

TEXAS PENSION REVIEW BOARD

INVESTMENT COMMITTEE MEETING NOVEMBER 21, 2023

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TEXAS PENSION REVIEW BOARD INVESTMENT COMMITTEE MEETING AGENDA

Tuesday, November 21, 2023 - 2:00 PM

(Or upon adjournment of the Board meeting, whichever occurs later)

William P. Clements Building, Fourth Floor, Room 402 300 W. 15th Street, Austin, TX, 78701

Committee members may attend this meeting by videoconference pursuant to Texas Government Code §551.127. One or more committee members, including the presiding officer, will be physically present at the physical location of the meeting listed above. The meeting will be accessible to the public at the physical location listed above. The public may access the meeting virtually by joining via the Zoom link: https://us02web.zoom.us/j/82719962566. A livestream of this meeting, agenda materials of the meeting, and a recording of the meeting will be made available at www.prb.texas.gov.

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

- 1. Meeting called to order
- 2. Roll call of committee members
- 3. Administrative matters
 - a. Consideration and possible action to approve July 14, 2022, meeting minutes
- 4. Public comment
- 5. Investment data report draft
- 6. Investment Policy Statements
 - a. Guidelines
 - b. Guidance
 - c. Tools and Templates
- 7. Future meetings: agenda items, dates, locations, and other arrangements
- 8. Adjournment

NOTE: The committee may go into closed session concerning any item on this agenda as authorized under the Texas Open Meetings Act, Government Code, Chapter 551. Persons with disabilities who plan to attend this meeting and who may need special assistance are requested to contact Lindsay Seymour at (800) 213-9425/ (512) 463-1736 as far in advance as possible, but no less than three business days prior to the meeting date so that appropriate arrangements can be made.

How to provide public comment: Members of the public who wish to provide public comment to the committee may attend the meeting in person at the address above or register for the meeting using the Zoom link provided above. If you wish to provide comment remotely by Zoom, you must contact Lindsay Seymour (lindsay.seymour@prb.texas.gov) no later than Monday, November 20, 2023. Note that public comments will be limited to no more than three minutes.

Item 3a. July 14, 2022, meeting minutes





Investment Committee Meeting Minutes July 14, 2022

1. Meeting called to order (0:09)

The first meeting of 2022 of the Investment Committee was called to order Thursday, July 14, 2022, at 3:15 p.m. in the Reagan building, room 120, 1400 Congress Avenue, Austin, Texas, 78701.

2. Roll call (0:20)

Committee members present:

Chair Christopher Zook Christopher "Chris" Gonzales, via videoconference Rob Ries

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

3. Committee administrative matters (0:40)

a. September 29,2020, meeting minutes

Chair Zook entertained a motion to suspend reading the minutes of the September 29, 2020, committee meeting and approve them as circulated.

The motion was made by Mr. Gonzales and seconded by Mr. Ries.

The motion passed unanimously.

4. Overview and update on investment-related statutory requirements, including: (1:26)

a. Investment expense reporting under Section 802.103(a), Texas Government Code

Mr. Munter provided the background of investment practices and performance evaluations (IPPE) and investment expense reporting. He stated that additional information that must be in system's annual financial report (AFR) after 2019 included:

- A listing of the names of investment managers engaged by the retirement system.
- A listing, by asset class, of all direct and indirect commissions and fees paid by the retirement system during the fiscal year.
- A listing, by service provided, of investment services.

Mr. Munter discussed an updated investment expense reporting timeline for submission to the PRB. The committee discussed the intended outcome for requiring an investment expense report from systems and how the data will be presented to stakeholders.

b. Investment practices and performance evaluations (IPPE) under Section 802.109, Texas Government Code

Mr. Munter explained that systems with assets at or greater than \$30 million are required to select a substantially experienced independent firm to:

- Evaluate the appropriateness, adequacy, and effectiveness of the system's investment practices and performance.
- Make recommendations for improving the system's investment policies, procedures, and practices.

Mr. Munter provided an overview of the IPPE timeline and the items each IPPE must have. He discussed the PRB's 2020 recommendations to the Legislature, and subsequent IPPE statute updates. He noted that the IPPE data from systems was used to improve the PRB's intensive review process. Chair Zook stated his belief that it would be considered best practice to employ an independent firm to compile a system's IPPE.

5. Updated guidance for conducting IPPEs (21:58)

Mr. Munter presented a proposed draft of updated IPPE guidance, including timelines and deadlines for systems to submit their evaluations. The committee discussed the positives of conducting annual IPPEs, even when not required by statute. Mr. Munter also discussed the new required disclosures and how sponsors can pay for all or part of the IPPE process. He noted that the PRB would be accepting feedback from stakeholders on the updated guidance.

Chair Zook entertained a motion to direct staff to finalize the Guidance for conducting Investment Practices and Performance Evaluations, incorporating changes agreed upon by the committee and any technical changes, for recommendation to the full board for final review at its October 6th meeting.

The motion was made by Mr. Ries and seconded by Mr. Zook.

The motion passed unanimously.

6. Future Investment Committee activities (39:05)

Mr. Munter stated that the PRB planned to finalize updated IPPE guidance based on committee and stakeholder feedback, and then would further develop investment expense reporting and analysis. The PRB also planned to draft investment-related guidelines and best practices based on IPPE statute.

The committee requested staff also work to provide information on reporting guidelines. Chair Zook discussed the positives of providing investment-related guidelines and best practices to systems, coupled with the availability of all data collected being posted on a public website in a simplified way for any non-investment professional to understand. Mr. Gonzales discussed having liquidity reports being submitted to the PRB in the future. He stated that the liquidity of a system and its investments directly affect a system's ability to pay member benefits.

7. Future meetings: agenda items, dates, locations, and other arrangements (47:43)

Chair Zook stated the next Investment Committee meeting was TBD.

8. Invitation for public comment (48:05)

There were no public comments.

9. Adjournment (48:25)

The meeting was adjourned at 4:03 p.m.

PRB staff in attendance:

Matthew Featherston	David Fee	Mariah Miller
Amy Cardona	Robert Munter	Wes Allen

Bryan Burnham Ashley Rendon Lindsay Seymour Madilyn Jarman

Members of the public in attendance:

James Marts- Odessa Fire Jill Contreras- Odessa Fire Linda Mill- CAPTRUST

Erik Brown- Odessa Fire

Chair Christopher Zook

Item 5: Investment Data Report

Robert Munter



Investment Data Report Draft

- New, investment-focused PRB report
- Combines previously collected data with newly available investment expense information resulting from SB 322 (86R).
- Goals:
 - Provide useful report for the board, systems, legislature, and the public.
 - Increase transparency by making consolidated investment data publicly available.



Investment Data Report Draft

Investment Data Report

- Investment returns
- Investment expenses both previously reported method in annual audits and new SB 322 investment expense reporting
- Asset allocation

Future Additions

- Quarterly investment data from publicly available reports
- Liquidity metrics

Other Suggestions

- Additional requests from the Investment Committee
- Feedback from systems and stakeholders

Investment Data Report Overview

See appendix for full tables

Investment Data Returns and Expenses Report

- Last reported fiscal year end
- Net total assets
- Funded ratio
- Investment return assumption
- Investment returns
- Investment expenses
- 10-year vs. assumption

Investment Data Asset Class and Expenses Report

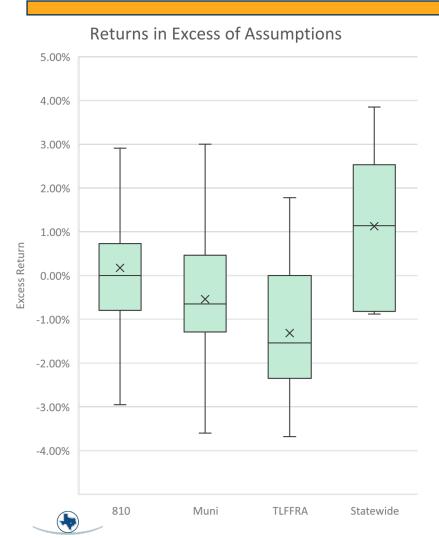
- Asset allocations as reported in annual audits
- New investment expense details by asset class and fee type
- Total fees associated with asset class

Investment Data Services Report

- Investment services
- Investment consultant
- Custodial
- Legal
- Research
- Other
- Total



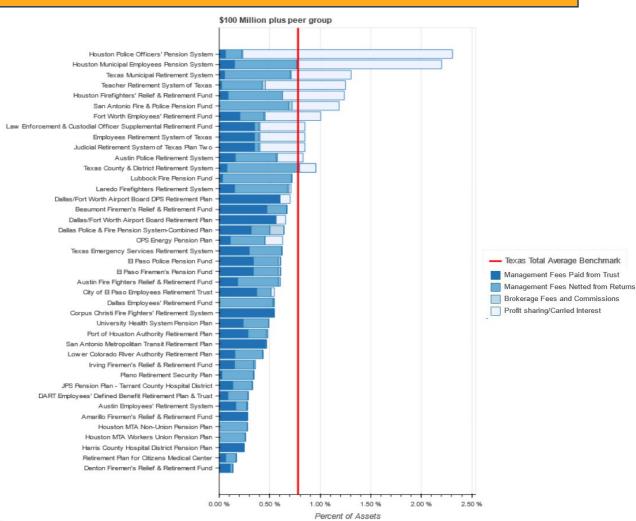
Investment Returns



- Statewide systems outperform assumptions
- TLFFRA systems have the highest expected return assumption
- TLFFRA median return assumption of 7.25 percent vs. 7 percent or lower for others

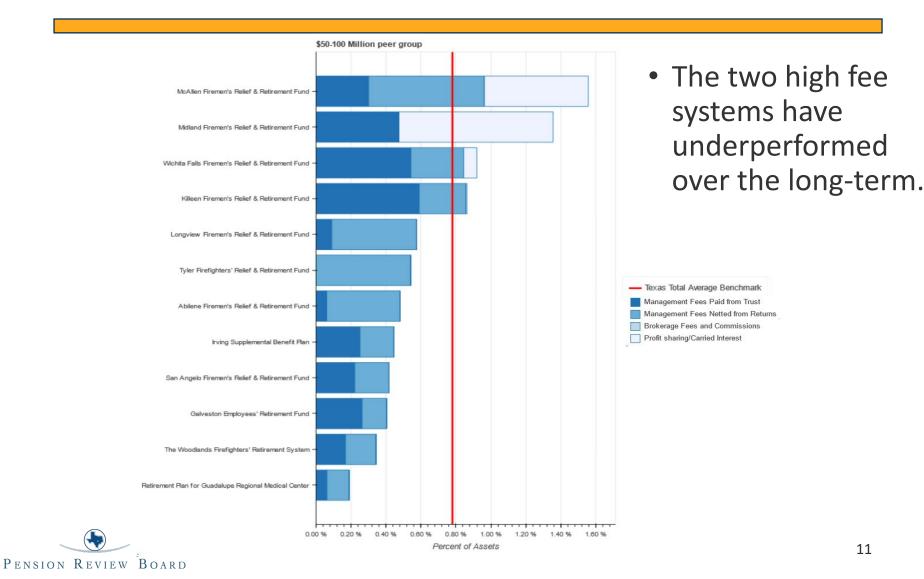
System Assets \$100M Plus Peer Group

- 27 percent of all systems reported fees for profit sharing and carried interest
- 64 percent have some reported alternative investment
- The two systems with high profitsharing fees are among the top performers longterm

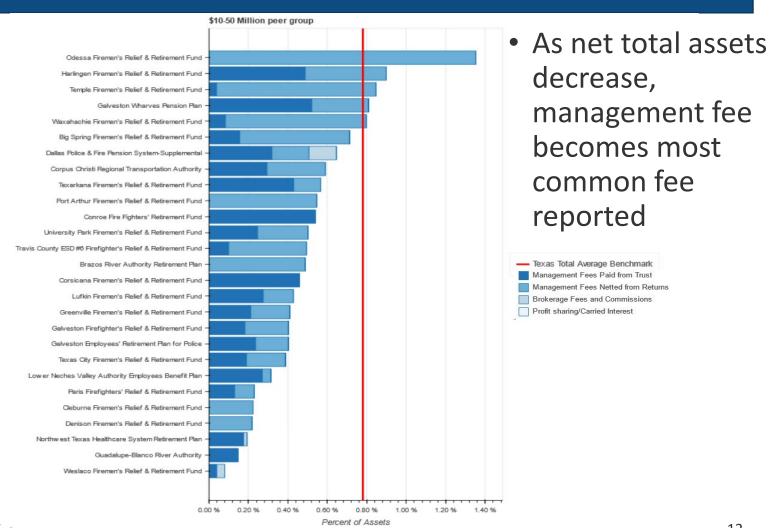




System Assets \$50-100M Peer Group



System Assets \$10-50M Peer Group



System Assets Less Than \$10M Peer Group

Less than \$10 Million peer group Funds that can Northeast Medical Center Hospital Retirement Flan invest assets Retirement Plan for Employees of Brownsville Navigation District with larger Fort Worth Employees' Retirement Fund Staff Plan systems can Marshall Firemen's Relief & Retirement Fund have access to San Benito Firemen Relief & Retirement Fund Colorado River Municipal Water District Defined Benefit Retirement Plan & Trust alternative Arlington Employees Deferred Income Plan investments Atlanta Firemen's Relief & Retirement Fund Texas Total Average Benchmark Management Fees Paid from Trust B Paso Firemen & Policemen's Pension Staff Plan and Trust Management Fees Netted from Returns Brokerage Fees and Commissions Refugio County Memorial Hospital District Retirement Plan Profit sharing/Carried Interest Orange Firemen's Relief & Retirement Fund Sw eetw ater Firemen's Relief & Retirement Fund Rainview Firemen's Relief & Retirement Fund Retirement Plan for Anson General Hospital Brownwood Firemen's Relief & Retirement Fund Retirement Plan for Sweeny Community Hospital 0.00 % 0.20 % 0.40 % 0.60 % 0.80 % 1.00 % 1.20 % 1.40 % 1.60 % 13

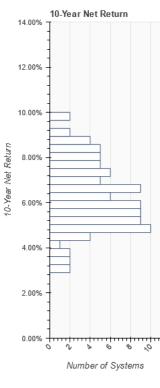
PENSION REVIEW BOARD :

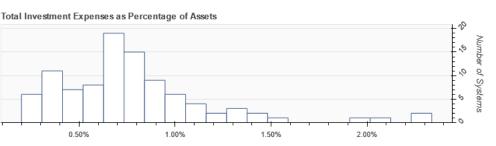
Percent of Assets

Total Expenses vs. 10-Year Net Return

- 6.38 percent average
 10-year net return
- Larger systems generally outperform assumptions while smaller systems underperform
- 7.14 percent net return for systems with assets > \$100M
- 5.78 percent net return for systems with assets < \$100M









Questions and Suggestions



Investment Data Returns and Expenses Report November 21, 2023

(Dollars in Millions) (Fees as Percent of Net Total Assets)

	<u> </u>		, ,			,		SB 322 Total			
System	Fiscal Year End	Net Total Assets	Funded Ratio	Investment Return Assumption	1-Year Net Return	3-Year Net Return	10-Year Net Return	Direct & Indirect Expenses	SB 322 Total Investment Expense	Annual Audit Investment Expense	10YR Return Vs Assumption
Midland Firemen's Relief & Retirement Fund	12/31/2021	\$94	26.58%	7.50%	N/A	N/A	N/A	1.36%	1.46%	1.52%	N/A
The Woodlands Firefighters' Retirement System	12/31/2022	\$56	102.05%	7.00%	-15.43%	4.50%	N/A	0.34%	0.45%	0.28%	N/A
Odessa Firemen's Relief & Retirement Fund	12/31/2022	\$44	33.97%	7.00%	-12.84%	5.55%	4.36%	1.35%	1.50%	1.20%	N/A
Conroe Fire Fighters' Retirement Fund	12/31/2022	\$37	53.60%	7.25%	-13.46%	3.83%	5.28%	0.54%	0.59%	0.59%	N/A
Lower Neches Valley	12/31/2022	\$12	60.47%	6.50%	-16.22%	3.00%	N/A	0.31%	0.31%	0.27%	N/A
El Paso Firemen & Policemen's Pension Staff Plan	12/31/2022	\$1	110.63%	7.75%	-10.32%	5.01%	N/A	0.62%	0.66%	0.19%	N/A
Nacogdoches County Hospital District	6/30/2021	\$51	82.50%	4.99%	22.63%	10.44%	8.87%	N/A	N/A	0.00%	3.88%
Law Enforcement & Custodial Off Sup. Ret. Fund	8/31/2022	\$1,042	43.38%	4.45%	-1.59%	9.66%	8.30%	0.85%	0.86%	0.15%	3.85%
Capital MTA Admin Employees	12/31/2021	\$53	85.38%	6.75%	12.63%	16.03%	10.15%	N/A	N/A	0.08%	3.40%
Dallas Co. Hospital Dist. Retirement Income Plan	12/31/2021	\$1,599	80.63%	6.00%	12.22%	14.87%	9.24%	0.35%	0.38%	0.22%	3.24%
Northeast Medical Center Hospital Retirement Plan	6/30/2022	\$4	66.24%	5.75%	-8.98%	8.75%	8.83%	1.46%	2.10%	0.00%	3.08%
Houston Municipal Employees Pension System	6/30/2022	\$3,952	71.06%	7.00%	5.00%	12.88%	10.00%	2.20%	2.24%	0.23%	3.00%
Citizens Medical Center	2/28/2022	\$150	121.16%	6.75%	7.31%	11.55%	9.66%	0.17%	0.20%	0.08%	2.91%
Judicial Retirement System of Texas Plan Two	8/31/2022	\$566	78.65%	5.77%	-1.59%	9.66%	8.30%	0.85%	0.86%	0.13%	2.53%
Amarillo Firemen's Relief & Retirement Fund	12/31/2022	\$218	90.80%	7.50%	-14.66%	6.93%	9.28%	0.28%	0.32%	0.32%	1.78%
Harris County Hospital District Pension Plan	12/31/2022	\$821	70.46%	5.75%	-16.58%	3.23%	7.35%	0.24%	0.30%	0.00%	1.60%
Houston Police Officers' Pension System	6/30/2022	\$6,862	90.46%	7.00%	-1.40%	9.60%	8.40%	2.31%	2.34%	0.25%	1.40%
Guadalupe Regional Medical Center	12/31/2022	\$94	90.31%	6.75%	-15.09%	3.48%	8.12%	0.19%	0.23%	0.08%	1.37%
Houston Firefighters' Relief & Retirement Fund	6/30/2022	\$5,094	102.63%	7.25%	0.01%	10.86%	8.58%	1.24%	1.25%	0.16%	1.33%
Sweeny Community Hospital	12/31/2022	\$3	82.96%	5.75%	-16.69%	1.72%	7.08%	0.19%	0.23%	0.09%	1.33%
Employees Retirement System of Texas	8/31/2022	\$31,986	69.74%	7.00%	-1.59%	9.66%	8.30%	0.85%	0.86%	0.13%	1.30%
Teacher Retirement System of Texas	8/31/2022	\$184,186	75.62%	7.00%	-6.72%	7.73%	8.14%	1.25%	1.34%	0.14%	1.14%
Denton Firemen's Relief & Retirement Fund	12/31/2022	\$137	89.80%	6.75%	-4.62%	7.88%	7.76%	0.14%	0.32%	0.26%	1.01%
Big Spring Firemen's Relief & Retirement Fund	12/31/2021	\$18	63.36%	7.75%	12.40%	15.66%	8.69%	0.68%	0.89%	0.38%	0.94%
University Health System Pension Plan	12/31/2022	\$527	71.60%	7.00%	-11.99%	5.65%	7.92%	0.49%	0.58%	0.29%	0.92%
San Angelo Firemen's Relief & Retirement Fund	12/31/2021	\$83	68.00%	7.80%	10.25%	13.28%	8.61%	0.42%	0.57%	0.33%	0.81%
Texas County & District Retirement System	12/31/2022	\$41,969	N/A	7.50%	-5.80%	8.29%	8.27%	0.79%	0.82%	0.12%	0.77%
Brownwood Firemen's Relief & Retirement Fund	12/31/2021	\$6	51.30%	7.00%	10.61%	14.81%	7.74%	0.23%	1.02%	0.79%	0.74%
City of El Paso Employees Retirement Trust	8/31/2022	\$908	81.20%	7.25%	-5.27%	9.10%	7.91%	0.55%	0.60%	0.27%	0.66%
University Park Firemen's Relief & Retirement Fund	12/31/2021	\$13	48.00%	7.25%	9.90%	13.31%	7.88%	0.50%	0.80%	0.80%	0.63%
Plano Retirement Security Plan	12/31/2022	\$186	92.83%	6.75%	-15.19%	3.90%	7.29%	0.34%	0.40%	0.22%	0.54%
San Antonio Metropolitan Transit Retirement Plan	9/30/2022	\$322	65.90%	7.25%	-14.80%	5.02%	7.76%	0.47%	0.50%	0.50%	0.51%
Port of Houston Authority Retirement Plan	7/31/2022	\$199	90.08%	6.00%	-8.58%	5.04%	6.49%	0.48%	0.65%	0.29%	0.49%
Galveston Wharves Pension Plan	12/31/2022	\$13	79.84%	7.25%	-17.44%	2.54%	7.72%	0.81%	0.81%	0.52%	0.47%
Travis County ESD #6 FRRF	12/31/2022	\$40	81.90%	6.50%	-14.83%	3.22%	6.81%	0.49%	0.73%	0.33%	0.31%
Austin Fire Fighters Relief & Retirement Fund	12/31/2022	\$1,116	80.00%	7.30%	-10.78%	5.80%	7.57%	0.60%	0.63%	0.31%	0.27%

