisers, Inc.	Steven Krauszer	steven.krauszer@invesco.com	(832) 244-4002
Investment Manager	Kayne Anderson Rudnik	Maritza Gonzalez	mgonzalez@kayne.com	(310) 284-6423
Investment Manager	PGIM	Kevin Smith	kevin.smith@pgim.com	(973) 683-1658
Investment Manager	JP Morgan Asset Management	Julia Bernier	julia.m.bernier@jpmorgan.com	(212) 648-1109
Investment Manager	Vanguard	Michelle Buonanno	michelle_buonanno@vanguard.com	(800) 523-1036 x32661
Investment Manager	Western Asset Management	Cindy Navalta	cynthia@navalta@westernasset.com	(626) 844-9586

Amarillo

Service Provided	Firm Name	Contact Name	Email	Phone
Actuary	Rudd & Wisdom, Inc.	Mark Fenlaw	mfenlaw@ruddwisdom.com	(512) 346-1590
Attorney	Jackson Walker, LLP	Chuck Campbell	ccampbell@jw.com	(512) 236-2663
Auditor	Connor, McMillon, Mitchell & Shennum, PLLC	Janie Arnold	janie.arnold@cmmscpa.com	(806) 373-6661
Investment Consultant	Wells Fargo Advisors	Kelly Bevis	kelly.a.bevis@wfadvisors.com	(817) 877-9889
Investment Custodian / Bank	Frost Bank	Steve Klein	sklein@frostbank.com	(210) 220-4743
Investment Manager	Kayne Anderson Rudnik	Maritza Gonzalez	mgonzalez@kayne.com	(310) 284-6423
Investment Manager	Luther King Capital Management	Luther King	lking@lkcm.com	(817) 332-3235
Investment Manager	Vanguard	Erin Cover	erin_cover@vanguard.com	(972) 632-0516

Atlanta

Service Provided	Firm Name	Contact Name	Email	Phone
Actuary	Rudd & Wisdom, Inc.	Mark Fenlaw	mfenlaw@ruddwisdom.com	(512) 346-1590
Attorney	James H. Verschoyle	James Verschoyle	JHVerschoyle@aol.com	(903) 796-4187
Auditor	Richard A. Bowman, CPA	Richard Bowman	rbowman@rbcpa.us	(325) 235-4974
Investment Consultant	Westwood Holdings Group, Inc.	Kim Calhoun	kcalhoun@westwoodgroup.com	(214) 756-6989
Investment Custodian / Bank	Westwood Holdings Group, Inc.	Kim Calhoun	"	(214) 756-6989
Investment Manager	Westwood Holdings Group, Inc.	Kim Calhoun	"	(214) 756-6989

Big Spring

Service Provided	Firm Name	Contact Name	Email	Phone
Actuary	Dean Actuaries, LLC	Chuck Dean	chuck@retsource.com	(214) 792-0101
Auditor	West, Davis & Co., LLP	Gary Davis	gary@westdavis.com	(512) 340-0333
Investment Consultant	Robert Harrell, Inc.	Will Harrell	rhi@harrel.com	(214) 756-6990
Investment Custodian / Bank	Westwood Trust	Kim Calhoun	kcalhoun@westwoodgroup.com	(214) 756-6990
Investment Manager	Westwood Trust	Kim Calhoun	"	(214) 756-6990

System Contractor Information

Beaumont

Service Provided	Firm Name	Contact Name	Email	Phone
Accountant	Wathen, DeShong & Juncker, LLP	Jeremy Triska	jeremy@wdjcpa.com	(409) 838-1605
Actuary	GRS	Daniel Siblik		
Attorney	Jackson Walker, LLP	Chuck Campbell	ccampbell@jw.com	(512) 236-2263
Auditor	Wathen, DeShong & Juncker, LLP	Jeremy Triska	jeremy@wdjcpa.com	(409) 838-1605
Investment Consultant	AndCo Consulting	Jack Evatt	jacke@andcoconsulting.com	(407) 520-5351
Investment Custodian / Bank	Salem Trust	Mindy Johnson	mindy.johnson@salemtrust.com	(813) 288-4990
Investment Manager	American Realty Advisors	Richelle Hayes	rhayes@americanreal.com	(407) 342-1432
Investment Manager	CapitalSpring	Richard Fitzgerald	rfitzgerald@capitalspring.com	(212) 981-0155
Investment Manager	Conestoga Capital Advisors	Mark Clewett	mclewett@conestogacapital.com	(484) 654-1385
Investment Manager	Delaware Investments	Bill Conrad	William.Conrad@delinvest.com	(215) 255-1086
Investment Manager	DePrince, Race & Zollo	Brian Casey	bcasey@drz-inc.com	(321) 288-1291
Investment Manager	Garcia Hamilton & Associates, LP	Janna Hamilton	Janna@garciahamiltonassociates,com	(713) 853-2309
Investment Manager	IFM Investors	Dan Kim	Dan.kim@ifminvestors.com	(212) 784-2288
Investment Manager	Legg Mason Global Asset Management	Nedra Hadley	nedra.hadley@brandywineglobal.com	(215) 609-3921
Investment Manager	Loomis, Sayles & Company	Lynsey Fitzgerald	lfitzgerald@loomissayles.com	(617) 960-2556
Investment Manager	Orleans Capital Management	Emily Becker	ebecker@orleanscapital.com	(985) 674-1367
Investment Manager	Vanguard	Brian Lunney	brianlunney@vanguard.com	(610) 669-2674
Investment Manager	WCM Investment Management	Sloane Payne	sloane@wcminvest.com	(949) 380-0200

Brownwood

Service Provided	Firm Name	Contact Name	Email	Phone
Accountant	Helen Duvall, CPA	Helen Duvall	helen.duvall@cpa.com	(832) 620-0424
Actuary	Rudd & Wisdom, Inc.	Mark Fenlaw	mfenlaw@ruddwisdom.com	(512) 346-1590
Attorney	Pat Chesser	Pat Chesser	pchesser@brownwoodtexas.gov	(325) 646-5775
Auditor	Richard Bowman, CPA	Richard Bowman	rbowman@rbcpa.us	(325) 235-4974
Investment Consultant	Graystone Consulting	Jim Stoker	james.stoker@msgraystone.com	(512) 469-3418
Investment Custodian / Bank	Morgan Stanley Smith Barney, LLC	Pamela Dunn	pamela.dunn@msgraystone.com	(512) 469-3449
Investment Manager	Blackrock Strategic, Inc.	Robb Falaguerra	robb.falaguerra@blackrock.com	(312) 254-6018
Investment Manager	Blackstone Group	David Ainsworth	david.ainsworth@blackstone.com	(217) 864-3578
Investment Manager	Cambiar Investors, LLC	Karl Engelmann	kengelmann@cambiar.com	(303) 302-9024
Investment Manager	Delaware Investments	Dan Perry	dan.perry@macquarie.com	(215) 255-8514
Investment Manager	Federated Investors, Inc.	Mark Strubel	mstrubel@federatedinv.com	(214) 725-8298
Investment Manager	Glovista Investment, LLC	Darshan Bhatt	darshan.bhatt@glovista.net	(212) 336-1542
Investment Manager	Great Lakes Advisors	Tom Erdmier	terdmier@greatlakesadvisors.com	(727) 712-2995
Investment Manager	WCM Investment Management	Bill Orke	billorke@wcminvest.com	(949) 715-5742
Investment Manager	Wedgewood Partners, Inc.	David Rolfe	drolfe@wedgewood-partners.com	(314) 567-6407

System Contractor Information

Cleburne

Service Provided	Firm Name	Contact Name	Email	Phone
Accountant	Gilliam, Wharram & Co, P.C.	Harold Gilliam	HaroldG@gwcopc.com	(817) 641-2274
Actuary	Foster & Foster	Brad Heinrichs	brad.heinrichs@foster-foster.com	(239) 433-5500
Auditor	Richard A. Bowman, CPA	Ricky Bowman	Rbowman@RBCPA.us	(325) 235-4974
Investment Consultant	Worthpointe Wealth Management	Scott O'brien	scott.obrien@wpwm.com	(512) 595-6554
Investment Custodian / Bank	Scottrade, Inc.			
Investment Manager	Worthpointe Wealth Management	Scott O'brien	scott.obrien@wpwm.com	(512) 595-6554

Conroe

Service Provided	Firm Name	Contact Name	Email	Phone
Accountant	Robert Vanwassehnova	Amy	bobvancpa@yahoo.com	(936) 760-1600
Actuary	Definiti LLC	David Sawyer	David.Sawyer@definiti-llc.com	(281) 296-1107
Attorney	Jackson Walker, LLP	Chuck Campbell	ccampbell@jw.com	(512) 236-2263
Auditor	Brooks Watson & Co			
Investment Consultant	South Texas Money Management	Lisa I. Miller	lmiller@stmmltd.com	(512) 698-4593
Investment Custodian / Bank	Charles Schwab	Karen Benewith	Karen.Benewith@schwab.com	(602) 355-3526

Corpus Christi

Service Provided	Firm Name	Contact Name	Email	Phone
Actuary	Rudd & Wisdom, Inc.	Mark Fenlaw	mfenlaw@ruddwisdom.com	(512) 346-1590
Attorney	Davis Hutchinson & Wilkerson, LLP	Craig Ansel	cansel@dhwlaw.com	(361) 882-2272
Auditor	GF Valdez, PC	Lupe Valdez	lupe.valdez@gfvpc.com	(361) 991-1650
Investment Consultant	UBS Institutional Consulting	Hal Tabb	hal.tabb@ubs.com	(504) 595-5444
Investment Custodian	Frost Bank	Mike Albright	malbright@frostbank.com	(361) 844-1048
Investment Manager	Eaton Vance Investment Mangers	Kathy Kasper	kkasper@eatonvance.com	(617) 672-8155
Investment Manager	Franklin Templeton Investments	Brian Kahley	briankahley@franklintempleton.com	(945) 527-2198
Investment Manager	Fuller & Thaler Asset Management	G. Ed Stubbins	estubbins@fullerthaler.com	(650) 931-1515
Investment Manager	Garcia Hamilton & Associates, LP	Ruby M. Dang	ruby@garciahamiltonassociates.com	(713) 853-2359
Investment Manager	JP Morgan Asset Management	Kate (Morgenier) Hurley	kathleen.morgenier@jpmorgan.com	(212) 668-1555
Investment Manager	JP Morgan Asset Management SPF	Kate (Morgenier) Hurley	kathleen.morgenier@jpmorgan.com	(212) 668-1555
Investment Manager	Polen Capital	P.J. Fitzgerald	pjfitzgerald@polencapital.com	(561) 995-4529
Investment Manager	Clearbridge Institutional	Kenny Fung	kfung@clearbridge.com	(212) 805-2122

Corsicana

Service Provided	Firm Name	Contact Name	Email	Phone
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Auditor	Anderson, Marx, & Bohl	Dori Bohl	dbohl@anderson-cpa.com	(903) 872-2571
Investment Consultant	Luther King Capital Management	Paul Greenwell	pgreenwell@lkcm.com	(817) 332-3235
Investment Custodian	Charles Schwab	IST East Team 4		(800) 515-2157
Investment Manager	Blackstone Group	David Ainsworth	david.ainsworth@blackstone.com	(214) 864-3578
Investment Manager	Morgan Stanley Smith Barney, LLC	Pam Dunn	pamela.dunn@msgraystone.com	(512) 469-3449

System Contractor Information

Denison

Service Provided	Firm Name	Contact Name	Email	Phone
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Auditor	BrooksWatson & Co., PLLC	Louis Breedlove	lbreedlove@brookscardiel.com	(281) 907-9188
Investment Consultant	Fiduciary Financial Services Wealth Management	Cecilia Fisher	cecelia.fisher@ffss.net	(972) 934-9070
Investment Custodian / Bank	First United Bank	Freddy Menjivar	fmenjivar@firstunitedbank.com	(903) 813-3654

Denton

Service Provided	Firm Name	Contact Name	Email	Phone
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Attorney	City of Denton	Jennifer DeCurtis	jennifer.decurtis@cityofdenton.com	(940) 349-8333
Auditor	Hankins Eastup Deaton Tonn & Seay, P.C.	Dan Tonn	dan@mydentontoncpa.com	(940) 387-8563
Investment Consultant	Garnett Advisors, LLC	William Coleman	bcoleman@garnettadvisors.com	(940) 387-3881
Investment Custodian / Bank	Frost Bank	Ed Peschke	ed.peschke@frostbank.com	(817) 420-5626
Investment Manager	Garnett Advisors, LLC	William Coleman	bcoleman@garnettadvisors.com	(940) 387-3881

Galveston

Service Provided	Firm Name	Contact Name	Email	Phone
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Attorney	Hund, Krier, Wilkerson & Wright, P.C.	Kim Wilkerson	kwilkerson@hkwwlaw.com	(806) 783-8700
Auditor	Whitley Penn	Laura Lynch	Laura.Lynch@Whitleypenn.com	(713) 386-1112
Investment Consultant	Graystone Consulting	Scott Owens	Scott.Owens@msgraystone.com	(813) 227-2027
Investment Custodian / Bank	Morgan Stanley	Pamela Dunn	pamela.dunn@msgraystone.com	(512) 468-3449
Investment Manager	Balyasny			
Investment Manager	Blackstone Group			
Investment Manager	Clarion Partners			
Investment Manager	Clearbridge			
Investment Manager	DF Dent & Co.			
Investment Manager	Fuller & Thaler Asset Management			
Investment Manager	JP Morgan Asset Management			
Investment Manager	Kayne Anderson Rudnik			
Investment Manager	Lazard Asset Management			
Investment Manager	Millennium			
Investment Manager	Nuance Investments			
Investment Manager	Polen Capital Management			
Investment Manager	Sage Advisory			
Investment Manager	Vanguard			
Investment Manager	Victory Capital			

System Contractor Information

Greenville

Service Provided	Firm Name	Contact Name	Email	Phone
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Auditor	Malnory, McNeal & Company, P.C.	Lori Whittle	lwhittle@malnorymcneal.com	(903) 784-6700
Investment Manager	Westwood Trust	Kim Calhoun	kcalhoun@westwoodgroup.com	(214) 756-6989
Investment Manager	Westwood Trust	Amy Lester	alester@westwoodgroup.com	(214) 756-6989

Harlingen

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Actuary	Definiti LLC	David Sawyer	David.Sawyer@definiti-llc.com	(281) 296-1107
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Auditor	CRI CPAs and Adivsors	Matt Montemayor	mmontemayor@cricpa.com	(956) 423-3765
Investment Consultant	AndCo Consulting	Tony Kay	tonyk@andcoconsulting.com	(972) 996-2280
Investment Custodian / Bank	Frost Bank	Rick Ramirez	Rick.Ramirez@frostbank.com	(956) 702-6641
Investment Manager	BlackRock Advisors, LLC	Daniel Ott	daniel.ott@blackrock.com	(312) 395-9313
Investment Manager	Clarion Partners	George Loebrich	george.loebrich@clarionpartners.com	(212) 808-2117
Investment Manager	Pacific Asset Management	Michael Spitler	michael.spitler@pacificam.com	(949) 219-3729
Investment Manager	Westwood Trust	Amy Lester	alester@westwoodgroup.com	(214) 756-6986

Irving

Service Provided	Firm Name	Contact Name	Email	Phone
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Attorney	Jackson Walker, LLP	Chuck Campbell	ccampbell@jw.com	(512) 236-2263
Auditor	BKD	Joshua J. Findlay	jfindlay@BKD.com	(972) 702-8262 Ext. 434
Investment Consultant	Meketa Investment Group	Aaron Lally	alally@meketagroup.com	(305) 341-2900
Investment Custodian / Bank	Frost Bank	Ed Peschke	ed.peschke@frostbank.com	(817) 420-5626
Investment Manager	APEX/Fiera Capital	Mark Harrell	mharrell@fieracapital.com	(937) 388-1425
Investment Manager	CapitalSpring	Kristin Reilly	kreilly@capitalspring.com	(615) 651-1579
Investment Manager	CDK Realty Advisors, LP	Denise Cannefax	denise@harvestinterests.com	(972) 774-4387
Investment Manager	Clarion Partners	Daniel Reid	daniel.reid@clarionpartners.com	(212) 883-2500
Investment Manager	Cohesive Capital Partners	John Barber	jbarber@cohesivecapital.com	(212) 616-9619
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Investment Manager	Delaware Investments	Krista Urie	krista.urie@macquarie.com	(215) 255-1320
Investment Manager	Goldman Sachs		AICS-TPD@gs.com	(212) 902-1077
Investment Manager	Hancock Timber	Mike Strzelecki	mstrzelecki@hnrg.com	(617) 747-1501
Investment Manager	Harvest Interests	Kenneth Cooley	Ken@harvestinterests.com	(214) 908-1378
Investment Manager	Lazard Asset Management	Sean Delaney	sean.delaney@lazard.com	(212) 632-6519
Investment Manager	PIMCO	Evan Francks	evan.francks@pimco.com	(949) 720-7504
Investment Manager	Polen Capital Management	Gregg Kerr	gkerr@polencapital.com	(561) 241-2425
Investment Manager	Principal Real Estate	Doug Vander Beek	vanderbeek.doug@principal.com	(515) 362-2142
Investment Manager	Silverado Interests	Jamie Slagel	jamieslagel@silveradointerests.com	(214) 445-4284
Investment Manager	Silvercrest Asset Management	Kim Murdolo	kmurdolo@silvercrestgroup.com	(212) 649-0667
Investment Manager	Smith Group Asset Management	Kenneth Wallace	kenneth@smithasset.com	(214) 880-4633
Investment Manager	WCM Investment Management	Bill Orke	billorke@wcminvest.com	(949) 715-5742

System Contractor Information

Killeen

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Attorney	Jackson Walker, LLP	Chuck Campbell	ccampbell@jw.com	(512) 236-2263
Auditor	BrooksWatson & Co., PLLC	Candace Virgadamo	cvirgamado@brookswatsoncpa.com	(281) 941-2005
Investment Consultant	AndCo Consulting	Tony Kay	tonyk@AndCoConsulting.com	(972) 996-2280
Investment Custodian / Bank	Frost	Carol Banks	carol.banks@frostbank.com	(817) 420-5850

Laredo

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Investment Consultant	Fund Evaluation Group	Alan Bergin	abergin@feg.com	(313) 875-4300
Investment Custodian / Bank	Wells Fargo Advisors	Jean Tucker	Jean.L.Tucker@wellsfargo.com	(713) 319-1656
Investment Manager	Artisan Partners	Mark Yockey	mark.yockey@artisanpartners.com	
Investment Manager	Dimensional Fund Advisors	Matt Pawlak	matt.pawlak@dimensional.com	(512) 306-4376
Investment Manager	Fiduciary Management of Milwaukee	Mike Stanley	mstanley@fiduciarymgt.com	(414) 226-4545
Investment Manager	Hood River Small Cap Growth	Brett Hokkanen	bhokkanen@hoodrivercapital.com	(503) 444-4897
Investment Manager	Ironwood Capital Partners, LP	Jonathan Gans	jon@ironwoodpartners.com	(415) 777-2400
Investment Manager	Ishared U.S. Aggregate Bonds Index Fund			
Investment Manager	JP Morgan Asset Management	David S. Fisher	david.s.fisher@jpmorgan.com	(212) 648-0476
Investment Manager	Loomis, Sayles & Company, LP			
Investment Manager	PIMCO	Vernon Edler	Vernon.Edler@pimco.com	(949) 720-6460
Investment Manager	Pointer	Cassie Schmidt	schmitz@pointermc.com	(423) 266-3544
Investment Manager	Speece Thorson	Fred Speece	FSpeece@stcapital.com	(612) 338-7043
Investment Manager	Stephens Investment Management Group	Patrick White	patrick.white@stephens.com	(713) 993-4264
Investment Manager	Tortoise MLP & Pipeline	Andrew Goldsmith	agoldsmith@tortoiseadvisors.com	(913) 890-2159

System Contractor Information

Longview

Service Provided	Firm Name	Contact Name	Email	Phone
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Auditor	Curtis Blakely & Co.	Mitchell McCoy	mmccoy@cbandco.com	(903) 247-1857
Investment Consultant	Robert Harrell, Inc.	Will Harrell	wharrell@harrell.com	(512) 795-9100
Investment Bank	Frost Bank	Ed Peschke	ed.peschke@frostbank.com	(817) 420-5626
Investment Custodian	Frost Bank/Morgan Stanley	Ed Peschke/James Stoker	James.Stoker@msgraystone.com	(512) 370-0438
Investment Manager	Balyasny	Rich Arbucci	rarbucci@bamfunds.com	(646) 924-1280
Investment Manager	Blackstone Group	David Ainsworth	david.ainsworth@blackstone.com	(214) 864-3578
Investment Manager	Campus Clarion	Daniel Reid	daniel.reid@clarionpartners.com	(212) 883-2500
Investment Manager	Cohesive Capital	Gregory Angrist	gangrist@cohesivecapital.com	(212) 616-9609
Investment Manager	Diamond Hill	Joe Penner	jpenner@diamond-hill.com	(614) 255-5735
Investment Manager	Frost Investment Management	Vance Arnold	vance.arnold@Frostinvestmentadvisors.com	(210) 220-6493
Investment Manager	JP Morgan Asset Management	Michael Reynolds	Michael.reynolds@jpmorgan.com	(832) 627-1863
Investment Manager	MFS	James Walden	jwalden@mfs.com	(617) 954-4563
Investment Manager	Millennium	Brian Kelly	brian.kelly@mlp.com	(212) 708-4367
Investment Manager	PIMCO	Andrew Hoffman	andrew.hoffman@pimco.com	(949) 467-8393
Investment Manager	T. Rowe Price	Chris Macon	Chris_Macon@troweprice.com>	(512) 202-5730
Investment Manager	Vanguard	Hannah Rawdin	hannah_rawdin@vcep.vangaurd.com	(888) 383-4483
Investment Manager	WCM Investment Management	Julianna Jones	julianna@wcminvestments.com	(949) 380-0200
Investment Manager	William Blair	Jim White	jwhite@williamblair.com	(312) 364-8896

Lubbock

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Attorney	Hund, Krier, Wilkerson & Wright, P.C.	Kim Wilkerson	kwilkerson@hkwwlaw.com	(806) 783-8700
Auditor	Robinson, Burdette, Martin	Brent Redford	pfoster@rbmsllp.com	(806) 744-4333
Investment Consultant	CAPTRUST	Dale Connors	dale.connors@captrust.com	(303) 738-0300
Investment Custodian / Bank	U.S. Bank	Corey Reavis	corey.reavis@usbank.com	
Investment Manager	American Realty Advisors	Paul Czachorowski	pczachorowski@aracapital.com	(213) 233-5700
Investment Manager	Blackstone Group	David Ainsworth	david.ainsworth@blackstone.com	(212) 864-3578
Investment Manager	Goldman Sachs	Guy Pullen	guy.pullen@gs.com	(917) 882-1099
Investment Manager	Golub Capital Partners	Gillian Sheffy	gsheffy@golubcapital.com	(646) 218-2212
Investment Manager	GQG Partners	Meredith Mertens	mmertens@gqgpartners.com	(754) 312-6105
Investment Manager	Greenspring Associates, Inc.	John Wuestling	jwuestling@gspring.com	(410) 363-2725
Investment Manager	Harvest Interests	Kenneth Cooley	ken@harvestinterests.com	(214) 253-2140
Investment Manager	Huff Energy Group	Rick DeAngelo	beb@huffcompanies.com	(973) 984-1233
Investment Manager	Parametric Portfolio Associates, LLC	Jeremy Smith	jsmith@paraport.com	(952) 737-6857
Investment Manager	Principal Gobal Investors	Jim McMillan	mcmillan.lames@principal.com	(212) 603-3620
Investment Manager	Siguler Guff & Company, LP	Matthew Brewer	Mbrewer@sigulerguff.com	(212) 634-5972
Investment Manager	Tailwinds Management LP	Caitlin Guinee	cguinee@tailwind.com	(212) 271-5775

System Contractor Information

Lufkin

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Investment Consultant	Westwood Trust	Amy Lester	alester@westwoodgroup.com	(214) 756-6986
Investment Custodian / Bank	Westwood Trust	Amy Lester	"	"
Investment Manager	Westwood Trust	Amy Lester	"	"

Marshall

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Auditor	Knuckols Duvall Hallum & Co.	Mike Hallum	mike.h@kdhco.net	(903) 938-0331
Investment Custodian / Bank	Westwood Trust	Kim Calhoun	kcalhoun@westwoodgroup.com	(214) 756-6989
Investment Manager	Westwood Trust	Kim Calhoun	kcalhoun@westwoodgroup.com	(214) 756-6989

McAllen

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Attorney	Locke Lord & Bissell LP	Stefan Smith	spsmith@lockelord.com	(214) 740-8796
Auditor	Weaver and Tidwell, LLP			
Investment Consultant	CBIZ	Robert Longfield	robert.longfield@cbiz.com	(901) 761-8080
Investment Custodian / Bank	Principal	Jean Tucker	tucker.jean@principla.com	(515) 878-6104
Investment Manager	Cielo Realty Partners, LTD	Robert Gandy III	RG3@crp-re.com	(956) 369-0944
Investment Manager	Courage Credit Opportunities, LP	John E. Klinge	jklinge@couragecap.com	(310) 622-9270
Investment Manager	Franklin Templeton Investments	Christopher Walton	chris.walton@franklintempleton.com	(650) 312-2523
Investment Manager	Hillswick Asset Management	Alison Sandor	alison.sandor@hillswickasset.com	(203) 425-1420
Investment Manager	Ironwood Capital Partners, LP	Martin J. Hermens	marty@ironwoodpartners.com	(415) 777-2400
Investment Manager	JP Morgan Asset Management	Scott Rubin	scott.h.rubin@jpmorgan.com	(212) 623-8610
Investment Manager	Lee Munder Emerging Market Equity	Tom Capobianco	lmcg@leemunder.com	(617) 380-5601
Investment Manager	MFS	Matt Westhoven	mwesthoven@mfs.com	(617) 954-6055
Investment Manager	Oppenheimer International	Jason Widner	Jwidener@ofiglobal.com	(310) 228-0972
Investment Manager	PIMCO	Rushant Sanathara	rush.sanathara@pimco.com	(949) 720-7693
Investment Manager	TerraCap Partners III, LP	James Lane	Jlane@terracapmgmt.com	(239) 540-2002
Investment Manager	Titan Master Fund, LP	Marice Leo	mleo@titanadvisors.com	(203) 327-8600
Investment Manager	Wells Capital Management	Tom Galfano	Tom.Galfano@wellsfargo.com	(414) 539-3358

System Contractor Information

Midland

Service Provided	Firm Name	Contact Name	Email	Phone
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Actuary	Rudd & Wisdom, Inc.	Mark Fenlaw	mfenlaw@ruddwisdom.com	(512) 345-7437
Attorney	Lawson Attorneys, PLLC	Gary Lawson	gary.lawson.lawyers@gmail.com	(469) 964-8500
Auditor	Weaver	Jeff Wada	jeff.wada@weaver.com	(972) 448-9217
Investment Analyst	Claude Parenteau	Parenteau Analytics	claude@parenteauassociates.com	(817)-379-5199
Investment Custodian / Bank	Frost Bank	Ed Peschke/Carol Banks	ed.peschke@frostbank.com	(817) 420-5626
Investment Manager	CDK Realty Advisors, LP	Denise Canifax	denise@harvestinterests.com	(469) 774-4387
Investment Manager	Glendower Capital	Josh Glaser	josh.glaser@glendowercapital.com	(212) 653-8402
Investment Manager	Greenspring Associates, Inc.	John Wuestling	jwuestling@gspring.com	(410) 363-2725
Investment Manager	Harvest Interests	Kenneth Cooley	ken@harvetinterests.com	(214) 908-1378
Investment Manager	Lazard Asset Management	Tony Dote	tony.dote@lazard.com	(210) 960-1602
Investment Manager	Loomis, Sayles & Company, LP	Joe Beauparlant	jbeauparlant@loomissayles.com	(617) 310-3678
Investment Manager	Morgan Stanley Investment Management	Ryan Gainsford	ryan.gainsford@morganstanley.com	(214) 709-8429
Investment Manager	MREC (Moriah Group)	Will Lunsford	will@moriahgroup.net	(432) 682-2510
Investment Manager	NBW Capital, LLC	Ben Neidermeyer	bniedermeyer@nbwcapital.com	(617) 482-2222
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Investment Manager	The Davis Companies	Jillian Alves	jalves@thedaviscompanies.com	(617) 451-1300
Investment Manager	Westwood Holdings Group, Inc.	Amy Lester	alester@westwoodgroup.com	(214) 756-6986
Investment Manager	Westwood Trust	Kim Calhoun	kcalhoun@westwoodgroup.com	(214) 756-6989

Odessa

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Auditor	Richard A. Bowman	Ricky Bowman	rbowman@rbcpa.us	(325) 235-4974
Investment Consultant	Southeastern Advisory Services, Inc	Jeff Swanson	jeff@seadvisory.com	(904) 233-7600
Investment Custodian / Bank	Salem Trust	Mindy Johnson/Debbie Kocsis	Mindy.Johnson@salemtrust.com	(813) 288-4990
Investment Manager	American Funds			
Investment Manager	American Realty Advisors	Jeff Miller	jmiller@aracapital.com	(213) 233-5700
Investment Manager	BlackRock Advisors, LLC			
Investment Manager	Charles Schwab			
Investment Manager	Dodge & Cox			
Investment Manager	Doubleline Funds			
Investment Manager	PIMCO			
Investment Manager	T. Rowe Price			
Investment Manager	TA Realty (Core)	Sean Ruhmann	ruhmann@tarealty.com	(617) 476-2723
Investment Manager	Vanguard			
Investment Manager	Yacktman Asset Management			

System Contractor Information

Orange

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Investment Consultant	AndCo Consulting	Tony Kay	tonyk@andcoconsulting.com	(918) 407-5010
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Paris

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Plainview

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System Contractor Information

Port Arthur

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San Angelo

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San Benito

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System Contractor Information

Temple

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Investment Manager	Harvest Interests		www.harvestinsterests.com	(214) 253-2140
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Texarkana

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Texas City

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System Contractor Information

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System Contractor Information

Weslaco

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Wichita Falls

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Glossary

Glossary

Actuarial Accrued Liability (AAL)

Computed differently under different actuarial cost methods, the AAL generally represents the current value of expected benefits attributable to service credit earned (or accrued) as of the valuation date.

