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# Texas Pension Review Board

## **Pension Basics Legislative Seminar** **March 2021**

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# PRB Overview

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## 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

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# PRB Overview

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## 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

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# Landscape of Texas Plans

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- **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.

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# Landscape of Texas Plans

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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.

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# Defined Benefit Plan Governance

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- **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 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.



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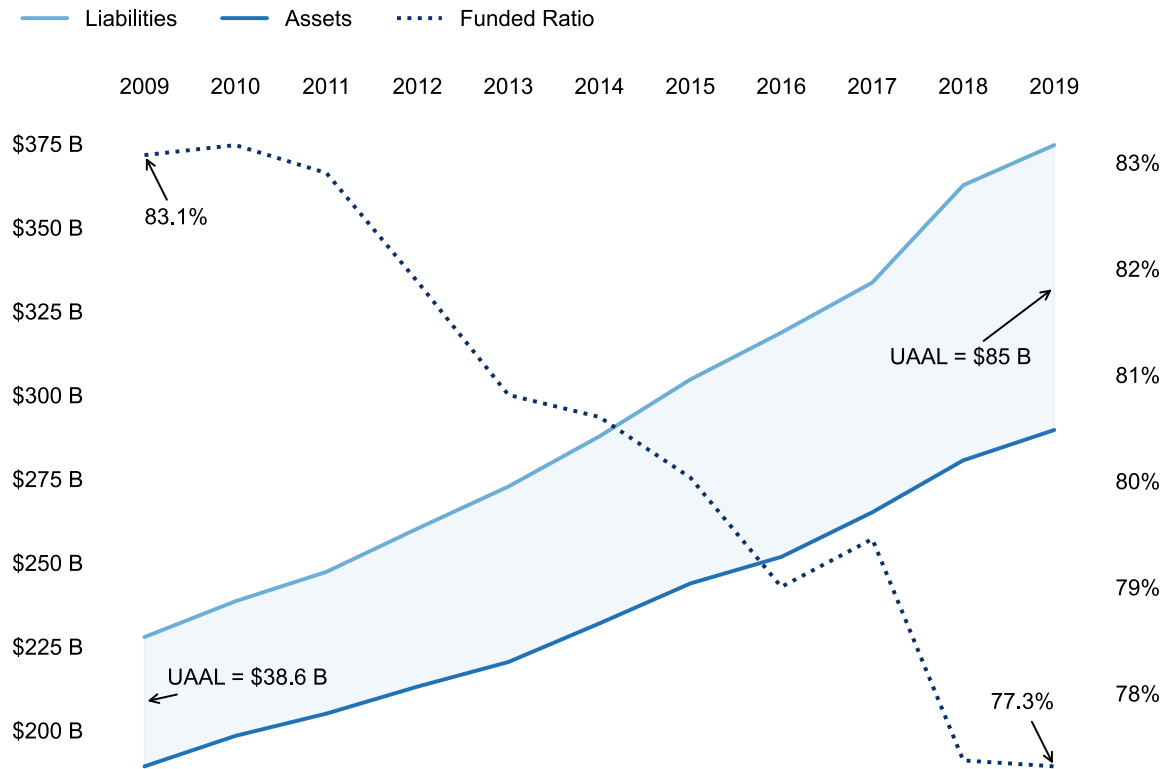
# Key Actuarial Measures

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- **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.

# 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.

# FSRP Statistics

Since September 1, 2015, the Number of Systems...	
<u>subject to</u> the requirement	19
that have <u>submitted</u> an FSRP	17
working on their <u>initial</u> FSRP	2
subject to a <u>revised</u> FSRP	11
that <u>successfully achieved</u> a 40-year am period post-FSRP	9
that have an <u>overdue</u> initial or revised FSRP	5
<u>at risk</u> of becoming subject to the requirement	13
achieved a 40 year am period but are <u>at risk again</u>	2