System	Fiscal Year End	Net Total Assets	Funded Ratio	Investment Return Assumption	1-Year Net Return	3-Year Net Return	10-Year Net Return	SB 322 Total Direct & Indirect Expenses	SB 322 Total Investment Expense	Annual Audit Investment Expense	10YR Return Vs Assumption
JPS - Tarrant County Hospital District	9/30/2022	\$370	86.20%	6.75%	-16.41%	2.94%	7.01%	0.33%	0.38%	0.10%	0.26%
CPS Energy Pension Plan	12/31/2022	\$1,919	81.62%	7.00%	-10.51%	4.19%	7.24%	0.63%	0.66%	0.31%	0.24%
Employees of Brownsville Navigation District	12/31/2022	\$9	87.76%	6.00%	-12.80%	3.94%	6.24%	1.02%	1.02%	1.02%	0.24%
Northwest Texas Healthcare System Retirement Plan	9/30/2022	\$19	86.85%	6.00%	-12.61%	4.79%	5.95%	0.19%	0.28%	0.28%	-0.05%
Denison Firemen's Relief & Retirement Fund	12/31/2022	\$20	73.50%	7.50%	-17.61%	2.20%	7.41%	0.22%	0.72%	0.50%	-0.09%
DFW Airport Board	12/31/2022	\$587	80.11%	7.00%	-6.30%	5.60%	6.90%	0.66%	0.66%	0.66%	-0.10%
DFW Airport Board DPS	12/31/2022	\$254	82.19%	7.00%	-6.20%	5.60%	6.90%	0.70%	0.70%	0.65%	-0.10%
El Paso Police Pension Fund	12/31/2022	\$979	75.18%	7.75%	-10.32%	5.01%	7.45%	0.61%	0.65%	0.26%	-0.30%
El Paso Firemen's Pension Fund	12/31/2022	\$684	75.76%	7.75%	-10.32%	5.01%	7.45%	0.61%	0.65%	0.28%	-0.30%
Colorado River Municipal Water Dist.	12/31/2022	\$6	64.81%	5.75%	-15.82%	0.70%	5.44%	0.78%	1.45%	0.00%	-0.31%
Irving Firemen's Relief & Retirement Fund	12/31/2022	\$242	82.90%	7.00%	-9.90%	2.80%	6.60%	0.36%	0.46%	0.14%	-0.40%
DART Employees	9/30/2022	\$183	75.59%	6.64%	-12.01%	4.97%	6.17%	0.29%	0.53%	0.37%	-0.47%
Dallas Employees' Retirement Fund	12/31/2022	\$3,516	54.07%	7.25%	-8.38%	3.92%	6.65%	0.54%	0.56%	0.55%	-0.60%
San Antonio Fire & Police Pension Fund	12/31/2022	\$3,586	80.08%	7.25%	-10.60%	4.60%	6.60%	1.19%	1.22%	0.41%	-0.65%
Houston MTA Workers Union Pension Plan	12/31/2022	\$291	64.26%	6.25%	-14.10%	2.40%	5.60%	0.26%	0.37%	0.29%	-0.65%
Fort Worth Employees' Retirement Fund	9/30/2022	\$2,504	49.69%	7.00%	-8.80%	5.41%	6.35%	1.00%	1.08%	0.23%	-0.65%
Fort Worth Employees' Retirement Fund Staff Plan	9/30/2022	\$8	69.41%	7.00%	-8.67%	5.41%	6.35%	1.00%	1.08%	0.22%	-0.65%
Anson General Hospital	6/30/2022	\$1	98.06%	6.00%	-17.30%	-1.59%	5.34%	0.46%	0.50%	0.08%	-0.66%
Lubbock Fire Pension Fund	12/31/2022	\$240	68.90%	7.50%	-4.72%	7.10%	6.79%	0.72%	0.78%	0.07%	-0.71%
Austin Employees' Retirement System	12/31/2022	\$2,960	50.30%	6.75%	-15.58%	1.86%	6.02%	0.28%	0.31%	0.19%	-0.73%
Corpus Christi Regional Transportation Authority	12/31/2022	\$43	79.41%	7.00%	-14.71%	3.26%	6.26%	0.59%	0.59%	0.00%	-0.74%
Texas Municipal Retirement System	12/31/2022	\$35,600	N/A	6.75%	-7.35%	4.02%	5.93%	1.31%	1.33%	0.08%	-0.82%
Houston MTA Non-Union Pension Plan	12/31/2022	\$177	56.49%	6.25%	-14.00%	2.30%	5.40%	0.28%	0.31%	0.31%	-0.85%
Texas Emergency Services Retirement System	8/31/2022	\$124	75.20%	7.50%	-13.21%	4.75%	6.62%	0.62%	0.75%	0.42%	-0.88%
Beaumont Firemen's Relief & Retirement Fund	12/31/2022	\$104	40.65%	7.50%	-15.56%	3.69%	6.60%	0.67%	0.78%	0.62%	-0.90%
Wichita Falls Firemen's Relief & Retirement Fund	12/31/2022	\$51	41.46%	7.50%	-14.21%	4.10%	6.59%	0.92%	0.97%	0.84%	-0.91%
Austin Police Retirement System	12/31/2022	\$933	55.21%	7.25%	-11.54%	5.14%	6.27%	0.83%	0.88%	0.21%	-0.98%
Brazos River Authority Retirement Plan	2/28/2023	\$22	70.34%	6.50%	-6.33%	6.55%	5.51%	N/A	N/A	0.00%	-0.99%
Guadalupe-Blanco River Authority	12/31/2022	\$32	79.60%	6.25%	-16.19%	2.32%	5.24%	0.15%	0.26%	0.00%	-1.01%
Tyler Firefighters' Relief & Retirement Fund	12/31/2022	\$75	64.05%	7.00%	-14.35%	3.03%	5.90%	0.54%	0.76%	0.76%	-1.10%
Arlington Employees Deferred Income Plan	6/30/2021	\$4	120.00%	5.00%	8.11%	6.28%	3.75%	0.74%	0.74%	0.00%	-1.25%
Irving Supplemental Benefit Plan	12/31/2022	\$99	90.18%	6.75%	-13.93%	3.39%	5.49%	0.45%	0.53%	0.40%	-1.26%
Texarkana Firemen's Relief & Retirement Fund	12/31/2022	\$37	75.50%	7.50%	-12.81%	3.89%	6.07%	0.57%	0.66%	0.57%	-1.43%
Port Arthur Firemen's Relief & Retirement Fund	12/31/2022	\$49	65.10%	7.25%	-16.85%	1.01%	5.81%	0.55%	0.71%	0.71%	-1.44%
Corpus Christi Fire Fighters' Retirement System	12/31/2022	\$166	55.30%	7.25%	-14.20%	2.20%	5.78%	0.54%	0.64%	0.29%	-1.47%
Cleburne Firemen's Relief & Retirement Fund	12/31/2022	\$23	55.21%	7.35%	-10.83%	4.22%	5.86%	0.22%	0.78%	0.54%	-1.49%
Corsicana Firemen's Relief & Retirement Fund	12/31/2022	\$11	55.40%	7.00%	-15.16%	5.52%	5.41%	0.46%	0.46%	0.46%	-1.59%
Galveston Employees' Retirement Fund	12/31/2022	\$59	70.08%	7.25%	-16.71%	1.81%	5.65%	0.40%	0.46%	0.18%	-1.60%
Lower Colorado River Authority Retirement Plan	12/31/2022	\$426	66.40%	7.00%	-14.40%	3.40%	5.10%	0.43%	0.43%	0.43%	-1.90%

System	Fiscal Year End	Net Total Assets	Funded Ratio	Investment Return Assumption	1-Year Net Return	3-Year Net Return	10-Year Net Return	SB 322 Total Direct & Indirect Expenses	SB 322 Total Investment Expense	Annual Audit Investment Expense	10YR Return Vs Assumption
Harlingen Firemen's Relief & Retirement Fund	9/30/2022	\$34	56.00%	7.75%	-14.50%	2.90%	5.80%	0.90%	1.01%	0.58%	-1.95%
Greenville Firemen's Relief & Retirement Fund	12/31/2022	\$14	37.20%	7.25%	-14.82%	1.56%	5.23%	0.41%	0.69%	0.69%	-2.02%
Temple Firemen's Relief & Retirement Fund	9/30/2022	\$47	64.55%	7.75%	-14.21%	4.37%	5.67%	0.85%	1.01%	0.19%	-2.08%
Marshall Firemen's Relief & Retirement Fund	12/31/2022	\$8	33.69%	7.25%	-15.28%	1.09%	5.12%	0.81%	0.81%	0.81%	-2.13%
Lufkin Firemen's Relief & Retirement Fund	12/31/2022	\$21	46.80%	7.25%	-15.03%	1.47%	5.07%	0.43%	0.68%	0.51%	-2.18%
Refugio County Memorial Hospital	10/31/2022	\$2	88.11%	6.00%	-14.91%	3.93%	3.82%	0.56%	1.12%	0.00%	-2.18%
Galveston Employees' Retirement Plan for Police	12/31/2022	\$23	38.58%	7.00%	-14.06%	1.72%	4.81%	0.40%	0.40%	0.26%	-2.19%
Atlanta Firemen's Relief & Retirement Fund	12/31/2022	\$4	66.32%	7.00%	-15.18%	1.10%	4.79%	0.65%	0.87%	0.66%	-2.21%
Laredo Firefighters Retirement System	9/30/2022	\$180	54.60%	7.40%	-16.13%	3.32%	5.18%	0.71%	0.79%	0.21%	-2.22%
Galveston Firefighter's Relief & Retirement Fund	12/31/2022	\$49	58.50%	7.50%	-15.12%	1.98%	5.25%	0.40%	0.76%	0.54%	-2.25%
Killeen Firemen's Relief & Retirement Fund	9/30/2022	\$54	66.22%	7.25%	-14.98%	3.54%	4.98%	0.86%	0.96%	0.26%	-2.27%
Orange Firemen's Relief & Retirement Fund	12/31/2022	\$8	48.26%	7.75%	-17.19%	2.27%	5.41%	0.53%	0.91%	0.00%	-2.34%
Weslaco Firemen's Relief & Retirement Fund	9/30/2022	\$15	70.20%	7.25%	-12.01%	3.16%	4.88%	0.08%	0.64%	0.60%	-2.37%
Waxahachie Firemen's Relief & Retirement Fund	9/30/2022	\$19	63.00%	7.00%	-23.49%	-0.05%	4.48%	0.80%	0.93%	0.21%	-2.52%
Sweetwater Firemen's Relief & Retirement Fund	12/31/2022	\$8	35.06%	7.50%	-15.61%	1.03%	4.88%	0.47%	0.87%	0.63%	-2.62%
Longview Firemen's Relief & Retirement Fund	12/31/2022	\$86	59.85%	7.50%	-11.80%	3.95%	4.79%	0.58%	0.68%	0.58%	-2.71%
McAllen Firemen's Relief & Retirement Fund	9/30/2022	\$53	59.50%	7.50%	-18.14%	1.51%	4.79%	1.56%	1.96%	0.72%	-2.71%
San Benito Firemen Relief & Retirement Fund	9/30/2022	\$4	59.20%	7.50%	-12.85%	2.24%	4.72%	0.79%	1.29%	1.05%	-2.78%
Plainview Firemen's Relief & Retirement Fund	12/31/2022	\$7	37.69%	7.50%	-16.22%	0.96%	4.71%	0.46%	1.08%	0.88%	-2.79%
Texas City Firemen's Relief & Retirement Fund	12/31/2022	\$15	38.36%	7.25%	-15.49%	1.04%	4.32%	0.39%	0.67%	0.45%	-2.93%
Capital MTA Bargaining	12/31/2022	\$34	53.77%	6.50%	-18.39%	2.05%	3.55%	N/A	N/A	0.37%	-2.95%
Abilene Firemen's Relief & Retirement Fund	9/30/2022	\$52	40.51%	7.50%	-16.63%	1.57%	4.36%	0.48%	0.69%	0.41%	-3.14%
Dallas Police & Fire Pension System-Combined Plan	12/31/2021	\$2,158	41.79%	6.50%	5.00%	6.00%	2.90%	0.64%	0.78%	0.51%	-3.60%
Dallas Police & Fire Pension System-Supplemental	12/31/2021	\$19	45.66%	6.50%	5.00%	6.00%	2.90%	0.65%	0.65%	0.51%	-3.60%
Paris Firefighters' Relief & Retirement Fund	12/31/2022	\$16	101.39%	7.25%	-16.02%	1.04%	3.57%	0.23%	0.31%	0.31%	-3.68%

Investment Data Asset Class and Expenses Report November 21, 2023

(Dollars in Millions) (Fees as Percent of Net Total Assets)

System	Fiscal Year End Date	Asset Class	Net Total Assets	Asset Allocation	Managment Fees Paid From Trust	Management Fees Netted From Returns	Brokerage Fees and Commissions	Profit Share Carried Interest	Total Asset Class Expenses
		Real Assets	\$52	11.21%	0.00%	0.15%	0.00%	0.00%	0.16%
		Fixed Income	\$52	20.59%	0.00%	0.10%	0.00%	0.00%	0.10%
Abilene Firemen's Relief & Retirement Fund	9/30/2022	Equities	\$52	61.10%	0.06%	0.13%	0.00%	0.00%	0.19%
		Alternative Investments	\$52	5.59%	0.00%	0.03%	0.00%	0.00%	0.03%
		Fixed Income	\$218	20.33%	0.05%	0.00%	0.00%	0.00%	0.05%
Amarillo Firemen's Relief & Retirement Fund	12/31/2022	Equities	\$218	75.21%	0.21%	0.00%	0.00%	0.00%	0.21%
		Cash	\$218	4.46%	0.01%	0.00%	0.00%	0.00%	0.01%
		Fixed Income	\$4	76.72%	0.38%	0.18%	0.00%	0.00%	0.56%
Arlington Employees Deferred Income Plan	6/30/2021	Equities	\$4	19.98%	0.10%	0.06%	0.00%	0.00%	0.16%
		Cash	\$4	3.30%	0.01%	0.00%	0.00%	0.00%	0.02%
		Fixed Income	\$4	31.07%	0.12%	0.06%	0.00%	0.00%	0.18%
Atlanta Eiromon's Poliof & Potiromont Fund		Equities	\$4	50.29%	0.21%	0.06%	0.00%	0.00%	0.27%
Atlanta Firemen's Relief & Retirement Fund	12/31/2022	Cash	\$4	4.57%	0.02%	0.00%	0.00%	0.00%	0.02%
		Alternative Investments	\$4	0.00%	0.11%	0.07%	0.00%	0.00%	0.18%
		Real Assets	\$2,960	10.64%	0.01%	0.07%	0.00%	0.00%	0.08%
		Fixed Income	\$2,960	18.91%	0.02%	0.01%	0.00%	0.00%	0.03%
Austin Employees' Retirement System	12/31/2022	Equities	\$2,960	53.38%	0.13%	0.03%	0.01%	0.00%	0.16%
		Cash	\$2,960	6.86%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$2,960	9.91%	0.00%	0.00%	0.00%	0.00%	0.00%
		Real Assets	\$1,116	10.05%	0.00%	0.11%	0.00%	0.00%	0.11%
		Fixed Income	\$1,116	27.85%	0.05%	0.01%	0.00%	0.00%	0.06%
Austin Fire Fighters Relief & Retirement Fund	12/31/2022	Equities	\$1,116	38.51%	0.13%	0.13%	0.02%	0.00%	0.27%
		Alternative Investments	\$1,116	22.96%	0.00%	0.16%	0.00%	0.00%	0.16%
		Real Assets	\$933	15.89%	0.00%	0.16%	0.00%	0.21%	0.37%
		Fixed Income	\$933	11.24%	0.01%	0.04%	0.00%	0.00%	0.05%
Austin Police Retirement System	12/31/2022	Equities	\$933	66.08%	0.15%	0.09%	0.01%	0.00%	0.25%
•		Cash	\$933	0.77%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$933	5.96%	0.00%	0.12%	0.00%	0.04%	0.16%