Actuarial Assumptions

Factors which actuaries use in estimating the cost of funding a defined benefit pension plan. Examples include: the rate of return on plan investments; mortality rates; and the rates at which plan participants are expected to leave the system because of retirement, disability, termination, etc.

Actuarial Cost Methods

To determine the actuarial accrued liability (AAL) and the normal cost (NC), actuaries can use different cost methods. An actuarial cost method is a way to allocate pieces of a participant's total expected benefit to each year of their working career. In other words, it is a technique to determine how much of the present value of future benefits (PVFB) to assign to past service (AAL) vs. future service (present value of future normal costs, or PVFNC). Actuarial cost methods differ in the way the AAL and the NC are calculated and therefore how the total PVFB is allocated.

Actuarial Value of Assets (AVA)

The actuarial value of assets (AVA) is the value of assets used for the actuarial valuation. The AVA can be either the market value (MVA) or a smoothed value of assets. Asset smoothing techniques are employed by actuaries to smooth the short-term effects of volatility in the MVA. Smoothing is a concept designed to recognize the long-term nature of pension obligations and attempt to reduce the volatility of assets, which can help keep contributions more stable and thus more predictable for the plan sponsor over time. The AVA is used to calculate the unfunded actuarial accrued liability (UAAL).

Actuarially Determined Contribution (ADC)

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 losses. ADC contribution structures inherently adjust to the plan's changing funded status, ideally to maintain the overall trajectory towards fully funding benefit promises. This approach contrasts with fixed rate funding structures which do not change from year to year unless proactive steps are taken.

GASB No. 67 defines ADC as the target or recommended contribution to a defined benefit plan for the reporting period, determined in conformity with Actuarial Standards of Practice (ASOPs). Section 802.101(a), Texas Government Code requires that a system's actuarial valuation include a recommended contribution rate for the system to achieve and maintain an amortization period that does not exceed 30 years.

Actuary

In general, an actuary is a business professional who analyzes the financial consequences of risk using mathematics, statistics and financial theory to study uncertain future events, most commonly related to insurance and pension programs. Actuaries estimate the future benefit payments expected to be paid from the plan by making assumptions about how long current employees will work, how much they will earn, and ultimately, the distributions they will receive.

Amortization Method

How the amortization payment is structured:

- **Level Dollar** - similar to a standard fixed-rate mortgage such that the annual payment towards the UAAL is assumed to be the same dollar amount every year.
- **Level Percentage** - the payments are a level percentage of payroll, and the dollar amount of the payment is assumed to increase at the rate of the expected payroll increase.
- **Open** - the annual amortization payment towards the UAAL is calculated using the same period from one year to the next. In other words, if the specified amortization period is set as 30, the ADC will be calculated at each valuation using a 30-year period. This is similar to refinancing a home mortgage every single year.
- **Closed** - the annual amortization payment towards the UAAL is calculated using a fixed schedule based on a specified starting and ending date. In other words, if the specified amortization period is set as 30, the ADC will be calculated using a 30-year period in the first year and decrease by one year at each subsequent year's valuation (29, 28, etc. down to 1, after which the plan would be fully funded). This is similar to a fixed-period home mortgage with a known beginning and ending date (in this case, a 30-year mortgage).
- **Layered** – a series of closed level dollar amortization payments. Under the layered amortization method, the first amortization payment is a closed amortization of the initial unfunded liability. The second amortization payment is the amortization of any gain or loss in the first year. In a 30-year layered amortization approach after two years, there would be three amortization payments: (i) the initial unfunded with 28 years remaining, (ii) the first year gain or loss with 29 years remaining, and (iii) the second year gain or loss over 30 years.

Glossary

Amortization Payment

The portion of the total contribution used to reduce the unfunded actuarial accrued liability.

Amortization Period

The specified length of time used when calculating the amortization payment portion of an actuarially determined contribution, or as the time it would theoretically take to fully fund the UAAL or fully recognize a surplus.

Annuitant

One who receives periodic payments from the retirement system. This term includes service and disability retirees, and their survivors.

Annuity

A series of periodic payments, usually for life, payable monthly or at other specified intervals.

Asset Valuation Method

The type of method used to compute Actuarial Value of Assets.

Assumed Rate of Return

The assumed long-term rate of return on plan assets. The assumed rate of return is the most common interest rate used as the discount rate by Texas public retirement systems for funding calculations.

Benefit Formula

The formula used to calculate retirement benefits. The formula typically takes into account an employee's years of credited service (YCS), final average salary, and a pre-established benefit multiplier.

Benefit Security

The likelihood sufficient assets will be available to pay all benefits when they come due.

Combined Disbursements

The sum of benefit payments, withdrawals, administrative, and investment related expenses.

Glossary

Combined Revenue

The sum of total investment income and other income (even if negative), and employer, employee, and other contributions.

Covered Payroll

All elements included in compensation paid to active employees participating in the pension, on which contributions to a pension plan are based. For example, if pension contributions are calculated on base pay including overtime, covered payroll includes overtime compensation.

Credited Service

A period of employment that is recognized as service for purposes of determining eligibility to receive pension payments and determining the amount of such payments.

Cost-of-Living Adjustment (COLA)

An increase in a retiree’s annuity that is typically based on a set percentage or on the change in the Consumer Price Index (CPI).

Deferred Retirement Option Plan (DROP)

An additional benefit that participants may receive from their retirement plan. Under a DROP arrangement, the participant is treated as retired on a date prior to the date they actually separate service. Under a Forward DROP, the participant may elect to “retire” but continue working for the sponsoring organization. Their monthly annuity is placed in a designated account until the member ceases to work or for a specified amount of time as allowed by the retirement system. When the member separates from service, the account balance becomes available and is paid in accordance with plan terms. Under a Retro DROP, the participant is given the option to calculate their benefit as if they had retired on a date earlier than their actual separation of service. Benefit payments that would have been paid had they actually separated service on that date are accumulated and paid in accordance with the plan terms.

Defined Benefit Plan (DB)

A pension plan providing a definite benefit formula for calculating benefit amounts - such as a flat amount per year of service; a percentage of salary; or a percentage of salary, times years of service.

Glossary

Discount Rate

The discount rate is the interest rate used to calculate the value of future payments as of the valuation date. This assumption typically has the largest single impact on the determination of the AAL and PVFB. Discounting a deferred payment with a higher (lower) discount rate will produce a lower (higher) present value, due to the higher (lower) expected interest to be added to a hypothetical fund for the payment. The assumed rate of return is the most common interest rate used as the discount rate by Texas public retirement systems for funding calculations.

Fiduciary Net Position (FNP)

The fiduciary net position is the market value of assets as of the fiscal year-end, as reported in the system's annual financial report.

Fiduciary

(1) Indicates the relationship of trust and confidence where one person (the fiduciary) holds or controls property for the benefit of another person; (2) anyone who exercises power and control, management, or disposition with regard to a fund's assets, or who has authority to do so or who has authority or responsibility in the plan's administration. Fiduciaries must discharge their duties solely in the interest of the participants and their beneficiaries and are accountable for any actions which may be construed by the courts as breaching that trust.

Final Average Salary (FAS)

The average salary used in the benefit formula. Calculations for FAS vary from plan to plan. In most cases, the FAS is calculated based on a three, four, or five year average of an employee's salary. Some plans use the employee's highest earning years to calculate this average, and others use the employee's final years before retirement.

Funded Ratio

The funded ratio is the ratio of assets to accrued liability: Assets / AAL = Funded Ratio. Funded ratios are reported based on the actuarial value of assets (AVA or smoothed value) and market value of assets (MVA). Generally, the closer the funded ratio is to 100 percent, the more secure the current accrued benefits. However, if a plan is currently underfunded, the attempt to achieve a funded ratio of 100 percent will impact the other policy goals, intergenerational equity, and the desire for a stable contribution from one year to another.

Inflation

The rate at which price levels are rising, and purchasing power is falling. Inflation is a component of both the assumed investment rate of return and the assumed rate of employee pay increases.

Glossary

Intergenerational Equity

Seeks to have each generation of taxpayers pay the cost of benefits for the employees who provide services to those taxpayers, rather than deferring those costs to future taxpayers.

Lump Sum Distribution

Payment within one taxable year of the entire balance payable to the participant from a qualified pension or employee annuity plan.

Negative Amortization

The increase in the unfunded actuarial accrued liability because the amortization payment is not sufficient or large enough to cover the interest that accrues on the unfunded liability.

Net Pension Liability

Measured as the total pension liability less the amount of the system's fiduciary net position.

Normal Cost (NC)

Computed differently under different cost methods, the normal cost generally represents the portion of the present value of future projected benefits (PVFB) attributable to the present year. The employer normal cost equals the total normal cost of the plan reduced by employee contributions.

Normal Retirement Age (NRA)

The age, as established by a plan, when unreduced benefits can be received.

Present Value of Future Benefits

The current value of all benefits expected to be paid to current participants.

Present Value of Future Normal Costs

The current value of benefits attributed to the present year and all future years (includes the normal cost as the first year).

Service Retirement

Retirement dependent upon completion of a specified period of service. In some usages, the term has the same meaning as normal retirement.

Glossary

Social Security (participation)

Public retirement plans that meet certain minimum requirements may, but are not required to, participate in Social Security.

Total (Gross) Assets

Total gross fair value of assets held in trust by a pension plan, **not net** of financial liabilities such as payables.

Total (Net) Assets

Total gross fair value of assets held in trust by a pension plan, **net** of plan financial liabilities, including accounts payable, but not net of the total present value of benefits due to plan participants.

Total Liabilities

Financial liabilities, such as payables, securities lending obligation to return collateral, and debt for plans that use leverage. Total liabilities do not include the actuarial accrued liability.

Total Pension Liability (TPL)

The actuarial accrued liability calculated in accordance with GASB 67, as reported in the system's annual financial report.

Unfunded Actuarial Accrued Liability (UAAL)

The UAAL is the difference between the actuarial accrued liability and the actuarial value of assets. Therefore the UAAL is the amount that is still owed to the fund for past obligations.

Vesting

The right of an employee to the benefits he or she has accrued, or some portion of them, even if employment under the plan is terminated. An employee who has met the vesting requirements of a pension plan is said to have a vested right. Voluntary and mandatory employee contributions are always fully vested.

Withdrawal

The termination of employment prior to becoming eligible for any benefits. The term sometimes refers to subsequent termination of membership in a system by withdrawal of the employee's accumulated contributions from the system.

Texas Pension Review Board

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Appendix K – Summary of Pension Legislation During the 87th Legislative Session

Texas Pension Review Board

Pension Bills of the 87th Legislative Session

General Pension Bills

HB 3898 - Funding Policy, FSRP Updates, & IPPE Changes (Anchia)

Status: *Signed by Governor 6/18/21; Effective 9/1/21*

Funding Policy Changes

Sponsor involvement. Systems and their sponsor, if not a statewide, must **jointly develop and adopt** a funding policy.

Funding policy revision. The funding policy must be revised to reflect any significant changes required because of an FSRP. If revising the funding policy after an FSRP, the revision must describe any automatic contribution or benefit changes to avoid having to create a revised FSRP, including risk sharing, ADC structure, or other adjustable mechanisms. The PRB may adopt rules necessary to implement this section.

The most recent edition of the funding policy must be posted on a publicly available website.

FSRP Changes

Threshold, target, trigger, and sponsor adoption. For FSRPs after September 1, 2021, the triggering amortization period is lowered from **40 to 30 years** and an FSRP is required if the system's amortization period has exceeded 30 years for three consecutive annual AVs or two consecutive AVs for plans that conduct AVs every two to three years. **However, no system would have to achieve 30 years before September 1, 2025.**

FSRPs must:

- be developed by the later of two years of AV that triggered the requirement or September 1, 2025.
- be adopted at open meetings of the governing bodies of the system and sponsor.
- FSRPs may not include items requiring future actions.

Effective September 1, 2025, FSRPs are triggered immediately if:

- the amortization period is > 40 years; or
- the amortization period is > 30 years with a funded ratio under 65%.

Credit for reforms already made. An FSRP would **not** be required if:

- the system's AV shows that the system's expected funding period > 30 but < 40 years; and
    - the system is adhering to an FSRP formulated before September 1, 2025; or
    - the system is implementing or will ultimately use an ADC rate **and** the AV shows that the system is expected to achieve full funding.

If another FSRP is triggered within 10 years of the first FSRP, the revised FSRP has stricter requirements:

- must be designed to achieve a **25-year amortization period** within two years of the triggering AV.

General Pension Bills

HB 3898 (continued) - Funding Policy, FSRP Updates, & IPPE Changes

FSRP Changes (continued)

Required Documentation. The system will be able to submit to the PRB an actuarial valuation that shows the combined impact of all changes of an FSRP or revised FSRP within 90 days of adoption. If the system does not provide the AV within the time allotted, the PRB may request the system provide a separate analysis. The AV or separate analysis must include an actuarial projection of the system's expected future assets and liabilities between the AV date and full funding date; and a description of all assumptions used to perform the analysis, which much conform with ASOPs.

Sponsor may pay all or part of the costs of separate analyses (original and revised FSRPs). System must pay any remaining costs not covered by the sponsor. Also, FSRPs (original and revised) cannot include actions that are subject to future approval.

Additional conforming changes are made to the Fort Worth Employees' Retirement Fund FSRP statute (Sec. 802.2016).

Grandfathering. Plans already subject to FSRP or who become subject **before September 1, 2021,** will continue to operate under the previous law, except if a plan falls off track and must formulate a revised FSRP **after September 1, 2025, the new FSRP would have to meet the same requirements as the new FSRPs formulated after September 1, 2021, and target 30 years instead of 40**.

Investment Practices and Performance Evaluation Changes

IPPEs must include the following disclosures:

- A **summary of the independent firm's experience** in evaluating investment performance and practices and a statement stating the firm's experience meets statutory requirements.
- A statement disclosing the **nature of any existing relationship** between the independent firm and the retirement system (including whether the firm is involved directly/indirectly in managing the investments of the system).
- A list of **the types of remuneration** received by the firm from sources other than the system for services provided to the system.
- **Statement(s) disclosing conflict of interests** concerning the firm and retirement system; and
- An explanation of the firm's **determination regarding whether to include a recommendation**.

Formal review-and-comment process: The firm must deliver an initial draft to the system before the 30th day after the evaluation is completed to allow the system to submit actions or comments. The firm must file a final report between 31 and 60 days from delivering the initial report to the system for review.

The employer may pay all or part of the cost of the evaluation, and the retirement system would pay the remainder.

HB 867 - Pensions and QDROs (Thompson, Senfronia)

Status*: Signed by Governor 5/19/21; Effective 9/1/21*

The bill clarifies that Qualified Domestic Relations Orders (QDRO) or similar orders for maintenance or child support would apply to pensions, retirement plans, and other employee benefits. Judges are allowed to revise new and previous orders to comply with the requirements of a QDRO and the terms of a benefit plan if a plan administrator rules the existing order does not meet the requirements. Chapter 804 of the Texas Government Code prevails if there are conflicting statutes.

Statewide Systems

Employees Retirement System of Texas (ERS)

SB 321 - ERS Funding & Cash Balance Tier 4 (Huffman)

Status: *Signed by Governor 6/18/21; Effective 9/1/21*

The state is required make an **additional actuarially determined annual contribution** to pay off the legacy liability **by August 31, 2054**. The system will create a cash balance plan for new members hired on or after September 1, 2022.

Tier 4 (members hired on/after September 1, 2022) – Cash Balance

- Tier 4 members will **contribute 6%** of their compensation into an individual account.
- Members of the employee class will be **vested after five years of service** and could retire with a minimum of five years of service at age 65, or if they met the rule of 80.
- The **lifetime annuity** will be equal to the member's accumulated account balance plus a 150% employer match at retirement.
- There are no changes to the retirement eligibility for members of the elected class.

Law enforcement and custodial officer supplemental retirement fund (LECOSRF) will also have the new cash balance benefit tier. Law enforcement and custodial officers will contribute an additional 2% into LECOSRF. The **lifetime annuity** will be equal to the member's accumulated account balance plus a 300% employer match at retirement.

Interest and Gain sharing. The system will credit the employee or retiree's **accumulated account balance** with a 4% guaranteed annual **interest credit** plus a **gain sharing interest credit** of 50% of the average return on the system's investments over the preceding five years greater than or equal to 4% and less than or equal to 10%, for a maximum of 3% gain sharing interest adjustment.

- For example, if the average rate of return over the preceding five years were 7%, the total interest credited to the employee's account will be 5.5%, consisting of the 4% minimum interest credit and 1.5% of gain sharing interest credit.

Changes for Current Members. A current member could retire without separating from their position if the member had enough service credit to receive the maximum annuity, was at least 60 years-old and was not entitled to any additional retirement benefits. This change would be subject to IRS plan qualification requirements.

HB 917 - ERS Board Composition (Hernandez)

Status: *Signed by Governor 5/15/21; Effective 9/1/21*

ERS board eligibility criteria will change to allow one of the three elected board members to be a retiree. Under current law, retirees are eligible to be appointed members, but not elected members.

SB 1071 - ERS Peace Officer Disability Retirement (Hinojosa)

Status: *Signed by Governor 6/16/21; Effective 9/1/21*

Occupational disability payment for a law enforcement or custodial officer whose disability makes the person unable to work solely due to the disability will be considered a total disability under federal social security law. Currently, such members receiving an occupational disability retirement annuity receive 100% of their average monthly compensation.

Statewide Systems

Employees Retirement System of Texas (ERS)

SB 1071 (continued) - ERS Peace Officer Disability Retirement

The annuity amount will change to an amount computed based on the maximum salary authorized under the position classification salary schedule prescribed by the General Appropriations Act, as adjusted from time to time, applicable to the position from which the person retired. This change applies to all applicable members, including those already receiving an annuity under the current statute. Payments will be recomputed to the increased amount beginning with the first payment date on or after the bill becomes effective.

Teacher Retirement System of Texas (TRS)

HB 1585 - TRS Sunset Bill (Lambert)

Status: *Signed by Governor; Effective immediately 5/26/21*

For any members who retired after January 1, 2021 and returned to work for a Texas public education institution, TRS shall send a written warning to any retiree who could lose their benefits for working beyond statutory limitations. If TRS determines that a retiree continued to work past statutory limitations, the retiree will be required to pay either the amount they earned in benefits or the amount they earned through employment for each month after the issuance of the warning.

The bill updates board training requirements and adds a requirement for the executive director to develop a training manual. Additionally, it creates an ombudsman's office to protect, assist, and advocate for members and enhances requirements to search for a missing member or heir to notify the member of ability to be refunded contributions. It also creates outreach and member education program requirements. Finally, the bill makes clarifying, technical changes to TRS statute by replacing the investment practices and performance evaluation (IPPE) provision with a reference to the PRB IPPE requirement. TRS complied with the PRB's IPPE provision to satisfy a similar requirement contained in its own statute. This bill brings the TRS and PRB statutes in alignment with the system's current practice.

SB 202 - TRS Employer Contributions (Schwertner)

Status: *Signed by Governor; Effective immediately 6/14/21*

Employer contribution paid on behalf of a rehired retiree (employer surcharge) cannot be passed on directly or indirectly to a retiree through methods like payroll deductions, fees, or other means. The change begins with the 2021-2022 school year and applies to all retirees.

SB 288 - TRS Loss of Monthly Annuity (Seliger)

Status: *Signed by Governor 6/14/21; Effective 9/1/21*

TRS is required to send a written warning to any retiree subject to a loss of benefits due to employment exceeding statutory limitations. If TRS determines that a retiree continues to exceed the statutory limitations on employment, the retiree is required to pay, for each month after issuance of the warning, either the amount they earned in benefits or the amount earned through employment. Benefits are not withheld from retirees returning to work or contributions will not be collected from the employer on behalf of the rehired retiree (employer surcharge) for positions related to student learning loss because of COVID-19.

Statewide Systems

Teacher Retirement System of Texas (TRS)

SB 288 (continued) - TRS Loss of Monthly Annuity (Seliger)

The position would have to be in addition to the normal staffing level at the public educational institution; be funded wholly or partly by federal funds for the purpose of COVID-19 relief and end on or before December 31, 2024. It does not apply to disability retirees. This is a temporary exemption scheduled to expire February 1, 2025.

SB 7 (2nd Called Legislative Session) – 13th Check for TRS (Huffman)

Status: *Signed by Governor 9/9/21; Effective Immediately*

TRS will issue a one-time supplemental payment to eligible annuitants in an amount equal to the lesser of their monthly benefit or $2,400. The TRS board determines eligibility for and the timing of the supplemental payment, payable no later than January 2022. Payment is only required if the legislature appropriates sufficient money.

ERS & TRS – Bills Affecting Both Systems

SB 483 - Biennial Report on Investment Returns (Schwertner)

Status: *Signed by Governor 6/14/21; Effective 9/1/21*

ERS and TRS must biennially submit a report that details and compares the assumed rate of return and actual rate of return for the system for the last 1-year, 5-year, 10-year and 20-year period to the Governor, Lt. Governor, and the Legislature. The report must include an estimate of what the market value of the total assets of the fund would have been for each period had the system achieved the assumed rate of return and a comparison between the estimate (what the total assets would have been) and the actual market value of the total assets in the fund.

Texas Municipal Retirement System (TMRS)

SB 1105 - TMRS Resumption of Service (Hughes)

Status: *Signed by Governor 5/28/21; Effective 9/1/21*

Retired TMRS members can be reemployed by the same municipality after a one-year break in service without having their benefit payment suspended. The one-year break must consist of 12 consecutive months after the effective date of retirement.

Members who resumed employment before September 1, 2021 who had their benefits suspended could have them reinstated if they met the criteria.

All Statewide Systems

SB 13 - Energy Boycott Investment Restriction (Birdwell)

Status*: Signed by Governor 6/14/21; Effective 9/1/21*

Certain state governmental entities are prohibited from investing in companies that boycott energy companies. State public retirement systems that qualify include the Employees Retirement System, the Teacher Retirement System, the Texas Municipal Retirement System, the Texas County and District Retirement System, and the Texas Emergency Services Retirement System.

A system may delay or stop divesting if there was clear evidence divestment would cause financial suffering. Systems are not required to divest from indirect holdings, but they would be required to write to the fund managers to ask them to remove listed companies from the fund or create a similar fund without those listed companies. Systems would not be subject to these requirements if it is inconsistent with fiduciary and legal duties.

SB 19 - Firearm/Ammunition Divestment (Schwertner)

Status*: Signed by Governor 6/14/21; Effective 9/1/21*

State agencies and political subdivisions are prevented from entering contracts paid from public funds unless there is a written verification that the company does not discriminate against firearm manufacturers or trade associations for no other reason than being a firearm manufacturer or trade association and will not do so while the contract is in effect. This would only apply to contracts that begin after the effective date. The restrictions only apply to contracts with companies with at least 10 employees and a value of at least $100,000.

State agencies are excepted from this requirement if it is inconsistent with constitutional or statutory duties surrounding debt issuance or investments.

Local Systems

HB 3375 - Dallas Police & Fire Pension Fund DROP Partial Lump-Sum (Davis)

Status: *Signed by Governor 6/16/21; Effective 9/1/21*

Dallas Police & Fire Pension Fund may provide lump-sum payments from DROP accounts in the event of unforeseeable emergency or financial hardships. The board will define unforeseeable emergencies, financial hardships, what types of death benefits would qualify for the partial lump sum payments and the maximum payout amount.

HB 4068 - Dallas Police & Fire Pension Fund Staff (Parker)

Status: *Signed by Governor 6/15/21; Effective 9/1/21*

Dallas Police & Fire Pension Fund staff may join TMRS. The fund’s members and/or trust fund cannot join TMRS.

Local Systems

HB 4368 - Austin Police Retirement System (Rodriguez)

Status: *Signed by Governor 6/15/21; Effective 9/1/21*

The governing statute of Austin Police plan was amended to make several changes to its contribution and benefit structure including the following:

Contribution Changes

- Member contributions increase by 2%, from 13% to 15% of pay beginning January 1, 2022.
- City contributions are divided into two parts:
  - A legacy liability layer to pay the unfunded liability as of December 31, 2020 over 30 installments. The first three years would result in a phase-in of approximately 1/3 of the contribution increase and growing at a rate of 3% thereafter.
  - The sum of the employer's normal cost and a layered amortization component designed to eliminate any unexpected future changes in the unfunded liability. Losses amortized over a max of 30 years.
- The portion of the city contribution designed to fund future benefit accruals is subject to a minimum and maximum corridor of +/-5% of the projected corridor midpoint.

Benefit Changes

- Creates a new benefit tier (Group B)
  - Reduces the multiplier from 3.2% to 2.5%.
  - Changes retirement eligibility from age 55 and 20 years of service to 50 and 25.
  - Increases final average salary calculation from the highest 36 months to highest 60.

Actuarial Assumptions & Experience Study

Requires the board's actuary to perform an experience study every five years and notify the city. The city will then inform the system whether it would perform its own experience study, review the experience study, or accept the system's. If the city performs its own or does a review, the actuaries from the city and system will be required to determine the hypothetical contribution rate based on the proposed assumptions. If the difference was greater than 2% of payroll, they would be required to reconcile the difference within 20 business days or consult a third-party actuary. The board retains the responsibility to set actuarial assumptions.

