AGENDA

DALLAS POLICE & FIRE PENSION SYSTEM

Date: December 4, 2020

The regular meeting of the Dallas Police and Fire Pension System Board of Trustees will be held at **8:30 a.m. on Thursday, December 10, 2020, via telephone conference for audio at 214-271-5080 access code 588694 or Toll-Free (US & CAN): 1-800-201-5203 and Zoom meeting for visual https://us02web.zoom.us/j/89923917294?pwd=UzdOVFFheDUzSFFIdG9mVHVBRnZZQT09 Passcode: 989650. Items of the following agenda will be presented to the Board:**

A. MOMENT OF SILENCE

B. CONSENT AGENDA

1. Approval of Minutes

a. Required Public Meeting of November 12, 2020
b. Regular meeting of November 12, 2020

2. Approval of Refunds of Contributions for the Month of November 2020

3. **Approval of Survivor Benefits**

4. **Approval of Service Retirements**

5. **Approval of Alternate Payee Benefits**

6. **Approval of Payment of Military Leave Contributions**

7. **Approval of Payment of Previously Withdrawn Contributions**

C. DISCUSSION AND POSSIBLE ACTION REGARDING ITEMS FOR INDIVIDUAL CONSIDERATION

1. **Report on Audit Committee**

2. **2019 Financial Audit**

3. **2019 Comprehensive Annual Financial Report**

4. **Chairman's Discussion Items**

   2021 Board Calendar

5. **Communication Plan**

6. **Monthly Contribution Report**

7. **Board approval of Trustee education and travel**

    a. Future Education and Business-related Travel
    b. Future Investment-related Travel

8. **Report on Professional Services Provider Meetings**

9. **Staff Retirement Plan**

10. **Portfolio Update**

11. **Investment Advisory Committee Reappointments**

12. **Global Equity Structure**

13. **Third Quarter 2020 Investment Performance Analysis and Second Quarter 2020 Private Markets & Real Assets Review**

    Portions of the discussion under this topic may be closed to the public under the terms of Section 551.072 of the Texas Government Code.

14. Hearthstone Spring Valley Sale

Portions of the discussion under this topic may be closed to the public under the terms of Section 551.072 of the Texas Government Code.

15. Lone Star Investment Advisors Update

Portions of the discussion under this topic may be closed to the public under the terms of Section 551.071 of the Texas Government Code.

16. Legal issues - In accordance with Section 551.071 of the Texas Government Code, the Board will meet in executive session to seek and receive the advice of its attorneys about pending or contemplated litigation or any other legal matter in which the duty of the attorneys to DPFP and the Board under the Texas Disciplinary Rules of Professional Conduct clearly conflicts with Texas Open Meeting laws.

17. Closed Session - Board serving as Medical Committee

Discussion of the following will be closed to the public under the terms of Section 551.078 of the Texas Government Code:

a. Application for death benefits for disabled child
b. Disability application 2020-2
c. Disability application 2020-3

18. Executive Director Performance Evaluation

Portions of the discussion under this topic may be closed to the public under the terms of Section 551.074 of the Texas Government Code.

D. BRIEFING ITEMS

1. Public Comment

2. Executive Director's report

a. Associations' newsletters
- NCPERS Monitor (December 2020)
- NCPERS PERSist (Fall 2020)
- TEXPERS Pension Observer

https://online.anyflip.com/mxfu/alie/mobile/index.html

b. Open Records

c. Operational Response to COVID-19

The term "possible action" in the wording of any Agenda item contained herein serves as notice that the Board may, as permitted by the Texas Government Code, Section 551, in its discretion, dispose of any item by any action in the following non-exclusive list: approval, disapproval, deferral, table, take no action, and receive and file. At the discretion of the Board, items on this agenda may be considered at times other than in the order indicated in this agenda.

At any point during the consideration of the above items, the Board may go into Closed Executive Session as per Texas Government Code, Section 551.071 for consultation with attorneys, Section 551.072 for real estate matters, Section 551.074 for personnel matters, and Section 551.078 for review of medical records.

DALLAS POLICE & FIRE PENSION SYSTEM

ITEM A

MOMENT OF SILENCE

In memory of our Members and Pensioners who recently passed away

NAME	ACTIVE/ RETIRED	DEPARTMENT	DATE OF DEATH
Robert A. Furr	Retired	Police	Nov. 7, 2020
Roy W. Cobb	Retired	Fire	Nov. 13, 2020
Michael R. Wilson	Retired	Fire	Nov. 14, 2020
Bronc McCoy	Active	Police	Nov. 16, 2020
Robert H. Pflughoft	Retired	Fire	Nov. 17, 2020
H. D. Tharp	Retired	Fire	Nov. 17, 2020
Thomas E. Massey	Retired	Fire	Nov. 25, 2020
Frank S. Williams	Retired	Police	Nov. 26, 2020

Regular Board Meeting – Thursday, December 10, 2020

Dallas Police and Fire Pension System
Thursday, November 12, 2020
8:30 a.m.
Via telephone conference.