System	Fiscal Year End Date	Asset Class	Net Total Assets	Asset Allocation	Managment Fees Paid From Trust	Management Fees Netted From Returns	Brokerage Fees and Commissions	Profit Share Carried Interest	Total Asset Class Expenses
		Real Assets	\$104	6.60%	0.14%	0.00%	0.00%	0.00%	0.14%
Beaumont Firemen's Relief & Retirement Fund	12/31/2022	Fixed Income	\$104	22.38%	0.19%	0.07%	0.00%	0.00%	0.26%
Beaution Figure 1 Veneral Remember 1 and	12/3 1/2022	Equities	\$104	58.00%	0.15%	0.12%	0.00%	0.00%	0.27%
		Alternative Investments	\$104	10.52%	0.00%	0.00%	0.00%	0.00%	0.00%
		Real Assets	\$22	4.44%	0.00%	0.11%	0.00%	0.00%	0.11%
Brazos River Authority Retirement Plan	2/28/2023	Fixed Income	\$22	21.62%	0.00%	0.20%	0.00%	0.00%	0.20%
		Equities	\$22	54.99%	0.00%	0.12%	0.00%	0.00%	0.12%
		Alternative Investments	\$22	18.10%	0.00%	0.05%	0.00%	0.00%	0.05%
		Fixed Income	\$6	8.94%	0.00%	0.06%	0.00%	0.00%	0.06%
		Equities	\$6	85.16%	0.00%	0.15%	0.00%	0.00%	0.15%
Brownwood Firemen's Relief & Retirement Fund	12/31/2021	Cash	\$6	1.18%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$6	4.32%	0.00%	0.02%	0.00%	0.00%	0.02%
		Fixed Income	\$53	31.42%			Not Reported		
Capital MTA Admin Employees	12/31/2021	Equities	\$53	68.44%			Not Reported		
		Cash	\$53	0.26%			Not Reported		
		Fixed Income	\$34	26.05%			Not Reported		
Capital MTA Bargaining	12/31/2022	Equities	\$34	73.69%			Not Reported		
		Cash	\$34	0.08%			Not Reported		
		Real Assets	\$908	11.91%	0.03%	0.06%	0.00%	0.00%	0.09%
		Fixed Income	\$908	16.65%	0.03%	0.00%	0.00%	0.00%	0.03%
City of El Paso Employees Retirement Trust	8/31/2022	Equities	\$908	53.77%	0.14%	0.08%	0.00%	0.00%	0.22%
		Cash	\$908	1.80%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$908	15.63%	0.18%	0.00%	0.00%	0.03%	0.21%
		Real Assets	\$23	5.43%	0.00%	0.01%	0.00%	0.00%	0.01%
Cleburne Firemen's Relief & Retirement Fund	12/31/2022	Fixed Income	\$23	35.96%	0.00%	0.06%	0.00%	0.00%	0.06%
		Equities	\$23	54.99%	0.00%	0.15%	0.00%	0.00%	0.15%
		Cash	\$23	3.37%	0.00%	0.00%	0.00%	0.00%	0.00%
		Real Assets	\$6	0.00%	0.03%	0.00%	0.00%	0.08%	0.12%
Colorado River Municipal Water Dist.	12/31/2022	Fixed Income	\$6	38.40%	0.08%	0.00%	0.00%	0.20%	0.28%
		Equities	\$6	51.68%	0.11%	0.00%	0.00%	0.27%	0.38%

System	Fiscal Year End Date	Asset Class	Net Total Assets	Asset Allocation	Managment Fees Paid From Trust	Management Fees Netted From Returns	Brokerage Fees and Commissions	Profit Share Carried Interest	Total Asset Class Expenses
		Real Assets	\$37	1.26%	0.02%	0.00%	0.00%	0.00%	0.02%
Conroe Fire Fighters' Retirement Fund	12/31/2022	Fixed Income	\$37	27.79%	0.14%	0.00%	0.00%	0.00%	0.14%
Combe the righters remement fund	12/31/2022	Equities	\$37	69.92%	0.36%	0.00%	0.00%	0.00%	0.36%
		Cash	\$37	0.47%	0.02%	0.00%	0.00%	0.00%	0.02%
Corpus Christi Fire Fighters' Retirement System	12/31/2022	Fixed Income	\$166	33.78%	0.10%	0.00%	0.00%	0.00%	0.10%
Oorpus Offinsit i the Fighters Treatment Oystem	12/01/2022	Equities	\$166	53.67%	0.44%	0.00%	0.00%	0.00%	0.44%
		Real Assets	\$43	2.53%	0.01%	0.03%	0.00%	0.00%	0.04%
Corpus Christi Regional Transportation Authority	12/31/2022	Fixed Income	\$43	37.61%	0.11%	0.09%	0.00%	0.00%	0.20%
Corpus Chinsti Regional Transportation Admonty	12/31/2022	Equities	\$43	55.42%	0.16%	0.17%	0.00%	0.00%	0.33%
		Cash	\$43	2.01%	0.01%	0.00%	0.00%	0.00%	0.01%
		Fixed Income	\$11	26.82%	0.10%	0.00%	0.00%	0.00%	0.10%
Corsicana Firemen's Relief & Retirement Fund	12/31/2022	Equities	\$11	69.90%	0.32%	0.00%	0.00%	0.00%	0.32%
		Cash	\$11	2.82%	0.03%	0.00%	0.00%	0.00%	0.03%
		Real Estate	\$1,919	0.00%	0.03%	0.04%	0.00%	0.02%	0.09%
		Fixed Income	\$1,919	20.32%	0.05%	0.03%	0.00%	0.00%	0.07%
CPS Energy Pension Plan	12/31/2022	Equities	\$1,919	54.03%	0.04%	0.07%	0.00%	0.00%	0.11%
		Cash	\$1,919	0.66%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$1,919	16.31%	0.00%	0.20%	0.00%	0.16%	0.35%
		Real Estate	\$1,599	10.53%	0.08%	0.00%	0.00%	0.00%	0.08%
		Fixed Income	\$1,599	25.14%	0.03%	0.02%	0.00%	0.00%	0.05%
Dallas Co. Hospital Dist. Retirement Income Plan	12/31/2021	Equities	\$1,599	59.63%	0.09%	0.13%	0.00%	0.00%	0.22%
		Cash	\$1,599	1.09%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$1,599	3.99%	0.00%	0.00%	0.00%	0.00%	0.00%
		Real Assets	\$3,516	9.85%	0.00%	0.07%	0.00%	0.00%	0.07%
		Fixed Income	\$3,516	25.44%	0.00%	0.05%	0.00%	0.00%	0.05%
Dallas Employees' Retirement Fund	12/31/2022	Equities	\$3,516	51.30%	0.00%	0.30%	0.00%	0.00%	0.30%
		Cash	\$3,516	3.12%	0.00%	0.00%	0.01%	0.00%	0.01%
		Alternative Investments	\$3,516	10.86%	0.00%	0.10%	0.00%	0.00%	0.10%
		Real Assets	\$2,158	18.81%	0.13%	0.05%	0.11%	0.00%	0.29%
		Fixed Income	\$2,158	19.90%	0.03%	0.03%	0.00%	0.00%	0.06%
Dallas Police & Fire Pension System-Combined Plan	12/31/2021	Equities	\$2,158	44.49%	0.16%	0.00%	0.02%	0.00%	0.18%
,		Cash	\$2,158	2.76%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$2,158	13.31%	0.00%	0.10%	0.00%	0.00%	0.10%

System	Fiscal Year End Date	Asset Class	Net Total Assets	Asset Allocation	Managment Fees Paid From Trust	Management Fees Netted From Returns	Brokerage Fees and Commissions	Profit Share Carried Interest	Total Asset Class Expenses
		Real Assets	\$19	18.84%	0.13%	0.05%	0.12%	0.00%	0.30%
		Fixed Income	\$19	19.93%	0.03%	0.03%	0.00%	0.00%	0.06%
Dallas Police & Fire Pension System-Supplemental	12/31/2021	Equities	\$19	44.56%	0.16%	0.00%	0.02%	0.00%	0.19%
		Cash	\$19	2.76%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$19	13.33%	0.00%	0.10%	0.00%	0.00%	0.10%
		Real Assets	\$254	7.60%	0.15%	0.00%	0.00%	0.05%	0.20%
		Fixed Income	\$254	25.66%	0.12%	0.00%	0.00%	0.01%	0.13%
DFW Airport Board DPS	12/31/2022	Equities	\$254	38.27%	0.14%	0.00%	0.00%	0.00%	0.14%
		Cash	\$254	3.04%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$254	25.41%	0.19%	0.00%	0.00%	0.04%	0.24%
		Real Assets	\$587	7.60%	0.15%	0.00%	0.00%	0.04%	0.19%
		Fixed Income	\$587	25.66%	0.11%	0.00%	0.00%	0.01%	0.12%
DFW Airport Board	12/31/2022	Equities	\$587	38.27%	0.13%	0.00%	0.00%	0.00%	0.13%
B. W. III port Board		Cash	\$587	3.04%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$587	25.41%	0.18%	0.00%	0.00%	0.04%	0.22%
		Real Estate	\$183	0.00%	0.00%	0.05%	0.00%	0.00%	0.05%
DART Frankrises	0/00/0000	Fixed Income	\$183	37.67%	0.00%	0.05%	0.00%	0.00%	0.05%
DART Employees	9/30/2022	Equities	\$183	43.40%	0.08%	0.10%	0.00%	0.00%	0.18%
		Cash	\$183	2.42%	0.01%	0.00%	0.00%	0.00%	0.01%
		Equities	\$20	73.01%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$20	5.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Denison Firemen's Relief & Retirement Fund	12/31/2022	Real Assets	\$20	4.69%	0.00%	0.00%	0.00%	0.00%	0.00%
		Cash	\$20	5.46%	0.00%	0.00%	0.00%	0.00%	0.00%
		Fixed Income	\$20	11.68%	0.00%	0.22%	0.00%	0.00%	0.22%
		Real Assets	\$137	11.01%	0.03%	0.00%	0.00%	0.00%	0.03%
Denton Firemen's Relief & Retirement Fund	12/31/2022	Fixed Income	\$137	14.57%	0.03%	0.02%	0.00%	0.00%	0.04%
		Equities	\$137	59.95%	0.05%	0.01%	0.00%	0.00%	0.06%
		Real Assets	\$1	9.20%	0.01%	0.10%	0.00%	0.00%	0.11%
		Fixed Income	\$1	18.45%	0.03%	0.05%	0.01%	0.00%	0.09%
El Paso Firemen & Policemen's Pension Staff Plan	12/31/2022	Equities	\$1	51.15%	0.18%	0.03%	0.01%	0.00%	0.22%
		Cash	\$1	2.56%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$1	18.66%	0.12%	0.08%	0.00%	0.00%	0.20%

System	Fiscal Year End Date	Asset Class	Net Total Assets	Asset Allocation	Managment Fees Paid From Trust	Management Fees Netted From Returns	Brokerage Fees and Commissions	Profit Share Carried Interest	Total Asset Class Expenses
		Real Estate	\$684	0.00%	0.01%	0.09%	0.00%	0.00%	0.11%
		Fixed Income	\$684	19.08%	0.03%	0.04%	0.01%	0.00%	0.08%
El Paso Firemen's Pension Fund	12/31/2022	Equities	\$684	52.92%	0.18%	0.03%	0.01%	0.00%	0.22%
		Alternative Investments	\$684	19.31%	0.12%	0.08%	0.00%	0.00%	0.20%
		Real Estate	\$979	0.00%	0.01%	0.09%	0.00%	0.00%	0.11%
		Fixed Income	\$979	19.37%	0.03%	0.04%	0.01%	0.00%	0.08%
El Paso Police Pension Fund	12/31/2022	Equities	\$979	53.73%	0.18%	0.03%	0.01%	0.00%	0.22%
		Alternative Investments	\$979	19.60%	0.12%	0.08%	0.00%	0.00%	0.20%
		Real Assets	\$31,986	0.00%	0.16%	0.00%	0.00%	0.11%	0.27%
		Fixed Income	\$31,986	17.24%	0.02%	0.00%	0.00%	0.00%	0.02%
Employees Retirement System of Texas	8/31/2022	Equities	\$31,986	33.25%	0.00%	0.04%	0.01%	0.01%	0.06%
		Cash	\$31,986	1.91%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$31,986	46.28%	0.16%	0.00%	0.00%	0.33%	0.50%
		Real Assets	\$2,504	15.23%	0.05%	0.01%	0.00%	0.00%	0.07%
		Fixed Income	\$2,504	33.10%	0.05%	0.00%	0.00%	0.00%	0.05%
Fort Worth Employees' Retirement Fund	9/30/2022	Equities	\$2,504	41.91%	0.09%	0.02%	0.01%	0.01%	0.13%
		Alternative Investments	\$2,504	22.03%	0.01%	0.21%	0.00%	0.54%	0.75%
		Real Assets	\$8	15.16%	0.05%	0.01%	0.00%	0.00%	0.07%
		Fixed Income	\$8	32.95%	0.05%	0.00%	0.00%	0.00%	0.05%
Fort Worth Employees' Retirement Fund Staff Plan	9/30/2022	Equities	\$8	41.71%	0.09%	0.02%	0.01%	0.01%	0.13%
		Cash	\$8	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$8	21.93%	0.01%	0.21%	0.00%	0.54%	0.75%
		Fixed Income	\$59	23.39%	0.13%	0.04%	0.00%	0.00%	0.16%
Galveston Employees' Retirement Fund	12/31/2022	Equities	\$59	64.61%	0.08%	0.10%	0.00%	0.00%	0.18%
		Alternative Investments	\$59	10.41%	0.06%	0.00%	0.00%	0.00%	0.06%
		Fixed Income	\$23	29.32%	0.07%	0.04%	0.00%	0.00%	0.11%
Ochordon Frankrica d B (ii) 121 (5 ii	40/04/2022	Equities	\$23	59.70%	0.14%	0.04%	0.00%	0.00%	0.19%
Galveston Employees' Retirement Plan for Police	12/31/2022	Cash	\$23	3.00%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$23	5.77%	0.02%	0.09%	0.00%	0.00%	0.10%

System	Fiscal Year End Date	Asset Class	Net Total Assets	Asset Allocation	Managment Fees Paid From Trust	Management Fees Netted From Returns	Brokerage Fees and Commissions	Profit Share Carried Interest	Total Asset Class Expenses
		Real Assets	\$49	2.69%	0.00%	0.00%	0.00%	0.00%	0.00%
		Fixed Income	\$49	19.48%	0.02%	0.00%	0.00%	0.00%	0.02%
Galveston Firefighter's Relief & Retirement Fund	12/31/2022	Equities	\$49	61.05%	0.16%	0.04%	0.00%	0.00%	0.20%
, and the second		Cash	\$49	5.93%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$49	10.73%	0.00%	0.18%	0.00%	0.00%	0.18%
		Fixed Income	\$13	19.38%	0.10%	0.00%	0.00%	0.00%	0.10%
Galveston Wharves Pension Plan	12/31/2022	Equities	\$13	79.18%	0.40%	0.29%	0.00%	0.00%	0.69%
		Cash	\$13	0.62%	0.02%	0.00%	0.00%	0.00%	0.02%
		Fixed Income	\$14	32.04%	0.06%	0.06%	0.00%	0.00%	0.12%
		Equities	\$14	48.90%	0.10%	0.06%	0.00%	0.00%	0.15%
Greenville Firemen's Relief & Retirement Fund	12/31/2022	Cash	\$14	3.66%	0.01%	0.00%	0.00%	0.00%	0.01%
		Alternative Investments	\$14	15.50%	0.05%	0.08%	0.00%	0.00%	0.13%
		Fixed Income	\$32	0.00%	0.05%	0.00%	0.00%	0.00%	0.05%
		Equities	\$32	13.01%	0.06%	0.00%	0.00%	0.00%	0.06%
Guadalupe-Blanco River Authority	12/31/2022	Cash	\$32	6.52%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$32	80.44%	0.04%	0.00%	0.00%	0.00%	0.04%
		Real Assets	\$34	14.11%	0.17%	0.00%	0.00%	0.00%	0.17%
		Fixed Income	\$34	22.37%	0.00%	0.11%	0.00%	0.00%	0.11%
Harlingen Firemen's Relief & Retirement Fund	9/30/2022	Equities	\$34	60.45%	0.32%	0.30%	0.00%	0.00%	0.62%
		Cash	\$34	0.13%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$34	2.95%	0.00%	0.00%	0.00%	0.00%	0.00%
		Real Assets	\$821	5.23%	0.02%	0.00%	0.00%	0.00%	0.02%
		Fixed Income	\$821	30.75%	0.04%	0.00%	0.00%	0.00%	0.04%
Harris County Hospital District Pension Plan	12/31/2022	Equities	\$821	58.75%	0.18%	0.00%	0.00%	0.00%	0.18%
		Cash	\$821	4.93%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$821	4.70%	0.00%	0.00%	0.00%	0.00%	0.00%
		Real Assets	\$5,094	6.70%	0.00%	0.11%	0.00%	0.18%	0.28%
		Fixed Income	\$5,094	13.93%	0.02%	0.02%	0.00%	0.01%	0.05%
Houston Firefighters' Relief & Retirement Fund	6/30/2022	Equities	\$5,094	32.39%	0.06%	0.00%	0.00%	0.00%	0.06%
		Cash	\$5,094	1.22%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$5,094	43.32%	0.01%	0.40%	0.00%	0.43%	0.84%