# 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

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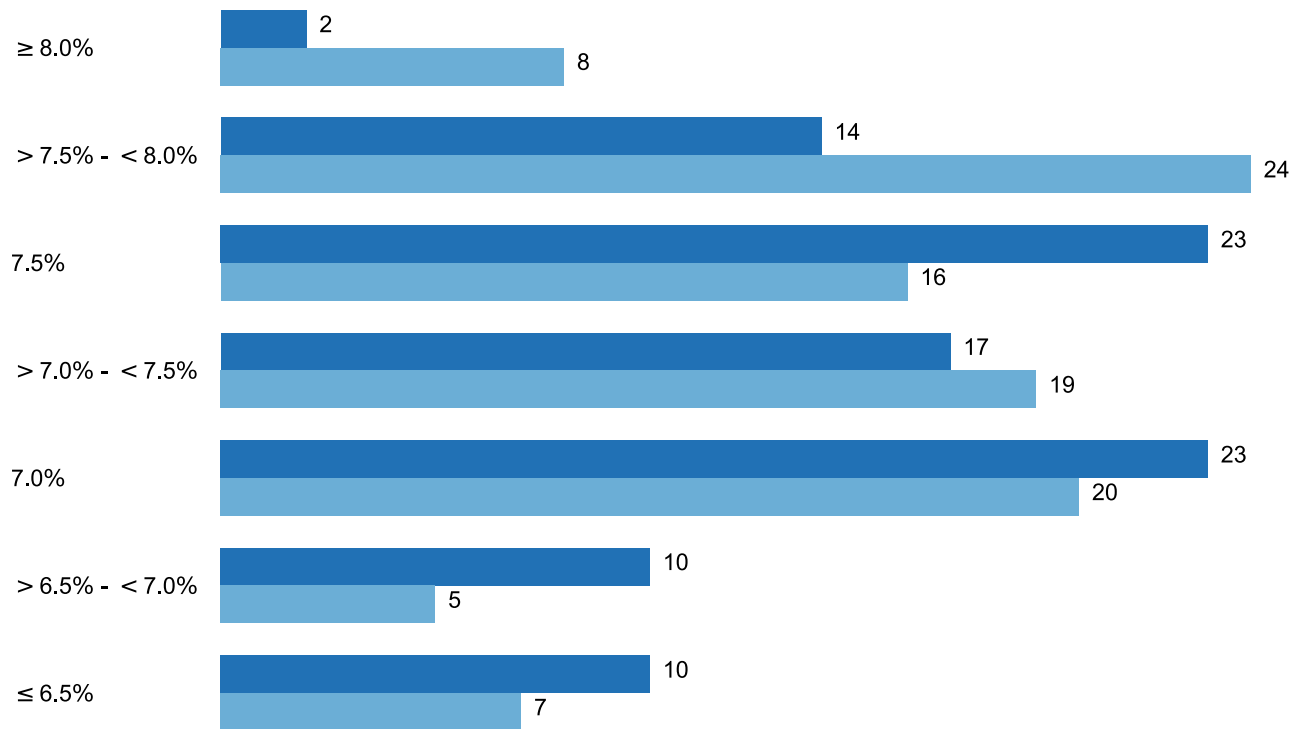
# Assumed Rates of Return

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- 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.