Board Composition & Authority

Removes one police officer member. One additional citizen member appointed by the city council is added to the existing one appointed by the board. Also, both citizen members are required to have finance or investment experience. Removes the board's authority to increase benefits, lower retirement eligibility, or grant COLAs.

Appendix L – PRB Presentation to House Committee on Pensions, Investments, and Financial Services

Texas Pension Review Board

House Pensions, Investments, and Financial Services Committee

March 10, 2021

Pension Review Board

PRB Mission

- The PRB is composed of **7 members** appointed by the Governor.
- The Board oversees all 347 Texas **public retirement systems**, both state and local, to monitor their actuarial soundness and compliance with certain state law.
- Of the 347 systems, 100 are actuarially funded defined benefit plans, for which total net assets are approximately **$301 billion**, and total membership is over **2.95 million** members.
- Of the **100** defined benefit plans:
  - ❑ **7** are **statewide** retirement systems
  - ❑ **17** are **major municipal** retirement systems
  - ❑ **42** are **paid/part-paid firefighter** systems
  - ❑ **34** are local retirement systems offered by **other political entities**

Pension Review Board

Primary Duties

- Conduct a **continuing reviews** of all Texas public retirement systems
- Conduct **intensive studies** of potential or existing problems that threaten the actuarial soundness of public retirement systems
- Provide **information** and **technical assistance**
- Recommend **policies, practices, and legislation** to public retirement systems and governmental entities
- Develop and administer an **educational training program** for trustees and administrators of retirement systems
- Prepare **actuarial impact statements** for pending legislation

PRB Pension Funding Guidelines (effective 6/30/17)

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

*Plans with amortization periods that exceed 30 years as of 6/30/2017 should seek to reduce their amortization period to 30 years or less as soon as practicable, but not later than 6/30/2025.

Pension Review Board

Funding Soundness Restoration Plan

- If a retirement system receives several consecutive valuations showing that the **system's amortization period exceeds 40 years**, the system's governing body and sponsoring entity must formulate a FSRP and submit the plan to the PRB.
- The FSRP must be sufficient to reduce the amortization period to 40 within **10 years**. Plans must report **updates** at least **every two years.**
- 16 systems have submitted FSRPs.
  - Nine systems have achieved their goal and are below 40 years.
  - Four other systems are working on developing a Revised FSRP since the initial FSRP was not met, including one plan subject to a second revised FSRP.
  - The remaining three systems are working towards a 40-year amortization period.
- Three systems are subject to the requirement but have not yet submitted their FSRPs.
- Thirteen more systems are at-risk of becoming subject to the FSRP requirement and have submitted at least one valuation with an amortization period greater than 40 years.

Intensive Actuarial Reviews to Date

January 2018	April 2018	October 2018	October 2019
Galveston Police Greenville Fire	Beaumont Fire Marshall Fire	Longview Fire Orange Fire Irving Fire	Odessa Fire Paris Fire

Recommendations:

- Adopt a funding policy that requires payment of an actuarially determined contribution, or at minimum, that fully funds the plan over a finite period of 30 years or less
- Adopt a formal risk/cost-sharing framework with “guardrails” or triggers that reduce uncertainty and guide stakeholders in how benefit and contribution levels will be modified under different economic conditions
- Closely monitor investment performance including asset allocation and expenses
- Conduct an in-depth asset-liability study of potential risks associated with existing asset mix and liabilities they support. Perform scenario testing of large PROP withdrawals coupled with potential adverse investment experience
- Regularly review actuarial assumptions against experience, making necessary changes
- Complete required training so that the board can make informed decisions

Minimum Educational Training (MET) Program

- The 83rd Texas Legislature required the PRB to establish the MET Program for trustees and system administrators of Texas public retirement systems, including providing online training.
- New public retirement system trustees and administrators are required to take **a minimum of 7 hours of training** within their first year of service; **minimum of 4 hours every 2 years thereafter**.
- The following provides overall MET compliance by retirement system type:
  - Statewide: 95.2%
  - Municipal: 94.4%
  - Local Fire Fighter: 74.5%
  - Special District and Supplemental: 73.6%
- The full MET Compliance Report, organized by system, can be found on the PRB website.

Legislative Session Resources

- March 2021 *Guide to Public Retirement Systems in Texas*
- Texas Public Pension Data Center
- Pension Basics Seminar for legislative staff - March 15, 2021
- Pension bill tracking report
- Actuarial Impact Statements

Agency Activities & Update on New Requirements for Texas Plans

Major Agency Activities FY 2019-2020

- Adopted rules, published guidance and designed templates to **assist systems in achieving compliance** with new statutory requirements
- **Analyzed investment performance evaluations** and summarized the information in the PRB's first *Investment Performance Report*
- Collaborated with stakeholders throughout the biennium, culminating in legislative recommendations to help enhance **transparency and responsible pension funding**

PENSION REVIEW BOARD

Monitoring Legislation: SB 2224

- SB 2224 (86R) required all public retirement systems to adopt a written **funding policy**.
  - The PRB has received **96 out of 100** funding policies
  - The PRB has done the following to help implement SB 2224:
    - Worked with systems to **develop and issue guidance**;
    - At the request of the systems**, provided a sample funding policy**;
    - Encouraged systems to **work with sponsors** to craft the funding policies;
    - Notified sponsors of the new statutory requirement.
  - A summary of the funding policies received through the end of 2020 is available in the PRB's biennial report.

Monitoring Legislation: SB 322

- Investment Expense Reporting
  - To assist retirement systems in compliance with the new requirement, the PRB has **engaged with systems** and **addressed concerns** surrounding the requirement; **published** rules to assist with reporting investment expenses; and **created a** **template** **and an** **asset class guide** as requested by systems for further assistance.
- Investment Practices and Performance Evaluation
  - Systems with at least $30 million in assets were required to select an independent firm to **evaluate** the system's investment practices and performance and to **provide recommendations** for improvement.
  - The PRB has **adopted guidance** detailing the elements of the evaluation and clarifying what constituents an independent firm.
  - The PRB created an **Investment Committee** to submit an **investment performance report** to the Governor and Legislature.

Investment Performance Report

- Texas Government Code Section 802.109(i) requires the PRB to submit an Investment Performance Report that both compiles and summarizes the information from the evaluations and include the report in the agency's Biennial Report to the Legislature.

- This report contains **aggregate analysis of the evaluations, a summary of each individual evaluation and resources** including a compilation of references from the evaluations to help systems access best practices and relevant benchmarking resources.

PENSION REVIEW BOARD

Recommendations to the 87th Legislature

Funding Policy Statute

- Add the plan sponsor to the funding policy requirement.

Funding Soundness Restoration Plan (FSRP) Statute

- Increase sponsor accountability and tie funding policy and FSRP together.
- Update the threshold, target and trigger.
- Update timelines and consequences if original FSRP is not working.

Investment Performance Report

- Amend statute to require evaluations to detail how the evaluator determined the need, or lack thereof, for any recommendations.
- Amend statute to require a formal review-and-comment process before publication.
- Review and consider the feasibility of whether an independent firm conducting the evaluation should be a different firm from the one that helped the system develop its existing investment policies, procedures and practices.
- Amend statute to require evaluators to identify their qualifications and potential conflicts-of-interest, codifying existing PRB informal guidance.

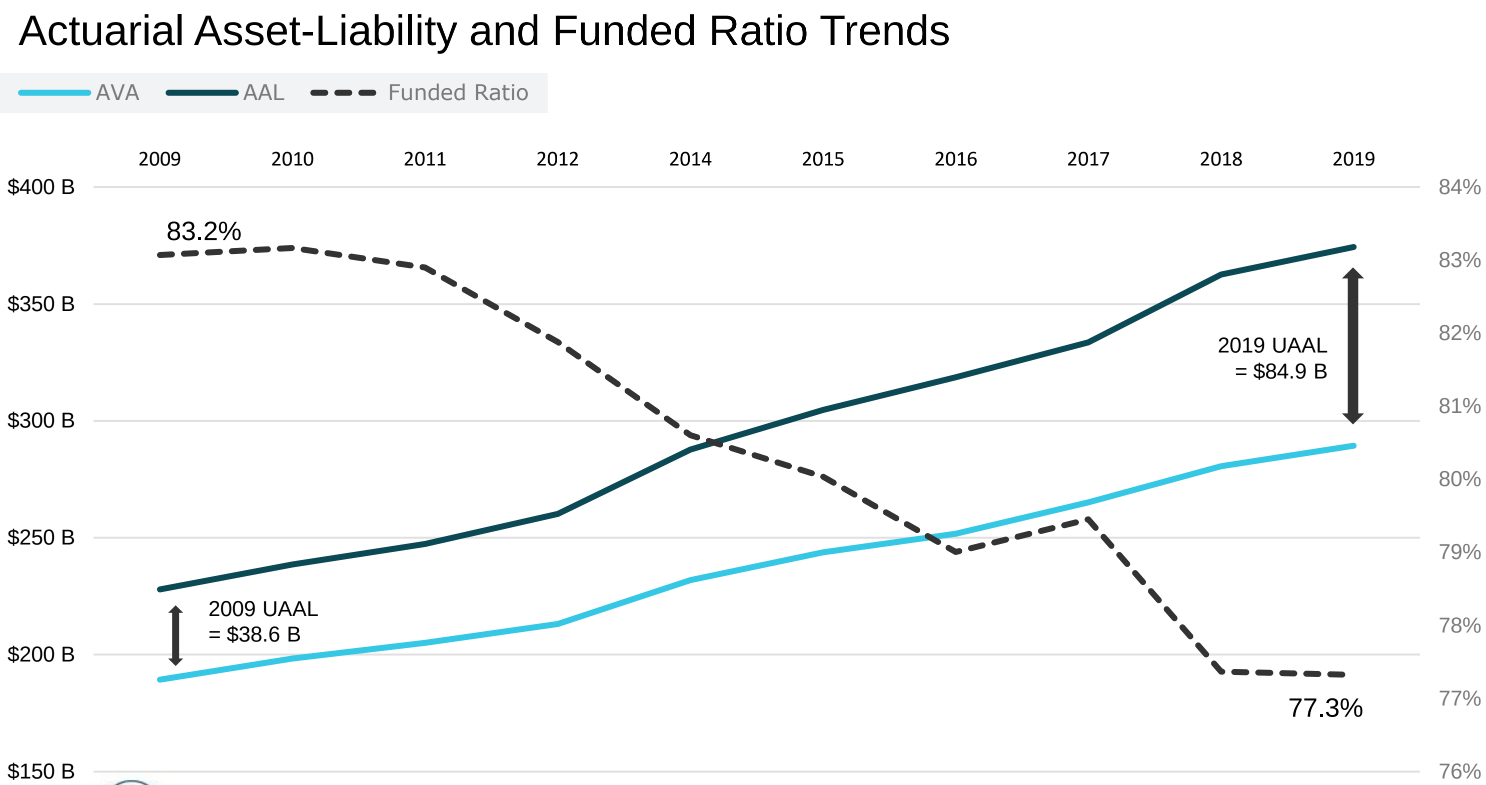
Key Metrics for Texas Public Pensions

Key Actuarial Measures

- **Two measures** frequently used to assess a system's **financial health**: funded ratio and amortization period.
- **Funded Ratio:** It is the proportion of a system's accrued liabilities that are covered by the assets. It is the ratio of the assets to the liabilities (AVA/AAL).
- **Amortization Period (Am. Pd.):** The amortization period or funding period is the expected period of time for a system to pay off its unfunded liability (UAAL).

Assets - Liabilities Trends

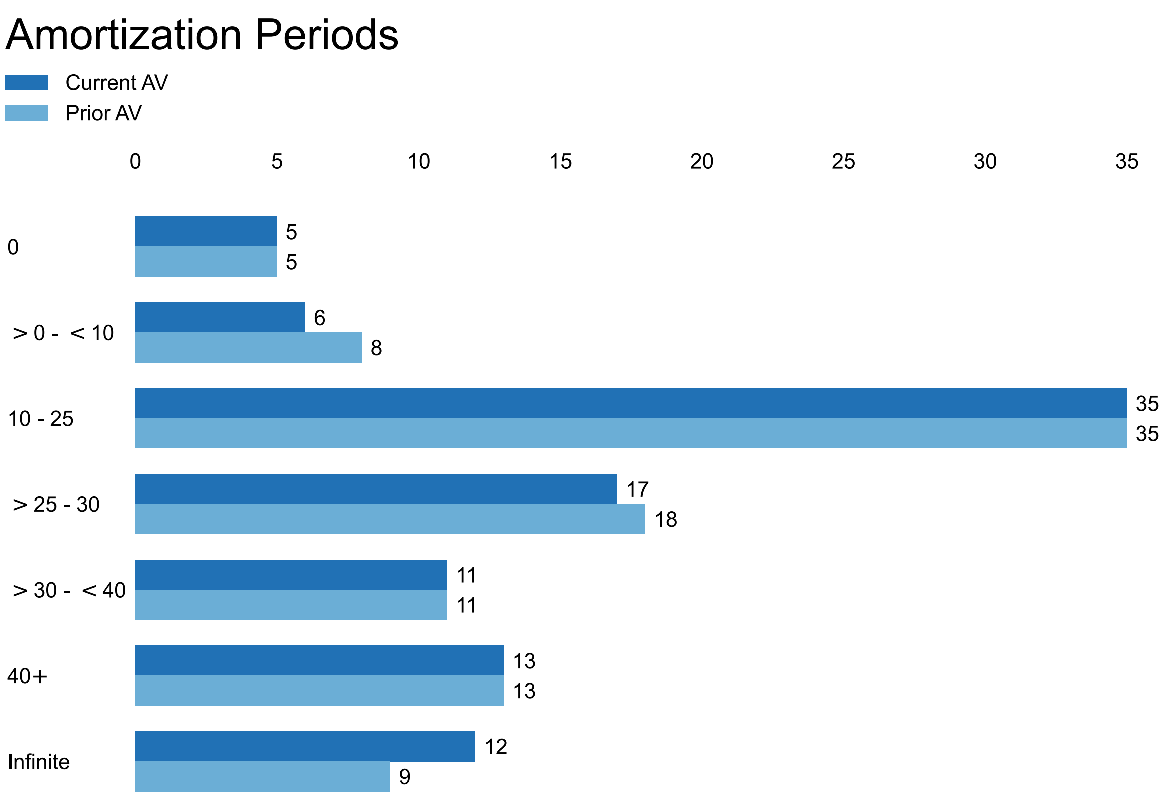
Since 2009, the overall unfunded actuarial accrued liability (UAAL), has steadily increased from $38.6 billion in 2009 to $84.9 billion in 2019. The aggregate funded ratio, in turn, has decreased over time from 83.2% to 77.3%.



Pension Review Board

Amortization Periods

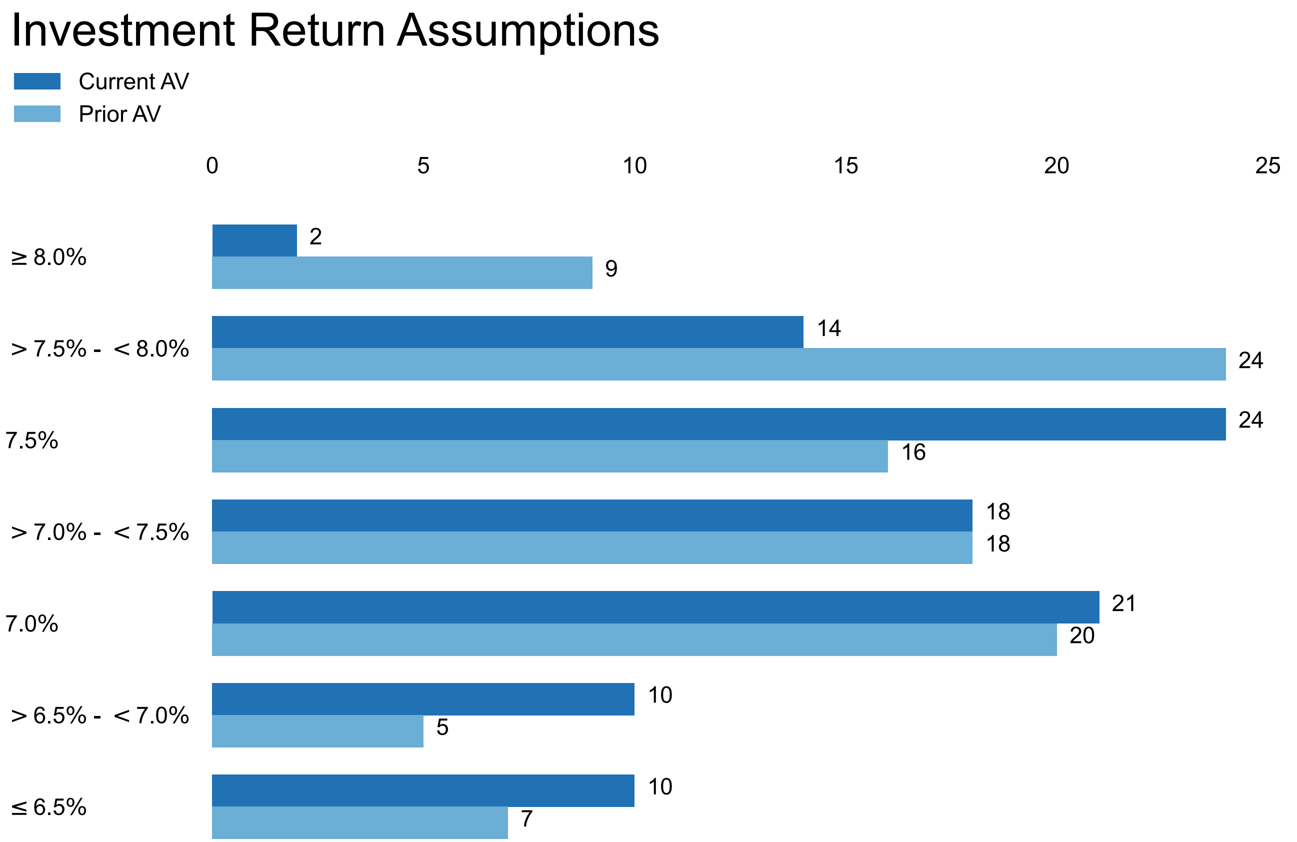
The PRB *Pension Funding Guidelines* establish a maximum amortization period of not more than **30 years** with a preferred target range of 10 to 25 years.



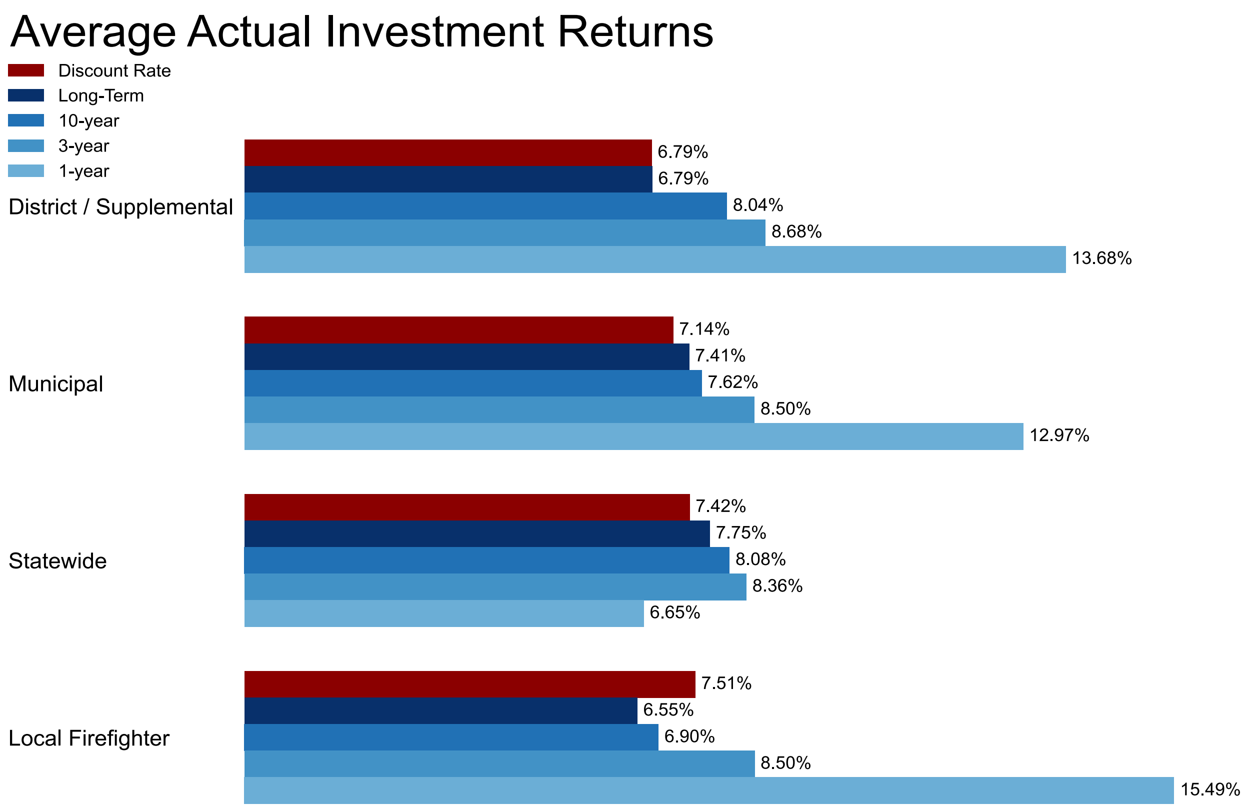
Assumed Rates of Return

- The average assumed rate of return for Texas retirement systems is currently **7.17%**. The national average is **7.18%** (NASRA, February 2021).
- In response to projected market conditions and actual plan experience, retirement systems across the country, including Texas, have **reduced their return assumptions** in recent years and we expect this trend to continue.
- The rate of return assumption is a **key economic assumption** that has an inverse correlation with the liability and short-term contribution requirements of a plan. A higher return assumption leads to a lower liability and contribution requirement and vice versa.
- **ERS** lowered its return assumption in 2018 from **8%** to **7.5%** and again in 2020 to **7%**. **TRS** lowered its return assumption from **8%** to **7.25%** in 2018.

Investment Return Assumption Trends



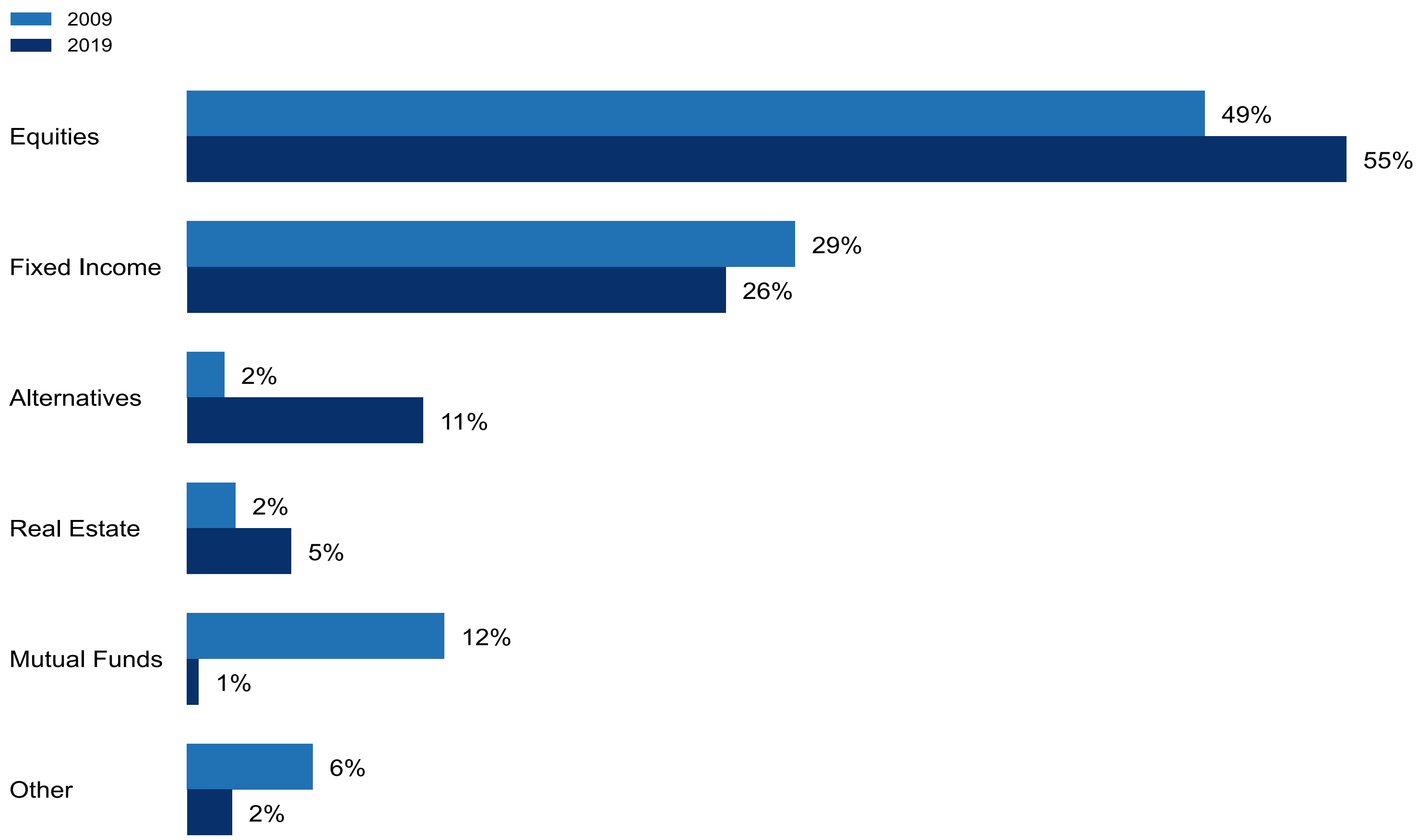
Average Actual Investment Return Trends FY 2019



<u>Fiscal year 2019 returns generally exceeded assumed rates of return by a large margin for plans with a December fiscal year end, which is approximately two-thirds of all plans.</u> Long-term return is 30 years or longest term available. All figures are net of fees. Assumed returns obtained from most recent actuarial valuation reports.

Pension Review Board

Average Asset Allocation FYE 2009 v 2019



Other includes: capital assets, receivables, securities lending collateral, liabilities and cash. The allocations provided are an unweighted average of all Texas defined benefit plans. Figures are obtained from the annual financial reports and may differ from allocation targets in investment policy statements.

PENSION REVIEW BOARD

COVID-19 and Texas Plans

- The impact of the COVID-19 pandemic on Texas public pension plans is still emerging. The pandemic has the potential to affect plan contributions, investment returns, and demographic experience.
- In the near term, the most significant impacts are likely to be budgetary constraints. Decreased revenues and increased costs for the plan sponsor make it more difficult to address potential contribution shortfalls.
- The long-term impacts are uncertain, but persistent low interest rates may force plans to continue to reduce expected investment returns, thereby increasing the needed level of contributions. This will be further exacerbated if total payroll growth is lower than expected.

Texas Pension Review Board

Plan Data | Comparative Data | Aggregate Data | Home

Texas Public Pension Data Center

This data center is meant to provide lawmakers, taxpayers, pension systems, and other stakeholders with current, historical and comparative public pension information. As part of its mission, the Pension Review Board compiles and reviews data from state and local public retirement systems in Texas. This website contains information reported by retirement systems to the PRB.

View Plans

Select a pension plan to view current and historical data.

VIEW DATA

Compare Plans

Select a peer group by plan type or asset size to view comparative data.

VIEW DATA

All Texas Plans

View key indicators of financial health for all Texas plans in the aggregate.