Required Public Meeting, William F. Quinn, Chairman, presiding:

ROLL CALL

Board Members

Present at 8:33 a.m.	William F. Quinn, Nicholas A. Merrick, Armando Garza, Michael Brown, Robert B. French, Gilbert A. Garcia, Kenneth Haben, Tina Hernandez Patterson, Steve Idoux, Mark Malveaux
Present at 9:28 a.m.	Allen R. Vaught
Absent:	None
Staff	Kelly Gottschalk, Josh Mond, Kent Custer, Brenda Barnes, John Holt, Damion Hervey, Cynthia Thomas, Ryan Wagner, Greg Irlbeck, Michael Yan, Milissa Romero
Others	Jeff Williams, Caitlin Grice, Chuck Campbell, Leandro Festino, Sidney Kawanguzi

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The second of two annual public meetings of the Dallas Police and Fire Pension System Board of Trustees as required by Section 3.01 (j-9) of Article 6243a-1 of Vernon's Revised Civil Statutes.

The meeting was called to order at 8:33 a.m.

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1. Report on the health and performance of the Pension System

a. January 1, 2020 Actuarial Valuation
b. Projected Change in Net Position Bridge Chart

a. Jeff Williams and Caitlin Grice of Segal Consulting, DPFP's actuarial firm, presented the results of the January 1, 2020 actuarial valuation report, including the GASB No. 67 actuarial valuation.

b. The Executive Director presented the Projected Change in Net Position Bridge Chart and reported on the health and performance of DPFP as required by Section 3.01 (j-9) of Article 6243a-1 of Vernon's Revised Civil Statutes.

No motion was made.

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Required Public Meeting
Thursday, November 12, 2020

2. Public Comment

The Board received comments during the open forum.

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Ms. Gottschalk stated that there was no further business to come before the Board. On a motion by Mr. Quinn and a second by Mr. Garza, the meeting was adjourned at 9:42 a.m.

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William F. Quinn
Chairman

ATTEST:

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Kelly Gottschalk
Secretary

Dallas Police and Fire Pension System
Thursday, November 12, 2020
8:30 a.m.
Via telephone conference

Regular meeting, William F. Quinn, Chairman, presiding:

ROLL CALL

Board Members

Present at 8:33 a.m.	William F. Quinn, Nicholas A. Merrick, Armando Garza, Michael Brown, Robert B. French, Gilbert A. Garcia, Kenneth Haben, Tina Hernandez Patterson, Steve Idoux, Mark Malveaux
Present at 9:28 a.m.	Allen R. Vaught
Absent:	None
Staff	Kelly Gottschalk, Josh Mond, Kent Custer, Brenda Barnes, John Holt, Damion Hervey, Cynthia Thomas, Ryan Wagner, Greg Irlbeck, Michael Yan, Milissa Romero
Others	Jeff Williams, Caitlin Grice, Chuck Campbell, Leandro Festino, Sidney Kawanguzi

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The meeting was called to order and recessed at 8:33 a.m. The meeting was reconvened at 9:42 a.m.

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The Chairman of the Board stated retired member Jerry Rhodes was named Reserve Officer of the Year.

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A. MOMENT OF SILENCE

The Board observed a moment of silence in memory of retired police officers Ronald M. Hubner, Bobby M. Dillard, Rufus W. High, Jr., Clifford B. Norfleet, T. G. Dickerson, William P. Rossi, and retired firefighters Larry D. Jackson, T. J. Walker.

No motion was made.

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Regular Board Meeting
Thursday, November 12, 2020

B. CONSENT AGENDA

1. **Approval of Minutes**

   Regular meeting of October 8, 2020

2. **Approval of Refunds of Contributions for the Month of October 2020**

3. **Approval of Activity in the Deferred Retirement Option Plan (DROP) for November 2020**

4. **Approval of Estate Settlements**

5. **Approval of Survivor Benefits**

6. **Approval of Service Retirements**

7. **Spouse Wed After Retirement (SWAR)**

8. **Approval of Payment of Previously Withdrawn Contributions**

9. **Approval of Payment of Military Leave Contributions**

After discussion, Mr. Haben made a motion to approve the minutes of the meeting of October 8, 2020. Mr. Garza seconded the motion, which was unanimously approved by the Board.

After discussion, Mr. Quinn made a motion to approve the remaining items on the Consent Agenda, subject to the final approval of the staff. Mr. Vaught seconded the motion, which was unanimously approved by the Board.

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C. DISCUSSION AND POSSIBLE ACTION REGARDING ITEMS FOR INDIVIDUAL CONSIDERATION

1. **January 1, 2020 Actuarial Valuation**

   Jeff Williams and Caitlin Grice of Segal Consulting, DPFP's actuarial firm, presented the results of the January 1, 2020 actuarial valuation report, including the GASB No. 67 actuarial valuation.

Regular Board Meeting
Thursday, November 12, 2020

1. January 1, 2020 Actuarial Valuation (continued)

After discussion, Mr. Merrick made a motion to approve issuance of the January 1, 2020 actuarial valuation report, subject to final review by the auditors (BDO) and review and approval by the Executive Director. Mr. Garcia seconded the motion, which was unanimously approved by the Board.

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2. Financial Audit Status

The Chief Financial Officer provided a status update on the annual financial audit.

No motion was made.

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3. Second Reading and discussion of the 2021 Budget

The Chief Financial Officer presented the second reading of the 2021 budget, prepared in total for both the Combined Pension Plan and the Supplement Plan. The first reading of the budget was October 8, 2020. There were no changes to the budget from the first reading. The budget was sent to the City of Dallas for comments and posted to the website for member review. No comments were received from the city or members.

After discussion, Mr. Garcia made a motion to approve the 2021 Budget. Mr. Vaught seconded the motion, which was unanimously approved by the Board.