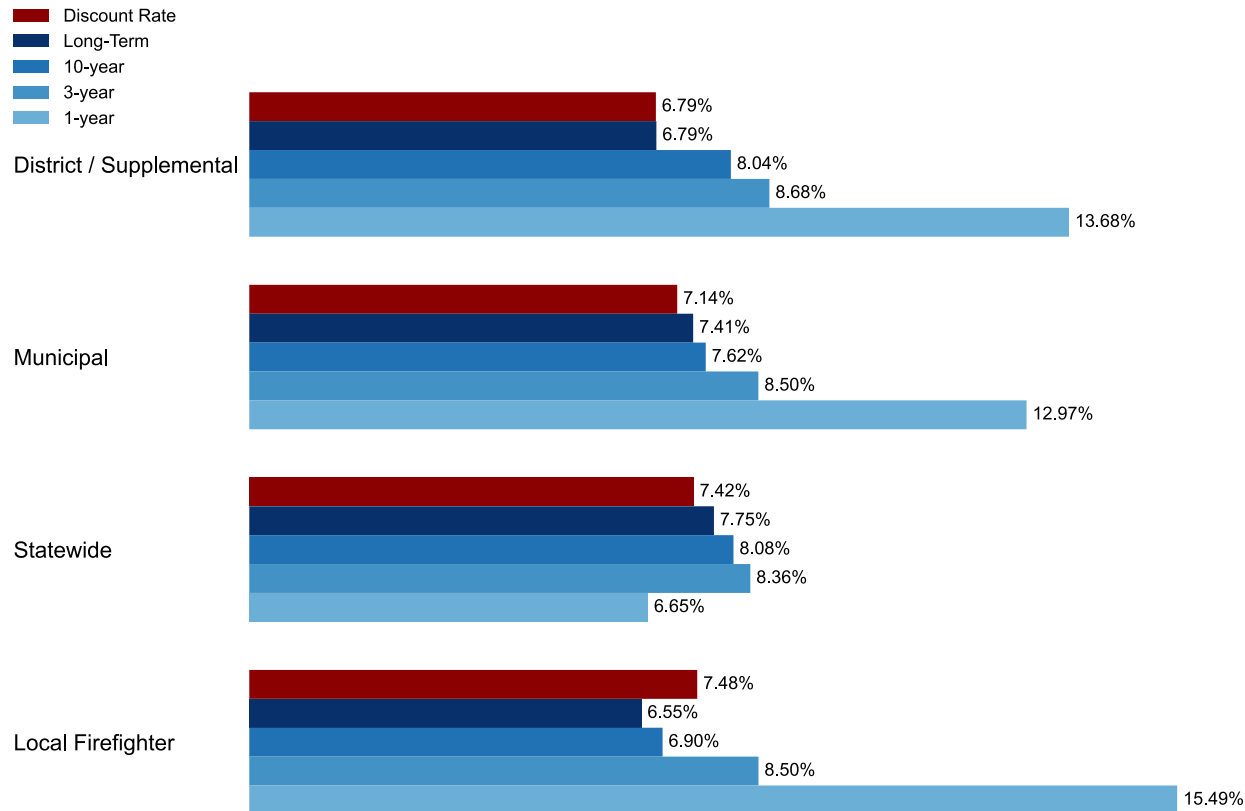
# Investment Return Assumption Trends

■ Current AV  
■ Prior AV



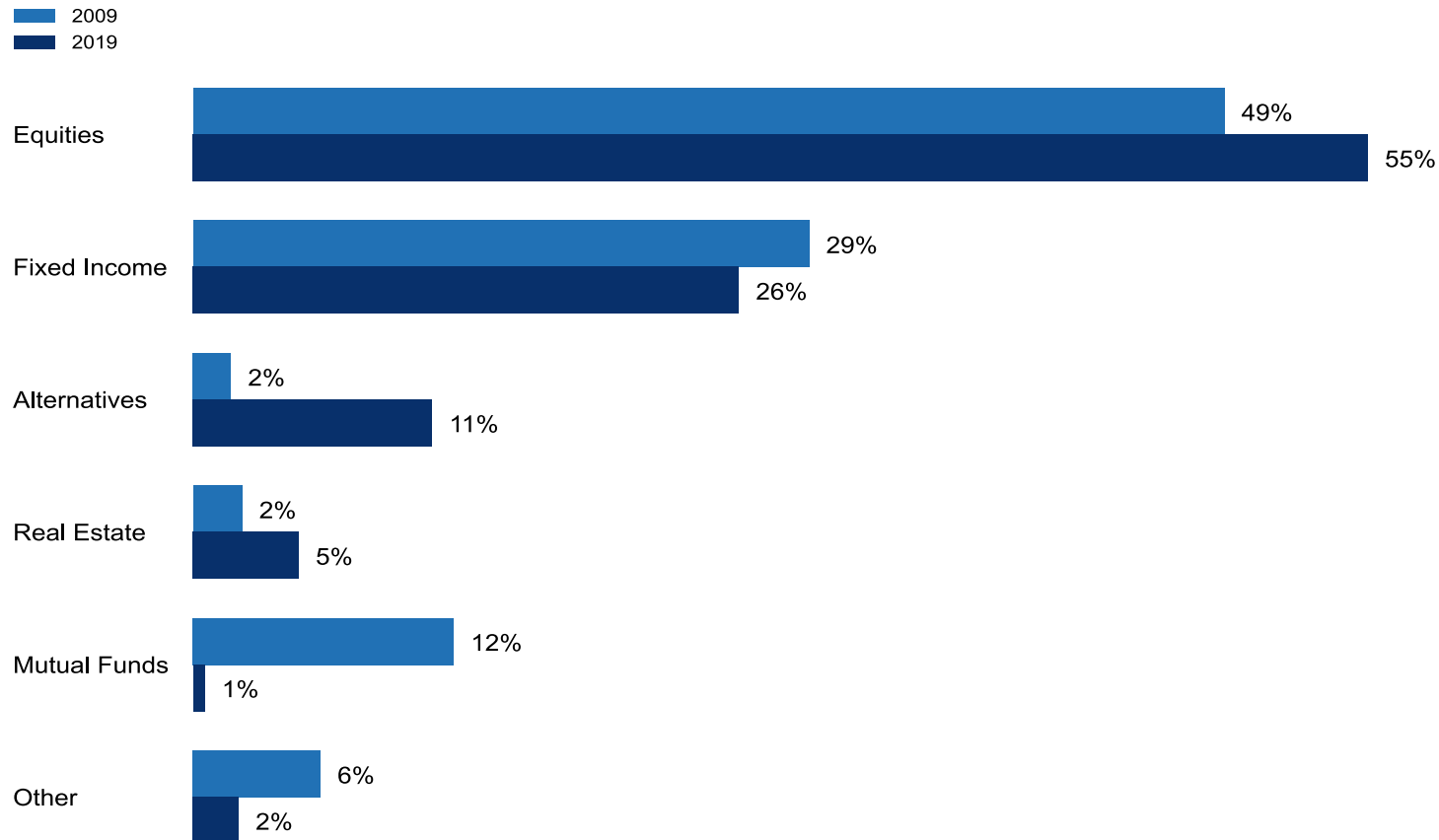


# Average Actual Investment Return Trends FYE 2019



*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.*

# 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.*

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# COVID-19 and Market Trends

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- 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 constitutes 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.



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# Actuarial Impact Statements

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- 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 86<sup>th</sup> Legislative Session.
- The PRB provided 43 actuarial impact statements on bills affecting public retirement systems.

# 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**.



# 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.

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# Resources

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- **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](http://www.prb.texas.gov)


512-463-1736

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# Appendix

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# PRB Online Data Center


 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](#)

This data center contains information reported by retirement systems to the PRB in annual financial reports, actuarial valuations and other studies, and investment and membership reports. The information may not reflect a system's current status, only its most recently reported information. Deadlines for reporting information vary and may be viewed here. Historical data and trends presented are not intended to predict future events or continuing trends.

The information in this data center is intended to meet the Texas Government Code Section 801.209(a) requirement to post each public retirement system's most recent data from reports required under Chapter 802, as well as to meet the Section 2054.1265 requirement for state agencies to post high-value data sets created or maintained by the agency on a generally accessible internet website maintained by or for the agency.