VIEW DATA

Aggregate Data

The 100 plans

There are 100 actuarially funded defined benefit public pension plans registered with the PRB. The total membership of these public retirement systems is more than 2.95 million active and retired members, and the total net assets of the plans are approximately $301 billion. The 100 plans include:

7
statewide plans including 2 cash balance plans that municipalities, counties and districts may join

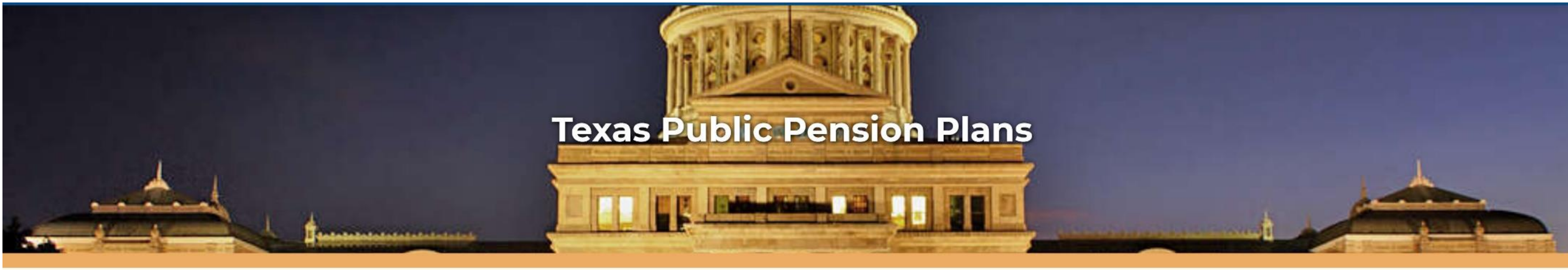
17
major municipal plans including 14 in state law and 3 in local ordinance

42
local firefighter plans organized under the Texas Local Firefighters Retirement Act

34
local plans administered by special purpose districts or as supplemental plans

PRB Online Data Center – Plan Data

available at: https://data.prb.texas.gov/



This data center is meant to provide lawmakers, taxpayers, pension systems, and other stakeholders with current, historical and comparative public pension information. As part of its mission, the Pension Review Board compiles and reviews data from state and local public retirement systems in Texas. This website contains information reported by retirement systems to the PRB.

Locate a Pension Plan

Select a plan and view key indicators of financial health over time.

Select a plan

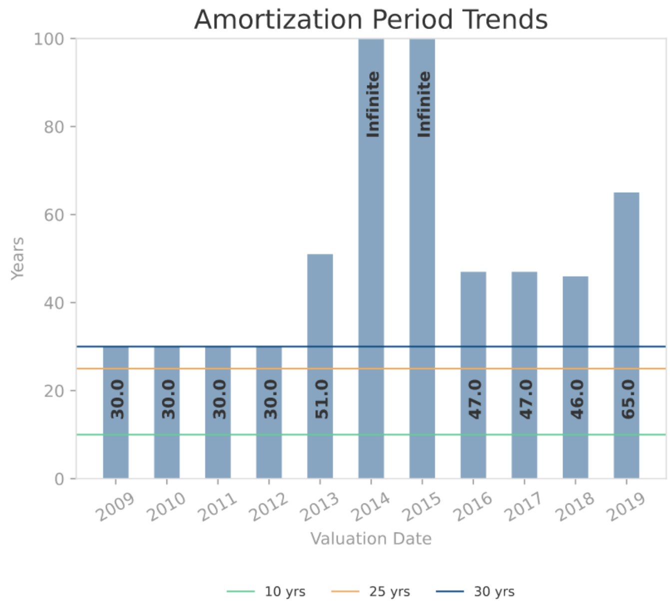
Pension Review Board

Dallas Employees' Retirement Fund

Membership	Total Net Assets	Social Security	Contributions	Contribution Type	Fiscal Year End
Active: 7,427 Annuitant: 7,405	$3,658,088,000	No	Employee: 13.32 % Employer: 14.14 %	Other	December

The Dallas Employees' Retirement Fund was established by ordinance in November 1943 and became effective in January 1944 after ratification by the voters of the City of Dallas. The Plan derives its authority from Chapter 40A of the Dallas City Code. The Plan is a single-employer defined benefit pension plan that provides retirement, disability, and death benefits to its members, and is sponsored by the City of Dallas. All employees of the City are members in the Plan, except police officers, firefighters, elected officers, non-salaries appointee members of administrative boards or commissions, part-time employees working less than one-half time, temporary employees, individuals working under contract, and individuals whose salaries are paid in part by another government agency.

Actuarial | Financial | Investments



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

Download Data

Pension Review Board

PRB Online Data Center – Comparative Data

Compare by Type

Local Firefighter
Local plans organized under the Texas Local Fire Fighters Retirement Act.

View Data

District / Supplemental
Local plans administered by special purpose districts or as supplemental plans.

View Data

Municipal
Major municipal plans either in state law or local ordinance.

View Data

Statewide
Statewide plans including two cash balance plans that municipalities, counties and districts may join.

View Data

Compare by Total Assets

Less than $10M
Plans with less than $10 million in total assets

View Data

$10M to $50M
Plans with at least $10 million and less than $50 million in total assets

View Data

$50M to $100M
Plans with at least $50 million and less than $100 million in total assets

View Data

$100M or Greater
Plans with at least $100 million in total assets

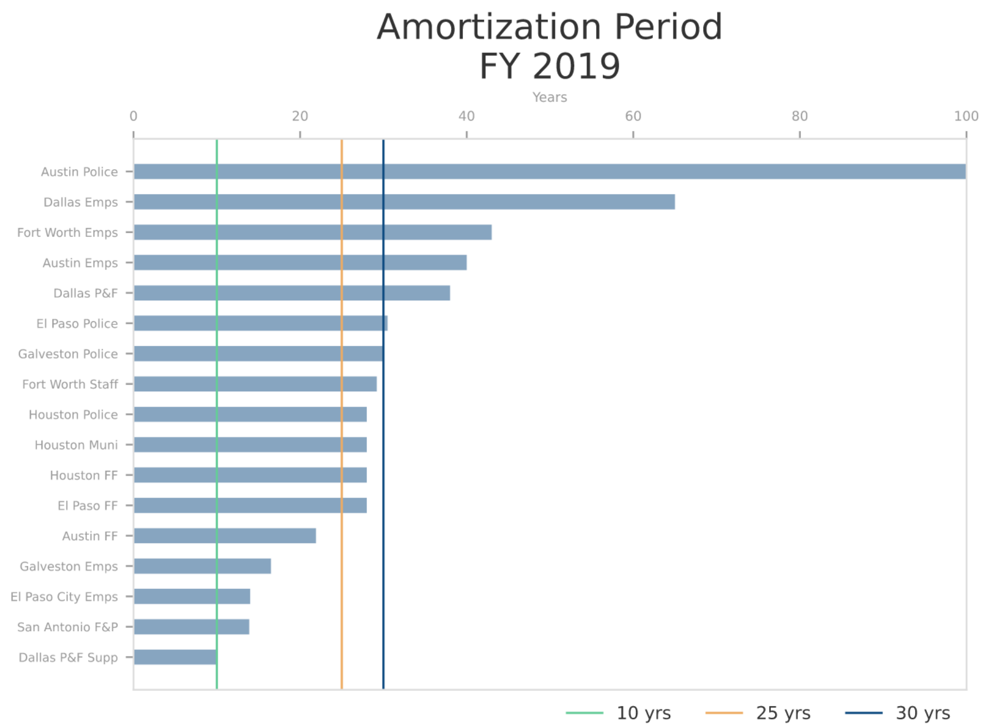
View Data

Pension Review Board

Municipal FY 2019

There are 17 municipal retirement systems including 14 systems enabled by Article 6243, Vernon's Civil Statutes and three created by city ordinances or charters, which are the Dallas Employees' Retirement Fund, City of El Paso Employees Retirement Trust, and Galveston Employees' Retirement Fund.

Actuarial | Financial | Investments



A retirement system's effective amortization period is defined by the PRB as the time it would theoretically take to fully fund the system's unfunded actuarial accrued liability (UAAL). The reported amortization period takes into account the plan's amortization policy and contribution history. The chart displays Municipal retirement systems' effective amortization periods for the selected fiscal year. If an actuarial valuation was not completed al year, the immediately preceding fiscal year is shown.

Download Data

Pension Review Board

Resources

- **PRB Public Pension Data Center** available at: https://data.prb.texas.gov/
- **PRB Online Courses**: Actuarial Matters, Benefits Administration, Investments, Governance, Fiduciary Matters, Ethics, Risk Management
- Available at: http://www.prb.state.tx.us/resource-center/trustees-administrators/educational-training-program/

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512-463-1736

Pension Review Board

Appendix – Actuarial Valuation Report

PENSION REVIEW BOARD

Actuarial Valuation Report
February 12, 2021

		Current Actuarial Valuation								Prior Actuarial Valuation		
Plan Name	**Plan Status (1)**	**Effective Date**	**Discount Rate**	**Effective Amort Period (2)**	**Funded Ratio %**	**Market Value of Assets (MVA)**	**Actuarial Value of Assets (AVA)**	**Unfunded Actuarial Accrued Liability (UAAL = AAL - AVA)**	**UAAL as % of Payroll**	**Effective Date**	**Prior Effective Amort Period (2)**	**Funded Ratio %**
Employees Retirement System of Texas	Active	8/31/2020	7.00%	Infinite	66.0	$ 27,946,206,540	$ 28,543,207,745	$ 14,715,104,328	203.77%	8/31/2019	Infinite	70.5
Law Enforcement & Custodial Off Sup. Ret. Fund	Active	8/31/2020	7.00%	Infinite	60.1	$ 947,324,194	$ 968,062,761	$ 641,524,299	39.37%	8/31/2019	Infinite	65.3
Austin Police Retirement System	Active	12/31/2019	7.25%	Infinite	58.4	$ 857,839,229	$ 852,294,229	$ 607,235,559	349.30%	12/31/2018	Infinite	58.1
Judicial Retirement System of Texas Plan Two	Active	8/31/2020	7.00%	Infinite	82.3	$ 477,331,237	$ 486,802,031	$ 104,428,095	116.28%	8/31/2019	Infinite	87.5
Beaumont Firemen's Relief & Retirement Fund	Active	12/31/2018	7.50%	Infinite	55.8	$ 105,769,426	$ 111,769,628	$ 88,543,261	457.43%	12/31/2016	104.0	67.5
Midland Firemen's Relief & Retirement Fund	Active	12/31/2017	7.75%	Infinite	60.9	$ 89,023,115	$ 91,856,742	$ 58,952,399	362.54%	12/31/2015	44.7	65.8
McAllen Firemen's Relief & Retirement Fund	Active	9/30/2018	7.50%	Infinite	68.2	$ 52,675,409	$ 51,901,271	$ 24,240,176	196.53%	10/1/2016	33.4	69.1
Longview Firemen's Relief & Retirement Fund	Active	12/31/2019	7.50%	Infinite	39.4	$ 45,779,786	$ 44,348,518	$ 68,367,542	504.54%	12/31/2018	Infinite	39.9
Conroe Fire Fighters' Retirement Fund	Active	12/31/2019	7.50%	Infinite	58.4	$ 29,561,207	$ 29,523,182	$ 21,025,245	200.13%	12/31/2018	Infinite	58.1
Orange Firemen's Relief & Retirement Fund	Active	1/1/2019	7.75%	Infinite	46.3	$ 7,961,733	$ 7,961,733	$ 9,241,746	360.64%	1/1/2017	69.3	49.9
Atlanta Firemen's Relief & Retirement Fund	Active	12/31/2018	7.40%	Infinite	80.0	$ 3,801,042	$ 4,181,146	$ 1,043,126	184.83%	12/31/2016	28.4	82.1
Plainview Firemen's Relief & Retirement Fund	Active	12/31/2019	7.50%	79.7	34.0	$ 6,238,767	$ 5,989,437	$ 11,633,150	576.43%	12/31/2017	44.8	37.7
Dallas Employees' Retirement Fund	Active	12/31/2019	7.25%	65.0	75.7	$ 3,658,088,000	$ 3,682,959,000	$ 1,180,366,000	272.04%	12/31/2018	46.0	80.0
Sweetwater Firemen's Relief & Retirement Fund	Active	12/31/2018	8.00%	63.3	63.9	$ 7,760,982	$ 8,770,824	$ 4,947,393	294.74%	12/31/2016	27.5	70.0
Marshall Firemen's Relief & Retirement Fund	Active	12/31/2018	7.50%	59.0	36.7	$ 7,278,840	$ 7,278,840	$ 12,576,960	429.30%	12/31/2016	56.4	42.0
Texarkana Firemen's Relief & Retirement Fund	Active	12/31/2019	7.60%	58.3	80.0	$ 36,402,489	$ 35,443,388	$ 8,854,932	202.16%	12/31/2017	15.0	86.3
Dallas Police & Fire Pension System-Combined Plan	Active	1/1/2020	7.00%	55.0	45.7	$ 2,057,857,317	$ 2,160,125,611	$ 2,563,846,869	645.88%	1/1/2019	38.0	48.1
Cleburne Firemen's Relief & Retirement Fund	Active	12/31/2018	7.35%	48.6	59.6	$ 19,362,808	$ 21,731,172	$ 14,724,082	324.13%	12/31/2016	28.8	66.7
Irving Firemen's Relief & Retirement Fund	Active	12/31/2019	7.00%	43.6	65.4	$ 195,803,334	$ 190,715,524	$ 100,839,331	267.38%	12/31/2017	Infinite	71.6
Wichita Falls Firemen's Relief & Retirement Fund	Active	1/1/2020	7.75%	43.3	56.8	$ 52,839,714	$ 52,839,714	$ 40,226,568	326.00%	1/1/2018	Infinite	57.7
Fort Worth Employees' Retirement Fund	Active	12/31/2019	7.00%	43.0	52.3	$ 2,396,727,586	$ 2,400,393,264	$ 2,186,491,299	433.49%	12/31/2018	44.0	52.4
Laredo Firefighters Retirement System	Active	9/30/2018	7.50%	43.0	59.9	$ 154,813,837	$ 155,509,979	$ 104,273,436	282.55%	9/30/2016	28.0	59.3
Texas City Firemen's Relief & Retirement Fund	Active	12/31/2018	7.50%	41.1	45.9	$ 14,389,108	$ 15,828,019	$ 18,643,387	348.98%	12/31/2016	28.0	50.4
Greenville Firemen's Relief & Retirement Fund	Active	12/31/2018	7.75%	40.7	46.6	$ 12,254,104	$ 13,479,514	$ 15,438,433	368.76%	12/31/2016	55.0	47.7
Austin Employees' Retirement System	Active	12/31/2019	7.00%	40.0	63.5	$ 2,928,033,076	$ 2,848,950,000	$ 1,638,934,062	231.64%	12/31/2018	32.0	67.6
Killeen Firemen's Relief & Retirement Fund	Active	9/30/2018	7.50%	39.8	69.4	$ 43,947,221	$ 42,970,465	$ 18,990,872	131.39%	9/30/2016	22.8	69.7
Brownwood Firemen's Relief & Retirement Fund	Active	12/31/2017	7.25%	38.6	45.0	$ 4,158,090	$ 4,165,427	$ 5,085,187	263.23%	12/31/2015	36.1	44.6
Big Spring Firemen's Relief & Retirement Fund	Active	1/1/2019	7.75%	38.3	53.2	$ 10,902,959	$ 11,874,904	$ 10,439,548	245.07%	1/1/2017	36.2	54.9
Amarillo Firemen's Relief & Retirement Fund	Active	12/31/2019	7.50%	38.1	82.0	$ 193,539,560	$ 177,211,704	$ 38,901,102	185.22%	12/31/2017	43.5	81.5

This report is a compilation of pension data reported by retirement systems in their most recent AVs, sorted by amortization period.

Actuarial Valuation Report
February 12, 2021

Plan Name	Plan Status (1)	Current Actuarial Valuation: Effective Date	Discount Rate	Effective Amort Period (2)	Funded Ratio %	Market Value of Assets (MVA)	Actuarial Value of Assets (AVA)	Unfunded Actuarial Accrued Liability (UAAL = AAL - AVA)	UAAL as % of Payroll	Prior Actuarial Valuation: Effective Date	Prior Effective Amort Period (2)	Funded Ratio %
Harlingen Firemen's Relief & Retirement Fund	Active	9/30/2019	7.75%	38.0	64.5	$ 33,712,925	$ 33,712,925	$ 18,528,703	277.57%	9/30/2017	59.1	66.1
San Angelo Firemen's Relief & Retirement Fund	Active	12/31/2019	7.80%	37.6	62.0	$ 71,755,778	$ 69,872,462	$ 42,886,258	339.34%	12/31/2017	31.3	64.9
Odessa Firemen's Relief & Retirement Fund	Active	1/1/2020	7.50%	37.5	36.8	$ 44,792,900	$ 43,361,750	$ 74,452,902	544.63%	1/1/2019	77.5	39.3
Lubbock Fire Pension Fund	Active	12/31/2018	7.75%	33.0	70.8	$ 186,484,535	$ 199,266,188	$ 82,173,796	241.06%	12/31/2016	33.5	72.6
Paris Firefighters' Relief & Retirement Fund	Active	12/31/2018	7.25%	32.1	30.5	$ 4,152,310	$ 4,663,640	$ 10,625,400	382.48%	12/31/2016	41.9	35.6
Abilene Firemen's Relief & Retirement Fund	Active	10/1/2019	7.50%	31.4	49.1	$ 55,688,061	$ 58,101,368	$ 60,298,270	393.82%	10/1/2017	31.9	55.7
Lufkin Firemen's Relief & Retirement Fund	Active	12/31/2018	7.50%	30.7	48.8	$ 15,659,035	$ 17,334,531	$ 18,178,233	349.28%	12/31/2016	33.1	46.7
Galveston Employees' Retirement Plan for Police	Active	1/1/2019	7.00%	30.0	34.0	$ 17,856,397	$ 19,642,037	$ 38,211,442	315.26%	1/1/2018	35.5	39.3
El Paso Police Pension Fund	Active	1/1/2020	7.75%	29.9	76.3	$ 932,430,228	$ 888,936,511	$ 275,499,329	298.45%	1/1/2018	30.5	78.3
Corpus Christi Fire Fighters' Retirement System	Active	12/31/2018	7.50%	29.8	60.2	$ 139,811,086	$ 151,136,552	$ 99,896,125	305.70%	12/31/2016	23.1	62.1
Fort Worth Employees' Retirement Fund Staff Plan (5)	Active	12/31/2019	7.00%	29.2	67.5	$ 5,853,631	$ 5,746,115	$ 2,773,533	181.77%	12/31/2018	30.0	68.9
Corsicana Firemen's Relief & Retirement Fund	Active	12/31/2018	7.00%	28.9	50.7	$ 8,563,597	$ 9,310,272	$ 9,065,130	218.76%	12/31/2016	28.9	53.1
University Park Firemen's Relief & Retirement Fund	Closed	12/31/2018	7.50%	28.8	43.4	$ 9,447,674	$ 10,460,367	$ 13,664,013	441.37%	12/31/2016	Infinite	44.0
Temple Firemen's Relief & Retirement Fund	Active	9/30/2018	7.75%	28.6	73.0	$ 44,243,769	$ 44,233,922	$ 16,392,673	181.02%	9/30/2016	28.4	75.1
Houston Firefighters' Relief & Retirement Fund	Active	7/1/2019	7.00%	28.0	82.9	$ 4,237,692,000	$ 4,190,934,000	$ 866,825,000	315.82%	7/1/2018	29.0	81.4
Houston Municipal Employees Pension System	Active	7/1/2020	7.00%	27.1	59.2	$ 2,881,788,000	$ 3,074,339,000	$ 2,122,008,000	330.40%	7/1/2019	28.0	59.3
Teacher Retirement System of Texas	Active	8/31/2020	7.25%	27.0	76.8	$ 165,416,245,243	$ 167,432,159,118	$ 50,605,424,379	101.24%	8/31/2019	29.0	76.4
Houston Police Officers' Pension System	Active	7/1/2020	7.00%	27.0	82.4	$ 5,572,476,000	$ 5,631,533,000	$ 1,204,149,000	255.17%	7/1/2019	28.0	81.7
CPS Energy Pension Plan	Active	1/1/2020	7.00%	27.0	82.7	$ 1,779,033,857	$ 1,719,537,036	$ 360,097,480	125.49%	1/1/2019	21.0	82.3
Galveston Firefighter's Relief & Retirement Fund	Active	12/31/2017	7.75%	26.8	69.2	$ 44,651,640	$ 44,330,845	$ 19,767,545	248.42%	12/31/2016	Infinite	68.0
El Paso Firemen's Pension Fund	Active	1/1/2020	7.75%	26.6	76.5	$ 643,133,030	$ 615,418,214	$ 189,530,926	281.17%	1/1/2018	28.0	77.8
San Benito Firemen Relief & Retirement Fund	Active	9/30/2019	7.50%	26.1	60.9	$ 3,927,895	$ 3,927,895	$ 2,523,394	184.91%	9/30/2017	21.8	60.7
University Health System Pension Plan	Active	1/1/2018	7.00%	26.0	70.7	$ 363,779,588	$ 347,115,543	$ 143,589,317	39.14%	1/1/2017	27.0	67.5
Irving Supplemental Benefit Plan	Active	1/1/2020	6.75%	26.0	73.5	$ 70,213,418	$ 67,147,643	$ 24,275,598	21.43%	1/1/2019	23.0	73.5
Tyler Firefighters' Relief & Retirement Fund	Active	12/31/2017	7.50%	25.5	76.2	$ 70,141,881	$ 69,570,894	$ 21,757,655	188.81%	12/31/2015	21.6	75.9
Dallas Co. Hospital Dist. Retirement Income Plan	Active	1/1/2020	6.00%	24.0	64.8	$ 1,173,720,580	$ 1,126,710,039	$ 611,546,606	89.21%	1/1/2019	25.0	71.5
Port Arthur Firemen's Relief & Retirement Fund	Active	12/31/2017	7.50%	23.7	74.2	$ 49,890,603	$ 48,844,714	$ 16,966,441	182.37%	12/31/2015	18.3	78.0
Houston MTA Workers Union Pension Plan	Closed	1/1/2020	6.25%	23.0	64.2	$ 294,629,862	$ 284,189,712	$ 158,635,309	175.09%	1/1/2019	24.0	62.5
San Antonio Metropolitan Transit Retirement Plan	Active	10/1/2018	7.25%	23.0	64.1	$ 298,393,798	$ 282,899,551	$ 158,753,455	139.47%	10/1/2017	24.0	62.4

This report is a compilation of pension data reported by retirement systems in their most recent AVs, sorted by amortization period.

Actuarial Valuation Report
February 12, 2021

		Current Actuarial Valuation								Prior Actuarial Valuation		
Plan Name	**Plan Status (1)**	**Effective Date**	**Discount Rate**	**Effective Amort Period (2)**	**Funded Ratio %**	**Market Value of Assets (MVA)**	**Actuarial Value of Assets (AVA)**	**Unfunded Actuarial Accrued Liability (UAAL = AAL - AVA)**	**UAAL as % of Payroll**	**Effective Date**	**Prior Effective Amort Period (2)**	**Funded Ratio %**
Houston MTA Non-Union Pension Plan	Closed	1/1/2020	6.25%	23.0	60.5	$ 186,645,413	$ 181,431,446	$ 118,527,718	303.71%	1/1/2019	24.0	61.8
Nacogdoches County Hospital District (5)	Frozen	7/1/2019	7.25%	22.0	96.8	$ 45,978,650	$ 46,663,570	$ 1,529,744	N/A	7/1/2018	20.0	94.7
Galveston Wharves Pension Plan	Closed	1/1/2019	7.25%	22.0	76.1	$ 12,411,631	$ 12,411,631	$ 3,906,450	255.74%	1/1/2018	23.0	83.8
Austin Fire Fighters Relief & Retirement Fund	Active	12/31/2019	7.50%	21.9	86.8	$ 1,029,892,806	$ 1,001,980,211	$ 152,385,418	159.33%	12/31/2018	17.9	88.0
Lower Colorado River Authority Retirement Plan	Closed	1/1/2020	7.00%	20.0	67.7	$ 428,877,867	$ 431,497,129	$ 205,980,317	202.35%	1/1/2019	18.0	70.3
Dallas Police & Fire Pension System-Supplemental (3)	Active	1/1/2020	7.00%	20.0	48.3	$ 17,307,433	$ 17,307,433	$ 18,523,051	3091.36%	1/1/2019	10.0	57.6
Texas Emergency Services Retirement System	Active	8/31/2020	7.50%	19.0	83.3	$ 125,229,661	$ 125,366,915	$ 25,073,628	N/A	8/31/2018	24.0	83.4
Employees of Brownsville Navigation District	Active	1/1/2019	6.15%	19.0	57.6	$ 4,890,148	$ 5,254,517	$ 3,873,642	89.19%	1/1/2018	20.0	54.3
Waxahachie Firemen's Relief & Retirement Fund	Active	10/1/2018	7.00%	18.9	73.1	$ 17,428,039	$ 17,428,039	$ 6,419,351	131.82%	10/1/2016	25.4	66.9
Denton Firemen's Relief & Retirement Fund	Active	12/31/2019	6.75%	18.3	80.8	$ 103,815,795	$ 98,109,262	$ 23,333,103	115.79%	12/31/2017	14.6	82.1
Sweeny Community Hospital	Closed	1/1/2020	7.00%	18.0	88.8	$ 3,490,459	$ 3,306,373	$ 415,513	65.55%	1/1/2019	19.0	86.4
Texas Municipal Retirement System (4)	Active	12/31/2019	6.75%	17.2	88.0	$ 31,813,811,275	$ 31,313,805,957	$ 4,271,031,992	61.15%	12/31/2018	18.2	87.1
Galveston Employees' Retirement Fund	Active	12/31/2019	7.25%	16.5	77.5	$ 57,497,904	$ 54,890,649	$ 15,922,387	60.63%	12/31/2018	16.8	76.6
Harris County Hospital District Pension Plan (5)	Closed	1/1/2020	6.75%	15.8	73.0	$ 737,879,367	$ 707,893,800	$ 261,858,773	167.34%	1/1/2019	16.4	74.0
Denison Firemen's Relief & Retirement Fund	Active	12/31/2017	7.50%	15.8	77.3	$ 17,725,070	$ 17,524,049	$ 5,159,287	155.45%	12/31/2015	27.1	74.4
DFW Airport Board	Active	1/1/2020	7.25%	15.0	85.8	$ 549,954,511	$ 543,581,900	$ 89,741,623	173.42%	1/1/2019	16.0	83.7
DFW Airport Board DPS	Active	1/1/2020	7.25%	15.0	81.2	$ 215,337,151	$ 212,881,725	$ 49,148,757	146.11%	1/1/2019	16.0	78.5
Plano Retirement Security Plan	Active	12/31/2019	6.75%	15.0	95.4	$ 167,755,102	$ 160,483,170	$ 7,711,014	4.87%	12/31/2017	0.0	100.8
Weslaco Firemen's Relief & Retirement Fund	Active	9/30/2018	7.25%	14.1	72.0	$ 11,577,179	$ 11,412,283	$ 4,440,304	101.90%	9/30/2016	14.1	68.5
City of El Paso Employees Retirement Trust	Active	9/1/2018	7.50%	14.0	80.3	$ 820,416,288	$ 822,926,030	$ 201,453,137	120.47%	9/1/2016	17.0	79.2
Corpus Christi Regional Transportation Authority	Active	1/1/2020	7.30%	14.0	92.1	$ 42,170,049	$ 41,116,802	$ 3,508,696	31.97%	1/1/2019	15.0	91.8
San Antonio Fire & Police Pension Fund	Active	1/1/2020	7.25%	13.7	87.6	$ 3,408,690,035	$ 3,434,094,746	$ 484,429,050	141.90%	1/1/2019	13.9	87.9
DART Employees (5)	Closed	10/1/2019	6.75%	12.3	80.5	$ 185,583,667	$ 190,481,841	$ 46,127,286	366.26%	10/1/2018	12.8	79.2
Capital MTA Bargaining	Frozen	1/1/2020	6.75%	12.0	52.1	$ 35,284,632	$ 33,780,736	$ 31,103,216	N/A	1/1/2019	20.0	50.6
Brazos River Authority Retirement Plan	Frozen	3/1/2020	6.50%	12.0	63.5	$ 20,463,482	$ 20,372,697	$ 11,705,422	N/A	3/1/2019	13.0	61.7
Capital MTA Admin Employees (3)	Active	1/1/2020	6.75%	11.7	77.8	$ 37,818,736	$ 35,895,259	$ 10,259,320	41.53%	1/1/2019	20.0	76.9
Texas County & District Retirement System (4)	Active	12/31/2019	8.00%	11.3	89.4	$ 33,833,510,529	$ 32,789,744,843	$ 3,880,435,865	52.85%	12/31/2018	12.6	88.5
Port of Houston Authority Retirement Plan	Closed	8/1/2020	6.25%	11.0	93.4	$ 191,251,270	$ 191,251,270	$ 13,596,861	45.80%	8/1/2019	30.0	92.9
Guadalupe-Blanco River Authority	Frozen	1/1/2019	6.75%	10.0	86.9	$ 28,731,703	$ 30,900,491	$ 4,643,707	N/A	1/1/2018	7.6	85.6

This report is a compilation of pension data reported by retirement systems in their most recent AVs, sorted by amortization period.