System	Fiscal Year End Date	Asset Class	Net Total Assets	Asset Allocation	Managment Fees Paid From Trust	Management Fees Netted From Returns	Brokerage Fees and Commissions	Profit Share Carried Interest	Total Asset Class Expenses
		Real Estate	\$177	0.00%	0.00%	0.16%	0.00%	0.00%	0.16%
Houston MTA Non-Union Pension Plan	12/31/2022	Fixed Income	\$177	25.94%	0.00%	0.04%	0.00%	0.00%	0.04%
Flouston WITA Non-Official Crision Flair	12/31/2022	Equities	\$177	55.57%	0.00%	0.08%	0.00%	0.00%	0.08%
		Cash	\$177	1.47%	0.00%	0.00%	0.00%	0.00%	0.00%
		Real Estate	\$291	0.00%	0.00%	0.15%	0.00%	0.00%	0.15%
Houston MTA Workers Union Pension Plan	12/31/2022	Fixed Income	\$291	25.33%	0.00%	0.04%	0.00%	0.00%	0.04%
Houston WITA Workers Officin Ferision Flair	12/31/2022	Equities	\$291	57.47%	0.00%	0.07%	0.00%	0.00%	0.07%
		Cash	\$291	0.79%	0.00%	0.00%	0.00%	0.00%	0.00%
		Real Assets	\$3,952	10.66%	0.00%	0.10%	0.00%	0.34%	0.44%
		Fixed Income	\$3,952	28.24%	0.06%	0.16%	0.00%	0.52%	0.74%
Houston Municipal Employees Pension System	6/30/2022	Equities	\$3,952	25.81%	0.09%	0.01%	0.01%	0.00%	0.10%
		Cash	\$3,952	0.32%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$3,952	34.63%	0.00%	0.34%	0.00%	0.57%	0.91%
		Real Assets	\$6,862	10.64%	0.00%	0.01%	0.00%	0.85%	0.85%
		Fixed Income	\$6,862	25.40%	0.03%	0.00%	0.00%	0.00%	0.03%
Houston Police Officers' Pension System	6/30/2022	Equities	\$6,862	33.31%	0.02%	0.00%	0.01%	0.00%	0.03%
		Cash	\$6,862	0.01%	0.01%	0.00%	0.00%	0.00%	0.01%
		Alternative Investments	\$6,862	30.33%	0.00%	0.15%	0.00%	1.23%	1.38%
		Real Assets	\$242	10.59%	0.02%	0.08%	0.00%	0.00%	0.10%
		Fixed Income	\$242	39.23%	0.00%	0.03%	0.00%	0.00%	0.03%
Irving Firemen's Relief & Retirement Fund	12/31/2022	Equities	\$242	47.27%	0.13%	0.06%	0.01%	0.00%	0.20%
		Cash	\$242	1.37%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$242	1.47%	0.00%	0.01%	0.00%	0.01%	0.02%
		Real Assets	\$99	6.22%	0.00%	0.00%	0.00%	0.00%	0.00%
		Fixed Income	\$99	32.29%	0.07%	0.04%	0.00%	0.00%	0.12%
Irving Supplemental Benefit Plan	12/31/2022	Equities	\$99	51.94%	0.18%	0.05%	0.00%	0.00%	0.23%
		Cash	\$99	2.09%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$99	5.37%	0.00%	0.10%	0.00%	0.00%	0.10%
		Fixed Income	\$370	25.38%	0.00%	0.01%	0.00%	0.00%	0.01%
JPS - Tarrant County Hospital District	9/30/2022	Equities	\$370	70.37%	0.13%	0.19%	0.00%	0.00%	0.32%
		Cash	\$370	4.25%	0.00%	0.00%	0.00%	0.00%	0.00%

System	Fiscal Year End Date	Asset Class	Net Total Assets	Asset Allocation	Managment Fees Paid From Trust	Management Fees Netted From Returns	Brokerage Fees and Commissions	Profit Share Carried Interest	Total Asset Class Expenses
		Real Assets	\$566	0.00%	0.16%	0.00%	0.00%	0.11%	0.27%
		Fixed Income	\$566	17.28%	0.02%	0.00%	0.00%	0.00%	0.02%
Judicial Retirement System of Texas Plan Two	8/31/2022	Equities	\$566	33.32%	0.00%	0.04%	0.01%	0.01%	0.06%
		Cash	\$566	2.14%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$566	46.38%	0.16%	0.00%	0.00%	0.33%	0.50%
		Real Assets	\$54	7.64%	0.00%	0.00%	0.00%	0.00%	0.00%
		Fixed Income	\$54	27.94%	0.43%	0.14%	0.00%	0.00%	0.57%
Killeen Firemen's Relief & Retirement Fund	9/30/2022	Equities	\$54	49.63%	0.00%	0.13%	0.00%	0.00%	0.13%
		Cash	\$54	9.65%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$54	4.93%	0.16%	0.00%	0.00%	0.01%	0.17%
		Real Assets	\$180	0.00%	0.00%	0.08%	0.00%	0.00%	0.08%
		Fixed Income	\$180	17.15%	0.00%	0.08%	0.00%	0.00%	0.08%
Laredo Firefighters Retirement System	9/30/2022	Equities	\$180	63.68%	0.15%	0.16%	0.02%	0.02%	0.35%
		Cash	\$180	0.25%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$180	18.94%	0.00%	0.20%	0.00%	0.00%	0.20%
		Real Assets	\$1,042	0.00%	0.16%	0.00%	0.00%	0.11%	0.27%
		Fixed Income	\$1,042	17.33%	0.02%	0.00%	0.00%	0.00%	0.02%
Law Enforcement & Custodial Off Sup. Ret. Fund	8/31/2022	Equities	\$1,042	33.43%	0.00%	0.04%	0.01%	0.01%	0.06%
		Cash	\$1,042	2.11%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$1,042	46.52%	0.16%	0.00%	0.00%	0.33%	0.50%
		Fixed Income	\$86	32.54%	0.00%	0.16%	0.00%	0.00%	0.16%
	40/04/0000	Equities	\$86	59.68%	0.00%	0.32%	0.00%	0.00%	0.32%
Longview Firemen's Relief & Retirement Fund	12/31/2022	Cash	\$86	0.03%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$86	7.69%	0.09%	0.00%	0.00%	0.00%	0.09%
		Real Assets	\$426	7.57%	0.00%	0.00%	0.00%	0.00%	0.00%
		Fixed Income	\$426	26.87%	0.05%	0.00%	0.00%	0.00%	0.05%
Lower Colorado River Authority Retirement Plan	12/31/2022	Equities	\$426	58.98%	0.11%	0.00%	0.00%	0.00%	0.11%
		Cash	\$426	1.41%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$426	6.10%	0.00%	0.28%	0.00%	0.00%	0.28%
		Fixed Income	\$12	28.10%	0.03%	0.01%	0.00%	0.00%	0.04%
Lower Neches Valley	12/31/2022	Equities	\$12	71.81%	0.24%	0.04%	0.00%	0.00%	0.27%
		Cash	\$12	0.09%	0.00%	0.00%	0.00%	0.00%	0.00%

System	Fiscal Year End Date	Asset Class	Net Total Assets	Asset Allocation	Managment Fees Paid From Trust	Management Fees Netted From Returns	Brokerage Fees and Commissions	Profit Share Carried Interest	Total Asset Class Expenses
		Real Assets	\$240	15.76%	0.00%	0.16%	0.00%	0.00%	0.16%
		Fixed Income	\$240	19.02%	0.00%	0.11%	0.00%	0.00%	0.11%
Lubbock Fire Pension Fund	12/31/2022	Equities	\$240	50.83%	0.00%	0.28%	0.00%	0.00%	0.28%
		Cash	\$240	0.61%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$240	13.65%	0.03%	0.13%	0.00%	0.00%	0.16%
		Fixed Income	\$21	31.12%	0.08%	0.06%	0.00%	0.00%	0.14%
		Equities	\$21	49.47%	0.13%	0.05%	0.00%	0.00%	0.18%
Lufkin Firemen's Relief & Retirement Fund	12/31/2022	Cash	\$21	3.83%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$21	15.70%	0.07%	0.04%	0.00%	0.00%	0.11%
		Fixed Income	\$8	26.17%	0.16%	0.06%	0.00%	0.00%	0.22%
		Equities	\$8	45.59%	0.28%	0.06%	0.00%	0.00%	0.34%
Marshall Firemen's Relief & Retirement Fund	12/31/2022	Cash	\$8	3.73%	0.02%	0.00%	0.00%	0.00%	0.02%
		Alternative Investments	\$8	23.57%	0.15%	0.08%	0.00%	0.00%	0.23%
	9/30/2022	Real Assets	\$53	0.00%	0.00%	0.19%	0.00%	0.19%	0.38%
		Fixed Income	\$53	8.11%	0.02%	0.06%	0.00%	0.00%	0.09%
McAllen Firemen's Relief & Retirement Fund		Equities	\$53	54.26%	0.28%	0.09%	0.00%	0.00%	0.37%
		Cash	\$53	3.04%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$53	34.45%	0.00%	0.31%	0.00%	0.41%	0.72%
		Real Assets	\$94	15.87%	0.15%	0.00%	0.00%	0.00%	0.15%
		Fixed Income	\$94	11.74%	0.06%	0.00%	0.00%	0.00%	0.06%
Midland Firemen's Relief & Retirement Fund	12/31/2021	Equities	\$94	39.39%	0.19%	0.00%	0.00%	0.00%	0.19%
		Cash	\$94	15.46%	0.01%	0.00%	0.00%	0.00%	0.01%
		Alternative Investments	\$94	19.00%	0.07%	0.00%	0.00%	0.88%	0.95%
		Fixed Income	\$51	40.06%			Not Reported		
Nacogdoches County Hospital District Retirement Plan	6/30/2021	Equities	\$51	54.05%			Not Reported		
		Real Assets	\$51	5.89%			Not Reported		
		Real Assets	\$4	4.88%	0.00%	0.08%	0.00%	0.00%	0.08%
Northeast Medical Center Hospital Retirement Plan	6/30/2022	Fixed Income	\$4	38.98%	0.00%	0.46%	0.00%	0.00%	0.46%
	0/30/2022	Equities	\$4	56.14%	0.00%	0.88%	0.00%	0.00%	0.88%
		Cash	\$4	0.00%	0.00%	0.03%	0.00%	0.00%	0.03%
		Fixed Income	\$19	42.01%	0.07%	0.00%	0.01%	0.00%	0.08%
Northwest Texas Healthcare System Retirement Plan	9/30/2022	Equities	\$19	52.75%	0.09%	0.00%	0.01%	0.00%	0.10%
		Cash	\$19	4.21%	0.01%	0.00%	0.00%	0.00%	0.01%

System	Fiscal Year End Date	Asset Class	Net Total Assets	Asset Allocation	Managment Fees Paid From Trust	Management Fees Netted From Returns	Brokerage Fees and Commissions	Profit Share Carried Interest	Total Asset Class Expenses
		Real Assets	\$44	29.73%	0.00%	1.05%	0.00%	0.00%	1.05%
Odessa Financiala Baliaf & Batinana ant Fund	40/04/0000	Fixed Income	\$44	10.87%	0.00%	0.04%	0.00%	0.00%	0.04%
Odessa Firemen's Relief & Retirement Fund	12/31/2022	Equities	\$44	55.85%	0.00%	0.27%	0.00%	0.00%	0.27%
		Cash	\$44	2.18%	0.00%	0.00%	0.00%	0.00%	0.00%
		Real Assets	\$8	14.05%	0.00%	0.15%	0.00%	0.00%	0.15%
		Fixed Income	\$8	19.07%	0.00%	0.06%	0.00%	0.00%	0.06%
Orange Firemen's Relief & Retirement Fund	12/31/2022	Equities	\$8	66.87%	0.08%	0.23%	0.00%	0.00%	0.31%
0		Cash	\$8	1.68%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$8	0.00%	0.00%	0.01%	0.00%	0.00%	0.01%
		Fixed Income	\$16	24.25%	0.04%	0.02%	0.00%	0.00%	0.05%
		Equities	\$16	57.36%	0.06%	0.06%	0.00%	0.00%	0.12%
Paris Firefighters' Relief & Retirement Fund	12/31/2022	Cash	\$16	2.37%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$16	15.76%	0.03%	0.02%	0.00%	0.00%	0.05%
		Fixed Income	\$7	25.92%	0.05%	0.09%	0.00%	0.00%	0.14%
		Equities	\$7	62.49%	0.17%	0.10%	0.00%	0.00%	0.27%
Plainview Firemen's Relief & Retirement Fund	12/31/2022	Cash	\$7	5.19%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$7	6.39%	0.00%	0.06%	0.00%	0.00%	0.06%
		Real Assets	\$186	11.01%	0.00%	0.12%	0.00%	0.00%	0.12%
		Fixed Income	\$186	23.45%	0.00%	0.04%	0.00%	0.00%	0.04%
Plano Retirement Security Plan	12/31/2022	Equities	\$186	65.36%	0.00%	0.13%	0.00%	0.00%	0.13%
		Cash	\$186	0.19%	0.03%	0.00%	0.00%	0.00%	0.03%
		Alternative Investments	\$186	0.00%	0.00%	0.03%	0.00%	0.00%	0.03%
		Real Assets	\$49	3.08%	0.00%	0.01%	0.00%	0.00%	0.01%
		Fixed Income	\$49	33.67%	0.00%	0.17%	0.00%	0.00%	0.17%
Port Arthur Firemen's Relief & Retirement Fund	12/31/2022	Equities	\$49	61.97%	0.00%	0.33%	0.00%	0.00%	0.33%
		Cash	\$49	1.03%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$49	0.00%	0.00%	0.03%	0.00%	0.00%	0.03%
		Real Assets	\$199	5.20%	0.00%	0.00%	0.00%	0.00%	0.00%
Port of Houston Authority Retirement Plan	7/31/2022	Fixed Income	\$199	44.21%	0.12%	0.04%	0.00%	0.00%	0.16%
Tort of Flousion Authority Nethernerit Flatt	113112022	Equities	\$199	48.35%	0.16%	0.14%	0.01%	0.00%	0.32%
		Cash	\$199	2.01%	0.00%	0.00%	0.00%	0.00%	0.00%

System	Fiscal Year End Date	Asset Class	Net Total Assets	Asset Allocation	Managment Fees Paid From Trust	Management Fees Netted From Returns	Brokerage Fees and Commissions	Profit Share Carried Interest	Total Asset Class Expenses
		Real Assets	\$2	2.55%	0.00%	0.00%	0.00%	0.00%	0.00%
Refugio County Memorial Hospital	10/31/2022	Fixed Income	\$2	17.83%	0.00%	0.21%	0.00%	0.00%	0.21%
reagio county wemonal mospital	10/01/2022	Equities	\$2	63.41%	0.00%	0.26%	0.00%	0.00%	0.26%
		Cash	\$2	16.09%	0.00%	0.09%	0.00%	0.00%	0.09%
		Fixed Income	\$1	58.25%	0.00%	0.00%	0.00%	0.00%	0.00%
Anson General Hospital	6/30/2022	Equities	\$1	40.90%	0.09%	0.14%	0.00%	0.23%	0.46%
		Cash	\$1	0.91%	0.00%	0.00%	0.00%	0.00%	0.00%
		Fixed Income	\$9	16.82%	0.18%	0.00%	0.00%	0.00%	0.18%
Employees of Brownsville Navigation District	12/31/2022	Equities	\$9	68.50%	0.74%	0.00%	0.00%	0.00%	0.74%
		Cash	\$9	14.68%	0.10%	0.00%	0.00%	0.00%	0.10%
		Fixed Income	\$94	24.22%	0.00%	0.07%	0.00%	0.00%	0.07%
Guadalupe Regional Medical Center	12/31/2022	Equities	\$94	74.74%	0.06%	0.06%	0.00%	0.00%	0.12%
		Cash	\$94	1.03%	0.00%	0.00%	0.00%	0.00%	0.00%
	12/31/2022	Fixed Income	\$3	24.22%	0.00%	0.07%	0.00%	0.00%	0.07%
Sweeny Community Hospital		Equities	\$3	74.74%	0.06%	0.06%	0.00%	0.00%	0.12%
		Cash	\$3	1.03%	0.00%	0.00%	0.00%	0.00%	0.00%
		Real Assets	\$83	3.97%	0.00%	0.00%	0.00%	0.00%	0.00%
		Fixed Income	\$83	25.35%	0.00%	0.06%	0.00%	0.00%	0.06%
San Angelo Firemen's Relief & Retirement Fund	12/31/2021	Equities	\$83	60.80%	0.22%	0.14%	0.00%	0.00%	0.36%
		Cash	\$83	2.42%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$83	7.47%	0.00%	0.00%	0.00%	0.00%	0.00%
		Real Assets	\$3,586	9.12%	0.00%	0.12%	0.00%	0.15%	0.27%
		Fixed Income	\$3,586	31.53%	0.00%	0.20%	0.02%	0.14%	0.36%
San Antonio Fire & Police Pension Fund	12/31/2022	Equities	\$3,586	43.26%	0.00%	0.20%	0.00%	0.00%	0.21%
		Cash	\$3,586	1.74%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$3,586	14.56%	0.00%	0.16%	0.01%	0.18%	0.35%
		Real Assets	\$322	13.60%	0.09%	0.00%	0.00%	0.00%	0.09%
San Antonio Metropolitan Transit Retirement Plan	9/30/2022	Fixed Income	\$322	28.10%	0.08%	0.00%	0.00%	0.00%	0.08%
	313012022	Equities	\$322	57.22%	0.28%	0.00%	0.01%	0.00%	0.29%
		Cash	\$322	1.90%	0.00%	0.00%	0.00%	0.00%	0.00%
		Equities	\$4	59.02%	0.00%	0.00%	0.00%	0.00%	0.00%
San Benito Firemen Relief & Retirement Fund	9/30/2022	Fixed Income	\$4	27.56%	0.00%	0.00%	0.00%	0.00%	0.00%
		Cash	\$4	5.30%	0.79%	0.00%	0.00%	0.00%	0.79%