# PRB Online Data Center – Plan Data

## Texas Public Pension Plans

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

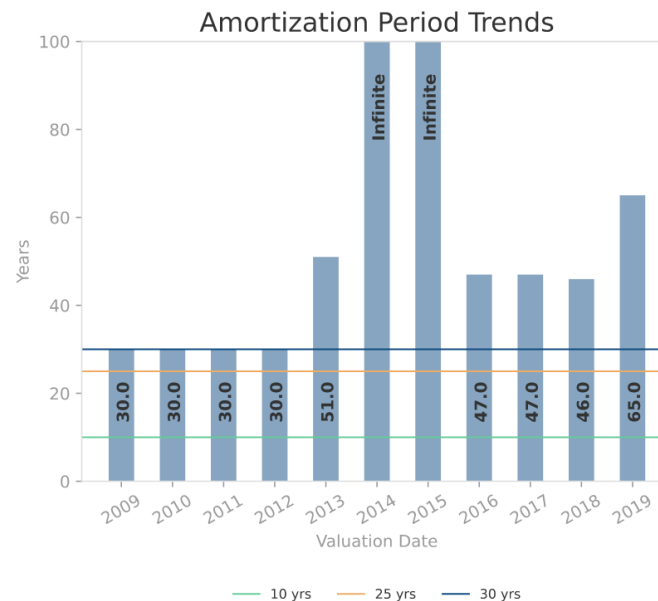


## Dallas Employees' Retirement Fund

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

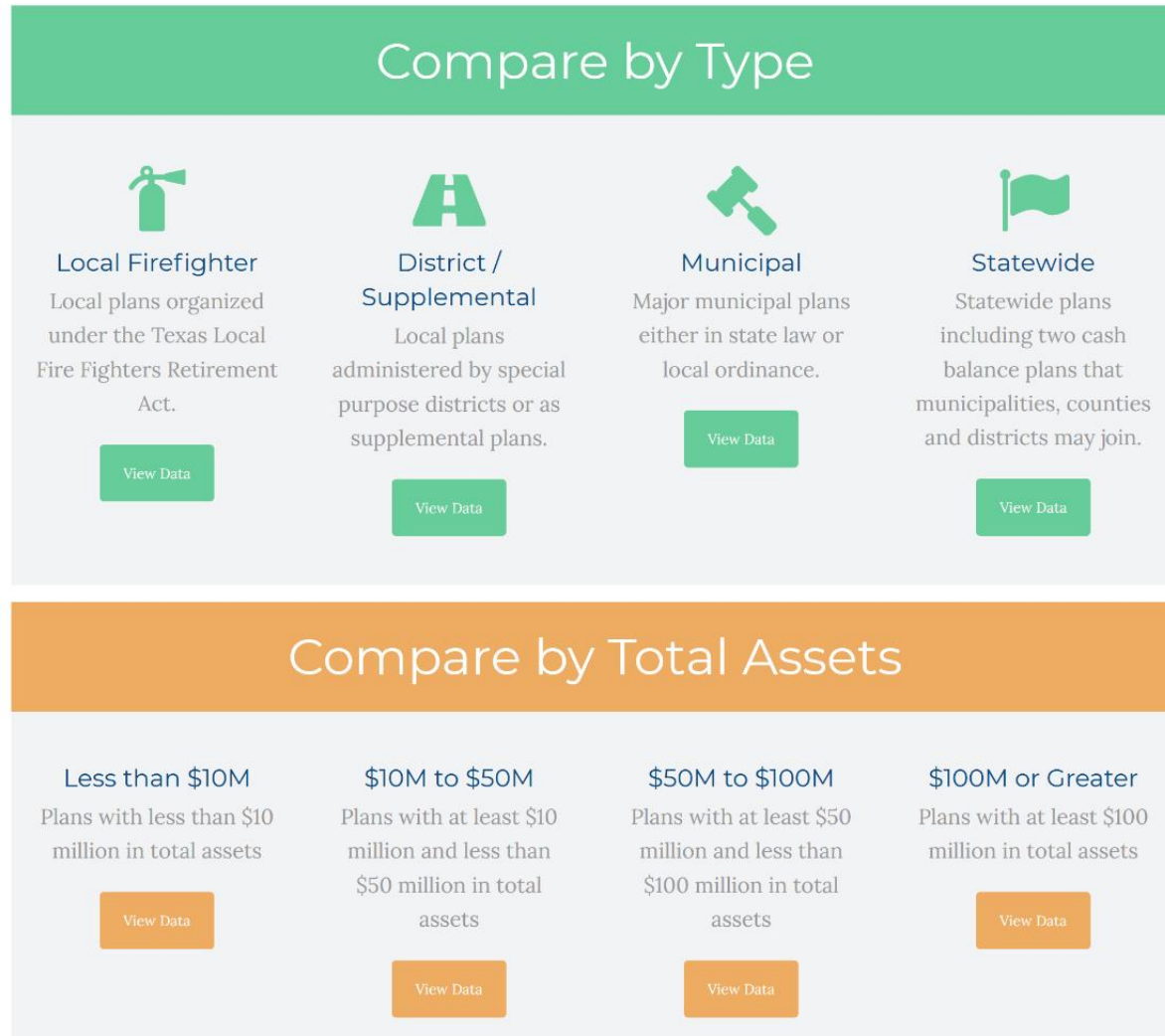
The Dallas Employees' Retirement Fund was established by ordinance in November 1943 and became effective in January 1944 after ratification by the voters of the City of Dallas. The Plan derives its authority from Chapter 40A of the Dallas City Code. The Plan is a single-employer defined benefit pension 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-salaried 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
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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.