Actuarial Valuation Report
February 12, 2021

Plan Name	Plan Status (1)	Current Actuarial Valuation: Effective Date	Discount Rate	Effective Amort Period (2)	Funded Ratio %	Market Value of Assets (MVA)	Actuarial Value of Assets (AVA)	Unfunded Actuarial Accrued Liability (UAAL = AAL - AVA)	UAAL as % of Payroll	Prior Actuarial Valuation: Effective Date	Prior Effective Amort Period (2)	Funded Ratio %
Northeast Medical Center Hospital Retirement Plan (3)	Frozen	7/1/2019	7.25%	10.0	82.7	$ 9,405,456	$ 9,405,456	$ 1,963,048	N/A	7/1/2018	10.0	83.8
Colorado River Municipal Water Dist. (5)	Active	1/1/2020	6.00%	7.1	88.3	$ 10,699,777	$ 10,699,777	$ 1,413,550	44.47%	1/1/2019	8.5	83.3
Refugio County Memorial Hospital (5)	Frozen	11/1/2019	6.00%	5.2	96.5	$ 1,861,692	$ 1,861,692	$ 68,240	N/A	11/1/2018	7.0	97.8
JPS - Tarrant County Hospital District	Active	10/1/2018	7.00%	5.0	93.6	$ 292,578,664	$ 278,787,703	$ 19,047,712	6.89%	10/1/2017	3.8	95.1
Guadalupe Regional Medical Center	Active	1/1/2020	7.00%	5.0	99.1	$ 83,831,107	$ 78,104,845	$ 709,550	2.40%	1/1/2019	12.0	96.5
Travis County ESD #6 FRRF	Active	12/31/2017	7.00%	3.3	87.2	$ 19,688,064	$ 19,010,963	$ 2,790,432	48.27%	12/31/2015	5.8	71.6
Northwest Texas Healthcare System Retirement Plan	Frozen	10/1/2019	7.50%	1.0	96.2	$ 23,912,245	$ 23,900,053	$ 944,540	N/A	10/1/2018	2.0	90.1
Citizens Medical Center	Active	3/1/2020	6.75%	0.0	106.1	$ 114,266,627	$ 114,815,280	$ (6,627,783)	-11.60%	3/1/2019	0.0	110.4
The Woodlands Firefighters' Retirement System	Active	1/1/2020	7.00%	0.0	107.0	$ 42,315,851	$ 42,315,851	$ (2,769,663)	-22.22%	1/1/2019	3.6	97.8
Arlington Employees Deferred Income Plan	Active	6/30/2019	5.00%	0.0	107.2	$ 2,999,905	$ 2,999,905	$ (200,717)	-5.33%	6/30/2018	0.0	106.2
Anson General Hospital	Frozen	7/1/2019	6.00%	0.0	110.1	$ 1,957,233	$ 1,911,086	$ (176,007)	-81.37%	7/1/2018	0.0	120.1
El Paso Firemen & Policemen's Pension Staff Plan	Active	1/1/2020	7.75%	0.0	113.7	$ 685,883	$ 661,663	$ (79,547)	-9.54%	1/1/2018	0.0	113.1
Grand Totals:					**76.8%**	**$ 301,589,468,387**	**$ 302,660,850,664**	**$ 91,552,742,286**				**77.1%**

Notes

(1) Plan status indicates whether a plan is active (admitting new hires), closed to new hires (but still accruing benefits), or frozen (not accruing benefits).

(2) The effective amortization period is the time it would take to theoretically eliminate the UAAL assuming no future gains or losses and taking into account both the plan's stated and historical contribution policy.

(3) Reported amortization period is based on an open amortization funding policy.

(4) Amortization period is calculated using system-wide aggregate UAAL and payroll amounts.

(5) Amortization period is calculated by the PRB.

Appendix M – Pension Basics Legislative Seminar

Texas Pension Review Board

Pension Basics Legislative Seminar

March 2021

PENSION REVIEW BOARD

PRB Overview

Primary Duties

- Conduct a **continuing review** of all Texas public retirement systems
- Conduct **intensive studies** of potential or existing problems that threaten the actuarial soundness of public retirement systems
- Prepare **actuarial impact statements** for pending legislation
- Provide **information** and **technical assistance**
- Recommend **policies, practices, and legislation** to public retirement systems and governmental entities
- Develop and administer an **educational training program** for trustees and administrators of retirement systems

PRB Overview

Board Composition

Composed of **seven** governor-appointed members, including:

- three members with a background in securities investment, pension administration, or pension law
- one member who is an actuary
- one member who is an expert in governmental finance
- one active member of a public retirement system
- one retired member of a public retirement system

Landscape of Texas Plans

- **347 Public Retirement Systems in Texas**: **100** actuarially funded DB plans (including **2** hybrid plans); **166 defined contribution** and **81 pay-as-you-go** volunteer firefighter plans.
- **The two hybrid/cash-balance** plans are **Texas Municipal Retirement System** (TMRS) and **Texas County and District Retirement System** (TCDRS). Currently, **888** municipalities are participating in **TMRS**, and **799** counties and districts are participating in **TCDRS**.
- **DC plans** are primarily offered as supplemental plans by school districts, housing authorities, municipal districts, COGs, and MHMR facilities. Plan types include 401(a), 401(k), 403(b), and 457(b) plans.

Landscape of Texas Plans

Of the **100** actuarially funded defined benefit plans in Texas:

- **7** are **statewide** retirement systems, governed by the Texas Government Code.
- **17** are **major municipal** retirement systems including 14 systems enabled by state statute (Article 6243, Vernon's Civil Statutes) and three retirement systems created by city ordinance or charter (Dallas Employees, Galveston Employees, El Paso City Employees).
- **42** are **paid/part-paid firefighter** systems across the state, created under the Texas Local Firefighters Retirement Act (TLFFRA), Article 6243(e) of Vernon's Civil Statutes.
- **34** are local retirement systems offered by **other political entities** such as water districts, appraisal districts, or other special purpose districts, authorized by Chapter 810 of the Texas Government Code.

Texas Constitution

Constitutional Authority to Create Pensions

- State and local retirement systems are enabled by **Article 16, Section 67 of the Texas Constitution** which grants authority to the Legislature to enact general laws establishing retirement systems for public employees and officers.
- The Constitution also provides that the financing of benefits must be based on **sound actuarial principles** and that the assets of a system are held in trust for the benefit of the members and may not be diverted.
- The **Teacher Retirement System** (TRS) and **Employees Retirement System** (ERS) are established in the Constitution with a floor and ceiling for state contributions to both funds at **6% and 10%**, respectively.

Constitutional Benefit Protection

- **Article 16, Section 66 of the Texas Constitution** provides **benefit protection** to certain local retirement systems by prohibiting the reduction or impairment of accrued benefit. (8 cities opted out of this provision: Denison, Galveston, Houston, Marshall, McAllen, Paris, Port Arthur, and Sweetwater)
- The benefit protection was tested in the courts in lawsuits related to Ft. Worth Employees' Retirement System and Dallas Police and Fire Pension System lawsuits. The courts determined that prospective benefit changes do not violate this provision.

Defined Benefit Plan Governance

- **Decision-making authority** relating to **contribution levels** and **benefit provisions** varies considerably across Texas' diverse public retirement systems.
- **TRS** and **ERS** boards do not set the contribution or benefit policy; this is set in statute and can only be changed by the Legislature.
- Some **municipal retirement systems** must come before the Legislature to make contribution and/or benefit changes (San Antonio Fire and Police).
- Other **municipal and fire fighter systems** are allowed to make certain contribution and/or benefit changes without legislative approval (Houston Municipal, Ft. Worth Employees', Dallas Police and Fire and local firefighters/TLFFRA plans).
- Retirement systems established under **Chapter 810** of the Government Code have complete authority to determine plan provisions locally.

Pension Review Board

Pension Plan Financing

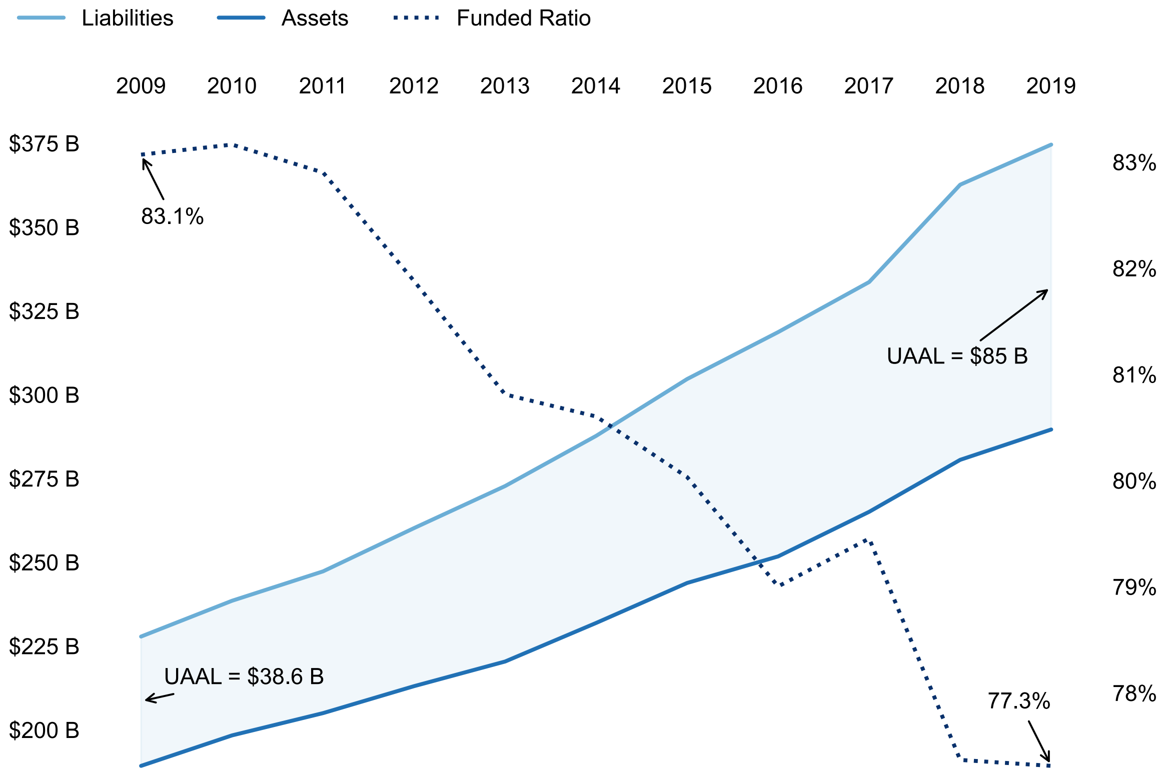
- **Pension Financing Equation: C + I = B + E** Contributions (C) + Income (I) = Benefits (B) + Expenses (E).
- In a **defined benefit (DB) plan**, actuarial methods are used to calculate and predict the benefits, expenses and income in the equation; actuaries then determine the recommended contributions for sound funding of the plan.
- In a **defined contribution (DC) plan**, the contributions and income determine the amount of benefit available, net of expenses.
- **Hybrid plans** utilize components of DB and DC. Benefits look like DC plan but are valued and funded like DB plan. The largest cash balance plans in Texas are TCDRS and TMRS.

Key Actuarial Measures

- **Two measures** frequently used to assess a system's **financial health**: funded ratio and amortization period.
- **Funded Ratio:** It is the proportion of a system's accrued liabilities that are covered by the assets. It is the ratio of the assets to the liabilities.
- **Amortization Period (Am. Pd.):** The amortization period or funding period is the expected period of time for a system to pay off its unfunded liability.

Assets - Liabilities Trends

Since 2009, the overall unfunded actuarial accrued liability (UAAL), which is the difference between the actuarial value of assets (AVA) and accrued actuarial liability (AAL), has steadily increased from $38.6 billion in 2009 to $85 billion in 2019. The aggregate funded ratio, in turn, has decreased over time from 83.1% to 77.3%.



PRB Pension Funding Guidelines (effective 6/30/17)

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

*Plans with amortization periods that exceed 30 years as of 6/30/2017 should seek to reduce their amortization period to 30 years or less as soon as practicable, but not later than 6/30/2025.

Pension Review Board

Funding Soundness Restoration Plan

- If a retirement system receives several consecutive valuations showing that the **system's amortization period exceeds 40 years**, the system's governing body and sponsoring entity must formulate a FSRP and submit the plan to the PRB.
- The FSRP must be sufficient to reduce the amortization period to 40 within **10 years**.
- Plans must report **updates** at least **every two years.**
- **If subsequent valuations indicate the FSRP is not working,** the system's governing body and sponsoring entity must formulate a **Revised FSRP** with the same amortization period deadline.
- Systems are **at-risk of becoming subject to the FSRP** requirement if they have submitted at least one valuation with an amortization period greater than 40 years.

Pension Review Board

FSRP Statistics

Since September 1, 2015, the Number of Systems…	
subject to the requirement	19
that have submitted an FSRP	17
working on their initial FSRP	2
subject to a revised FSRP	11
that successfully achieved a 40-year am period post-FSRP	9
that have an overdue initial or revised FSRP	5
at risk of becoming subject to the requirement	13
achieved a 40 year am period but are at risk again	2

Pension Review Board

Intensive Actuarial Reviews to Date

January 2018	April 2018	October 2018	October 2019
Galveston Police Greenville Fire	Beaumont Fire Marshall Fire	Longview Fire Orange Fire Irving Fire	Odessa Fire Paris Fire

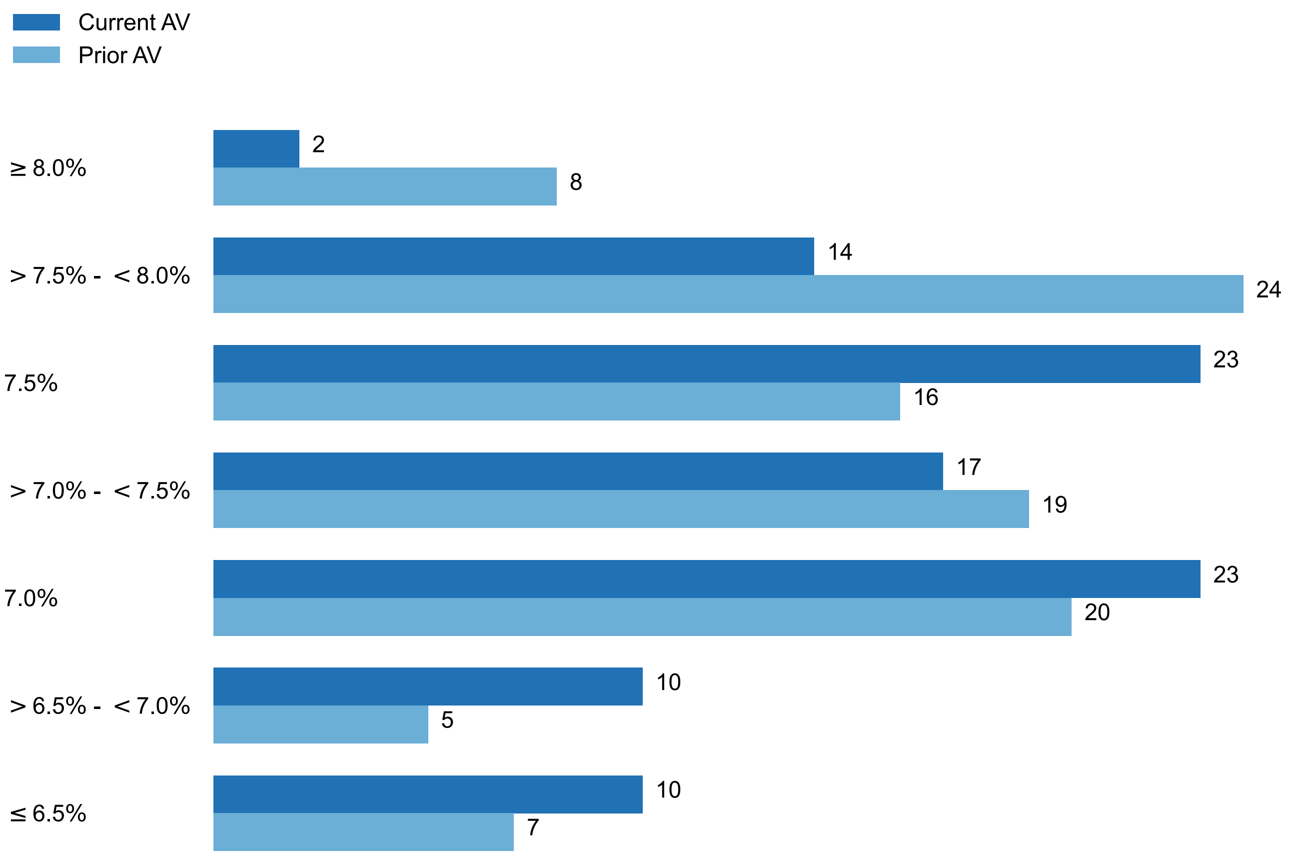
Recommendations:

- Adopt a funding policy that requires payment of an actuarially determined contribution, or at minimum, that fully funds the plan over a finite period of 30 years or less
- Adopt a formal risk/cost-sharing framework with "guardrails" or triggers that reduce uncertainty and guide stakeholders in how benefit and contribution levels will be modified under different economic conditions
- Closely monitor investment performance including asset allocation and expenses
- Conduct an in-depth asset-liability study of potential risks associated with existing asset mix and liabilities they support. Perform scenario testing of large PROP withdrawals coupled with potential adverse investment experience
- Regularly review actuarial assumptions against experience, making necessary changes
- Complete required training so that the board can make informed decisions

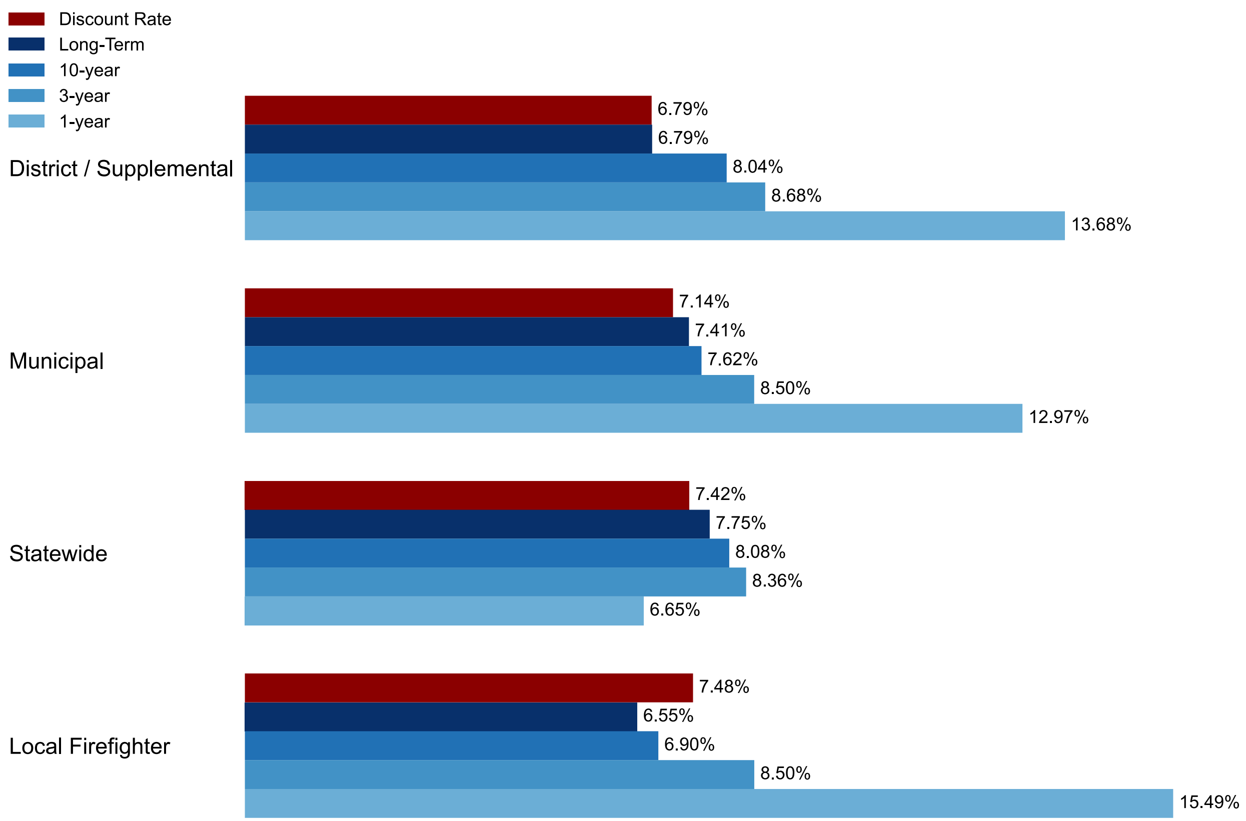
Assumed Rates of Return

- The average assumed rate of return for Texas retirement systems is currently **7.17%**. The national average is **7.18%** (NASRA, February 2021).
- In response to projected market conditions and actual plan experience, retirement systems across the country, including Texas, have **reduced their return assumptions** in recent years and we expect this trend to continue.
- The rate of return assumption is a **key economic assumption** that has an inverse correlation with the liability and short-term contribution requirements of a plan. A higher return assumption leads to a lower liability and contribution requirement and vice versa.
- In 2018, **ERS** lowered its return assumption from **8%** to **7.5%** and to **7%** in 2020. **TRS** lowered its return assumption from **8%** to **7.25%** in 2018.

Investment Return Assumption Trends



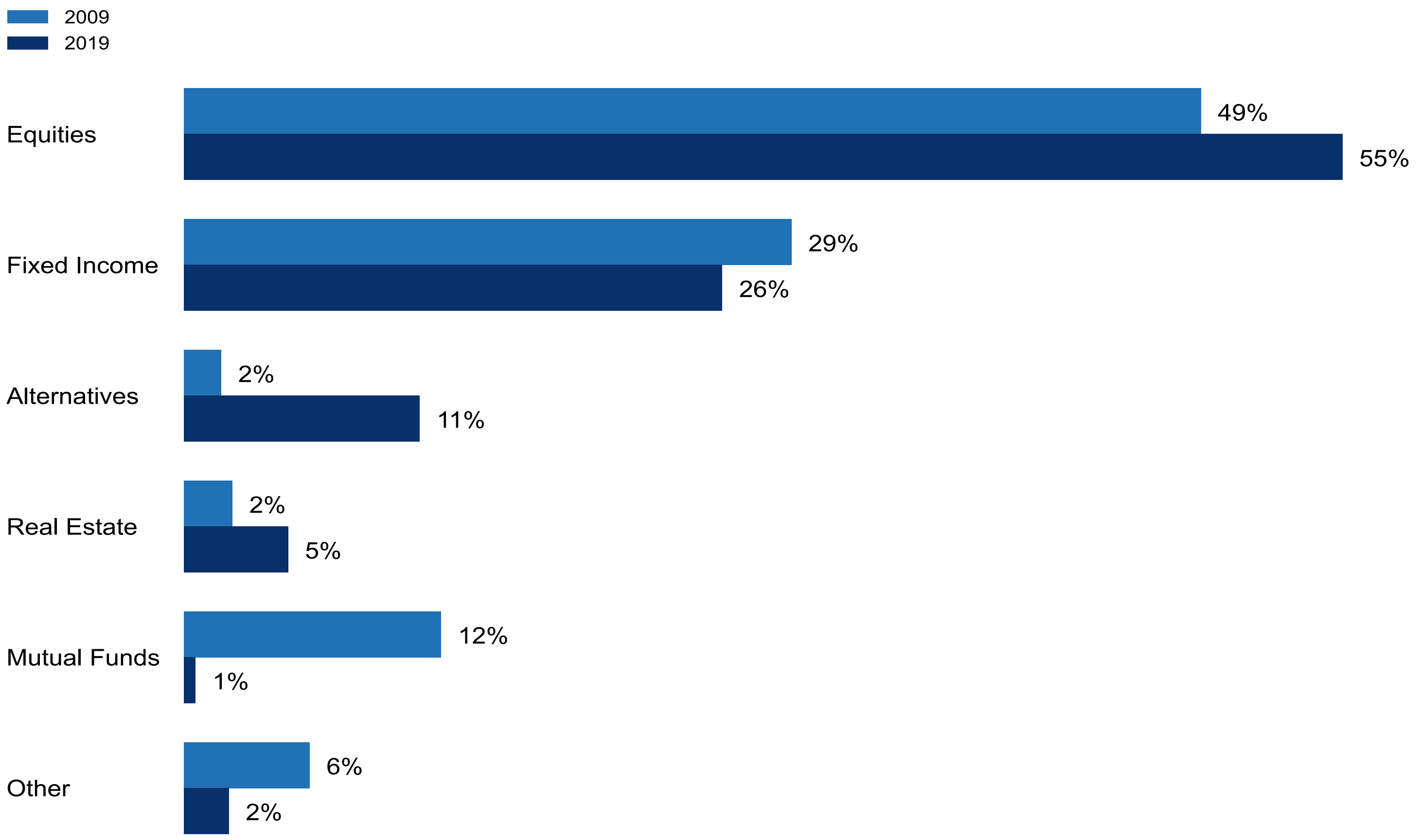
Average Actual Investment Return Trends FYE 2019



Long-term return is 30 years or longest term available. All figures are net of fees. Assumed returns obtained from most recent actuarial valuation reports.

Pension Review Board

Average Asset Allocation FYE 2009 v 2019



Other includes: capital assets, receivables, securities lending collateral, liabilities and cash. The allocations provided are an unweighted average of all Texas defined benefit plans. Figures are obtained from the annual financial reports and may differ from allocation targets in investment policy statements.

COVID-19 and Market Trends

- The impact of the COVID-19 pandemic on Texas public pension plans is still emerging. The pandemic has the potential to affect plan contributions, investment returns, and demographic experience.
- In the near term, the most significant impacts are likely to be budgetary constraints. Decreased revenues and increased costs for the plan sponsor make it more difficult to address potential contribution shortfalls.
- The long-term impacts are uncertain, but persistent low interest rates may force plans to continue to reduce expected investment returns, thereby increasing the needed level of contributions. This will be further exacerbated if total payroll growth is lower than expected.