System	Fiscal Year End Date	Asset Class	Net Total Assets	Asset Allocation	Managment Fees Paid From Trust	Management Fees Netted From Returns	Brokerage Fees and Commissions	Profit Share Carried Interest	Total Asset Class Expenses
		Fixed Income	\$8	42.64%	0.07%	0.06%	0.00%	0.00%	0.13%
		Equities	\$8	48.61%	0.10%	0.09%	0.00%	0.00%	0.19%
Sweetwater Firemen's Relief & Retirement Fund	12/31/2022	Cash	\$8	3.57%	0.01%	0.00%	0.00%	0.00%	0.01%
		Alternative Investments	\$8	6.13%	0.09%	0.05%	0.00%	0.00%	0.14%
		Real Assets	\$184,186	0.00%	0.00%	0.15%	0.00%	0.17%	0.32%
		Fixed Income	\$184,186	20.01%	0.00%	0.00%	0.00%	0.00%	0.00%
Teacher Retirement System of Texas	8/31/2022	Equities	\$184,186	32.63%	0.02%	0.07%	0.03%	0.20%	0.32%
· ·		Cash	\$184,186	0.52%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$184,186	53.32%	0.00%	0.19%	0.00%	0.42%	0.61%
		Real Assets	\$47	4.22%	0.04%	0.00%	0.00%	0.00%	0.04%
		Fixed Income	\$47	20.10%	0.00%	0.19%	0.00%	0.00%	0.19%
Temple Firemen's Relief & Retirement Fund	9/30/2022	Equities	\$47	61.57%	0.00%	0.50%	0.00%	0.00%	0.50%
·		Cash	\$47	1.12%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$47	12.71%	0.00%	0.12%	0.00%	0.00%	0.12%
	12/31/2022	Real Assets	\$37	4.60%	0.00%	0.00%	0.00%	0.00%	0.00%
		Fixed Income	\$37	25.53%	0.08%	0.00%	0.00%	0.00%	0.08%
Texarkana Firemen's Relief & Retirement Fund		Equities	\$37	34.09%	0.25%	0.14%	0.00%	0.00%	0.38%
		Cash	\$37	3.41%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$37	32.31%	0.11%	0.00%	0.00%	0.00%	0.11%
		Fixed Income	\$15	32.19%	0.05%	0.06%	0.00%	0.00%	0.11%
		Equities	\$15	49.39%	0.09%	0.06%	0.00%	0.00%	0.15%
Texas City Firemen's Relief & Retirement Fund	12/31/2022	Cash	\$15	3.11%	0.01%	0.00%	0.00%	0.00%	0.01%
		Alternative Investments	\$15	15.40%	0.04%	0.08%	0.00%	0.00%	0.12%
		Real Assets	\$41,969	1.82%	0.01%	0.00%	0.00%	0.00%	0.01%
		Fixed Income	\$41,969	2.18%	0.00%	0.00%	0.00%	0.00%	0.00%
Texas County & District Retirement System	12/31/2022	Equities	\$41,969	24.66%	0.02%	0.00%	0.02%	0.00%	0.03%
		Cash	\$41,969	2.53%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$41,969	68.58%	0.04%	0.86%	0.00%	-0.16%	0.75%
		Real Assets	\$124	11.84%	0.00%	0.00%	0.00%	0.00%	0.00%
		Fixed Income	\$124	21.12%	0.06%	0.00%	0.00%	0.00%	0.06%
Texas Emergency Services Retirement System	8/31/2022	Equities	\$124	54.26%	0.19%	0.32%	0.01%	0.00%	0.51%
		Cash	\$124	2.54%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$124	8.59%	0.05%	0.00%	0.00%	0.00%	0.05%

System	Fiscal Year End Date	Asset Class	Net Total Assets	Asset Allocation	Managment Fees Paid From Trust	Management Fees Netted From Returns	Brokerage Fees and Commissions	Profit Share Carried Interest	Total Asset Class Expenses
		Real Assets	\$35,600	13.45%	0.00%	0.13%	0.00%	0.17%	0.31%
		Fixed Income	\$35,600	24.99%	0.01%	0.12%	0.00%	0.05%	0.18%
Texas Municipal Retirement System	12/31/2022	Equities	\$35,600	37.55%	0.04%	0.00%	0.01%	0.00%	0.05%
		Cash	\$35,600	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$35,600	23.72%	0.00%	0.40%	0.00%	0.37%	0.77%
		Fixed Income	\$56	18.46%	0.04%	0.02%	0.00%	0.00%	0.06%
		Equities	\$56	65.98%	0.00%	0.16%	0.00%	0.00%	0.16%
The Woodlands Firefighters' Retirement System	12/31/2022	Cash	\$56	0.40%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$56	14.74%	0.12%	0.00%	0.00%	0.00%	0.12%
		Real Assets	\$40	0.03%	0.00%	0.03%	0.00%	0.00%	0.03%
Travis County ESD #6 Firefighter's Relief & Retirement	12/31/2022	Fixed Income	\$40	31.84%	0.07%	0.09%	0.00%	0.00%	0.16%
Fund		Equities	\$40	66.66%	0.03%	0.28%	0.00%	0.00%	0.30%
		Cash	\$40	0.99%	0.00%	0.00%	0.00%	0.00%	0.00%
	12/31/2022	Real Estate	\$75	0.00%	0.00%	0.01%	0.00%	0.00%	0.01%
Tyler Firefighters' Relief & Retirement Fund		Fixed Income	\$75	31.67%	0.00%	0.17%	0.00%	0.00%	0.17%
Tyler Firengitters Tremer & Trement Fund		Equities	\$75	63.51%	0.00%	0.34%	0.00%	0.00%	0.34%
		Cash	\$75	1.79%	0.00%	0.01%	0.00%	0.00%	0.01%
		Real Assets	\$527	7.73%	0.07%	0.02%	0.00%	0.00%	0.09%
		Fixed Income	\$527	21.19%	0.03%	0.05%	0.00%	0.00%	0.08%
University Health System Pension Plan	12/31/2022	Equities	\$527	42.79%	0.13%	0.14%	0.00%	0.00%	0.27%
		Cash	\$527	2.83%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$527	25.55%	0.00%	0.05%	0.00%	0.00%	0.05%
		Real Assets	\$13	0.21%	0.00%	0.00%	0.00%	0.00%	0.00%
		Fixed Income	\$13	24.37%	0.05%	0.05%	0.00%	0.00%	0.11%
University Park Firemen's Relief & Retirement Fund	12/31/2021	Equities	\$13	58.28%	0.13%	0.12%	0.00%	0.00%	0.25%
		Cash	\$13	2.23%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$13	15.04%	0.06%	0.08%	0.00%	0.00%	0.14%
		Real Assets	\$19	6.54%	0.00%	0.06%	0.00%	0.00%	0.06%
		Fixed Income	\$19	33.95%	0.00%	0.15%	0.00%	0.00%	0.15%
Waxahachie Firemen's Relief & Retirement Fund	9/30/2022	Equities	\$19	49.19%	0.08%	0.49%	0.00%	0.00%	0.58%
	0,00,2022	Cash	\$19	2.04%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$19	7.84%	0.00%	0.00%	0.00%	0.00%	0.00%

System	Fiscal Year End Date	Asset Class	Net Total Assets	Asset Allocation	Managment Fees Paid From Trust	Management Fees Netted From Returns	Brokerage Fees and Commissions	Profit Share Carried Interest	Total Asset Class Expenses
		Fixed Income	\$15	3.17%	0.00%	0.00%	0.00%	0.00%	0.00%
Weslaco Firemen's Relief & Retirement Fund	9/30/2022	Equities	\$15	96.79%	0.02%	0.00%	0.04%	0.00%	0.06%
		Cash	\$15	0.04%	0.02%	0.00%	0.00%	0.00%	0.02%
	12/31/2022	Real Estate	\$51	0.00%	0.01%	0.20%	0.00%	0.07%	0.27%
		Fixed Income	\$51	23.52%	0.16%	0.01%	0.00%	0.01%	0.18%
Wichita Falls Firemen's Relief & Retirement Fund		Equities	\$51	58.69%	0.37%	0.07%	0.00%	0.00%	0.44%
		Cash	\$51	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
		Alternative Investments	\$51	6.39%	0.01%	0.03%	0.00%	0.00%	0.03%

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(Dollars in Millions) (Fees as Percent of Net Total Assets)

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System	Fiscal Year End	Net Total Assets	Investment Consultant	Custodial	Legal	Research	Other	Total
Abilene Firemen's Relief & Retirement Fund	9/30/2022	\$52	0.09%	0.12%	0.00%	0.00%	0.00%	0.21%
Amarillo Firemen's Relief & Retirement Fund	12/31/2022	\$218	0.01%	0.03%	0.00%	0.00%	0.00%	0.04%
Arlington Employees Deferred Income Plan	6/30/2021	\$4	Not Reported					
Atlanta Firemen's Relief & Retirement Fund	12/31/2022	\$4	0.13%	0.10%	0.00%	0.00%	0.00%	0.22%
Austin Employees' Retirement System	12/31/2022	\$2,960	0.01%	0.01%	0.00%	0.00%	0.01%	0.03%
Austin Fire Fighters Relief & Retirement Fund	12/31/2022	\$1,116	0.02%	0.01%	0.00%	0.00%	0.00%	0.03%
Austin Police Retirement System	12/31/2022	\$933	0.02%	0.02%	0.00%	0.00%	0.00%	0.05%
Beaumont Firemen's Relief & Retirement Fund	12/31/2022	\$104	0.08%	0.03%	0.00%	0.00%	0.00%	0.11%
Big Spring Firemen's Relief & Retirement Fund	12/31/2021	\$18	0.18%	0.03%	0.00%	0.00%	0.00%	0.21%
Brazos River Authority Retirement Plan	2/28/2023	\$22	0.16%	0.00%	0.00%	0.00%	0.00%	0.16%
Brownwood Firemen's Relief & Retirement Fund	12/31/2021	\$6	0.79%	0.00%	0.00%	0.00%	0.00%	0.79%
Capital MTA Admin Employees	12/31/2021	\$53			Not Re	ported		
Capital MTA Bargaining	12/31/2022	\$34			Not Re	ported		
City of El Paso Employees Retirement Trust	8/31/2022	\$908	0.03%	0.02%	0.00%	0.00%	0.00%	0.06%
Cleburne Firemen's Relief & Retirement Fund	12/31/2022	\$23	0.56%	0.00%	0.00%	0.00%	0.00%	0.56%
Colorado River Municipal Water Dist.	12/31/2022	\$6	0.00%	0.59%	0.00%	0.08%	0.00%	0.67%
Conroe Fire Fighters' Retirement Fund	12/31/2022	\$37	0.05%	0.00%	0.00%	0.00%	0.00%	0.05%
Corpus Christi Fire Fighters' Retirement System	12/31/2022	\$166	0.05%	0.04%	0.00%	0.00%	0.00%	0.09%
Corpus Christi Regional Transportation Authority	12/31/2022	\$43			Not Re	ported		
Corsicana Firemen's Relief & Retirement Fund	12/31/2022	\$11			Not Re	ported		
CPS Energy Pension Plan	12/31/2022	\$1,919	0.01%	0.01%	0.01%	0.00%	0.01%	0.04%
Dallas Co. Hospital Dist. Retirement Income Plan	12/31/2021	\$1,599	0.01%	0.02%	0.00%	0.00%	0.00%	0.03%
Dallas Employees' Retirement Fund	12/31/2022	\$3,516	0.01%	0.00%	0.00%	0.00%	0.00%	0.01%
Dallas Police & Fire Pension System-Combined Plan	12/31/2021	\$2,158	0.02%	0.01%	0.11%	0.00%	0.00%	0.14%
Dallas Police & Fire Pension System-Supplemental	12/31/2021	\$19			Not Re	ported		
DFW Airport Board DPS	12/31/2022	\$254			Not Re	ported		
DFW Airport Board	12/31/2022	\$587			Not Re	ported		
DART Employees	9/30/2022	\$183	0.22%	0.03%	0.00%	0.00%	0.00%	0.24%
Denison Firemen's Relief & Retirement Fund	12/31/2022	\$20	0.50%	0.00%	0.00%	0.00%	0.00%	0.50%
Denton Firemen's Relief & Retirement Fund	12/31/2022	\$137	0.15%	0.03%	0.00%	0.00%	0.00%	0.18%
El Paso Firemen & Policemen's Pension Staff Plan	12/31/2022	\$1	0.03%	0.01%	0.01%	0.00%	0.00%	0.04%
El Paso Firemen's Pension Fund	12/31/2022	\$684	0.03%	0.01%	0.01%	0.00%	0.00%	0.04%
El Paso Police Pension Fund	12/31/2022	\$979	0.03%	0.01%	0.01%	0.00%	0.00%	0.04%
Employees Retirement System of Texas	8/31/2022	\$31,986	0.01%	0.00%	0.00%	0.00%	0.00%	0.01%
Fort Worth Employees' Retirement Fund	9/30/2022	\$2,504	0.05%	0.03%	0.01%	0.00%	0.00%	0.08%
Fort Worth Employees' Retirement Fund Staff Plan	9/30/2022	\$8	0.05%	0.03%	0.01%	0.00%	0.00%	0.08%
Galveston Employees' Retirement Fund	12/31/2022	\$59	0.00%	0.06%	0.00%	0.00%	0.00%	0.06%
Galveston Employees' Retirement Plan for Police	12/31/2022	\$23			Not Re	l		
Galveston Firefighter's Relief & Retirement Fund	12/31/2022	\$49	0.34%	0.02%	0.00%	0.00%	0.00%	0.36%
Galveston Wharves Pension Plan	12/31/2022	\$13			Not Re			
Greenville Firemen's Relief & Retirement Fund	12/31/2022	\$14	0.18%	0.10%	0.00%	0.00%	0.00%	0.28%
Guadalupe-Blanco River Authority	12/31/2022	\$32	0.11%	0.00%	0.00%	0.00%	0.00%	0.11%
Harlingen Firemen's Relief & Retirement Fund	9/30/2022	\$34	0.09%	0.00%	0.03%	0.00%	0.00%	0.11%
Harris County Hospital District Pension Plan	12/31/2022	\$821	0.01%	0.04%	0.00%	0.00%	0.00%	0.06%
Houston Firefighters' Relief & Retirement Fund	6/30/2022	\$5,094	0.00%	0.00%	0.01%	0.00%	0.00%	0.01%
Houston MTA Non-Union Pension Plan	12/31/2022	\$177	0.03%	0.00%	0.00%	0.00%	0.00%	0.03%
Houston MTA Workers Union Pension Plan	12/31/2022	\$291	0.03%	0.09%	0.00%	0.00%	0.00%	0.11%
Houston Municipal Employees Pension System	6/30/2022	\$3,952	0.02%	0.01%	0.00%	0.00%	0.00%	0.04%
Houston Police Officers' Pension System	6/30/2022	\$6,862	0.01%	0.00%	0.00%	0.00%	0.01%	0.03%
Irving Firemen's Relief & Retirement Fund	12/31/2022	\$242	0.08%	0.00%	0.02%	0.00%	0.00%	0.10%
Irving Supplemental Benefit Plan	12/31/2022	\$99	0.06%	0.03%	0.00%	0.00%	0.00%	0.09%
JPS - Tarrant County Hospital District	9/30/2022	\$370	0.04%	0.02%	0.00%	0.00%	0.00%	0.05%
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System	Fiscal Year End	Net Total Assets	Investment Consultant	Custodial	Legal	Research	Other	Total
Judicial Retirement System of Texas Plan Two	8/31/2022	\$566	0.01%	0.00%	0.00%	0.00%	0.00%	0.01%
Killeen Firemen's Relief & Retirement Fund	9/30/2022	\$54	0.08%	0.02%	0.00%	0.00%	0.00%	0.09%
Laredo Firefighters Retirement System	9/30/2022	\$180	0.05%	0.02%	0.00%	0.00%	0.00%	0.07%
Law Enforcement & Custodial Off Sup. Ret. Fund	8/31/2022	\$1,042	0.01%	0.00%	0.00%	0.00%	0.00%	0.01%
Longview Firemen's Relief & Retirement Fund	12/31/2022	\$86	0.11%	0.00%	0.00%	0.00%	0.00%	0.11%
Lower Colorado River Authority Retirement Plan	12/31/2022	\$426			Not Re	ported		
Lower Neches Valley	12/31/2022	\$12			Not Re	ported		
Lubbock Fire Pension Fund	12/31/2022	\$240	0.03%	0.02%	0.01%	0.00%	0.00%	0.06%
Lufkin Firemen's Relief & Retirement Fund	12/31/2022	\$21	0.16%	0.10%	0.00%	0.00%	0.00%	0.26%
Marshall Firemen's Relief & Retirement Fund	12/31/2022	\$8			Not Re	ported		
McAllen Firemen's Relief & Retirement Fund	9/30/2022	\$53	0.22%	0.16%	0.03%	0.00%	0.00%	0.40%
Midland Firemen's Relief & Retirement Fund	12/31/2021	\$94	0.06%	0.01%	0.03%	0.01%	0.00%	0.10%
Nacogdoches County Hospital District	6/30/2021	\$51			Not Re	ported		
Northeast Medical Center Hospital Retirement Plan	6/30/2022	\$4	0.00%	0.64%	0.00%	0.00%	0.00%	0.64%
Northwest Texas Healthcare System Retirement Plan	9/30/2022	\$19	0.09%	0.00%	0.00%	0.00%	0.00%	0.09%
Odessa Firemen's Relief & Retirement Fund	12/31/2022	\$44	0.12%	0.03%	0.00%	0.00%	0.00%	0.15%
Orange Firemen's Relief & Retirement Fund	12/31/2022	\$8	0.30%	0.08%	0.00%	0.00%	0.00%	0.37%
Paris Firefighters' Relief & Retirement Fund	12/31/2022	\$16	0.05%	0.03%	0.00%	0.00%	0.00%	0.08%
Plainview Firemen's Relief & Retirement Fund	12/31/2022	\$7	0.62%	0.00%	0.00%	0.00%	0.00%	0.62%
Plano Retirement Security Plan	12/31/2022	\$186	0.04%	0.02%	0.00%	0.00%	0.00%	0.06%
Port Arthur Firemen's Relief & Retirement Fund	12/31/2022	\$49	0.15%	0.02%	0.00%	0.00%	0.00%	0.17%
Port of Houston Authority Retirement Plan	7/31/2022	\$199	0.01%	0.06%	0.04%	0.05%	0.00%	0.17%
Refugio County Memorial Hospital	10/31/2022	\$2	0.56%	0.00%	0.00%	0.00%	0.00%	0.56%
Anson General Hospital	6/30/2022	\$1	0.03%	0.01%	0.00%	0.00%	0.00%	0.04%
Citizens Medical Center	2/28/2022	\$150	0.02%	0.01%	0.00%	0.00%	0.00%	0.03%
Employees of Brownsville Navigation District	12/31/2022	\$9	Not Reported					
Guadalupe Regional Medical Center	12/31/2022	\$94	0.03%	0.01%	0.00%	0.00%	0.00%	0.04%
Sweeny Community Hospital	12/31/2022	\$3	0.03%	0.01%	0.00%	0.00%	0.00%	0.04%
San Angelo Firemen's Relief & Retirement Fund	12/31/2021	\$83	0.05%	0.06%	0.02%	0.03%	0.00%	0.16%
San Antonio Fire & Police Pension Fund	12/31/2022	\$3,586	0.02%	0.01%	0.00%	0.00%	0.00%	0.03%
San Antonio Metropolitan Transit Retirement Plan	9/30/2022	\$322	0.03%	0.01%	0.00%	0.00%	0.00%	0.04%
San Benito Firemen Relief & Retirement Fund	9/30/2022	\$4	0.22%	0.28%	0.00%	0.00%	0.00%	0.49%
Sweetwater Firemen's Relief & Retirement Fund	12/31/2022	\$8	0.18%	0.22%	0.00%	0.00%	0.00%	0.40%
Teacher Retirement System of Texas	8/31/2022	\$184,186	0.06%	0.03%	0.00%	0.00%	0.00%	0.09%
Temple Firemen's Relief & Retirement Fund	9/30/2022	\$47	0.11%	0.05%	0.00%	0.00%	0.00%	0.16%
Texarkana Firemen's Relief & Retirement Fund	12/31/2022	\$37	0.05%	0.04%	0.00%	0.00%	0.00%	0.09%
Texas City Firemen's Relief & Retirement Fund	12/31/2022	\$15	0.18%	0.10%	0.00%	0.00%	0.00%	0.28%
Texas County & District Retirement System	12/31/2022	\$41,969	0.01%	0.00%	0.00%	0.00%	0.02%	0.03%
Texas Emergency Services Retirement System	8/31/2022	\$124	0.09%	0.03%	0.00%	0.00%	0.00%	0.13%
Texas Municipal Retirement System	12/31/2022	\$35,600	0.00%	0.00%	0.00%	0.00%	0.02%	0.03%
The Woodlands Firefighters' Retirement System	12/31/2022	\$56	0.07%	0.04%	0.00%	0.00%	0.00%	0.11%
Travis County ESD #6 FRRF	12/31/2022	\$40	0.15%	0.09%	0.00%	0.00%	0.00%	0.24%
Tyler Firefighters' Relief & Retirement Fund	12/31/2022	\$75	0.13%	0.09%	0.00%	0.00%	0.00%	0.22%
University Health System Pension Plan	12/31/2022	\$527	0.07%	0.01%	0.00%	0.00%	0.00%	0.09%
University Park Firemen's Relief & Retirement Fund	12/31/2021	\$13	0.20%	0.10%	0.00%	0.00%	0.00%	0.30%
Waxahachie Firemen's Relief & Retirement Fund	9/30/2022	\$19	0.08%	0.05%	0.00%	0.00%	0.00%	0.13%
Weslaco Firemen's Relief & Retirement Fund	9/30/2022	\$15	0.56%	0.00%	0.00%	0.00%	0.00%	0.56%
Wichita Falls Firemen's Relief & Retirement Fund	12/31/2022	\$51	0.05%	0.00%	0.00%	0.00%	0.00%	0.05%