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4. Quarterly Financial Reports

The Chief Financial Officer presented the third quarter 2020 financial statements.

No motion was made.

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Regular Board Meeting
Thursday, November 12, 2020

5. Investment Policy Statement

a. Investment Advisory Committee
b. Policy Benchmark Change

Staff proposed amending the Investment Policy Statement to increase the maximum number of members on the Investment Advisory Committee from six to seven and to change the High Yield Policy Benchmark from the Bloomberg Barclays Global High Yield Total Return to the Bloomberg Barclays US Corp HY Total Return based on the Loomis Sayles High Yield Bond analysis.

After discussion, Mr. Garcia made a motion to approve the proposed Investment Policy Statement revisions. Mr. Garza seconded the motion, which was unanimously approved by the Board.

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6. Board Committee Membership

The Chairman asked that the membership of the Board's committees be reviewed on an annual basis in November. The Board has three permanent committees, the Audit Committee, the Professional Services Committee, and the Investment Advisory Committee.

The structure of the Audit Committee and the Professional Services Committee is established in the Committee Policy and Procedure. Each committee is comprised of a minimum of three members and a maximum of five members. The committee must include one Mayoral appointed Board member, one Board member selected by the Members (Police, Fire or non-member Trustee) and either the Chair of the Board or a Board member selected by the Chair of the Board.

The structure of the Investment Advisory Committee is established in the Investment Policy Statement. The Investment Advisory Committee is composed of up to seven members including one to three current Board members and a majority of outside investment professionals as amended in the prior agenda item.

The Chairman of the Board nominated Kenneth Haben and Michael Brown to serve on the Investment Advisory Committee and to maintain Gilbert Garcia as the Chair and the four outside investment professionals currently on the Investment Advisory Committee. The Chairman nominated to the Professional Services Committee: Steve Idoux, Mark Malveaux, Allen Vaught as members, Nicholas Merrick as the Chair and to maintain Robert French as a current member. The Chairman stated the Audit Committee would include existing members Armando Garza, Tina Hernandez Patterson and himself as the Chair of the Audit Committee.

Regular Board Meeting
Thursday, November 12, 2020

6. Board Committee Membership (continued)

After discussion, Mr. Garcia made a motion to appoint Trustees to serve on committees as nominated by the Chairman. Mr. Quinn seconded the motion, which was unanimously approved by the Board.

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7. Monthly Contribution Report

The Executive Director reviewed the Monthly Contribution Report.

No motion was made.

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8. Staff Leave Accrual During COVID-19

The COVID-19 pandemic, along with the associated Stay at Home orders, has resulted in an unexpected increase in staff leave balances – Vacation, Attendance Incentive Leave and Sick Leave. During this period, staff has continued to earn or accrue leave balances without the normal use of their leaves. While existing policies allow for various levels of hours to be rolled over from one year to the next year, some of our staff have already exceeded those levels for 2020.

The Executive Director discussed the plan to address the employee leave balances in a manner that does not impact service delivery or increase costs for DPFP.

No motion was made.

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9. Required Training Manual Delivery

Section 3.013(c) of Article 6243a-1 requires the Executive Director annually deliver a training manual covering certain subject areas set forth in Section 3.013(b). The Executive Director provided an overview of the contents, addressed new items in the manual and answered any questions concerning the training manual. Each Trustee received the Trustee acknowledgment form to sign to acknowledge receipt of the electronic training manual accessible in Diligent.

No motion was made.

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Regular Board Meeting
Thursday, November 12, 2020

10. Board approval of Trustee education and travel

a. Future Education and Business-related Travel
b. Future Investment-related Travel

The Board and staff discussed future Trustee education. There was no future Trustee business-related travel or investment-related travel scheduled.

No motion was made.

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11. Portfolio Update

Investment staff briefed the Board on recent events and current developments with respect to the investment portfolio.

No motion was made.

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12. Loomis Sayles High Yield Bonds

Investment staff discussed the analysis conducted by staff and Meketa on the Loomis Sayles High Yield Investment.

No motion was made.

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13. Global Bond Allocation

Investment staff discussed the analysis conducted by staff and Meketa on the global bond allocation. Staff recommended prudently liquidating the Brandywine investment and to use the proceeds to fund cash flow needs and contributions to Investment Grade Bonds and Emerging Market Debt.

After discussion, Mr. Garcia made a motion to liquidate the Brandywine investment and use the proceeds to fund cash flow needs and contributions to Investment Grade Bonds and Emerging Market Debt as recommended by staff. Mr. Quinn seconded the motion, which was unanimously approved by the Board.

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Regular Board Meeting
Thursday, November 12, 2020

14. Lone Star Investment Advisors Update

Investment staff updated the Board on proposed extensions, recent performance, operational, and administrative developments with respect to DPFP investments in funds managed by Lone Star Investment Advisors.

After discussion, Mr. Quinn made a motion to authorize the Executive Director to enter into six-month extensions with no management fee on the Lone Star Growth Capital and Lone Star CRA funds. Mr. Vaught seconded the motion, which was unanimously approved by the Board.

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15. Legal issues - In accordance with Section 551.071 of the Texas Government Code, the Board will meet in executive session to seek and receive the advice of its attorneys about pending or contemplated litigation or any other legal matter in which the duty of the attorneys to DPFP and the Board under the Texas Disciplinary Rules of Professional Conduct clearly conflicts with Texas Open Meeting laws.