Monitoring Legislation: SB 2224

- SB 2224 (86R) required all public retirement systems to adopt a written **funding policy**.
  - The PRB has received **96 out of 100** funding policies
  - The PRB has done the following to help implement SB 2224:
    - Worked with systems to **develop and issue** **guidance**;
    - At the request of the systems**, provided a** **sample funding policy**;
    - Encouraged systems to **work with sponsors** to craft the funding policies;
    - Notified sponsors of the new statutory requirement.
  - A summary of the funding policies received through the end of 2020 is available in the PRB's biennial report.

Monitoring Legislation: SB 322

- Investment Expense Reporting
  - To assist retirement systems in compliance with the new requirement, the PRB has **engaged with systems** and **addressed concerns** surrounding the requirement; **published** rules to assist with reporting investment expenses; and **created a** template **and an** asset class guide as requested by systems for further assistance.
- Investment Practices and Performance Evaluation
  - Systems with at least $30 million in assets were required to select an independent firm to **evaluate** the system's investment practices and performance and to **provide recommendations** for improvement.
  - The PRB has **adopted guidance** detailing the elements of the evaluation and clarifying what constituents an independent firm.
  - The PRB created an **Investment Committee** to submit an **investment performance report** to the Governor and Legislature.

Recommendations to the 87th Legislature

- ***Funding Policy Statute***
  - Add the sponsor to the funding policy requirement.
- ***Funding Soundness Restoration Plan (FSRP) Policy Statute***
  - Increase sponsor accountability and tie funding policy and FSRP together.
  - Update the threshold, target and trigger.
  - Update timelines and consequences if original FSRP is not working.
- ***Investment Performance Report***
  - Amend statute to require evaluations to detail how the evaluator determined the need, or lack thereof, for any recommendations.
  - Amend statute to require a formal review-and-comment process prior to publication.
  - Review and consider the feasibility of whether an independent firm conducting the evaluation should be a different firm from the one that helped the system develop its existing investment policies, procedures and practices.
  - Amend statute to require evaluators to identify its qualifications and potential conflicts-of-interest; codifying existing PRB informal guidance.

Actuarial Impact Statements

- During legislative sessions, the agency provides an actuarial impact statement analyzing the **economic or financial impact** of a proposed pension bill on a public retirement system.
- Changes to pension systems often create **financial commitments** that extend far into the future.
- By addressing the actuarial impact of proposed changes, the PRB provides the Legislature with information that assists in **managing pension costs**.

86th Legislature Pension Bill Tracking

- 120 pension bills were filed during the 86th Legislative Session.
- The PRB provided 43 actuarial impact statements on bills affecting public retirement systems.

PENSION REVIEW BOARD

Triggers for Actuarial Impact Statement

A bill that may affect any element of the basic funding equation: **C + I = B + E**

Contributions (C) + Income (I) = Benefits (B) + Expenses (E).

- **C =** Increase or decrease in employer, employee or non-employer contributions
- **I & E =** Permissible investments or financing
- **B =** Plan participation, eligibility for benefits, or amount of benefits.
  - Benefit change examples:
    - **New tiers** for new or existing employees.
    - **Benefit formula** for existing members (e.g., multiplier, final average salary, service credit)
    - **Retirement eligibility** requirements
    - Cost of living adjustment (**COLA**) or **supplemental payments**.
    - Adding or removing a **class of employees**.

Pension Review Board

Actuarial Impact Statement Process

- When a bill with a **potential cost** effect on a retirement system is scheduled for committee hearing, the PRB obtains an **actuarial analysis** of the legislation from the system's actuary.
- The actuarial analysis is reviewed by the PRB's staff actuary, providing a **"second opinion"** or actuarial review of any costs associated with the bill.
- These two documents are summarized in an **actuarial impact statement** prepared by staff and submitted to the Legislative Budget Board (LBB).
- The **LBB** publishes the final actuarial impact statement, which is attached to the bill in committee and stays with the bill throughout the legislative process.
- If a bill is subsequently **amended or substituted** so that its actuarial effect is changed, another impact statement is usually prepared.
- The PRB also estimates the **cumulative effect** of all pension bills affecting TRS and ERS **70** days and again at **30** days before the end of session.

Resources

- **PRB Public Pension Data Center** available at: https://data.prb.texas.gov/
- **PRB Guide to Public Retirement Systems in Texas:** https://www.prb.texas.gov/txpen/wp-content/uploads/2021/03/2021-Legislative-Guide-Final.pdf
- **PRB Online Courses**: Actuarial Matters, Benefits Administration, Investments, Governance, Fiduciary Matters, Ethics, Risk Management
- Available at: http://www.prb.state.tx.us/resource-center/trustees-administrators/educational-training-program/
- Login: enter your office and name. No password required.

www.prb.texas.gov

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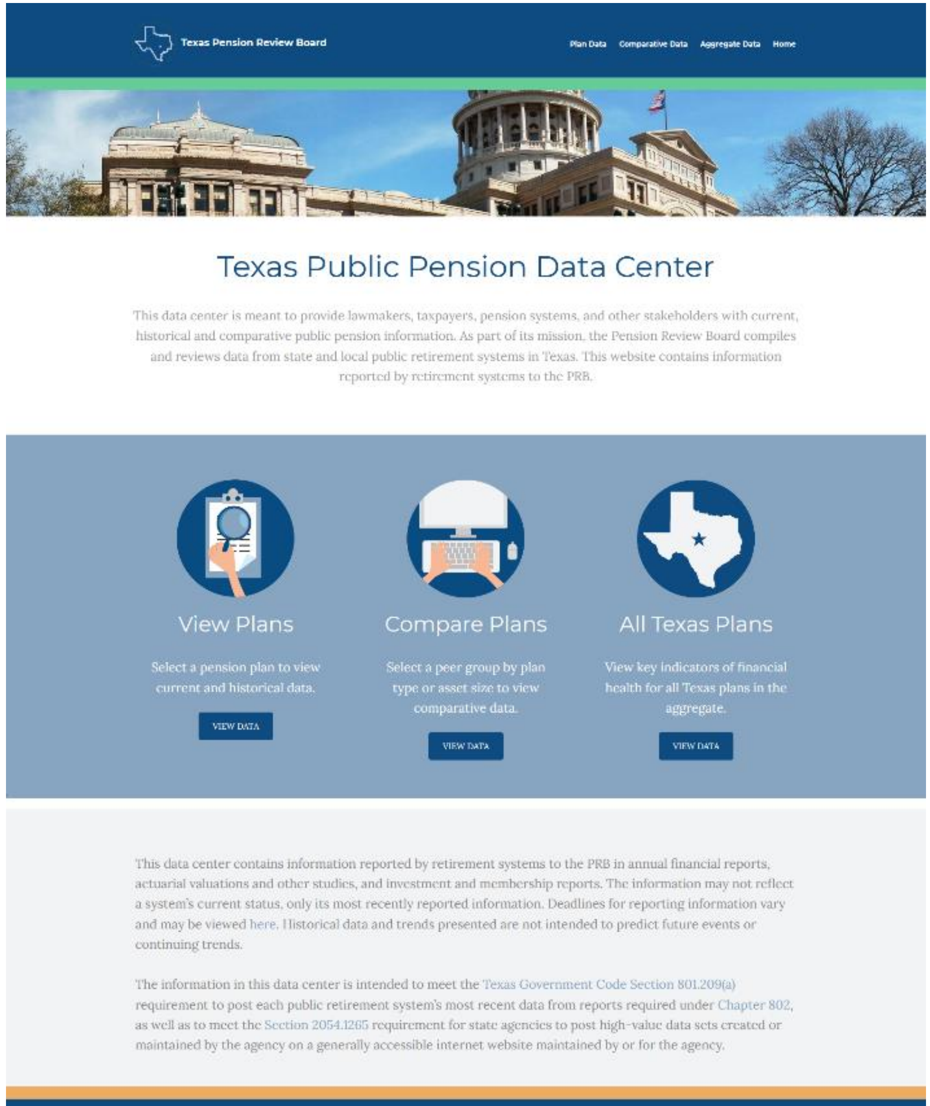
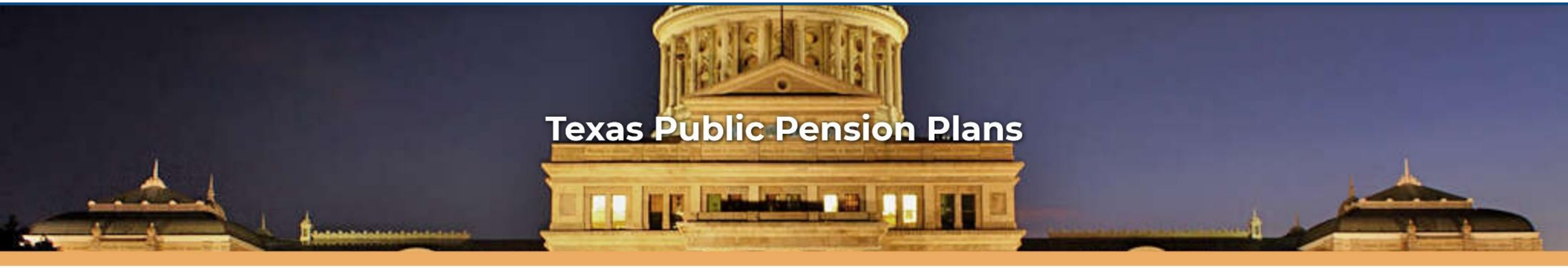
Appendix

PRB Online Data Center



PRB Online Data Center – Plan Data



This data center is meant to provide lawmakers, taxpayers, pension systems, and other stakeholders with current, historical and comparative public pension information. As part of its mission, the Pension Review Board compiles and reviews data from state and local public retirement systems in Texas. This website contains information reported by retirement systems to the PRB.

Locate a Pension Plan

Select a plan and view key indicators of financial health over time.

Select a plan

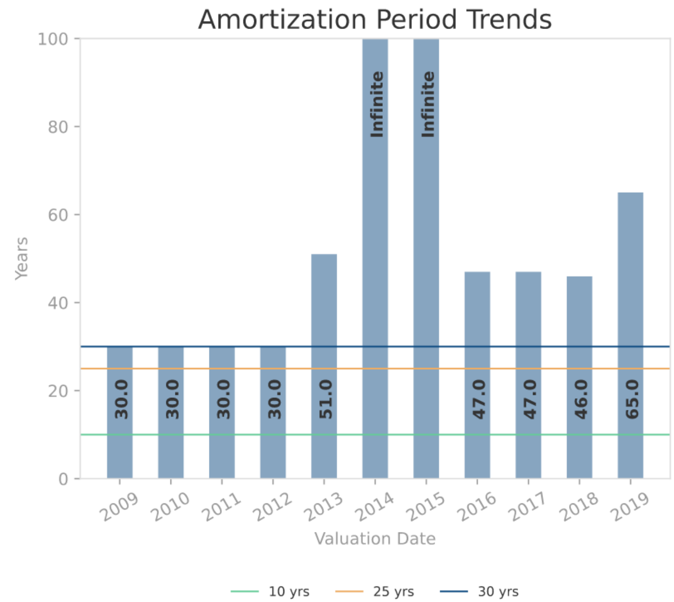
Pension Review Board

Dallas Employees' Retirement Fund

Membership	Total Net Assets	Social Security	Contributions	Contribution Type	Fiscal Year End
Active: 7,427 Annuitant: 7,405	$3,658,088,000	No	Employee: 13.32 % Employer: 14.14 %	Other	December

The Dallas Employees' Retirement Fund was established by ordinance in November 1943 and became effective in January 1944 after ratification by the voters of the City of Dallas. The Plan derives its authority from Chapter 40A of the Dallas City Code. The Plan is a single-employer defined benefit pension plan that provides retirement, disability, and death benefits to its members, and is sponsored by the City of Dallas. All employees of the City are members in the Plan, except police officers, firefighters, elected officers, non-salaries appointee members of administrative boards or commissions, part-time employees working less than one-half time, temporary employees, individuals working under contract, and individuals whose salaries are paid in part by another government agency.

Actuarial | Financial | Investments



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

Download Data

PRB Online Data Center – Comparative Data

Compare by Type

Local Firefighter
Local plans organized under the Texas Local Fire Fighters Retirement Act.

View Data

District / Supplemental
Local plans administered by special purpose districts or as supplemental plans.

View Data

Municipal
Major municipal plans either in state law or local ordinance.

View Data

Statewide
Statewide plans including two cash balance plans that municipalities, counties and districts may join.

View Data

Compare by Total Assets

Less than $10M
Plans with less than $10 million in total assets

View Data

$10M to $50M
Plans with at least $10 million and less than $50 million in total assets

View Data

$50M to $100M
Plans with at least $50 million and less than $100 million in total assets

View Data

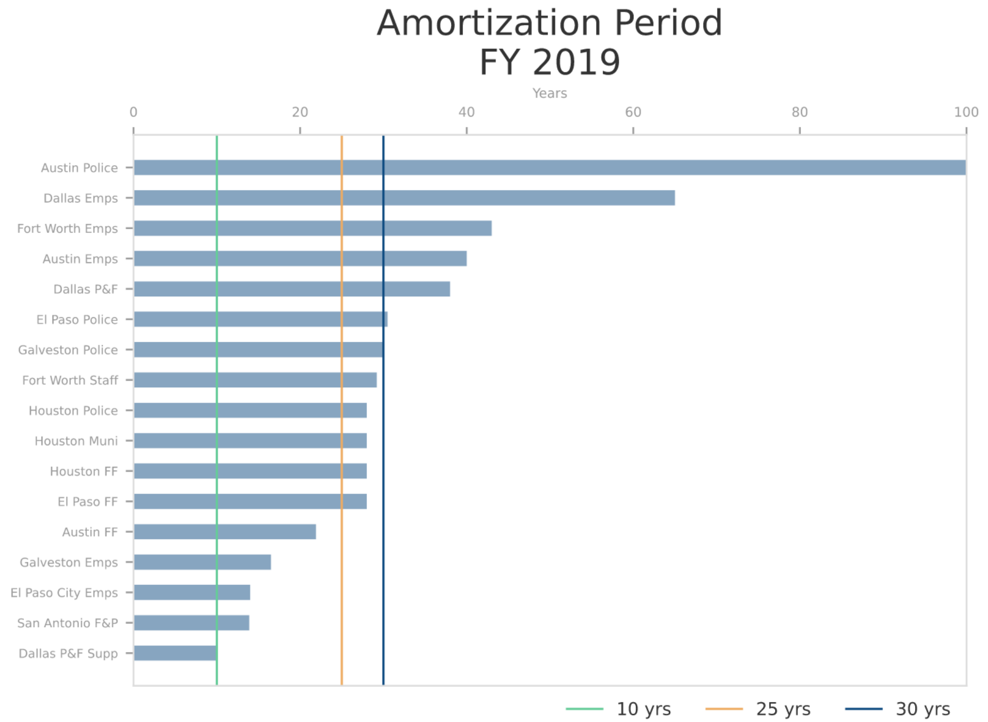
$100M or Greater
Plans with at least $100 million in total assets

View Data

Municipal FY 2019

There are 17 municipal retirement systems including 14 systems enabled by Article 6243, Vernon's Civil Statutes and three created by city ordinances or charters, which are the Dallas Employees' Retirement Fund, City of El Paso Employees Retirement Trust, and Galveston Employees' Retirement Fund.

Actuarial | Financial | Investments



A retirement system's effective amortization period is defined by the PRB as the time it would theoretically take to fully fund the system's unfunded actuarial accrued liability (UAAL). The reported amortization period takes into account the plan's amortization policy and contribution history. The chart displays Municipal retirement systems' effective amortization periods for the selected fiscal year. If an actuarial valuation was not completed al year, the immediately preceding fiscal year is shown.

Download Data

Governing Statutes

State Laws Governing Statewide Retirement Systems	
System or Issue Governed	Article/Section No.
Employees Retirement System of Texas	Title 8, Gov. Code, Subtitle B: Ch. 811-815
Teacher Retirement System of Texas	Title 8, Gov. Code, Subtitle C: Ch. 821-825
Judicial Retirement System of Texas, Plan Two	Title 8, Gov. Code, Subtitle E: Ch. 836-840
Texas County and District Retirement System	Title 8, Gov. Code, Subtitle F: Ch. 841-845
Texas Municipal Retirement System	Title 8, Gov. Code, Subtitle G: Ch. 851-855
Texas Emergency Services Retirement System	Title 8, Gov. Code, Subtitle H: Ch. 861-865

State Laws Governing Municipal, Fire Fighter and Police Officer Retirement Systems		
System or Issue Governed	Article/Section No.	Population Bracket
Dallas Police & Fire Pension System	V.T.C.S. 6243a-1	>1,180,000
El Paso Firemen & Policemen's Pension Fund	6243b	600,000-700,000
Texas Local Fire Fighters Retirement Act (TLFFRA)	6243e	Various
Austin Fire Fighters' Relief & Retirement Fund	6243e.1	750,000-850,000
Houston Firefighters' Relief & Retirement Fund	6243e.2(1)	1,600,000
Houston Police Officers' Pension System	6243g-4	>2,000,000
Houston Municipal Employees Pension System	6243h	>1,500,000
Fort Worth Employees' Retirement Fund	6243i	>500,000
Austin Employees' Retirement Fund	6243n	760,000-860,000
Austin Police Retirement System	6243n-1	750,00-850,000
San Antonio Fire & Police Pension Fund	6243o	1,300,000-1,500,000
Galveston Employees' Pension Plan for Police	6243p	50,000-400,000
Political Entities, including Municipalities & Other Special Purpose Districts	Title 8, Gov. Code §810	

Pension Review Board

Actuarial Valuation Report
February 12, 2021

Plan Name	Plan Status (1)	Current Actuarial Valuation: Effective Date	Discount Rate	Effective Amort Period (2)	Funded Ratio %	Market Value of Assets (MVA)	Actuarial Value of Assets (AVA)	Unfunded Actuarial Accrued Liability (UAAL = AAL - AVA)	UAAL as % of Payroll	Prior Actuarial Valuation: Effective Date	Prior Effective Amort Period (2)	Funded Ratio %
Employees Retirement System of Texas	Active	8/31/2020	7.00%	Infinite	66.0	$ 27,946,206,540	$ 28,543,207,745	$ 14,715,104,328	203.77%	8/31/2019	Infinite	70.5
Law Enforcement & Custodial Off Sup. Ret. Fund	Active	8/31/2020	7.00%	Infinite	60.1	$ 947,324,194	$ 968,062,761	$ 641,524,299	39.37%	8/31/2019	Infinite	65.3
Austin Police Retirement System	Active	12/31/2019	7.25%	Infinite	58.4	$ 857,839,229	$ 852,294,229	$ 607,235,559	349.30%	12/31/2018	Infinite	58.1
Judicial Retirement System of Texas Plan Two	Active	8/31/2020	7.00%	Infinite	82.3	$ 477,331,237	$ 486,802,031	$ 104,428,095	116.28%	8/31/2019	Infinite	87.5
Beaumont Firemen's Relief & Retirement Fund	Active	12/31/2018	7.50%	Infinite	55.8	$ 105,769,426	$ 111,769,628	$ 88,543,261	457.43%	12/31/2016	104.0	67.5
Midland Firemen's Relief & Retirement Fund	Active	12/31/2017	7.75%	Infinite	60.9	$ 89,023,115	$ 91,856,742	$ 58,952,399	362.54%	12/31/2015	44.7	65.8
McAllen Firemen's Relief & Retirement Fund	Active	9/30/2018	7.50%	Infinite	68.2	$ 52,675,409	$ 51,901,271	$ 24,240,176	196.53%	10/1/2016	33.4	69.1
Longview Firemen's Relief & Retirement Fund	Active	12/31/2019	7.50%	Infinite	39.4	$ 45,779,786	$ 44,348,518	$ 68,367,542	504.54%	12/31/2018	Infinite	39.9
Conroe Fire Fighters' Retirement Fund	Active	12/31/2019	7.50%	Infinite	58.4	$ 29,561,207	$ 29,523,182	$ 21,025,245	200.13%	12/31/2018	Infinite	58.1
Orange Firemen's Relief & Retirement Fund	Active	1/1/2019	7.75%	Infinite	46.3	$ 7,961,733	$ 7,961,733	$ 9,241,746	360.64%	1/1/2017	69.3	49.9
Atlanta Firemen's Relief & Retirement Fund	Active	12/31/2018	7.40%	Infinite	80.0	$ 3,801,042	$ 4,181,146	$ 1,043,126	184.83%	12/31/2016	28.4	82.1
Plainview Firemen's Relief & Retirement Fund	Active	12/31/2019	7.50%	79.7	34.0	$ 6,238,767	$ 5,989,437	$ 11,633,150	576.43%	12/31/2017	44.8	37.7
Dallas Employees' Retirement Fund	Active	12/31/2019	7.25%	65.0	75.7	$ 3,658,088,000	$ 3,682,959,000	$ 1,180,366,000	272.04%	12/31/2018	46.0	80.0
Sweetwater Firemen's Relief & Retirement Fund	Active	12/31/2018	8.00%	63.3	63.9	$ 7,760,982	$ 8,770,824	$ 4,947,393	294.74%	12/31/2016	27.5	70.0
Marshall Firemen's Relief & Retirement Fund	Active	12/31/2018	7.50%	59.0	36.7	$ 7,278,840	$ 7,278,840	$ 12,576,960	429.30%	12/31/2016	56.4	42.0
Texarkana Firemen's Relief & Retirement Fund	Active	12/31/2019	7.60%	58.3	80.0	$ 36,402,489	$ 35,443,388	$ 8,854,932	202.16%	12/31/2017	15.0	86.3
Dallas Police & Fire Pension System-Combined Plan	Active	1/1/2020	7.00%	55.0	45.7	$ 2,057,857,317	$ 2,160,125,611	$ 2,563,846,869	645.88%	1/1/2019	38.0	48.1
Cleburne Firemen's Relief & Retirement Fund	Active	12/31/2018	7.35%	48.6	59.6	$ 19,362,808	$ 21,731,172	$ 14,724,082	324.13%	12/31/2016	28.8	66.7
Irving Firemen's Relief & Retirement Fund	Active	12/31/2019	7.00%	43.6	65.4	$ 195,803,334	$ 190,715,524	$ 100,839,331	267.38%	12/31/2017	Infinite	71.6
Wichita Falls Firemen's Relief & Retirement Fund	Active	1/1/2020	7.75%	43.3	56.8	$ 52,839,714	$ 52,839,714	$ 40,226,568	326.00%	1/1/2018	Infinite	57.7
Fort Worth Employees' Retirement Fund	Active	12/31/2019	7.00%	43.0	52.3	$ 2,396,727,586	$ 2,400,393,264	$ 2,186,491,299	433.49%	12/31/2018	44.0	52.4
Laredo Firefighters Retirement System	Active	9/30/2018	7.50%	43.0	59.9	$ 154,813,837	$ 155,509,979	$ 104,273,436	282.55%	9/30/2016	28.0	59.3
Texas City Firemen's Relief & Retirement Fund	Active	12/31/2018	7.50%	41.1	45.9	$ 14,389,108	$ 15,828,019	$ 18,643,387	348.98%	12/31/2016	28.0	50.4
Greenville Firemen's Relief & Retirement Fund	Active	12/31/2018	7.75%	40.7	46.6	$ 12,254,104	$ 13,479,514	$ 15,438,433	368.76%	12/31/2016	55.0	47.7
Austin Employees' Retirement System	Active	12/31/2019	7.00%	40.0	63.5	$ 2,928,033,076	$ 2,848,950,000	$ 1,638,934,062	231.64%	12/31/2018	32.0	67.6
Killeen Firemen's Relief & Retirement Fund	Active	9/30/2018	7.50%	39.8	69.4	$ 43,947,221	$ 42,970,465	$ 18,990,872	131.39%	9/30/2016	22.8	69.7
Brownwood Firemen's Relief & Retirement Fund	Active	12/31/2017	7.25%	38.6	45.0	$ 4,158,090	$ 4,165,427	$ 5,085,187	263.23%	12/31/2015	36.1	44.6
Big Spring Firemen's Relief & Retirement Fund	Active	1/1/2019	7.75%	38.3	53.2	$ 10,902,959	$ 11,874,904	$ 10,439,548	245.07%	1/1/2017	36.2	54.9
Amarillo Firemen's Relief & Retirement Fund	Active	12/31/2019	7.50%	38.1	82.0	$ 193,539,560	$ 177,211,704	$ 38,901,102	185.22%	12/31/2017	43.5	81.5

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Actuarial Valuation Report
February 12, 2021

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Harlingen Firemen's Relief & Retirement Fund	Active	9/30/2019	7.75%	38.0	64.5	$ 33,712,925	$ 33,712,925	$ 18,528,703	277.57%	9/30/2017	59.1	66.1
San Angelo Firemen's Relief & Retirement Fund	Active	12/31/2019	7.80%	37.6	62.0	$ 71,755,778	$ 69,872,462	$ 42,886,258	339.34%	12/31/2017	31.3	64.9
Odessa Firemen's Relief & Retirement Fund	Active	1/1/2020	7.50%	37.5	36.8	$ 44,792,900	$ 43,361,750	$ 74,452,902	544.63%	1/1/2019	77.5	39.3
Lubbock Fire Pension Fund	Active	12/31/2018	7.75%	33.0	70.8	$ 186,484,535	$ 199,266,188	$ 82,173,796	241.06%	12/31/2016	33.5	72.6
Paris Firefighters' Relief & Retirement Fund	Active	12/31/2018	7.25%	32.1	30.5	$ 4,152,310	$ 4,663,640	$ 10,625,400	382.48%	12/31/2016	41.9	35.6
Abilene Firemen's Relief & Retirement Fund	Active	10/1/2019	7.50%	31.4	49.1	$ 55,688,061	$ 58,101,368	$ 60,298,270	393.82%	10/1/2017	31.9	55.7
Lufkin Firemen's Relief & Retirement Fund	Active	12/31/2018	7.50%	30.7	48.8	$ 15,659,035	$ 17,334,531	$ 18,178,233	349.28%	12/31/2016	33.1	46.7
Galveston Employees' Retirement Plan for Police	Active	1/1/2019	7.00%	30.0	34.0	$ 17,856,397	$ 19,642,037	$ 38,211,442	315.26%	1/1/2018	35.5	39.3
El Paso Police Pension Fund	Active	1/1/2020	7.75%	29.9	76.3	$ 932,430,228	$ 888,936,511	$ 275,499,329	298.45%	1/1/2018	30.5	78.3
Corpus Christi Fire Fighters' Retirement System	Active	12/31/2018	7.50%	29.8	60.2	$ 139,811,086	$ 151,136,552	$ 99,896,125	305.70%	12/31/2016	23.1	62.1
Fort Worth Employees' Retirement Fund Staff Plan (5)	Active	12/31/2019	7.00%	29.2	67.5	$ 5,853,631	$ 5,746,115	$ 2,773,533	181.77%	12/31/2018	30.0	68.9
Corsicana Firemen's Relief & Retirement Fund	Active	12/31/2018	7.00%	28.9	50.7	$ 8,563,597	$ 9,310,272	$ 9,065,130	218.76%	12/31/2016	28.9	53.1
University Park Firemen's Relief & Retirement Fund	Closed	12/31/2018	7.50%	28.8	43.4	$ 9,447,674	$ 10,460,367	$ 13,664,013	441.37%	12/31/2016	Infinite	44.0
Temple Firemen's Relief & Retirement Fund	Active	9/30/2018	7.75%	28.6	73.0	$ 44,243,769	$ 44,233,922	$ 16,392,673	181.02%	9/30/2016	28.4	75.1
Houston Firefighters' Relief & Retirement Fund	Active	7/1/2019	7.00%	28.0	82.9	$ 4,237,692,000	$ 4,190,934,000	$ 866,825,000	315.82%	7/1/2018	29.0	81.4
Houston Municipal Employees Pension System	Active	7/1/2020	7.00%	27.1	59.2	$ 2,881,788,000	$ 3,074,339,000	$ 2,122,008,000	330.40%	7/1/2019	28.0	59.3
Teacher Retirement System of Texas	Active	8/31/2020	7.25%	27.0	76.8	$ 165,416,245,243	$ 167,432,159,118	$ 50,605,424,379	101.24%	8/31/2019	29.0	76.4
Houston Police Officers' Pension System	Active	7/1/2020	7.00%	27.0	82.4	$ 5,572,476,000	$ 5,631,533,000	$ 1,204,149,000	255.17%	7/1/2019	28.0	81.7
CPS Energy Pension Plan	Active	1/1/2020	7.00%	27.0	82.7	$ 1,779,033,857	$ 1,719,537,036	$ 360,097,480	125.49%	1/1/2019	21.0	82.3
Galveston Firefighter's Relief & Retirement Fund	Active	12/31/2017	7.75%	26.8	69.2	$ 44,651,640	$ 44,330,845	$ 19,767,545	248.42%	12/31/2016	Infinite	68.0
El Paso Firemen's Pension Fund	Active	1/1/2020	7.75%	26.6	76.5	$ 643,133,030	$ 615,418,214	$ 189,530,926	281.17%	1/1/2018	28.0	77.8
San Benito Firemen Relief & Retirement Fund	Active	9/30/2019	7.50%	26.1	60.9	$ 3,927,895	$ 3,927,895	$ 2,523,394	184.91%	9/30/2017	21.8	60.7
University Health System Pension Plan	Active	1/1/2018	7.00%	26.0	70.7	$ 363,779,588	$ 347,115,543	$ 143,589,317	39.14%	1/1/2017	27.0	67.5
Irving Supplemental Benefit Plan	Active	1/1/2020	6.75%	26.0	73.5	$ 70,213,418	$ 67,147,643	$ 24,275,598	21.43%	1/1/2019	23.0	73.5
Tyler Firefighters' Relief & Retirement Fund	Active	12/31/2017	7.50%	25.5	76.2	$ 70,141,881	$ 69,570,894	$ 21,757,655	188.81%	12/31/2015	21.6	75.9
Dallas Co. Hospital Dist. Retirement Income Plan	Active	1/1/2020	6.00%	24.0	64.8	$ 1,173,720,580	$ 1,126,710,039	$ 611,546,606	89.21%	1/1/2019	25.0	71.5
Port Arthur Firemen's Relief & Retirement Fund	Active	12/31/2017	7.50%	23.7	74.2	$ 49,890,603	$ 48,844,714	$ 16,966,441	182.37%	12/31/2015	18.3	78.0
Houston MTA Workers Union Pension Plan	Closed	1/1/2020	6.25%	23.0	64.2	$ 294,629,862	$ 284,189,712	$ 158,635,309	175.09%	1/1/2019	24.0	62.5
San Antonio Metropolitan Transit Retirement Plan	Active	10/1/2018	7.25%	23.0	64.1	$ 298,393,798	$ 282,899,551	$ 158,753,455	139.47%	10/1/2017	24.0	62.4