Item 6: Investment Policy Statements

Robert Munter



Summary

- Background
- IPS overview
- Research approach
- Overview of research findings
- PRB IPS Guidelines, Guidance, and Tools and Templates



Background

- At the July 14, 2022, meeting, board tasked Investment Committee to work with PRB staff to develop guidelines on investment matters as laid out under Section 802.109 of the Texas Government Code (IPPE statute).
- Staff focus on investment policy statements (IPS)
 - Foundational document for systems' investment programs
- Project goal: Analyze and consolidate best practices to assist systems in ensuring a high-quality IPS that meets their needs and helps them achieve their goals.

What is an IPS?

- A document that defines how an investment program will be managed
- Serves as the foundation for any investment program by setting expectations and goals for all parties.
- Will have similarities, but each system should tailor for their specific needs.



IPS statutory requirement

- Most systems, unless exempt, governed by Sec. 802.202 of the Texas Government Code
- Subsection (d):

The governing body of a public retirement system shall:

- (1) develop and adopt a written investment policy;
- (2) maintain for public review at its main office a copy of the policy;
- (3) file a copy of the policy with the State Pension Review Board not later than the 90th day after the date the policy is adopted; and
- (4) file a copy of each change to the policy with the State Pension Review Board not later than the 90th day after the change is adopted.

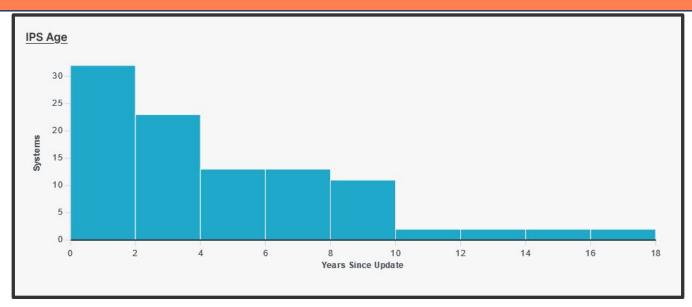


Approach to research and analysis

- Staff reviewed all 100 IPS documents received from Texas public retirement systems to identify:
 - Example language
 - Potential gaps compared to best practices
- Staff researched best practices:
 - GFOA
 - CFAI
 - Industry expert IPPE reports summarized in the <u>2020</u>
 PRB Investment Performance Report



IPS Review: Overview of Findings



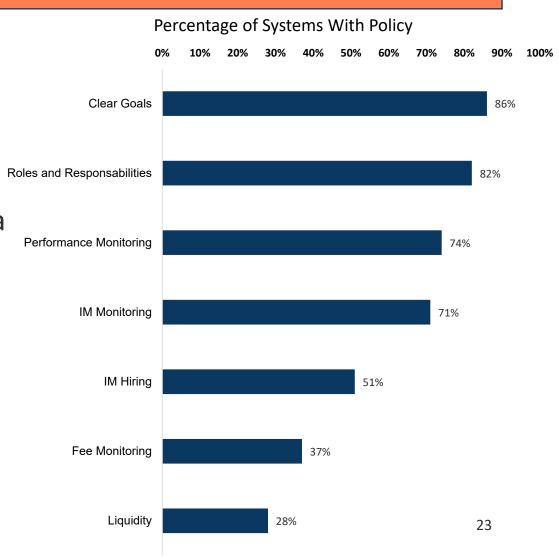
- Industry best practice is to review the IPS periodically.
- Systems are required to submit to the PRB any updated IPS.
- 55 systems updated within last four years.
- Concerns:
 - About half of systems are not regularly reviewing or updating the IPS.
 - Some systems are not submitting IPS updates to the PRB.
 - Eight systems have not reviewed their IPS in over 10 years.

IPS review: Overview of findings

Narrow scope review of system IPS documents found certain policies limited

Issues:

- Only 35 percent have a fee monitoring policy other than (net of fees).
- 25 percent of system IPS have only 0-3 key policies.





2020 Investment Performance Report Recommendations

- Annual IPS/system review
- Include selection criteria for hiring and firing decisions
- Add language for fee reconciliation
- Document roles and responsibilities
- Document/update existing practice for determining asset allocation
- Contribution and/or negative non-investment cash flow concerns

	OPERATIONAL PRACTICE ual IPS and/or system review e RFP at least once every 3-5 years for Investment Consultant				
	ual IPS and/or system review				
	• •				
2 Issue	e RFP at least once every 3-5 years for Investment Consultant	I			
1 Revie	iew RFP process and its potential impact on delays/missing investment opportunities				
1 Cond	duct more frequent AVs				
1 Quar	rterly board meetings should formally review underperforming investment managers	18			
1 Incre	ease board continuity				
1 Limit	t and stagger committee member terms				
1 Fund	d counsel reviews all legal contracts				
1 Revie	iew investing core beliefs anytime significant investment changes occur				
1 Crea	ate an implementation policy to assist in documentation of policies/procedures				
	DOCUMENTATION				
2 Deve	elop a written governance policy				
2 Impr	rove descriptions of existing policies and responsibilities				
1 Docu	ument existing governance practice	7			
1 Docu	ument purpose, function, membership, and possible actions of all committees				
1 Inclu	ude ESG-related and internal management considerations in the IPS				
TRANSPARENCY					
3 Post	additional documents to the website				
2 Mair	ntain a focus on transparency	6			
1 Mod	dernize website				
•	TRAINING				
3 Ensu	ure training stays up to date				
2 Deve	elop materials specifically for new board members	6			
1 Docu	ument training requirements				
OTHER					
1 '	rove plan adherence by adjusting policies exceeding best practice to align more with practices	1			
•	Total Governance Recommendations	38			



IPS Guidelines, Guidance, Tools and Templates

- Three main components:
 - Guidelines provide very high-level policy types and governance practices all systems should have but are flexible for implementation.
 - Guidance provides additional policy details and IPS review tool.
 - Example IPS provides examples of application.

IPS Guidelines, Guidance, Tools and Templates

IPS Guidelines

Combination of GFOA and CFAI best practices

Takes into consideration funding policy, investment practices, and benefits.

Based on best practices, expert recommendations found in IPPE reports and governing statutes

Guidance

Elaborates on the identified industry best practice policies

A resource for constructing policies

Tools and Templates

Useful for evaluating current IPS documents periodically

Example policy language provides a starting point in drafting language and a document specific to a system's needs.

PRB IPS Guidelines

Policies

- 1. Fund Mission or Goals
- 2. Roles and Responsibilities
- 3. Investment Objective
- 4. Liquidity
- 5. Risk Tolerance
- 6. Investment Assets
- 7. Proxy Voting
- 8. Performance Evaluation
- 9. Cost Management
- Investment Manager Selection and Monitoring
- 11. Ethics

Governing Procedures

- 1. The system's board should periodically review the IPS and related governing documents at least every two years if not annually and should re-adopt them at least every five years. By statute, changes to an IPS are required to be filed with the PRB not later than 90 days after the change is adopted.
- The board should acknowledge and consider both the individual system's pension funding constraints and benefit payment requirements when creating the IPS.
- The IPS should document existing practices for future trustees' benefit and overall investment program continuity.
- 4. The system is required by statute to make the IPS available on a publicly available website and make a physical copy available at a system's main office.



PRB IPS Guidance and Example Template

Guidance

- Provides descriptions of what the policy should cover.
- (If appropriate) are for policies that may only apply to certain systems.

Example:

Investment Objective: This policy defines the focus of the investment program using objective goals that can be measured and monitored. These objectives can be both short-term and long-term in nature and should be used to evaluate the overall success of the investment program.

a) Document the investment objective – The goal or goals should be actionable, attainable, unambiguous, and specified in advance.

Example Template

- Uses policy language from industry best practices and current system IPS
- Not intended to replace an existing IPS

Example:

Achieve a long-term rate of return that exceeds the assumed actuarial rate of return. The fund's nominal net of fee return should meet or exceed the investment return assumption of 7 percent over a rolling five-year period.



PRB IPS Review Tool

- The tool covers all identified best practices with a breakdown based on the guidance document.
- Systems without review procedures can use this tool for their periodic governance practice.
- Future PRB continuing education courses can provide more guidance on periodic review practices.



Next steps on Guidelines, Guidance, and Tools/Templates

- Staff is looking for feedback from all systems, stakeholders, and industry experts.
- Feedback period ends January 19, 2024
- Revise materials using stakeholder and committee feedback.
- Present revisions at next Investment Committee meeting (April 2024).
- Propose final adoption by the board at a future meeting.





Investment Policy Statement Guidelines

State law requires Texas public retirement system governing bodies in management of their investments to develop and adopt a written investment policy. This policy must be maintained for public review and filed with the Pension Review Board (PRB). ¹

The PRB provides these guidelines to assist systems in developing and maintaining a complete, well-developed investment policy statement (IPS) consistent with various industry best practices. They offer a high-level overview and minimum framework but also allow flexibility for systems and their investment consultants, advisors, and/or investment staff to construct an IPS that fits their needs. A complete, well-developed IPS forms the foundation of any well-managed investment program and establishes clear goals and direction. The IPS aids trustees in understanding the expectations of various roles involved in investing a system's assets. Clearly articulated roles and responsibilities in the IPS also ensure continuity between outgoing and newly appointed trustees.

An IPS may contain sections and language that are very similar among Texas retirement systems. However, each system will naturally have some differences based on their unique needs and decisions and need to tailor their IPS to reflect those differences. The following recommended policy categories reflect accepted industry best practices established by the Chartered Financial Analyst Institute and the Government Finance Officers Association as well as investment expert reports analyzing Texas retirement system investment practices and performance summarized in the PRB's 2020 Investment Performance Report. References are listed at the end of this document.

A thorough investment policy statement should contain the policies listed below.

- 1. Fund mission or goals
- 2. Roles and responsibilities
- 3. Investment objective
- 4. Liquidity
- 5. Risk tolerance
- 6. Investment assets
- 7. Proxy voting²
- 8. Performance evaluation
- 9. Cost management
- 10. Investment manager selection and monitoring
- 11. Ethics

¹ Sec. 802.202. Texas Government Code

² While not all systems pursue investments that have proxy voting rights, every system should have a policy in place acknowledging its approach to proxy voting, even if the investment practice is to not invest in assets with proxy voting rights.

Governance procedures based on best practices and state law

- 1. The system's board should periodically review the IPS and related governing documents at least every two years if not annually and should re-adopt them at least every five years. By statute, changes to an IPS are required to be filed with the PRB not later than 90 days after the change is adopted.³
- 2. The board should acknowledge and consider both the individual system's pension funding constraints and benefit payment requirements when creating the IPS.
- 3. The IPS should document existing practices for future trustees' benefit and overall investment program continuity.
- 4. The system is required by statute to make the IPS available on a publicly available website and make a physical copy available at a system's main office.⁴



³ Sec. 802.202, Texas Government Code

⁴ Sec. 802.202

Reference Materials

Bailey, J & Richards, T (2017). A Primer for Investment Trustees: Understanding Investment Committee Responsibilities

Chambers, D, Black, K & Lacey, N (2018). Alternative Investments: A Primer for Investment Professionals Drew, M & Walk, A (2019). Investment Governance for Fiduciaries

Stewart, Scott (2013). Manager Selection

Government Finance Officers Association (GFOA), *Adopting Financial Policies*, accessed November 5, 2023, https://www.gfoa.org/materials/adopting-financial-policies

GFOA, *Investment Policies for Defined Benefit Plans*, accessed November 5, 2023, https://www.gfoa.org/materials/investment-policies-for-defined-benefit-plans

GFOA, *Investment Fee Guidelines*, accessed November 5, 2023, https://www.gfoa.org/materials/investment-fee-guidelines

GFOA, Alternative Investments Checklist, accessed November 5, 2023, https://gfoaorg.cdn.prismic.io/gfoaorg/7f4e42b6-8b46-4124-b62d-93d76fd9fe24 Alternative Investments Checklist.pdf

GFOA, *GFOA Sample Investment Policy*, accessed November 5, 2023, https://gfoaorg.cdn.prismic.io/gfoaorg/76b137b8-17e3-42bd-ae9f-7f7be8be50bd GFOA sample investment policy.pdf



Guidance for Developing Investment Policy Statements

This guidance is intended to provide more in-depth descriptions of the high-level policies identified and recommended in the Guidelines for Investment Policy Statements. Some of the policies described below may not be necessary for all systems and are for unique situations, such as systems with specific governing laws or those with more complex investments. These types of policies are distinguished by the designation "(if appropriate)." Similar to the Guidelines for Investment Policy Statements, this guidance reflects accepted industry best practices established by the Chartered Financial Analyst Institute and the Government Finance Officers Association as well as investment expert reports analyzing retirement system investment practices and performance summarized in the PRB's 2020 Investment Performance Report. Examples of these policies and a glossary of common terms can be found in the PRB Investment Policy Statement Example document.

Description of each type of recommended policy:

- 1. **Fund mission or goal:** This section states the foundational beliefs, purpose of the fund, and any laws that govern the fund.
 - a. State fund mission that acknowledges all relevant parties This section at its core can appear obvious; however, a holistic view of the defined benefit fund is encouraged. A holistic view considers all parties involved including active members, retired members, and the system's sponsor. It should also define the goals related to the benefits being provided, such as providing benefits that are both equitable and serve as an employer retention tool. This section should reference the system's funding policy and recognize the sponsor as an integral part of meeting the fund's mission to pay benefits.
 - b. State investment program purpose This section should also focus on the specific purpose of the investment program.