The Board went into closed executive session at 10:50 a.m.

The meeting was reopened at 11:09 a.m.

No motion was made.

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16. Closed Session - Board serving as Medical Committee

Application for death benefits for disabled child

The Board went into closed executive session at 10:50 a.m.

The meeting was reopened at 11:09 a.m.

Staff presented an application for consideration by the Board of a survivor benefits for a disabled child in accordance with Section 6.06(n) of Article 6243a-1.

No motion was made.

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Regular Board Meeting
Thursday, November 12, 2020

D. BRIEFING ITEMS

1. Public Comments

Prior to commencing items for Board discussion and deliberation, the Board received public comments during the open forum.

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2. Executive Director's report

a. Associations' newsletters
- NCPERS Monitor (October 2020)
- TEXPERS Pension Observer
  http://online.anyflip.com/mxfu/alie/mobile/index.html

b. Open Records
c. Operational Response to COVID-19

The Executive Director's report was presented.

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Ms. Gottschalk stated that there was no further business to come before the Board. On a motion by Mr. Merrick and a second by Mr. Vaught, the meeting was adjourned at 11:10 a.m.

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William F. Quinn
Chairman

ATTEST:

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Kelly Gottschalk
Secretary

DISCUSSION SHEET

ITEM #C1

Topic: **Report on Audit Committee**

Discussion: The Audit Committee met with representatives of BDO on December 8, 2020. The Committee Chair will comment on Committee observations and advice.

Regular Board Meeting – Thursday, December 10, 2020

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C2

Topic: **2019 Financial Audit**

Attendees: Jill Svoboda, BDO, Partner
Rachel Pierson, BDO, Assurance Senior Manager

Discussion: Representatives from BDO, DPFP's independent audit firm, will be present to discuss the results of their audit for the year ended December 31, 2019.

Staff Recommendation: **Approve** issuance of the 2019 audit report, subject to final review and approval by BDO and the Executive Director.

AUDIT WRAP UP

December 31, 2019

Tel: 214-969-7007
Fax: 214-953-0722
www.bdo.com

600 North Pearl, Suite 1700
Dallas, Texas 75201

December 8, 2020

Board of Trustees and Audit Committee
Dallas Police and Fire Pension System

Professional standards require us to communicate with you regarding matters related to the audit, that are, in our professional judgment, significant and relevant to your responsibilities in overseeing the financial reporting process. On April 9, 2020 we presented an overview of our plan for the audit of the financial statements of the Dallas Police and Fire Pension system (the System) as of and for the year ended December 31, 2019, including a summary of our overall objectives for the audit, and the nature, scope, and timing of the planned audit work.

This communication is intended to elaborate on the significant findings from our audit, including our views on the qualitative aspects of the System's accounting practices and policies, management's judgments and estimates, financial statement disclosures, and other required matters.

We are pleased to be of service to the System and look forward to meeting with you to discuss our audit findings, as well as other matters that may be of interest to you, and to answer any questions you might have.

Respectfully,

BDO USA, LLP

Discussion Outline

Status of Our Audit

We have completed our audit of the financial statements, including procedures applied to the supplemental schedules, as of and for the year ended December 31, 2019. Our audit was conducted in accordance with auditing standards generally accepted in the United States of America and adheres to the guidelines established by the Governmental Auditing Standards Board. This audit of the financial statements does not relieve System management or those charged with governance of their responsibilities.

- The objective of our audit was to obtain reasonable - not absolute - assurance about whether the financial statements are free from material misstatements.
- The scope of the work performed was substantially the same as that described to you in our earlier Audit Planning communications.
- We expect to issue an unmodified opinion on the financial statements and release our report upon final approval of the Board and obtaining the final signed representation letter.
- Our responsibility for other information in documents containing the System's audited financial statements does not extend beyond the financial information identified in the audit report, and we are not required to perform procedures to corroborate such other information. However, in accordance with professional standards, we have read the information included by the System and considered whether such information, or the manner of its presentation, was materially inconsistent with its presentation in the financial statements. Our responsibility also includes calling to management's attention any information that we believe is a material misstatement of fact. We have not identified any material inconsistencies or concluded there are any material misstatements of facts in the other information that management has chosen not to correct.
- All records and information requested by BDO were freely available for our inspection.
- Management's cooperation was excellent. We received full access to all information that we requested while performing our audit, and we acknowledge the full cooperation extended to us by all levels of System personnel throughout the course of our work.

Results of Our Audit

ACCOUNTING PRACTICES, POLICIES AND ESTIMATES

The following summarizes the more significant required communications related to our audit concerning the System's accounting practices, policies, and estimates:

The System's significant accounting practices and policies are those included in Note 2 to the financial statements. These accounting practices and policies are appropriate, comply with generally accepted accounting principles and industry practice and governmental accounting standards, were consistently applied, and are adequately described within Note 2 to the financial statements.

- A summary of recently issued accounting pronouncements is included in Note 2 to the System's financial statements. The recently issued accounting pronouncements such as GASB 83, 84, 89 and 90 do not apply to the System.
- There were no changes in significant accounting policies and practices during 2019.

Significant estimates are those that require management's most difficult, subjective, or complex judgments, often as a result of the need to make estimates about the effects of matters that are inherently uncertain. The System's significant accounting estimates, including a description of management's processes and significant assumptions used in development of the estimates, are disclosed in Note 2, 4 and 5 of the financial statements.