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Houston MTA Non-Union Pension Plan	Closed	1/1/2020	6.25%	23.0	60.5	$ 186,645,413	$ 181,431,446	$ 118,527,718	303.71%	1/1/2019	24.0	61.8
Nacogdoches County Hospital District (5)	Frozen	7/1/2019	7.25%	22.0	96.8	$ 45,978,650	$ 46,663,570	$ 1,529,744	N/A	7/1/2018	20.0	94.7
Galveston Wharves Pension Plan	Closed	1/1/2019	7.25%	22.0	76.1	$ 12,411,631	$ 12,411,631	$ 3,906,450	255.74%	1/1/2018	23.0	83.8
Austin Fire Fighters Relief & Retirement Fund	Active	12/31/2019	7.50%	21.9	86.8	$ 1,029,892,806	$ 1,001,980,211	$ 152,385,418	159.33%	12/31/2018	17.9	88.0
Lower Colorado River Authority Retirement Plan	Closed	1/1/2020	7.00%	20.0	67.7	$ 428,877,867	$ 431,497,129	$ 205,980,317	202.35%	1/1/2019	18.0	70.3
Dallas Police & Fire Pension System-Supplemental (3)	Active	1/1/2020	7.00%	20.0	48.3	$ 17,307,433	$ 17,307,433	$ 18,523,051	3091.36%	1/1/2019	10.0	57.6
Texas Emergency Services Retirement System	Active	8/31/2020	7.50%	19.0	83.3	$ 125,229,661	$ 125,366,915	$ 25,073,628	N/A	8/31/2018	24.0	83.4
Employees of Brownsville Navigation District	Active	1/1/2019	6.15%	19.0	57.6	$ 4,890,148	$ 5,254,517	$ 3,873,642	89.19%	1/1/2018	20.0	54.3
Waxahachie Firemen's Relief & Retirement Fund	Active	10/1/2018	7.00%	18.9	73.1	$ 17,428,039	$ 17,428,039	$ 6,419,351	131.82%	10/1/2016	25.4	66.9
Denton Firemen's Relief & Retirement Fund	Active	12/31/2019	6.75%	18.3	80.8	$ 103,815,795	$ 98,109,262	$ 23,333,103	115.79%	12/31/2017	14.6	82.1
Sweeny Community Hospital	Closed	1/1/2020	7.00%	18.0	88.8	$ 3,490,459	$ 3,306,373	$ 415,513	65.55%	1/1/2019	19.0	86.4
Texas Municipal Retirement System (4)	Active	12/31/2019	6.75%	17.2	88.0	$ 31,813,811,275	$ 31,313,805,957	$ 4,271,031,992	61.15%	12/31/2018	18.2	87.1
Galveston Employees' Retirement Fund	Active	12/31/2019	7.25%	16.5	77.5	$ 57,497,904	$ 54,890,649	$ 15,922,387	60.63%	12/31/2018	16.8	76.6
Harris County Hospital District Pension Plan (5)	Closed	1/1/2020	6.75%	15.8	73.0	$ 737,879,367	$ 707,893,800	$ 261,858,773	167.34%	1/1/2019	16.4	74.0
Denison Firemen's Relief & Retirement Fund	Active	12/31/2017	7.50%	15.8	77.3	$ 17,725,070	$ 17,524,049	$ 5,159,287	155.45%	12/31/2015	27.1	74.4
DFW Airport Board	Active	1/1/2020	7.25%	15.0	85.8	$ 549,954,511	$ 543,581,900	$ 89,741,623	173.42%	1/1/2019	16.0	83.7
DFW Airport Board DPS	Active	1/1/2020	7.25%	15.0	81.2	$ 215,337,151	$ 212,881,725	$ 49,148,757	146.11%	1/1/2019	16.0	78.5
Plano Retirement Security Plan	Active	12/31/2019	6.75%	15.0	95.4	$ 167,755,102	$ 160,483,170	$ 7,711,014	4.87%	12/31/2017	0.0	100.8
Weslaco Firemen's Relief & Retirement Fund	Active	9/30/2018	7.25%	14.1	72.0	$ 11,577,179	$ 11,412,283	$ 4,440,304	101.90%	9/30/2016	14.1	68.5
City of El Paso Employees Retirement Trust	Active	9/1/2018	7.50%	14.0	80.3	$ 820,416,288	$ 822,926,030	$ 201,453,137	120.47%	9/1/2016	17.0	79.2
Corpus Christi Regional Transportation Authority	Active	1/1/2020	7.30%	14.0	92.1	$ 42,170,049	$ 41,116,802	$ 3,508,696	31.97%	1/1/2019	15.0	91.8
San Antonio Fire & Police Pension Fund	Active	1/1/2020	7.25%	13.7	87.6	$ 3,408,690,035	$ 3,434,094,746	$ 484,429,050	141.90%	1/1/2019	13.9	87.9
DART Employees (5)	Closed	10/1/2019	6.75%	12.3	80.5	$ 185,583,667	$ 190,481,841	$ 46,127,286	366.26%	10/1/2018	12.8	79.2
Capital MTA Bargaining	Frozen	1/1/2020	6.75%	12.0	52.1	$ 35,284,632	$ 33,780,736	$ 31,103,216	N/A	1/1/2019	20.0	50.6
Brazos River Authority Retirement Plan	Frozen	3/1/2020	6.50%	12.0	63.5	$ 20,463,482	$ 20,372,697	$ 11,705,422	N/A	3/1/2019	13.0	61.7
Capital MTA Admin Employees (3)	Active	1/1/2020	6.75%	11.7	77.8	$ 37,818,736	$ 35,895,259	$ 10,259,320	41.53%	1/1/2019	20.0	76.9
Texas County & District Retirement System (4)	Active	12/31/2019	8.00%	11.3	89.4	$ 33,833,510,529	$ 32,789,744,843	$ 3,880,435,865	52.85%	12/31/2018	12.6	88.5
Port of Houston Authority Retirement Plan	Closed	8/1/2020	6.25%	11.0	93.4	$ 191,251,270	$ 191,251,270	$ 13,596,861	45.80%	8/1/2019	30.0	92.9
Guadalupe-Blanco River Authority	Frozen	1/1/2019	6.75%	10.0	86.9	$ 28,731,703	$ 30,900,491	$ 4,643,707	N/A	1/1/2018	7.6	85.6

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Northeast Medical Center Hospital Retirement Plan (3)	Frozen	7/1/2019	7.25%	10.0	82.7	$ 9,405,456	$ 9,405,456	$ 1,963,048	N/A	7/1/2018	10.0	83.8
Colorado River Municipal Water Dist. (5)	Active	1/1/2020	6.00%	7.1	88.3	$ 10,699,777	$ 10,699,777	$ 1,413,550	44.47%	1/1/2019	8.5	83.3
Refugio County Memorial Hospital (5)	Frozen	11/1/2019	6.00%	5.2	96.5	$ 1,861,692	$ 1,861,692	$ 68,240	N/A	11/1/2018	7.0	97.8
JPS - Tarrant County Hospital District	Active	10/1/2018	7.00%	5.0	93.6	$ 292,578,664	$ 278,787,703	$ 19,047,712	6.89%	10/1/2017	3.8	95.1
Guadalupe Regional Medical Center	Active	1/1/2020	7.00%	5.0	99.1	$ 83,831,107	$ 78,104,845	$ 709,550	2.40%	1/1/2019	12.0	96.5
Travis County ESD #6 FRRF	Active	12/31/2017	7.00%	3.3	87.2	$ 19,688,064	$ 19,010,963	$ 2,790,432	48.27%	12/31/2015	5.8	71.6
Northwest Texas Healthcare System Retirement Plan	Frozen	10/1/2019	7.50%	1.0	96.2	$ 23,912,245	$ 23,900,053	$ 944,540	N/A	10/1/2018	2.0	90.1
Citizens Medical Center	Active	3/1/2020	6.75%	0.0	106.1	$ 114,266,627	$ 114,815,280	$ (6,627,783)	-11.60%	3/1/2019	0.0	110.4
The Woodlands Firefighters' Retirement System	Active	1/1/2020	7.00%	0.0	107.0	$ 42,315,851	$ 42,315,851	$ (2,769,663)	-22.22%	1/1/2019	3.6	97.8
Arlington Employees Deferred Income Plan	Active	6/30/2019	5.00%	0.0	107.2	$ 2,999,905	$ 2,999,905	$ (200,717)	-5.33%	6/30/2018	0.0	106.2
Anson General Hospital	Frozen	7/1/2019	6.00%	0.0	110.1	$ 1,957,233	$ 1,911,086	$ (176,007)	-81.37%	7/1/2018	0.0	120.1
El Paso Firemen & Policemen's Pension Staff Plan	Active	1/1/2020	7.75%	0.0	113.7	$ 685,883	$ 661,663	$ (79,547)	-9.54%	1/1/2018	0.0	113.1
Grand Totals:					**76.8%**	**$ 301,589,468,387**	**$ 302,660,850,664**	**$ 91,552,742,286**				**77.1%**

Notes

(1) Plan status indicates whether a plan is active (admitting new hires), closed to new hires (but still accruing benefits), or frozen (not accruing benefits).

(2) The effective amortization period is the time it would take to theoretically eliminate the UAAL assuming no future gains or losses and taking into account both the plan's stated and historical contribution policy.

(3) Reported amortization period is based on an open amortization funding policy.

(4) Amortization period is calculated using system-wide aggregate UAAL and payroll amounts.

(5) Amortization period is calculated by the PRB.

Appendix N – PRB Presentation to House Committee on Pensions, Investments, and Financial Services

Texas Pension Review Board: Interim Charges #1 and #3

House Committee on Pensions, Investments & Financial Services

August 16, 2022

Charge #1

Monitor the agencies and programs under the Committee's jurisdiction and oversee the implementation of relevant legislation passed by the 87th Legislature.

House Bill 3898

Summary

- **Charge #1—HB 3898 Implementation**
  - Funding Soundness Restoration Plans
    - Overview
    - Rulemaking
  - Investment Practices and Performance Evaluation and Funding Policy
    - Overview
    - Guidance Updates
- Resources

Funding Soundness Restoration Plans (FSRPs)

- Created by HB 3310 (84R) in 2015 to help ensure systems can meet their long-term obligations
  - Systems would create a plan to improve their funding status if funding period higher than maximum over time
- Requirements updated in 2021
  - Maximum funding period reduced; additional triggers created
  - More direct sponsor involvement and tied to funding policy requirement
  - Revised FSRP requirement strengthened to prevent repeated, ineffective revisions
  - More time to create FSRP, shorter time to reach target
  - Additional changes to process and material requirements

FSRP Proposed Rule Summary

- **General**: Applicability, definitions, etc.
- **Member Communication**: Valuation that puts a system at risk of an FSRP would prompt the requirement to notify members in the annual report.
- **Legacy FSRPs**: Helping ensure a smooth transition for systems with FSRPs prepared under the old law.
- **New FSRPs**: Clarifying the necessary documentation for submission and progress updates, timelines, voluntary FSRPs, and qualification for revised FSRP exemption.

Rulemaking Timeline & Stakeholder Feedback

- January—Initial rule concepts to PRB Actuarial Committee
  - Posted initial concepts for stakeholder feedback
- February—committee concepts to the full board
  - Sent updated concepts to stakeholders for feedback
- May 2022—Initial draft rules to PRB Actuarial Committee
- July 2022—PRB meeting; Draft rules presented to board to approve before posting; **Proposed rules posted in July 29th *Texas Register.***
  - August 2022: Official public comment period
- October 2022—Board reviews comments on posted rules; final approval

Investment Practices and Performance Evaluations (IPPEs)

- Created by SB 322 (86R) to improve investment practices
- Systems of at least $30 million in assets must have an independent firm:
  - Evaluate the investment practices and performance
  - Recommend ways to improve the investment policies, procedures, and practices
- Requirements updated in 2021
  - Added additional disclosure requirements about experience of evaluators, conflicts of interest, and reasons for not including recommendations
  - Added formal review-and-comment process
  - Sponsor may help pay the cost, and current investment consultants can be hired to prepare a system’s IPPE

IPPE & Funding Policy Guidance Updates

- Staff is currently in the process of updating the *Informal Guidance for Investment Policy and Performance Evaluations* to reflect the statutory changes in HB 3898.
  - Draft has been sent out to systems for stakeholder feedback to be presented at the Oct. PRB meeting.
- Planning to update the *Informal Guidance for Systems Developing a Funding Policy* next.

Resources

- FSRP and rulemaking resources: https://www.prb.texas.gov/actuarial/funding-soundness-restoration-plan-fsrp/
- Funding policy information: https://www.prb.texas.gov/actuarial/funding-policy/
- Investment Practices and Performance Evaluations: https://www.prb.texas.gov/investments/ippe/

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Charge #3

Review the Texas Local Fire Fighters Retirement Act (TLFFRA) to ensure proper governance and financial oversight. Examine whether the Pension Review Board has proper oversight and authority to implement necessary corrective measures.

Summary

- **Charge #3—TLFFRA Governance and PRB Oversight**
  - Background
  - Research & Previous Legislative Changes
    - Intensive reviews
    - Funding policies
    - Funding Soundness Restoration Plans
    - Minimum Education Training Program
    - Investment reporting
    - Asset Pooling
    - Governance Study
- Resources

Background

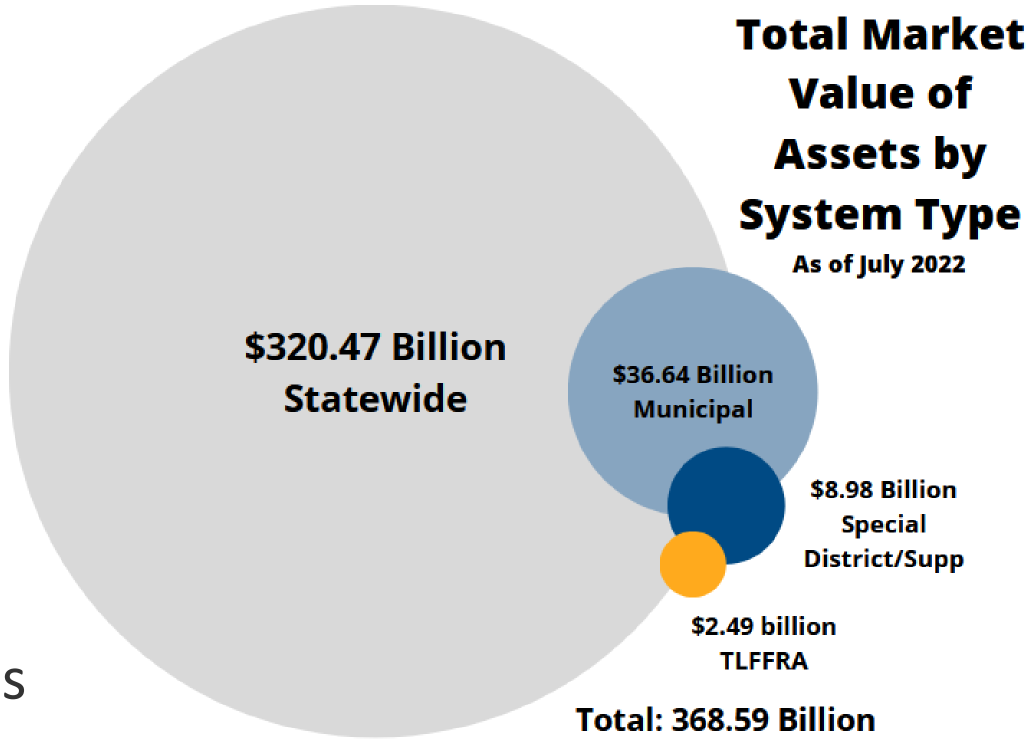
- Intro to the Pension Review Board
- Texas Public Retirement System Landscape
- Texas Local Firefighters Retirement Act (TLFFRA)

PRB Overview

- The PRB provides information and recommendations to help ensure that Texas public retirement systems are properly managed and actuarially sound.
- Oversight vs regulatory: PRB is an oversight entity
  - Agency provides technical assistance, collects and reviews reports, and provides data and research to stakeholders.
  - The board offers guidelines for best practices and works with systems to encourage statutory compliance.
  - If necessary, the PRB can use a subpoena or Writ of Mandamus to get reports, but it is a rarely-used last resort.
  - The PRB does not manage systems; benefits, contributions, investments, etc. are based on factors like governing statute, sponsor decisions, and individual choices of the system board and membership.

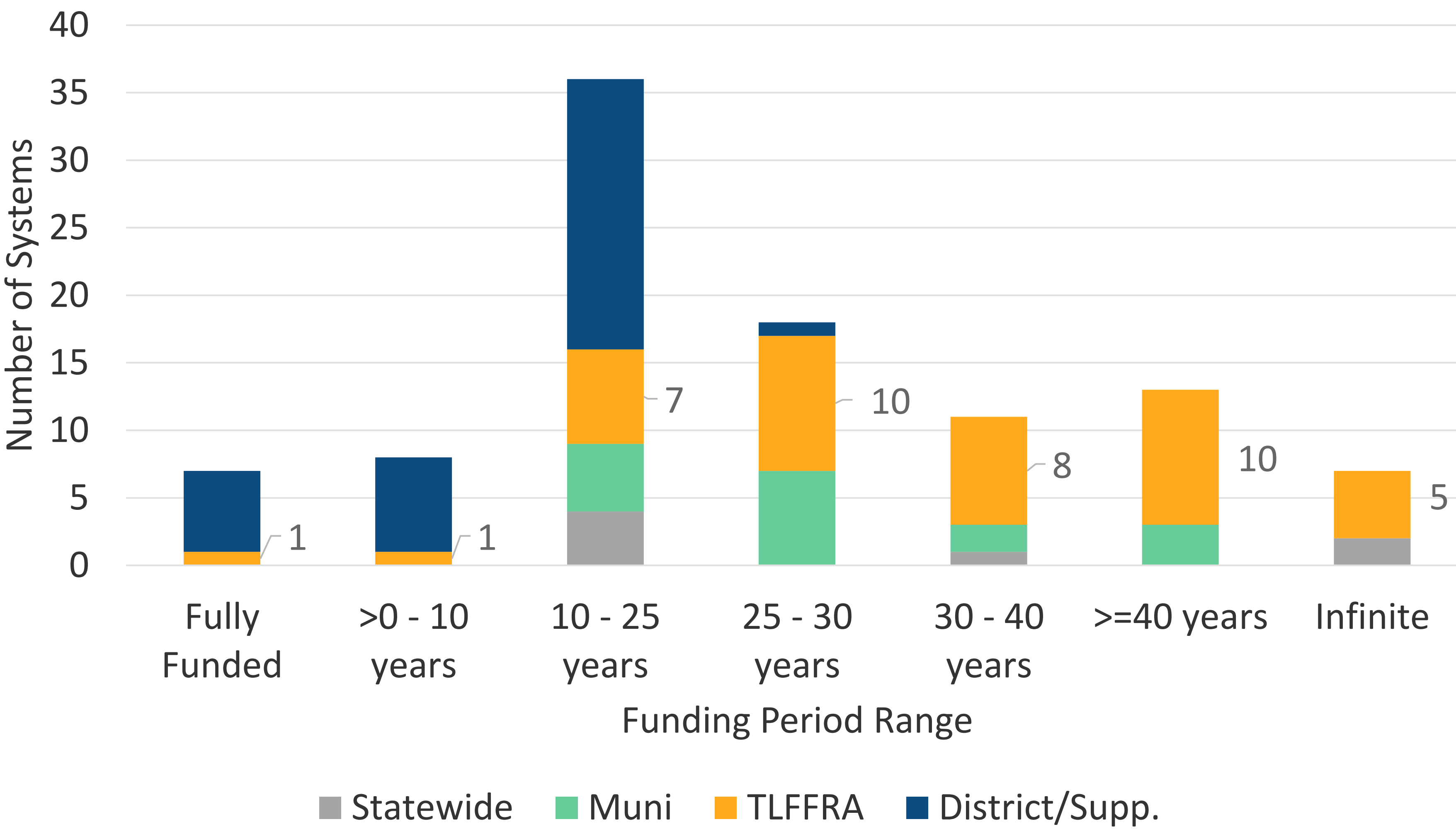
Texas Public Retirement System Landscape

- 347 public retirement systems with total assets of approx. $369B
  - 100 actuarially funded defined benefit plans
    - 7 statewide
    - 17 municipal
    - 42 local firefighter (TLFFRA)
    - 34 district/supplemental
  - 166 defined contribution plans
  - 81—volunteer TLFFRA plans



Pension Review Board

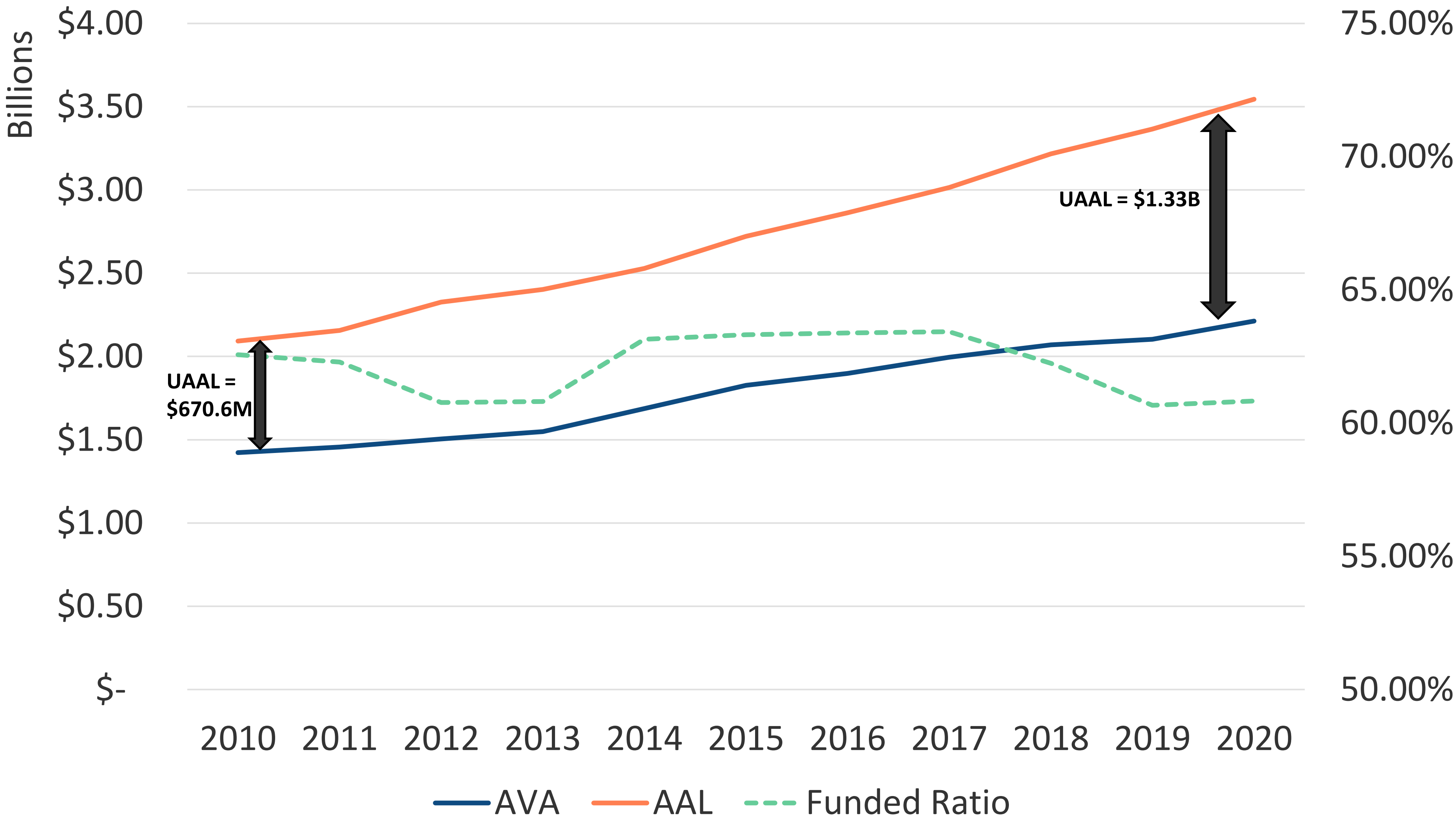
Latest Funding Period By Plan Type



Texas Local Fire Fighters Retirement Act

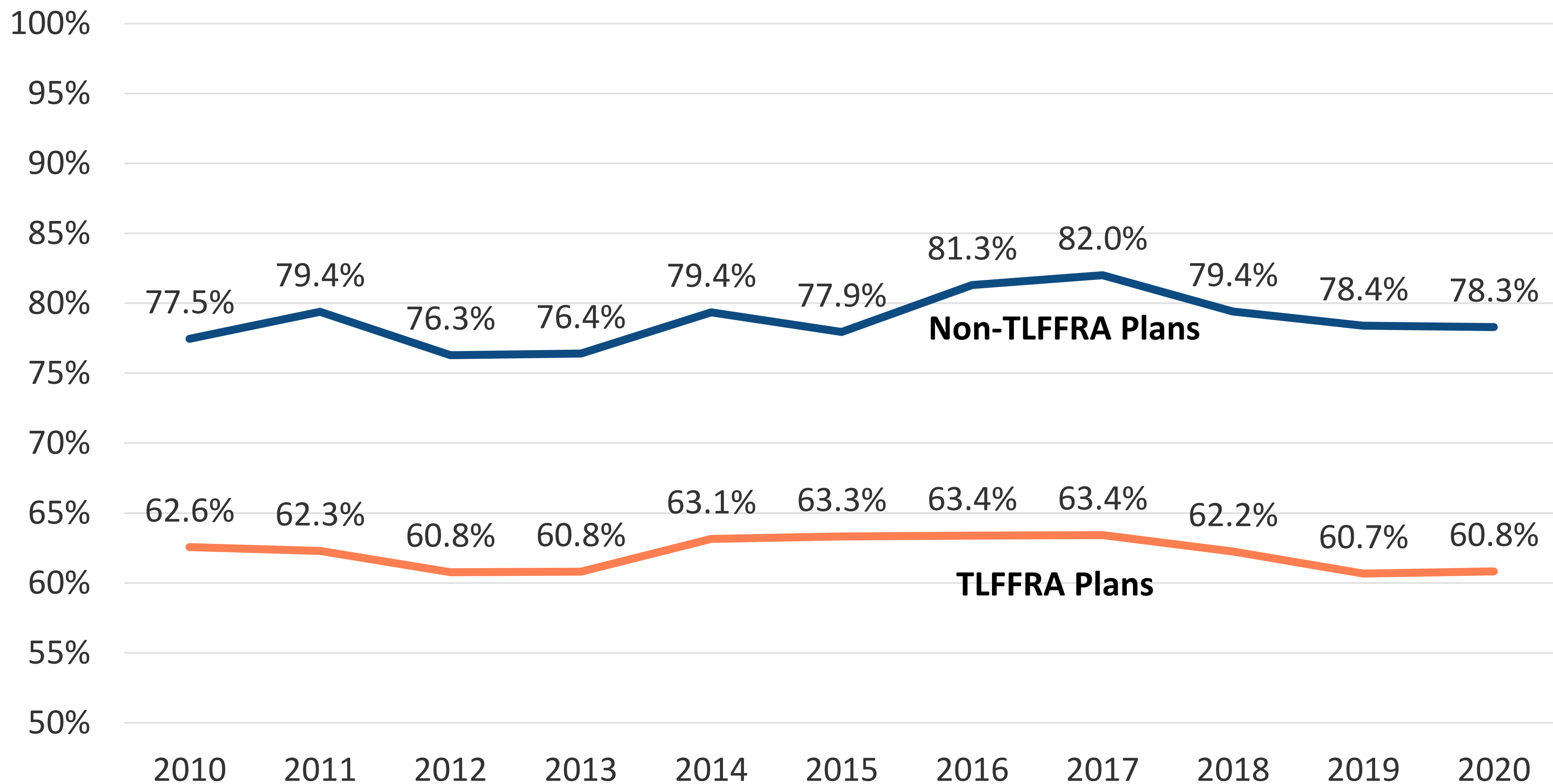
- Originally Firemen's Relief and Retirement Act in 1937. Restated under Article 6243e, Vernon's Civil Statutes, as Texas Local Fire Fighters Retirement Act (TLFFRA) in 1989.
  - Includes instructions for paid/part-paid and volunteer fire departments
- Some aspects mandated in statute.
  - composition of seven-member board of trustees
  - sponsor contribution minimum—lesser of 12% of payroll or match member rate
- Other aspects controlled locally.
  - Prospective benefit and member contribution changes made by system board and approved by actuary & membership vote