Fiduciary Responsibility

In making and supervising investments of the reserve fund of a public retirement system, an investment manager or the governing body shall discharge its duties solely in the interest of the participants and beneficiaries:

- Providing benefits to participants and their beneficiaries; and
- Defraying reasonable expenses of administering the system

- c. (If appropriate) Reference relevant governing statutes.
- 2. **Roles and responsibilities:** This section specifies the parties involved in the investment program and describes each party's responsibilities.
- a. Identify fiduciary standards and related requirements Various roles will follow certain fiduciary responsibilities and prudent investor standards consistent with applicable statute, as described in the textbox.¹
- b. List the important roles and define corresponding responsibilities This policy should thoroughly cover the responsibilities of all major parties such as the board trustees, investment consultants, investment managers, custodians, and others. It should also define their levels of

¹ Sec. 802.203, Texas Government Code

- authority and reporting requirements and include clear descriptions for monitoring and accountability of the assigned responsibilities. With these important roles clearly defined, the IPS helps provide continuity of the investment program by ensuring this important information can be passed on to future trustees.
- c. Describe how a role is reviewed Role policies should include a description of how roles will be reviewed including what metrics will be used, how frequently they will be reviewed, and who is responsible for reviewing the results.
 - Example: "The consultant will use the IPS-specified performance metrics to review investment managers quarterly and present to the board for review."
- d. Document the frequency of competitive procurement For third-party consultants and other relevant service providers, the policy should provide for a regular competitive procurement process, typically every 3-5 years. Regular re-procurement helps ensure quality services for a competitive cost.
- 3. Investment objective: This policy defines the focus of the investment program using objective goals that can be measured and monitored. These objectives can be both short-term and long-term in nature and should be used to evaluate the overall success of the investment program. Examples of investment objectives are listed in the textbox, Example Investment Objectives.
 - a. Document the investment objective The goal or should be actionable, attainable, unambiguous, and specified in advance. See examples in the textbox.
- 4. Liquidity: Liquidity policies can influence different aspects of a pension fund depending on the specific funding situation. For example, mature plans will require more cash flow liquidity to make benefit payments. A liquidity policy can be a subsection to a larger policy such as risk tolerance or investment assets—but may be a significant enough factor to merit a dedicated policy section.
 - a. Liquidity as a standalone policy This section
 - should include procedures for staff or the system to notify investment managers of expected future distribution needs, fund liquidity level requirements, illiquid investment restrictions, and notification policies or actions that the fund will take in the case of insufficient liquid assets.
 - b. Liquidity as a relevant subsection to another policy Since the term liquidity can have different meanings in investments and in terms of pension funds, subsections can sometimes be a better option.
- 5. **Risk tolerance:** This policy defines the risks that the fund accepts in exchange for investment returns. Identifying acceptable risk can be done in several ways, which may include risk budgeting, statements accepting market volatility in exchange for believed higher returns over the long term, risk measures or metrics, and diversification goals. The goal of this section is to identify the risk factors that could impede success and how the system will ensure the risk is monitored and managed. This policy should:
 - a. Identify risk factors Examples can include market risk, economic risk, interest rate risk,

Example Investment Objectives

- Achieve a long-term rate of return that exceeds the assumed actuarial rate of return.
- The fund's nominal net of fee return should meet or exceed the investment return assumption of 7 percent over a rolling five-year period.
- The actively managed investments performance should net return 1 percent alpha (excess return over a benchmark).

- inflation risk, and credit risk.²
- b. Define risk metrics Examples can include standard deviation, expected volatility, value-at-risk (VaR), and drawdown risk.
- c. (If appropriate) Liquidity Depending on the funding level or cashflow requirements to meet benefit payments, adequate liquidity levels might be a significant risk that requires detailed policies and monitoring.
- 6. **Investment assets:** This policy describes the asset classes considered investable by the fund and determines what percentage the fund will invest in each asset class, also known as the asset allocation. Refer to the example IPS document for more information and an example asset allocation. Assets can be grouped in different ways by various distinctions. However, the most common asset classes include equities, fixed income, real assets, alternatives, and cash. The policy should:
 - a. Establish investable asset classes Specify asset class allocation targets and rebalancing ranges.
 - b. Specify portfolio process Establish portfolio asset allocation target determination process and frequency of review.
 - c. (If appropriate) Define expected volatility and risk levels, including expected volatility and risk levels in any asset allocation target tables.
 - d. (If appropriate) Specify how often an asset liability study is to be performed, with every three to five years as industry best practice.
 - e. (If appropriate) If investing in alternative assets, document additional policies, such as legal reviews, valuation methodologies, liquidity, and others.
 - f. (If appropriate) Document any cash flow or liquidity concerns or needs that would impact the investment options or allocation.
- 7. **Proxy voting:** Systems that have investment proxy voting rights should include this policy in the IPS. A proxy policy should state which party is responsible for voting, define guidelines or limitations that must be followed, and specify notification/reporting procedures to the board on votes placed. If a system chooses not to have investments with proxy voting rights and therefore has no related guidelines or procedures, the IPS should still include this section to state this fact.
- 8. **Performance evaluation:** This section describes how the system's board will assess the success of the investment program and use that information to improve future decision making. The evaluation of performance can be delegated to a third party such as an investment consultant, who can consolidate, validate, analyze, and present the findings to the system's board.
 - a. Specify metrics Time-weighted, or internal rate of returns (TWR, IRR). Net of fee returns should always be provided, and gross returns are optional.

3

² PRB, *MET Investments Course*, accessed November 5, 2023, https://education.prb.texas.gov/course/investments/

- Identify benchmarks An acronym to use when identifying benchmarks is SAMURAI.
 See the textbox, SAMURAI, for a description of each aspect of benchmarks meeting this standard.
- c. Cost management This section can be written as a standalone section or as subsection to the performance evaluation policy. In any case, it should require that that both direct and indirect fees be monitored and specify frequency of review. The policy should include:
 - Reporting requirements of investment expenses, both net and gross of fees.
 - ii. Statutory reporting requirements —
 Texas retirement systems are required to report investment expenses in their annual financial reports. As a result, a fee policy should be tailored to capture and use the required information. This policy should require that both direct and indirect fees be evaluated and indicate the party

responsible for providing this information.3

SAMURAI

- Specified in advance The benchmark should be specified prior to evaluation.
- Appropriate The benchmark should be a good proxy for the investment and its characteristics.
- Measurable The benchmark should be easily calculable and available.
- Unambiguous The benchmark should be clearly understood by all parties involved.
- Reflective of current investment opinion
 The benchmark should match the investment style deployed by the fund.
- Accountable The benchmark should be accepted as appropriate by the party who is ultimately accountable for the investment's performance.
- Investable The benchmark should be purchasable or able to passively replicate.
- d. (If appropriate) Performance attribution This policy would specify if performance attribution should be required with performance evaluations. These additional details can be extremely useful for a board to understand investment performance while making it easier to engage investment staff or consultants on potential actions.
- e. (If appropriate) Performance appraisal and active vs. passive This policy would focus on evaluating investment managers' ability to deliver alpha using metrics and excess return analysis. The policy could include procedures to review active managed investments vs. passive investment alternatives.
- 9. **Investment manager selection and monitoring:** Investment managers are those who manage a portion of the system's assets. As such, the IPS should include policies to specify the due diligence necessary to ensure those assets are invested in the best interest of fund. As conducting investment manager due diligence is a skilled practice, it is highly encouraged that systems that lack internal expertise rely on a third-party consultant with relevant expertise to create or provide policies and guidance to govern the process.⁴
 - a. Selection criteria Include qualitative, quantitative, or other factors.

³ <u>Sec. 802.103, Texas Government Code, 40 TAC, §609.105(9)</u>

⁴ Secs. 802.204-802.207, Texas Government Code

- b. Procedure and metrics used for monitoring Use benchmarks established in the performance evaluation section. Performance should be reviewed at least quarterly.
- c. Compliance Review compliance with all applicable laws, fund guidelines, and monitoring policies.
- d. Watch list policy Include a watch list process in the policy as part of the monitoring process for investment managers. This type of policy allows a system to notify managers of their watch list status, which occurs when performance deficiencies or other issues arise that can lead to termination and withdrawal of assets. This process may include:
 - i. A notification to the investment manager of their placement on the watch list and the reason for the decision.
 - ii. A request for the manager to respond or provide any qualitative or quantitative analysis regarding the underlying issue.
 - iii. A contingency to research alternative investment opportunities if the investment manager is terminated.
 - iv. A requirement to review watch list managers every year to decide on removing, maintaining watch list status, or terminating.
- 10. **Ethics:** A section can be created to outline the core ethical principles that all parties should follow. Alternatively, this section may reference an additional document the system maintains, such as a code of conduct or broader ethics policy. These types of polices help clarify acceptable practices and document the core ethical beliefs trustees and other third parties will follow.



Investment Policy Statement Review Tool

investment roncy Statement Neview 1001						
		Policy	Does policy exist? Y/N	Action needed	Status (such as in progress, complete, etc.)	
1.	<u>Fun</u>	d mission or goal				
	a.	Acknowledge relevant parties				
	b.	Stated purpose				
	c.	(If appropriate) Reference relevant governing statutes				
2.	Role	s and responsibilities				
	a.	Identify fiduciary standards and related requirements				
	b.	List of important roles and define responsibilities				
	c.	<u>Describe how a role is reviewed</u>				
	d.	Document the frequency of competitive procurement				
3.	Inve	stment objective				
4.	Liqu	<u>idity</u>				
5.	Risk	<u>tolerance</u>				
	a.	<u>Identify risk factors</u>				
	b.	<u>Define risk metrics</u>				
	c.	(If appropriate) Liquidity				
6.	Inve	stment assets				
	a.	<u>Establish investable asset classes</u>				
	b.	Specify portfolio process				
	c.	(If appropriate) Expected volatility and risk levels				
	d.	(If appropriate) Asset liability study				
	e.	(If appropriate) Alternative investments				
	f.	(If appropriate) Cash flow and liquidity				
7.	Prox	<u>vy voting</u>				
8.	Perf	ormance evaluation				
	a.	Specify metrics				
	b.	<u>Identify benchmarks</u>				
	c.	<u>Cost management</u>				

	d. (If appropriate) Performance attribution				
	e. (If appropriate) Performance appraisal and active vs. passive				
9.	Investment manager selection and monitoring				
	a. <u>Selection criteria</u>				
	b. <u>Procedure and metrics used for monitoring</u>				
	c. <u>Compliance</u>				
	d. <u>Watch list policy</u>				
10.	<u>Ethics</u>				
	Governance Procedures	Procedure Completed? Y/N	Action Needed	Policy Creation or Update Status	
	IPS reviewed within last 2 years and reapproved within the last 5 years with documented changes filed with the PRB				
	The IPS consider both pension funding constraints and benefit liabilities				
3.	Existing practices are documented		<u> </u>		
	The IPS document is on a publicly available website and a physical copy is available at the main office				
Boa	Board Meeting Date: IPS Last Approved Date:				
Con	nments and Notes				



Investment Policy Statement Example

Overview

The Guidance for Developing an Investment Policy Statement, adopted by the Pension Review Board (PRB), provides a description of policies and sections that systems are encouraged to include in their investment policy statement (IPS), as applicable. This IPS example is an additional reference tool provided by the PRB to demonstrate what each type of policy might look like in an IPS. This document is not intended to be a fully functioning IPS since certain policy sections have been shortened for brevity and each IPS should be tailored to each system's needs. Furthermore, this IPS example is not intended to replace any system's existing IPS, but systems may use it as a starting point of a new IPS or to develop new policy language to update an existing policy.

This document contains example language from industry entities such as the Government Finance Officers Association (GFOA) and the Chartered Financial Analyst Institute (CFAI). Specific references are provided at the end of this document. The PRB also used policy language from actual IPS documents adopted by several Texas public retirement systems including, but not limited to, the Texas Municipal Retirement System (TMRS), Texas County and District Retirement System (TCDRS), Teacher Retirement System of Texas (TRS), City of Austin Employees' Retirement System (COAERS), Irving Firemen's Relief and Retirement Fund, City of El Paso Employees Retirement Trust, and Abilene Firemen's Relief and Retirement Fund, among others. In addition, a glossary of common terms used in IPS documents can be found at the end of this example IPS as an additional resource.

Example Language

I. Fund Mission

The investment policy statement (IPS) governs the pension system investment program and is established to provide a framework for management of those assets to conform with governing legislation and other legal requirements. This IPS outlines the foundational beliefs, purpose, objectives, benchmarks, restrictions, risks, and responsibilities of the board, staff, investment managers, service providers, sponsoring entity, members, and other stakeholders in how they impact the investment program.

The board has a fiduciary duty to the members and beneficiaries of the system to prudently allocate contributions from the sponsoring governmental entity and system members in accordance with the IPS to pay future benefits. The investment program relies on incoming funds in accordance with the established funding policy to meet a reasonable investment return assumption that matches future benefits.

II. Roles and Responsibilities

All parties involved in the investment program will act responsibly in accordance with their fiduciary duty and standards of care.¹

Prudence: The standard of prudence to be used by investment officials shall be the Uniform Prudent Investor Act standard and shall be applied in the context of managing an overall portfolio. Investment officers acting in accordance with written procedures, this investment policy, and exercising due diligence, shall be relieved of personal responsibility for an individual security's credit risk or market price changes, provided deviations from expectations are reported in a timely fashion and the liquidity and the sale of securities are carried out in accordance with the terms of this policy.

Ethics and Conflicts of Interest: Officers and employees involved in the investment process shall refrain from personal business activity that could conflict with the proper execution and management of the investment program, or that could impair their ability to make impartial decisions. Employees and investment officials shall disclose any material interests in financial institutions with which they conduct business, in accordance with applicable laws. They shall further disclose any personal financial or investment positions that could be related to the performance of the investment portfolio. Trustees and investment officials shall refrain from undertaking personal investment transactions with the same individual with whom business is conducted on behalf of the system.

- 1. The board of trustees is ultimately responsible for the administration of the system and its investment program assets following governing statute and applicable law. The board establishes investment objectives and policy, contracts with experts for advice and expertise, oversees the distribution of benefit payments, actively monitors investment performance, and as part of its fiduciary duty, ensures any delegated authority of investment assets are invested in accordance with the Prudent Investor Act. The board's fiduciary duty can be delegated to service providers but the board is ultimately responsible for monitoring the investment program. The board:
 - a. Establishes the fund mission, investment objectives, and investment philosophy consistent with the funding policy.
 - b. Creates and maintains a written IPS consistent with the identified mission and objectives and applicable laws.
 - c. Approves an investment asset allocation that diversifies the assets to reduce risk of loss.
 - d. Monitors and evaluates the system's investment performance and compliance with provisions outlined in the IPS or manager contracts and all applicable state or federal laws.
 - e. Efficiently manages the costs associated with implementation of its investment program.
 - f. Periodically reviews the performance of all service providers that directly report to the board including investment staff, investment managers, investment consultants, and custodians.
- 2. The **investment consultant** is hired by, and reports to, the board. The consultant provides advice and expertise on all investment-related matters, including:
 - a. Developing investment objectives and relevant policies.
 - b. Determining optimal asset allocation targets and investment strategies.
 - c. Leading investment manager searches, selection process, monitoring, and termination

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¹ Sec. 802.203, Texas Government Code

- following the policies outlined in the IPS.
- d. Providing monthly investment performance reports net of fees and liquidity status.
- e. Providing quarterly reviews of investment fees incurred.
- f. Providing the board with educational opportunities to improve trustees' investment knowledge.
- g. Reviewing the IPS annually and providing the board any suggestions for improvement.
- 3. The **investment managers** are retained by the board to manage or advise on specific strategies and asset classes, through a manager search process and according to specific criteria as set forth in this IPS. The manager must be registered under the Investment Advisers Act of 1940 and remain in good standing with all applicable laws. Investment managers:
 - a. Manage allocated assets in accordance with the policy guidelines and objectives as set forth in the investment management agreement between the manager and the board.
 - b. On a quarterly basis, provide a written report affirming compliance with the policy guidelines and any separate written agreement with the board.
 - c. On a quarterly basis, provide a report detailing the performance of allocated assets, a forecast of the market and economy, and portfolio analysis of invested assets.
 - d. Provide immediate written notice to the system of any significant market related or non-market related event that has impacted or may impact investment objectives.
- 4. The custodian bank serves as the master custodian of the system's assets and is responsible for maintaining the official book of record under the supervision of the board, calculating investment performance, and using the system's assets in accordance with the terms of a separate agreement.

III. Investment Objectives

The investment objective is to maximize the probability of achieving the actuarial return assumption without exceeding the risk tolerance specified by the board. The actuarial consultant's recommended return assumption for the system should be created after consulting with the system's investment consultant to determine appropriate expectations surrounding long-term investment returns for a well-diversified investment portfolio considering system future liabilities.

- 1. The investment assets nominal net of fee return should meet or exceed the return assumption of 7 percent over a rolling five-year period. The total fund portfolio performance will be compared using the relative benchmarks and asset weights specified in the IPS.
- 2. The actively managed investment performance should net return 1 percent alpha (excess return over the specified benchmark).

IV. Liquidity

The investment portfolio shall remain sufficiently liquid to meet all operating requirements that may be reasonably anticipated. This is accomplished by structuring the portfolio so that securities mature concurrent with cash needs to meet anticipated demands (static liquidity). Furthermore, since all possible cash demands cannot be anticipated, the portfolio should consist largely of securities with active secondary or resale markets (dynamic liquidity). Alternatively, a portion of the portfolio may be placed in

money market mutual funds or local government investment pools which offer same-day liquidity for short-term funds.

The investment consultant is responsible for monitoring and providing a liquidity report monthly to the board. As liquidity can vary by asset class and investment vehicle, the board shall limit portfolio asset investments based on redemption periods. The consultant will provide notice of known distribution liquidity needs to the investment managers in advance.

- 1. No more than 60 percent of the portfolio can be invested in vehicles that provide liquidity on a greater than annual basis.
- 2. No more than 20 percent of the portfolio can be invested in vehicles that provide liquidity on a greater than three-year lock-up period.

V. Risk Tolerance

The investment consultant will establish a framework for measuring the total fund portfolio and the policy benchmark. At a minimum, this framework must include a quantitative risk assessment for downside risk (e.g., value-at-risk (VaR), estimated shortfall, or various parametric and non-parametric statistics).

Investments shall be undertaken in a manner that seeks to ensure the preservation of capital in the overall portfolio. The objective will be to mitigate market risk, credit risk, inflation risk, and interest rate risk.

Market Risk

The system will minimize market risk, which is the risk that prices for stocks, bonds, and other assets may fall, by:

- Limiting investments to the types of securities listed in Section VI of this investment policy.
- Pre-qualifying and conducting ongoing due diligence of the financial institutions, broker/dealers, intermediaries, and advisers with which the system will do business in accordance with Section VI.
- Diversifying the investment portfolio so that the impact of potential losses from any one type of security or from any one individual issuer will be minimized.

2. Credit Risk

The system will minimize credit risk, which is the risk of loss of all or part of the investment due to the failure of the security issuer or backer, by:

- Limiting investments to the types of securities listed in Section VI of this investment policy.
- Pre-qualifying and conducting ongoing due diligence of the financial institutions, broker/dealers, intermediaries, and advisers with which the system will do business in accordance with Section VI.
- Requiring a minimum credit quality for certain investments and counterparties in accordance with Section VI.
- Diversifying the investment portfolio so that the impact of potential losses from any one type of security or from any one individual issuer will be minimized.