Significant accounting estimates include:
Actuarial Estimates
Fair Value Measurements

- Management did not make any significant changes to the processes or significant assumptions used to develop the significant accounting estimates in 2019.

CORRECTED AND UNCORRECTED MISSTATEMENTS

There were no corrected or uncorrected misstatements, other than those that were clearly trivial, related to accounts and/or disclosures that we brought to the attention of management.

Results of Our Audit

QUALITY OF THE SYSTEM'S FINANCIAL REPORTING

A discussion was held regarding the quality of the System's financial reporting, which included the following:

- Qualitative aspects of significant accounting policies and practices
  - BDO has no issues with the quality of the System's accounting policies and practices.
- Our conclusions regarding significant accounting estimates
  - BDO concurs with the System's critical accounting policies and practices with respect to significant estimates
- Financial statement presentation
  - BDO does not note exceptions to the System's financial statements.
- New accounting pronouncements
  - Refer to Note 2 of the financial statements and as noted on the preceding page under accounting practices, policies and estimates.
- Alternative accounting treatments
  - BDO notes that there is no alternative accounting treatments adopted by the System during the year.

BELOW IS A SUMMARY OF SELECT POLICIES, AREAS AND FINDINGS:

Internal Controls

Summary of procedures:

- Reviewed internal controls in place over financial reporting, distributions, payroll data, investments, system expenses, and system obligations.
- Obtained and reviewed the Service Organization Controls reports for JPMorgan, the System's Custodian, and STP Investment Services, LLP, the System's investment accounting service provider.

Findings:

- No issues were noted during our review of internal controls which caused us to adjust planned audit procedures.

Actuarial Valuation

Summary of procedures:

- Obtained actuarial reports and related requested data directly from the actuary.
- Ensured the census information provided was complete, accurate, and as of benefit information date.
- Tested census information in correlation with eligibility testing.
- Considered cash flow projections and determination of GASB 67 discount rates.
- Reviewed the actuarial valuation reports and utilized BDO's Actuarial Managing Director to perform an independent review of the reports and assumptions used. Primary areas of focus included demographic assumptions (mortality, termination prior to retirement, retirement and DROP participation eligibility which affect DROP utilization and retirement rates, disability) and economic assumptions (discount rate, inflation rate, investment rate of return, salary scale, administrative expenses, interest on DROP accounts) as well as the actuarial methods used (asset smoothing, actuarial cost method, amortization of unfunded actuarial accrued liability).
- Reviewed actuarial disclosures for completeness and accuracy during the review of the financial statements.

Findings:

Results of Our Audit

- Based on the review by BDO and BDO's experts, the actuarial methods employed by the System meet the requirements under GASB and Actuarial Standards of Practice.
- The valuation reports as of January 1, 2020, and analysis contained recognize the adoption of H.B. No. 3158. Many of the assumptions that were adopted based on the most recent experience review have been subsequently updated due to the plan changes effective January 1, 2017, as well as the Meet and Confer Agreement for salary scale purposes through 2019. Since actual plan experience under the plan modifications does not exist yet, these assumptions should be actively monitored in the period leading up to the next experience review.

Eligibility

Summary of procedures:

- Agreed demographic information to the census data used by the actuary.
- Ensured members were properly included or excluded from the System or census based on system requirements.

Findings:

- No issues were identified in our testing.

Benefit Payments

Summary of procedures:

- Reviewed reconciliation of annuity payments.
- Tested a sample of participants receiving benefits and ensured the participants selected were eligible to receive payment.
- For sample selected, traced amounts of benefit payments to the actual payments recorded per the payment register. Additionally, ensured proper tax was withheld and proper authorization of benefit payments was made.
- For each selection, obtained the calculation of benefits and recomputed the benefit amount based upon the participant data and ensured it was in accordance with the System documents.
- Reviewed annuity payments by month for any unusual variations.

Findings:

- No issues were identified in our testing.

Investments

Summary of procedures:

- Tested investments by selecting a sample using statistical sampling techniques.
- Obtained confirmations from investment managers and reviewed audited financial statements for investments selected. Reviewed confirmations for unusual items and misclassifications. Additionally, performed recalculations based on the unit values in the audited financials.
- A majority of the real estate investments have audited financial statements. Consideration of those internally managed real estate investments included review of appraisals by BDO Valuation Real Estate Specialists.
- Reviewed all complex investment valuation techniques and utilized BDO Valuation experts where necessary.
- Reviewed purchase agreements and letters of intent for properties sold or currently for sale.
- Reviewed Management's valuation memos in obtaining an understanding of the supporting process for establishing fair value.
- Confirmed all cash balances.
- Reconciled unit information recorded by the System to JPMorgan and to the fund's financial statements.
- Selected a sample of transactions for investment transaction testing and agreed the purchase/sales price to approved pricing sources.

Results of Our Audit

- Recalculated the exchange rate used for certain investments by comparing the rate to a third-party source such as Oanda.com.
- Reviewed the investment policy and reviewed for deviations from policy.
- Reviewed Management's fair value considerations and fair value hierarchy by investment in correlation with GASB No. 72.

Findings:

- No issues were identified in our testing.