# PRB Online Data Center – Comparative Data

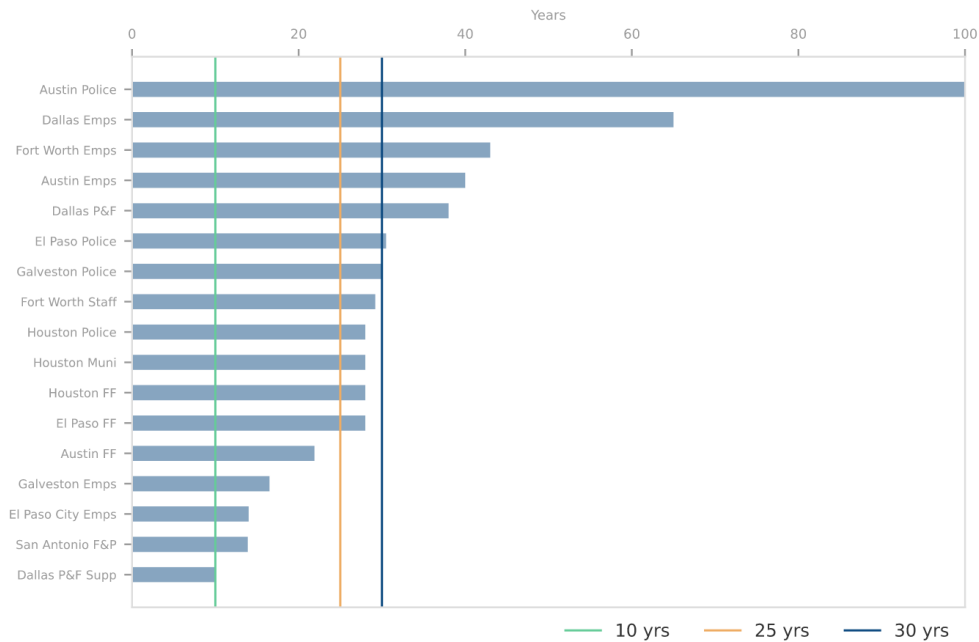


# Municipal FY 2019

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

## Amortization Period FY 2019



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	750,000-850,000
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	

**Actuarial Valuation Report  
February 12, 2021**

Plan Name	Plan Status (1)	Current Actuarial Valuation								Prior Actuarial Valuation		
		Effective Date	Discount Rate	Effective Amort Period (2)	Funded Ratio %	Market Value of Assets (MVA)	Actuarial Value of Assets (AVA)	Unfunded Actuarial Accrued Liability (UAAL = AAL - AVA)	UAAL as % of Payroll	Effective Date	Prior Effective Amort Period (2)	Funded Ratio %
Employees Retirement System of Texas	Active	8/31/2020	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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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
<b>Grand Totals:</b>					<b>76.8%</b>	<b>\$ 301,589,468,387</b>	<b>\$ 302,660,850,664</b>	<b>\$ 91,552,742,286</b>				<b>77.1%</b>

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.

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