Asset-Liability and Funded Ratio of TLFFRA Funds



Pension Review Board

Average Funded Ratio for Texas Retirement Systems by Year



Research & Previous Legislative Changes

- Intensive reviews
- Funding policies
- Funding Soundness Restoration Plans
- Minimum Education Training Program
- Investment reporting
- Asset Pooling Study
- Governance Study

Intensive Review Overview

January 2018	April 2018	October 2018	October 2019	November 2021	Current
Galveston Police Greenville Fire	Beaumont Fire Marshall Fire	Longview Fire Orange Fire Irving Fire	Odessa Fire Paris Fire	Midland Fire	Wichita Falls Fire

- In-depth examination of a system's issues and contributing factors, with recommendations to address problems.
  - TGC §801.202(2) instructs PRB to conduct intensive studies of potential or existing problems that threaten actuarial soundness.
- Systems selected based on actuarial health, compared by several factors including assumptions, amortization period, and depletion dates.
- 10 Intensive Reviews completed since 2018; 9 TLFFRA systems
  - See Appendix A for summary of recommendations from Intensive Reviews
  - Wichita Falls Firemen's Relief and Retirement Fund review in progress

Issues Identified and Linked to Governance

- Growing unfunded liability and low funded ratio
  - Chronically insufficient contributions
  - Investment returns not meeting assumptions
- Governance design may be slow to react or otherwise make it difficult to make necessary improvements.
  - Sponsor contribution and benefit decisions made separately.
  - Sponsor/plan relationship
    - Ex. Sponsor may be reluctant to increase contributions due to separate benefit decisions controlled by fund and members.
    - Ex. Poor communication between system and sponsor creates a disconnect between system decisions and city's collective bargaining negotiations.
  - Lack of stated policies and goals for different aspects of plan administration, such as criteria for enhancing benefits.

Updates & Highlights: Longview & Irving

- PRB conducted intensive reviews for both in 2018.
- Pension Obligation Bonds (POBs) to pay UAAL
- POBs linked to agreement between system and sponsor
  - Longview: MOU created along with planned $43 million POB issuance to ensure plan changes do not prevent the system from reaching full funding or make assumption changes.
  - Irving: City issued $80 million in POBs but proceeds go towards reducing the UAAL. ADC changes due to benefit increases must be paid with member contributions.

Updates & Highlights: Orange Fire

- PRB conducted intensive review in 2018.
  - Recommended review of investment expenses and changing funding policy to include actuarially determined contributions (ADC) and risk-sharing.
  - System and sponsor have increased contributions, reduced investment consultant costs, and lowered payroll growth assumption.
- Triggered an FSRP requirement in 2019 and completed the requirement by reducing funding period to 20.7 years.
  - Active members pay 13.8% of pay, which is higher than the cost of their benefits. City contributes 18.8% of pay, up from 14.5% in 2019.
  - Contributions cover cost of current retirees, but benefits for active members are not being pre-funded at all.
- Sought sponsor input on funding policy.

Updates & Highlights: Odessa Fire

- PRB conducted Intensive Review in 2019
  - City of Odessa requested the review.
  - Fund had a depletion date, and it was effectively operating as a pay-as-you-go plan rather than pre-funded.
- Several changes since:
  - City contributions increased from 20% to 26%; member contributions lowered from 18% to 16%
  - Assumed rate of return reduced from 7.75% to 7.5%, then 7%
  - Assumed payroll growth rate reduced from 3.5% to 3%
  - Feb. 2022: Funding period 27.7 years; funded ratio 37.18%

Funding Policies

- 2019 Interim Study: Funding Policies for Fixed Rate Pension Plans
  - SB 2224 (86R): Required systems to adopt funding policies and submit to PRB and sponsor.
  - HB 3898(87R): Linked funding policy and FSRPs; sponsor participation
- PRB provided guidance and policy template to aid development.
- Nov. 2020: Summary Report
  - 96/100 funding policies submitted; 40/42 TLFFRA funding policies submitted
  - 6 TLFFRA with specified risk-sharing mechanisms
  - 3 TLFFRA with contribution/benefit parameters beyond statute
- Statutorily-mandated process for plan changes can be slow, unwieldy

FSRPs and TLFFRA Systems

- 16 systems have been subject; 13 TLFFRA systems.
- As of July 2022:
  - 7 of 8 systems currently subject to an FSRP are TLFFRA systems
  - 5 of 7 systems at risk of triggering the requirement are TLFFRA systems
  - 24 of 42 TLFFRA systems have funding periods >30 years
  - 24 of 42 TLFFRA systems have funding ratios <65%
- Requirement established in 2015; overhaul in 2021
  - Funding period maximum reduced; more time to develop, and shorter period to reach the range
  - Sponsor now required to adopt and help develop FSRP
  - Revised FSRPs adjusted to prevent serial, ineffective FSRPs
  - Funding policies must be updated to reflect an FSRP

Minimum Education Training (MET) Program

- Created in 2013—established 7 core educational areas for trustees to have a baseline knowledge of their responsibilities.
  - New trustees must complete 7 total hours of training that includes each of the 7 core content areas in their first year of service.
  - Continuing trustees must complete 4 hours of continuing education every two years.
  - PRB provides free training in core content areas and a list of other accredited courses and providers.
    - Courses were developed and designed by PRB staff; core courses are currently being updated with plans for continuing education options.
- Compliance
  - Report training in September each year
  - Compliance statistics included in PRB Biennial Report to the Legislature

Investment Expense & Performance Reporting

Since 2020:

- Systems' annual financial reports are required to include a list of investment fees and commissions paid, organized by asset class.
- Systems with assets >$30 million required to evaluate investment practices and performance and to make recommendations for improvement.
  - 22 TLFFRA systems included in the PRB summary report
    - Many TLFFRA plans were below the $30-million threshold.
  - For 19 of those systems, existing investment consultant performed evaluation rather than an independent third-party.
    - PRB found existing investment consultants were less likely to recommend changes.

2021: HB 3898 (87R): Made changes to improve transparency and allow sponsor to pay for the evaluation.

2018 Asset Pooling Study

- 2018 Interim Study: Asset Pooling for Small Pension Plans
  - Focused on investment-related governance and management.
  - Analyzed investment return and fee data for Texas systems between 2007 and 2016, excluding statewide systems.
  - Evidence suggested potential benefits of pooling assets for investment purposes as well as administrative functions.
    - Diversification—small systems often cannot access many types of investments
    - Economies of scale—can reduce per capita management and administration costs
- Further study could provide more information about asset pooling services, associated legal requirements, and include input from systems.

Future Research: Governance Study

- Board directed staff to conduct a governance study.
- PRB's 2020 legislative recommendations revealed several governance issues that have created challenges for systems, especially TLFFRA systems.
  - Systems have reported difficulty with sufficient sponsor contributions and participation in funding policy/FSRP processes—HB 3898 (87R)
  - Requested clarity on FSRP process and requirements—Rulemaking ongoing
  - TLFFRA statutory provisions have made it difficult to make changes.
    - Membership votes
    - Contribution minimums

Resources

- PRB studies: https://www.prb.texas.gov/additional-resources/prb-studies/
- PRB Policy for Regulation of Non-Compliant Retirement Systems: https://www.prb.texas.gov/txpen/wp-content/uploads/2019/05/Regulation-of-NonCompliant-Plans.pdf
- Contribution and Benefit Decision-Making for Texas Public Retirement Systems: https://prb.box.com/shared/static/exw7omb4suws3vsf74sw01je40si63xb.pdf
- Intensive Reviews of public retirement systems: https://www.prb.texas.gov/intensive-reviews/
- PRB Public Pension Data Center: https://data.prb.texas.gov/

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Appendix O – Policy Research Project Proposal: Public Pension Governance

Policy Research Project Proposal: Public Pension Governance

Texas Pension Review Board

September 6, 2022

Summary

- PRB Overview
  - Board Composition
- Background: Public Pension Governance
  - What is a pension?
  - Why does this research matter?
  - Texas Public Retirement System Landscape
  - What is Governance?
  - Governance Study
  - House PIFS Interim Charge
- PRP Proposal: Pension Governance Study
  - Potential Research Questions
  - Resources Available
  - Impact and Expected Deliverables
  - Potential Opportunities

PRB Overview

PRB Overview

- The PRB provides information and recommendations to help ensure that Texas public retirement systems are properly managed and actuarially sound.
- Oversight vs regulatory: PRB is an oversight entity
  - Provides technical assistance, collects and reviews reports, and provides data and research to stakeholders.
  - Prepares actuarial impact statements for pending legislation (i.e. How bills affect retirement systems?).
  - Creates and administers educational resources and programming for retirement system trustees and administrators.
  - Recommends policies, practices, and legislation to public retirement systems and governmental entities.

Staff and Board Composition

- 11 staff, many with technical specialties to support agency mission (actuary, investment & financial analysts, etc.)
- Board Composition—Seven members appointed by the governor:
  - Three members with backgrounds in securities investment, pension administration, or pension law
  - One member who is an actuary
  - One member who is an expert in governmental finance
  - One active member of a public retirement system
  - One retired member of a public retirement system

Background: Public Pension Governance

What is a pension?

- "Pension" typically refers to a *defined benefit* retirement plan that pays retirees a set amount every month after retirement.
- The amount of a person's benefit payment is usually determined by a formula that includes how long someone worked and their salary.
- Benefits are paid for with contributions from the members and employer, plus income from investing the pooled contributions.

Texas Public Retirement System Landscape

- 347 public retirement systems
  - 100 actuarially funded defined benefit plans (2.95 million members)
    - 7 statewide
    - 17 municipal
    - 42 local firefighter (TLFFRA)
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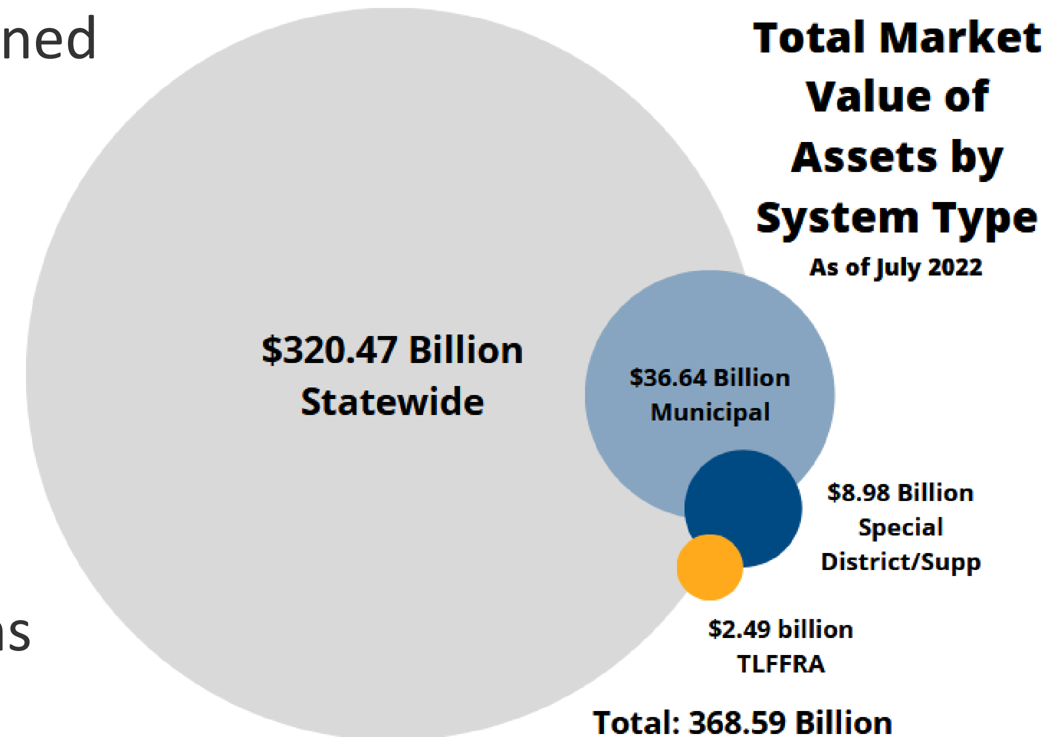


Pension Review Board

Why does this matter?

- **Public pensions are a big deal:** In Texas, 100 DB pension systems hold $369 billion in assets and 2.95 million members and their families are impacted.
- **Prevent a broken promise**: Members and retirees rely on these benefits and sacrificed higher pay in order to serve the public.
- **Help the "little guy":** Largest impacts are felt by the small, local systems with few or unspecialized staff.
- **Impacts the whole community**: Poorly managed and funded retirement systems can drain government budgets.

Texas House committee hopes to make changes to deal with teacher shortage

By Lori Brown | Published July 25, 2022 | Texas | FOX 4

Crypto plunge a cautionary tale for public pension funds like Houston's firefighters

15 Local Texas Pensions Are Less Than 50% Funded, Total $2.9 Billion in Unfunded Liabilities

Dallas Police and Fire Pension System Is in Deeper Trouble Than Expected

Texas and Louisiana rank lowest in teacher retirement benefits, study finds

Texas Employees catches flak for proxy votes against financing fossil fuel projects

TEXAS LEGISLATURE 2021

Texas Senate approves overhaul of pension plans for new state employees

Pension Review Board

What is plan governance?

- Governance determines how decisions are made.
- Good governance is important to many aspects of pension management.
  - Ensures trustees understand their board's authority and are informed about relevant statutes and best practices.
  - Establishes accountability and clear responsibilities for trustees, administrators, and third-party services.
  - Builds the confidence of pension members and other stakeholders.
  - Reduces the risks of fiduciary breach, litigation, and other risks to the system.
  - May improve long-term investment returns.

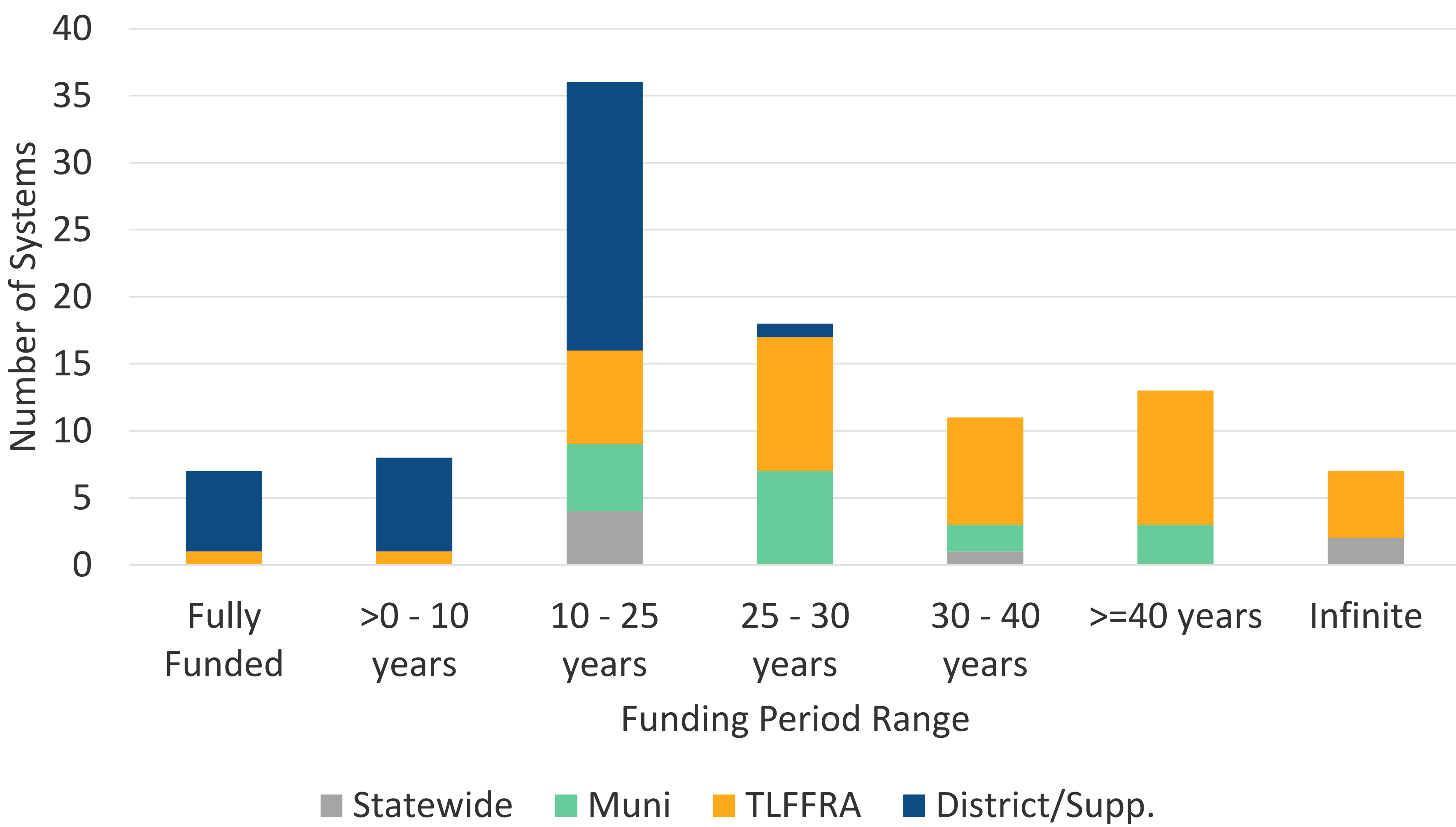
Background: Governance Study

- PRB's 2020 legislative recommendations revealed several governance issues that have created challenges for systems, especially TLFFRA systems.
  - Decisions about benefits and contributions are often not made by the same groups—no reason or inclination to cooperate
  - Statutory provisions have made it difficult to make changes.
    - Statewide and Municipal: Plan changes often require legislation
    - TLFFRA: Membership votes, Contribution minimums
  - Governing statutes are scattered and variable, plan design within those statutes are even less consistent.
- Board directed staff to conduct a governance study.

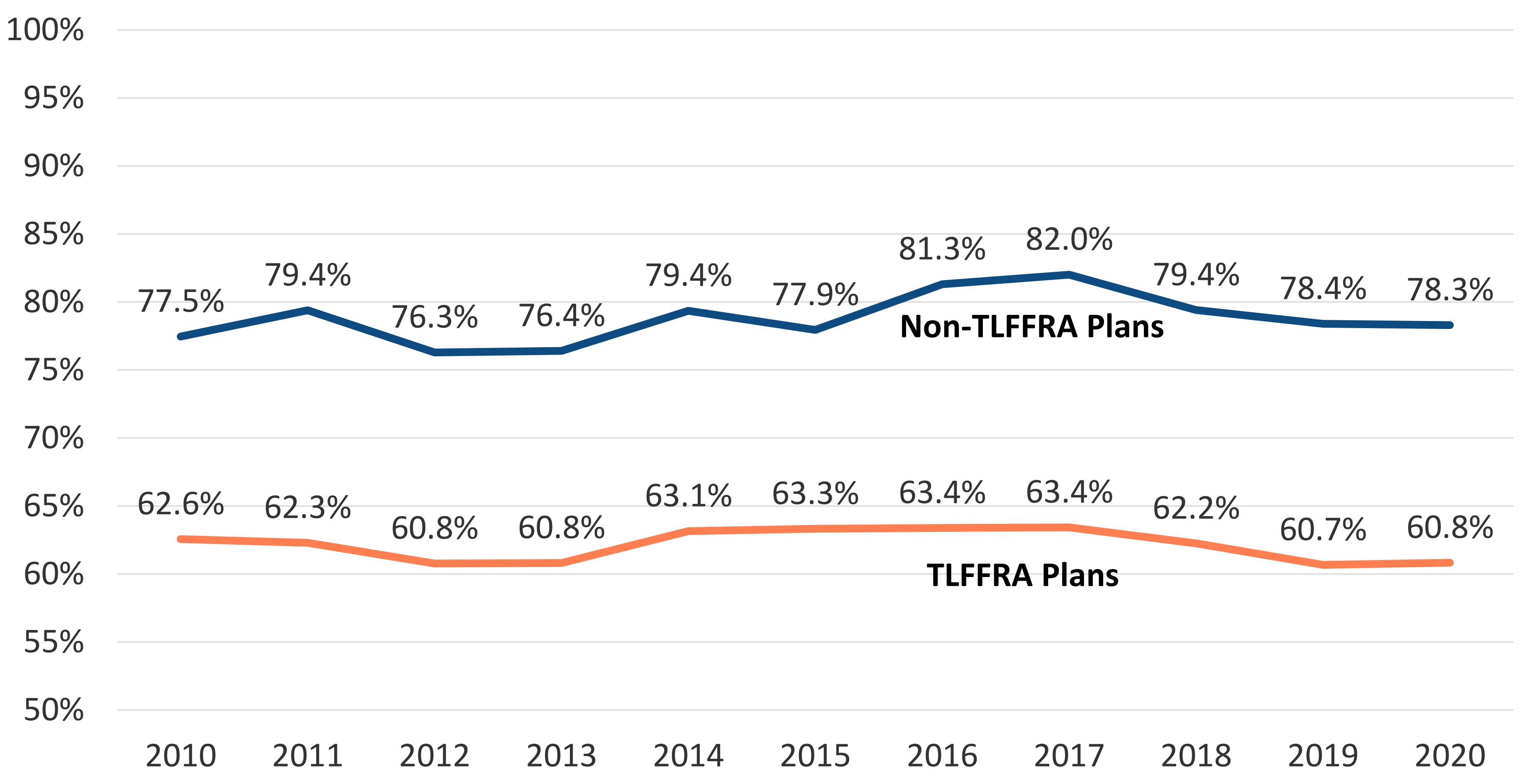
House Committee on Pensions, Investments, and Financial Services: Interim Charge #3

- Review the Texas Local Fire Fighters Retirement Act (TLFFRA) to ensure proper governance and financial oversight. Examine whether the Pension Review Board has proper oversight and authority to implement necessary corrective measures.
- PRB testified at Aug. 16 committee meeting about governance issues specifically related to local fire systems.
    - City officials and trustees from different systems spoke about how it has impacted them locally.

Latest Funding Period By Plan Type



Average Funded Ratio for Texas Retirement Systems by Year



Pension Review Board

PRP Proposal:
Pension Governance Study

Potential Research Questions

- What constitutes good public pension governance?
  - Texas public retirement systems
  - Systems in other states
- What factors influence the way a system is governed?
  - Structural and statutory factors
    - Governing statute
    - Relationships between system, sponsor, and membership
    - Alignment of stakeholder interests
  - Expertise of decision makers
  - Use of policies to govern decision making (i.e. funding policies, investment policies, etc.)

Available Resources

- PRB Resources
  - Minimum Education Training (MET) program to quickly learn the pension basics
  - Past research, reports, whitepapers, board and committee meetings, and presentations
  - Texas Public Pension Data Center
  - Staff expertise and reference guides to assist you navigating statute, technical components, etc.
  - Meetings with board members
- Connections to stakeholders and national and statewide organizations

Impact and Expected Deliverables

1. Presentation of your findings to the board in summer 2023
2. Final research report with recommendations and/or best practices, including potential changes to state statute
   - Recommendations could potentially become part of the PRB Biennial Report to the Texas Legislature or PRB Informal Guidance after further research by staff and approval by the board.

Potential Benefits for Students

- **Staff working with LBJ faculty to have the project qualify as an elective for Dean's Certificate in State and Local Finance**
- Potential to see your recommendations turn into legislation
- Practical experience with statute and pension policy—complex and important topic
  - Work in state and local government—budgeting, pension administration, or **understanding your own employment benefits;** relevant around the country
  - Work in private industries—finance, government relations, consulting, and research
  - Work in advocacy—education policy, fiscal reform, labor rights

Resources

- PRB studies: https://www.prb.texas.gov/additional-resources/prb-studies/
- Contribution and Benefit Decision-Making for Texas Public Retirement Systems: https://prb.box.com/shared/static/exw7omb4suws3vsf74sw01je40si63xb.pdf
- Intensive Reviews of public retirement systems: https://www.prb.texas.gov/intensive-reviews/
- PRB Public Pension Data Center: https://data.prb.texas.gov/
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- House PIFS Interim Hearing Recording: https://tlchouse.granicus.com/MediaPlayer.php?view_id=46&clip_id=23419; PRB slides: https://prb.box.com/shared/static/jx24x2anrd7phoj92rpsxtitsw9rym6f.pdf