Other Receivables, Payables and System Expenses

Summary of procedures:

- Confirmed and reviewed contributions receivables.
- Reviewed the reasonableness of interest and dividend receivables.
- Reviewed management's policy for securities lending and the accounting treatment of such transactions.
- Reviewed the schedule of accrued expenses. Tested fund management fees payable and accrued uncompensated balances.
- Performed a search for unrecorded liabilities to ensure all subsequent payments after year end which related to 2019 were appropriately accrued.
- Reviewed investment contracts in correlation with testing system expenses.
- Sampled administrative fees and selected individual transactions to test.
- Sampled management fee expenses and agreed the expense to confirmation received from investment managers where applicable. Reviewed and recalculated the breakout of fees and agreed amounts to actual invoices and payment support.

Findings:

- No issues were identified in our testing.

Investment Income

Summary of procedures:

- Selected a sample of dividends received and verified to an independent market source.
- Tested interest earned by recalculating individual transactions and performing a reasonableness test.
- Reconciled investment value and investment income to JPMorgan.
- Recalculated realized and unrealized gains and losses for a sample of transactions.

Findings:

- No issues were identified in our testing.

Fraud, Commitments and Contingencies and Subsequent Events

Fraud procedures:

- Performed interviews with a sample of members of the Board of Trustees, Management, and other individuals and considered responses received in determining necessary audit procedures.
- The nature, timing and extent of our procedures across areas of the audit were also varied, mainly by auditing items that would be considered below our normal vouching scope.
- Performed detailed journal entry testing to review for any potential unusual or fraudulent transactions.

Commitments and Contingencies:

- Although legal expenses are not material, we performed a test of legal expense transactions and reviewed legal invoices carefully for any unusual matters that were not already disclosed to us. No such matters were identified.
- Based on the legal confirmation responses received the System is appropriately disclosing legal matters in the financial statements.

Results of Our Audit

Subsequent Events:

- Reviewed Board Meeting Minutes.
- Obtained legal update letters prior to issuance.
- Performed final subsequent event procedures, including inquiries of Management to be updated prior to issuance.
- Assessed the impacts of the COVID-19 pandemic on the System by performing inquiries of Management and reviewing subsequent financial information.

Internal Control Over Financial Reporting

In planning and performing our audit of the financial statements, we considered the System's internal control over financial reporting (internal control) as a basis for designing our auditing procedures for the purpose of expressing our opinion on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the System's internal control. Accordingly, we do not express an opinion on the effectiveness of the System's internal control.

Our consideration of internal control was for the limited purpose described above and was not designed to identify all deficiencies in internal control that might be significant deficiencies or material weaknesses.

We are required to communicate, in writing, to those charged with governance all material weaknesses and significant deficiencies that have been identified in the System's internal controls over financial reporting. The definitions of control deficiency, significant deficiency and material weakness follow:

Category	Definition
Deficiency in Internal Control	A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct misstatements on a timely basis.
Significant Deficiency	A deficiency or combination of deficiencies in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.
Material Weakness	A deficiency or combination of deficiencies in internal control, such that there is a reasonable possibility that a material misstatement of the System's financial statements will not be prevented, or detected and corrected on a timely basis.

In conjunction with our audit of the financial statements, we noted no material weaknesses.

Other Required Communications

Following is a summary of those required items, along with specific discussion points as they pertain to the System:

Requirement	Discussion Points
Significant changes to planned audit strategy or significant risks initially identified	There were no significant changes to the planned audit strategy or significant risks initially identified and previously communicated to those charged with governance as part of our Audit Planning communications other than additional disclosures regarding COVID-19.
Obtain information from those charged with governance relevant to the audit	There were no matters noted relevant to the audit, including, but not limited to: violations or possible violations of laws or regulations; risk of material misstatements, including fraud risks; or tips or complaints regarding the System's financial reporting that we were made aware of as a result of our inquiry of those charged with governance.
Nature and extent of specialized skills or knowledge needed related to significant risks	The nature and extent of specialized skills or knowledge needed to perform the planned audit procedures or evaluate audit results related to significant risks are outlined below: • Utilized BDO's Actuarial Managing Director and Actuarial Manager to review the assumptions presented in the actuarial report. • Utilized BDO Valuation Real Estate specialists for review of the appraisal for the internally managed asset selected for testing. • Utilized BDO Valuation specialists for review of the fair value for certain funds selected for testing.
Consultations with other accountants	We are not aware of any consultations about accounting or auditing matters between management and other independent public accountants. Nor are we aware of opinions obtained by management from other independent public accountants on the application of generally accepted accounting principles.
Our evaluation of the System's relationships and transactions with related parties and their impact on the financial statements	We have evaluated the System's process to identify, authorize and approve, account for, and disclose its relationships and transactions with related parties and noted no significant issues.
Disagreements with management	There were no disagreements with management about matters, whether or not satisfactorily resolved, that individually or in aggregate could be significant to the System's financial statements or to our auditor's report.
Significant difficulties encountered during the audit	There were no significant difficulties encountered during the audit.
Other matters significant to the oversight of the System's financial reporting process, including complaints or concerns regarding accounting or auditing matters	There are no other matters that we consider significant to the oversight of the System's financial reporting process that have not been previously communicated.
Representations requested from management	Please refer to the management representation letter to be provided upon issuance of the report.

Independence Communication

Our engagement letter to you dated December 10, 2019 describes our responsibilities in accordance with professional standards and certain regulatory authorities with regard to independence and the performance of our services. This letter also stipulates the responsibilities of the System with respect to independence as agreed to by the System. Please refer to that letter for further information.