3. Interest Rate Risk

The system will minimize interest rate risk, which is the risk that rising of falling interest rates will reduce the value of the system's assets, by:

- Structuring the investment portfolio so that security maturities match cash requirements for ongoing operations, thereby avoiding the need to sell securities on the open market prior to maturity
- Investing operating funds primarily in shorter-term securities, money market mutual funds, or similar investment pools and limiting individual security maturity as well as the average maturity of the portfolio in accordance with this policy.

VI. Investment Assets

The board recognizes that the asset allocation decision will be the single most important factor determining the long-term performance of the fund. The board therefore wishes to retain complete discretion with respect to the asset allocation decision. Investment managers are expected to manage the funds for which they have been allocated at their discretion within the constraints of their mandates.

The current needs of the fund require a diversified portfolio, and the asset allocation percentages specified in this section are determined by the board as the optimal allocation for the fund. The determination of the optimal allocation is reviewed annually and is based on the advice of the investment consultant and available asset-liability studies that should be performed every 3-5 years. The fund's time horizon is long-term, and the allocation considers the various preferences, risk tolerances, return objective, and the desired diversification from this IPS.

Strategic Asset Allocation

Asset Class	Minimum Range	Strategic Target	Maximum Range
Public Equity	40%	50%	60%
Fixed Income	15%	30%	40%
Real Assets	5%	10%	15%
Alternative Investments	5%	10%	15%
Cash	0%	0%	5%

Rebalancing Policy

The goal of the rebalancing policy is to maintain the board-approved strategic allocation and its risk-to-return profile. The board has delegated rebalancing to the investment consultant which will review allocation levels for rebalancing at least quarterly.

Authorized Investments

1. Public Equity

- a. Investments in public equity securities must be traded on a national exchange or electronic network.
- b. No more than 5 percent of the system's total assets may be invested in the common stock, capital stock or convertible stock of any single issuing company. Additionally, the aggregate investment in any single company shall not exceed 5 percent of the outstanding capital stock of that company.

c. Investable options:

- i. Index fund, mutual fund, common stocks, exchange traded funds (ETFs), preferred stocks, or broad market benchmarks
- ii. Active and passive commingled funds
- iii. Separately managed accounts for actively managed, rules-based, passively managed, or custom strategies.
- iv. Other equity instruments including exchange-traded futures, options, or other derivatives are permitted only with approval from the board.

2. Fixed Income

- a. Domestic and Yankee Bonds, mortgages and mortgage-backed securities, asset-backed securities, global corporate bonds, global sovereign debt, fixed income futures, interest rate futures.
- b. No more than 5 percent of the fund' total assets may be invested in the securities of any single corporate issuer.
- c. All securities must be rated at least B- or equivalent.
- d. Competitive bids shall be obtained from at least three brokers or financial institutions on all purchases and sales of investment instruments transacted on the secondary market if possible.

3. Real Assets

a. Inflation-linked securities, commodities, REITS, real estate, listed infrastructure, natural resources.

4. Alternative Investments

a. Private equity, hedge funds, private real estate

5. **Cash**

a. Custodian bank STIF vehicles, AAA rated money market mutual funds, US Treasuries with maturity less than 365 days.

Alternative Investment Legal Requirements

Due to the unique nature of alternative investments, all investment entry documents, and any accompanying side letters will be reviewed by the system's contracted legal counsel to determine if the documents are sufficient for the system's legal requirements and needs. An alternative investment may not be made if certain legal requirements cannot be satisfied and the system is not willing to assume the legal exposure.

Alternative Valuation Policy

Due to certain alternative investment pricing limitations and complexities, the board will delegate to the investment consultant confirmation of compliance with industry best practice valuation procedures on an annual basis.

For all real estate investments, the investment consultant will confirm compliance with industry best practices. These investments should preferably have quarterly valuations, but valuations must be conducted no less than semi-annually. Exceptions to this policy can be approved by the board, such as for non-stabilized properties which include but are not limited to those under construction or renovation as well as land held for future expansion or entitlement.

1. Valuation Requirements – The scope must be sufficient to demonstrate that the value of each property held has been appropriately determined. The scope should include, but not be limited,

to the following:

- a. Must have and follow their own written valuation policies.
- b. Must notify the system in writing if the internal valuation policy is changed.
- c. Must be appropriate, established valuation techniques.
- d. Valuation process oversight, review, and approval must be independent of the portfolio manager with approval so documented.
- e. Sufficient documentation for real estate auditors to recompute the calculations during audit.
- f. Reconciliation of any significant variance from the previous appraisal.

VII. Proxy Voting

The board by default does not intend to invest in investment vehicles that provide proxy voting rights; however, when applicable, the investment manager is granted the authority to represent the system and shall vote shares in the best interest of the fund and its beneficiaries. A listing of all proxy votes showing the date each proxy was voted, the issue as to which each proxy was voted, and how each proxy was voted shall be provided to the board at least annually. If a proxy was not voted, the investment manager will provide a written statement indicating the reason that a particular proxy was not voted to the board as soon as reasonably practicable.

VIII. Performance Evaluation

Performance measurement will be based on total rate of return and will be monitored over a sufficient period to reflect the investment expertise of the manager(s) over one full market cycle, or five years, whichever is less. Performance results and evaluation relative to objectives will be reported to the board on a quarterly basis. A time-weighted return formula (which minimizes the effect of contributions and withdrawals) will be utilized in performance calculations. For alternatives, time-weighted returns will be used for consolidated reporting; however, internal rates of return and comparison to relevant peer groups and vintages will be used for evaluation of managers.

Asset Class Benchmarks

Asset Class	Policy Benchmark	Asset Class Goal	Strategic Target
Public Equity	MSCI ACWI IMI (Net)	Benchmark	50%
Fixed Income	Bloomberg Barclays US Aggregate Bond Index	Benchmark	30%
Real Assets	Real Estate – (NCREIF-ODCE Index) Real Assets – (Rollup of underlying manager benchmarks)	Real Estate – (CPI+5%) Real Assets – (CPI+4%)	10%
Alternative Investments	Hedge Funds – (HFRI FoF) Private Equity – (Rollup of underlying manager benchmarks)	Russel 3000 + 3%	10%
Cash	30-Day T-Bill	Benchmark	0%

Marking to Market

The market value of the portfolio shall be calculated at least quarterly [or monthly] and a statement of the market value of the portfolio shall be issued at least quarterly [or monthly]. This will ensure that review of the investment portfolio, in terms of value and price volatility, has been performed consistent with the GFOA Recommended Practice on "Mark-to-Market Practices for State and Local Government Investment Portfolios and Investment Pools." In defining market value, considerations should be given to the GASB Statement 31 pronouncement.

Quarterly Report

Each quarter, the investment consultant will prepare a report that compares the performance of the total investment fund against the benchmarks for the preceding quarter, fiscal year-to-date and annualized periods. The report shall provide the current allocation to each strategy and asset class. The report will also provide a synopsis of the performance of each active manager and a list of currently scheduled commitments or redemptions, if any, as well as any activity for the preceding quarter. Performance attribution analysis shall be provided that will show the impact of any asset class divergences over the past quarter and year as well as the performance of active managers.

The investment consultant should provide the report to the board and any investment committee. The report will include the following:

- 1. Listing of individual securities held at the end of the reporting period including type, acquisition cost, book cost, and market value.
- Realized and unrealized gains or losses resulting from appreciation or depreciation by listing the
 cost and market value of securities over one-year duration that are not intended to be held until
 maturity (in accordance with Governmental Accounting Standards Board (GASB) requirements).
- 3. Average weighted return on investments as compared to applicable benchmarks.
- 4. Percentage of the total portfolio which each type of investment represents.
- 5. A statement that the investment portfolio is compliant with the investment policy and is meeting the investment policy objectives.

<u>Investment Expenses</u>

Each quarter, the investment consultant will prepare a report that reviews both the direct and indirect expenses against relevant benchmarks and peers for the preceding quarter, fiscal year-to-date and one-year. Total fund expenses compared to peers will be reviewed annually with recommendations for improvements or confirmation of reasonable expenses.

The report must show each investment's expenses, both direct and indirect, accrued or estimated for the applicable period if available. Alternative investments will show the most recent incurred expenses. The expenses incurred must be aggregated based on the type of fee incurred (e.g., management fee paid from trust, management fee netted from returns, commission/brokerage fees, and profit share carried interest) and by asset class.

IX. Investment Manager Selection and Monitoring

To better ensure that managers will successfully manage to the system's objectives for their specific mandates, the board supports disciplined processes for manager selection, monitoring, watch list, and termination. In addition, the manager selection process is intended to protect against unethical behavior

including bribery and corruption and contact between the board and managers during the search process that is related to the pending selection and intended to influence the search outcome. Contact will be limited during the search process and directed through the investment consultant or third-party provider assisting in the investment manager search. Direct inquiries by managers to individual board members regarding the investment program will be referred to the investment consultant. As the investment needs of the system are ever-changing, so are the criteria appropriate for the selection of investment managers. Additional criteria and/or amendments to these criteria may be made by the board when appropriate.

Investment Manager Selection Criteria

- 1. Manager candidates should have a real-time performance record of five years or more for the specific investment product that the system is seeking. However, recognizing that past performance is not indicative of future results and the fact that attractive opportunities may be available without this target, qualitative exceptions to this rule may be adopted by the board.
- 2. Manager candidates must have demonstrated a long-term record of superior performance.
- 3. Manager candidates must have registered with the U.S. Securities and Exchange Commission (SEC) as investment advisors or be exempt from registration.
- 4. Manager candidates should have a material amount of assets under management for that specific investment product unless a waiver is authorized by the board.

Alternative Investment Manager Selection Criteria

- 1. The general partners or sponsors of alternative investment funds must possess the management skill and industry knowledge to exercise influence or have an impact on the portfolio companies that the funds invest.
- 2. The contract terms must not grossly favor the general partners over the limited partners (investors).
- 3. Capital commitment by the general partners should be significant.

Watch List

A manager retention decision is very important to the continued success of a pension system's investment strategy. The Watch List Policy applies to managers in the following asset classes: public equities, fixed income, and real assets. The watch list may not necessarily lead to any needed action but rather is intended to place a manager under increased scrutiny based on failure to meet quantitative or qualitative standards.

Quantitative Factors Resulting in Watch List Additions

Several factors may contribute to a manager's over- or under-performance at any given time, such as: market dynamics, investment skill, and/or pure chance. Given this uncertainty, it is unwise to mandate termination purely for lagging performance at any specific point. The following represent guidelines to be used in making a recommendation to the Board with regards to placing a traditional asset class manager on the watch list:

- Test 1 If the manager's rolling, five-year return (net of fees) falls below the rolling, five-year benchmark return for three consecutive quarters.
- Test 2 If the manager's rolling, five-year return (net of fees) for three consecutive quarters ranks in the bottom third of the investment consultant's peer group universe.

At the discretion of the board, a manager may be included on the watch list based on these criteria. The board may place the manager on the watch list at any time. Once a manager is placed on the watch list for performance reasons, performance will be closely monitored and scrutinized. All the qualitative criteria should be reviewed along with an explanation of the underperformance from the manager. Additional actions could include meetings with the manager and a formal re-interview of the manager by the board.

The manager will continue to be closely monitored during the watch list period and will remain under scrutiny until the board and investment consultant agree that the quantitative and qualitative criteria for removal from the watch list have been satisfied. Generally, one period of a rolling, five -ear return above the benchmark or above the bottom third of the investment consultant's peer group universe following placement on the watch list will be required for a manager's removal from the watch list for performance reasons. The observation process will at this point begin again.

Qualitative Factors Resulting in Watch List Additions

A significant and potentially adverse event related, but not limited, to any of the following qualitative issues or events, will be considered a reason to add the manager to the watch list. Examples include, but are not limited to, these events:

- Violation of investment guidelines
- Deviation from stated investment style and/or shifts in the firm's philosophy or process
- Turnover of one or more key personnel
- Change in firm ownership or structure
- Significant loss of clients and/or assets under management
- Significant and persistent lack of responsiveness to client requests
- Litigation
- Failure to disclose significant information, including potential conflicts of interest
- Chronic violations of the system's investment policy
- Any other issue or situation of which the board, the investment consultant and/or trustees become aware that is deemed material

Should any of these events occur, the recommended courses of action are similar to those contained in the preceding subsection (Quantitative Factors Resulting in Watch List Additions). After an assessment of the nature of the problem or potential problem, the investment consultant should then make a recommendation as to the appropriate course of action at the meeting after notification for the board to make a final determination of any action to take.

Because of the subjective nature of qualitative analysis, both additions and removals to and from the list should be handled by the investment consultant and the board on a case-by-case basis.

X. Ethics

The board recognizes the responsibility and fiduciary duty it has to the members and beneficiaries of the system and requires all trustees, service providers, and fiduciaries to the system to always act ethically in accordance with the system's Ethics Policy.



XI. Glossary And Resources

Active Management – A process employed by the system to produce better returns than those of passively managed indexed funds by use of, for example, investment managers, investment advisors, ETFs, or TAA, which typically rely on analytical research, quantitative models, forecast, regime analysis, judgment and experience in making investment decisions.

Asset Liability Management Study (ALM Study) – A comprehensive periodic study commissioned by the board to examine various aspects of the system's assets and liabilities including, but not limited to, asset allocation and investment strategies along with key asset and liability risk exposures.

Cash (Cash and Cash Equivalents) – An asset class characterized by liquidity of one year or less and described in greater detail in Section VI of this IPS as an investment category.

Commingled Fund – An investment fund consisting of assets from several accounts, which may include non-system accounts, that are blended so investors may benefit from economies of scale, lower trading cost, and diversification. Commingled funds are not publicly traded.

Exchange-Traded Fund (ETF) – A marketable security that tracks an index, a commodity, bonds, or a basket of assets like an index fund, and can be traded like a common stock on an exchange.

Fiscal Year (FY) – The period unique to the system for annual reports.

Investment Management Agreement (IMA) – A formal agreement between an investment manager and the system stipulating the terms under which the investment manager is authorized to act on behalf of the system to manage the assets listed in the agreement. The agreement establishes the extent to which the investment manager may act in a discretionary capacity to make investment decisions based on a prescribed strategy.

Investment Manager – An entity that manages system assets, usually in a separately managed account, with discretionary authority to invest within the confines of a system-mandated investment strategy or similar system directive, and where the account holdings are typically maintained in the custody of the fund's custodian bank.

Investment Policy Statement (IPS) – The investment policy statement of the system as approved by the board/investment committee that provides for the system's general investment goals and objectives.

Investment Program (IP) – A system for the investment and administration of the system's assets as outlined in the system's IPS and all applicable laws and regulations.

Internal Rate of Return (IRR) – The annual rate of growth for an investment that nets all expected future cash flows to zero. Often used in alternative investments that have large cash outflows during the beginning of the investment cycle with expected return distributions experienced in the future.

Market-Based Strategies – Investment strategies which are traded on public markets and are based on publicly traded securities. Market based strategies are highly liquid and valued daily.

Net Asset Value (NAV) – Market value per unit of the investment vehicle. For public markets, market value is determined daily. For private investments, market value is estimated periodically.

Passive Management (Indexing) – The process of buying and holding a well-diversified portfolio designed to produce substantially the same returns as a specified market index.

Peer Group – A set of investors (funds or managers) whose returns are used for a comparison with those of a given fund to determine how the given fund ranks among similar funds.

Performance Appraisal – The part of the performance evaluation process that attempts to determine whether the investment returns over an evaluation period have been achieved by skill or luck.

Performance Attribution – The part of the performance evaluation process that identifies sources of returns for a portfolio relative to a designated benchmark over an evaluation period.

Performance Evaluation – A component of the investment process involving periodic analysis of how a portfolio performed in terms of both returns earned and risks incurred.

Performance Measurement – The part of the performance evaluation process that calculates a portfolio's rate of return over an evaluation period.

Policy Benchmark – The specific standards against which the performance of securities held by the fund in certain asset classes can be measured. The specific benchmarks are detailed under Section VI - Investment Assets.

Private Investment – Strategies in which the system invests (typically through an interest in a limited partnership, limited liability company, or through some other binding agreement) in private equity, debt, real assets, or other assets not listed on a public exchange.

Risk Appetite – The amount of risk that the system is willing to take to meet its strategic objectives.

Risk Factors – Underlying characteristics of the portfolio that define risk, return and correlation.

Risk Tolerance – The degree of variability of investment returns relative to the assigned benchmark that the system is willing to accept.

Sharpe ratio – A risk-adjusted measure of portfolio performance in which risk is measured by the standard deviation of the portfolio's returns. It is the annualized ratio of the excess return (the actual return less the risk-free return) of the portfolio divided by the portfolio's standard deviation over a specified period.

Strategic Asset Allocation (SAA) – A portfolio strategy that sets long term target allocations for various asset classes and includes periodic rebalancing to maintain these allocations.

Tactical Asset Allocation (TAA) – A portfolio strategy that shifts, for a short period of time, the percentage of assets held in various allocation categories to capitalize or manage risk on market or economic environments.

Time Weighted Return (TWR) – A method for calculating investment returns such as an annualized return using the geometric mean of returns each year over a specified period.

Tracking Error – A measure of deviation between a portfolio's return and the benchmark or index it was meant to mimic or beat.

Reference Materials

Chartered Financial Analyst Institute (CFAI) Materials

J Bailey and T Richards,. A Primer for Investment Trustees: Understanding Investment Committee Responsibilities (2017).

D Chambers, K Black, and N Lacey, Alternative Investments: A Primer for Investment Professionals (2018). M Drew and A Walk, Investment Governance for Fiduciaries (2019). Scott Stewart, Manager Selection (2013).

Government Financial Officers Association (GFOA) Materials

GFOA Best Practice, *Adopting Financial Policies* (Sept. 30, 2015). https://www.gfoa.org/materials/adopting-financial-policies

- GFOA Best Practice, *Investment Policies for Defined Benefit Plans* (Sept. 30, 2017). https://www.gfoa.org/materials/investment-policies-for-defined-benefit-plans
- GFOA Best Practice, *Investment Fee Guidelines for External Management of Defined Benefit Plans* (Sept. 28. 2018). https://www.gfoa.org/materials/investment-fee-guidelines
- GFOA <u>Alternative Investments Checklist</u>
- GFOA <u>Sample Investment Policy</u>