Dallas Police and Fire Pension System

(An Independently Governed Component Unit of the City of Dallas, Texas)

Combining Financial Statements, Required Supplementary Information and Supplementary Schedule

December 31, 2019 and 2018

(With Independent Auditor's Reports Thereon)

The report accompanying these financial statements was issued by BDO USA, LLP, a Delaware limited liability partnership and the U.S. member of BDO International Limited, a UK company limited by guarantee.

Dallas Police and Fire Pension System

Contents

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600 North Pearl, Suite 1700
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Independent Auditor's Report

To the Board of Trustees
Dallas Police and Fire Pension System

Report on the Financial Statements

We have audited the accompanying financial statements of the Dallas Police and Fire Pension System (DPFP), including the Combined Pension Plan and the Supplemental Police and Fire Pension Plan of the City of Dallas (Supplemental Plan), collectively referred to as the "Plans", for the fiscal years ended December 31, 2019 and 2018, which comprise the combining statements of fiduciary net position, and the related combining statements of changes in fiduciary net position for the years then ended, and the related notes to the combining financial statements.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the fiduciary net position of DPFP as of December 31, 2019 and 2018, and the changes in fiduciary net position for the years then ended, in accordance with accounting principles generally accepted in the United States of America.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis (MD&A) and the required supplementary information, as listed in the table of contents, be presented to supplement the basic financial statements. Such information although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the MD&A and required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information

Our audits were conducted for the purpose of forming an opinion on the basic financial statements as a whole. The accompanying supplementary schedule of Administrative, Investment and Professional Services Expenses is presented for the purpose of additional analysis and is not a required part of the basic financial statements. Such information is the responsibility of DPFP management and was derived from and related directly to the underlying accounting and other records used to prepare the basic financial statements. The information has been subjected to the auditing procedures applied in the audits of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the information is fairly stated in all material respects in relation to the basic financial statements as a whole.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated December 10, 2020 on our consideration of DPFP's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering DPFP's internal control over financial reporting and compliance.

Dallas, Texas
December 10, 2020

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Independent Auditor's Report on Internal Control Over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance With *Government Auditing Standards*

To the Board of Trustees
Dallas Police and Fire Pension System

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of the Dallas Police and Fire Pension System (DPFP), including the Combined Pension Plan and the Supplemental Police and Fire Pension Plan of the City of Dallas (Supplemental Plan), collectively referred to as the "Plans", for the fiscal years ended December 31, 2019 and 2018, which comprise the combining statements of fiduciary net position, and the related combining statements of changes in fiduciary net position for the years then ended, and the related notes to the combining financial statements, and have issued our report thereon dated December 10, 2020.

Internal Control Over Financial Reporting

In planning and performing our audit of the financial statements, we considered DPFP's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinion on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of DPFP's internal control. Accordingly, we do not express an opinion on the effectiveness of DPFP's internal control.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A material weakness is a deficiency or a combination of deficiencies in internal control, such that there is a reasonable possibility that a material misstatement of DPFP's financial statements will not be prevented, or detected and corrected on a timely basis. A significant deficiency is a deficiency or a combination of deficiencies in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit, we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the Dallas Police and Fire Pension System's financial statements are free of material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, and contracts, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of This Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of DPFP's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering DPFP's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

Dallas, Texas
December 10, 2020

Dallas Police and Fire Pension System

Management's Discussion and Analysis (Unaudited)
December 31, 2019 and 2018

Overview

Management's Discussion and Analysis (MD&A) provides an overall review of the financial activities of the Dallas Police and Fire Pension System (DPFP), including the Combined Pension Plan and the Supplemental Police and Fire Pension Plan of the City of Dallas (Supplemental Plan), collectively referred to as the Plans, for the fiscal years ended December 31, 2019 and 2018. This discussion and analysis is intended to serve as an introduction to the financial statements, which reflect the Plans' resources available for payment of benefits and other related expenses. MD&A should be read in conjunction with the combining financial statements, notes to the combining financial statements, required supplementary information, and additional supplementary information provided in this report.

Financial Statements

The combining financial statements consist of the following:

Combining Statements of Fiduciary Net Position which reflect a snapshot of the Plans' financial position and reflect resources available for the payment of benefits and related expenses at year end. The resulting Net Position (Assets – Liabilities = Net Position) represents the value of the assets held in trust for pension benefits net of liabilities owed as of the financial statement date.

Combining Statements of Changes in Fiduciary Net Position which reflect the results of all transactions that occurred during the fiscal year and present the additions to and deductions from the net position. Effectively, these statements present the changes in plan net position during the fiscal year. If change in net position increased, additions were more than deductions. If change in net position decreased, additions were less than deductions.

Notes to Combining Financial Statements, which are an integral part of the combining financial statements, include additional information that may be needed to obtain an adequate understanding of the overall financial status of the Plans.

Required Supplementary Information (Unaudited) and additional Supplementary Information provide historical and additional information considered useful in obtaining an overall understanding of the financial positions and activities of the Plans.

Financial Highlights

The combining financial statements are presented solely on the accounts of the Plans. The accrual basis of accounting is utilized, whereby revenues are recognized when they are earned and collection is reasonably assured, and expenses are recognized when the related liability has been incurred. Investments are reported at fair value.

Dallas Police and Fire Pension System

Management's Discussion and Analysis (Unaudited)
December 31, 2019 and 2018

A summary of the Combining Statements of Fiduciary Net Position of the Plans is as follows (in thousands):

December 31:	2019	2018	2017
Assets			
Investments, at fair value	$ 1,971,352	$ 2,007,036	$ 1,990,602
Invested securities lending collateral	13,025	20,560	12,153
Receivables	61,308	42,634	34,629
Cash and cash equivalents	89,462	50,138	118,587
Prepaid expenses	402	365	436
Capital assets, net	12,329	12,489	12,715
Total assets	**2,147,878**	**2,133,222**	**2,169,122**
Liabilities			
Securities purchased	54,957	48,598	31,411
Securities lending obligations	13,025	20,560	12,153
Accounts payable and accrued liabilities	4,731	3,832	4,407
Total liabilities	**72,713**	**72,990**	**47,971**
Net position restricted for pension benefits	**$ 2,075,165**	**$ 2,060,232**	**$ 2,121,151**

The assets of the Combined Pension Plan and the Supplemental Plan are co-invested through a Group Master Trust (Group Trust). The rate of return on Group Trust investments during 2019 was 11.51% net of fees, compared to a rate of return of -1.49% for 2018 and 5.07% for 2017. Meketa Investment Group, Inc., DPFP's investment consultant at December 31, 2019, provides the rate of return for 2019 and 2018. NEPC, LLC (NEPC), DPFP's investment consultant at December 31, 2017, provided the rate of return for 2017. The methodology used by the investment consultants to calculate the time-weighted rate of return incorporates a one-quarter lag on market value adjustments for private equity, private debt, and real assets investments. This "lagged with cash flow adjustments" methodology is consistent with standard industry practice and allows for timely reporting to the Board of Trustees (Board). Gains and losses on lagged investments, which occur in the fourth quarter of any year, are recognized in the following year's rate of return.

House Bill 3158 (HB 3158 or the bill) was passed by the Texas legislature during the 85th legislative session. Both the House of Representatives and the Senate passed HB 3158 unanimously and Governor Abbott signed it on May 31, 2017. HB 3158 was effective September 1, 2017 and made significant changes to governance, contributions and benefits, including the structure of the Deferred Retirement Option Plan (DROP). Additional information about HB 3158 is included in Notes 1, 5 and 6 and the Required Supplementary Information accompanying the financial statements.

The Plans' net position increased by $15 million in 2019 due to investment gains and contribution increases exceeding the increase in benefit payments.

The Plans' net position decreased by $61 million in 2018, primarily the result of benefit payments exceeding total contribution payments. The net benefit outflow was partially offset by investment gains.

Dallas Police and Fire Pension System

Management's Discussion and Analysis (Unaudited)
December 31, 2019 and 2018

Securities lending collateral and obligations decreased in 2019 due to a decrease in lending activity. Securities lending collateral and obligations increased in 2018 due to an increase in lending activity resulting from increased lendable assets due to the funding of equity and fixed income mandates in mid-2017 and increased demand for securities due to market volatility in 2018. Changes in receivables are primarily a result of the timing of settlement of pending investment trades, as well as the timing of the last payroll of the year for the City of Dallas as such timing impacts the collection of benefit contributions.

Cash increased significantly in 2019 as cash from the sale of some investments was received at the end of the year. In 2018, cash declined significantly, as cash held during the legislative process in 2017 was deployed during the year.

A summary of the Combining Statements of Changes in Fiduciary Net Position of the Plans is as follows (in thousands):

Years ended December 31:		2019	2018	2017
Additions:				
Contributions				
City	$	157,251 $	151,336 $	128,395
Members		52,379	49,406	33,044
Total contributions		209,630	200,742	161,439
Net income from investing activities		123,955	43,452	97,456
Net income from securities lending activities		114	112	101
Other income		360	479	2,094
Total additions		**334,059**	**244,785**	**261,090**
Deductions:				
Benefits paid to members		310,008	297,155	295,245
Refunds to members		2,618	2,635	3,578
Interest expense		-	-	1,290
Professional and administrative expenses		6,500	5,914	8,158
Total deductions		**319,126**	**305,704**	**308,271**
Net increase (decrease) in net position		14,933	(60,919)	(47,181)
Net position restricted for pension benefits				
Beginning of period		**2,060,232**	**2,121,151**	**2,168,332**
End of period	**$**	**2,075,165 $**	**2,060,232 $**	**2,121,151**

The 2019 Contribution amounts for both members and the City were statutorily defined. Contributions for all active members (including members in DROP) were 13.5% of Computation Pay. Computation Pay is defined as base pay, education incentive pay and longevity pay. City contributions for the Combined Pension Plan were 34.5% of Computation Pay, plus a floor amount

Dallas Police and Fire Pension System

Management's Discussion and Analysis (Unaudited)
December 31, 2019 and 2018

to meet the minimum required contribution, plus an additional amount of $13 million in 2019. The floor has been greater than the 34.5% of Computation Pay for all pay periods in 2019. See Note 1 for additional information on City contribution rates.

City contributions to the Plans increased by $5.9 million or 3.9% in 2019 due to an increase in the bi-weekly floor amount. Member contributions of $52.4 million exceeded 2018 contributions by $3 million because of increased salaries and an increase in members.

In 2018, the member and City contributions increased over 2017 due to twelve months of contributions at the legislative defined amounts. City contributions to the Plans increased by $23 million or 18% in 2018. Member contributions increased $16 million in 2018.

City Contributions to the Combined Pension Plan in 2019 increased $6.4 million or 4.3% due to the scheduled increase in the bi-weekly floor amount.

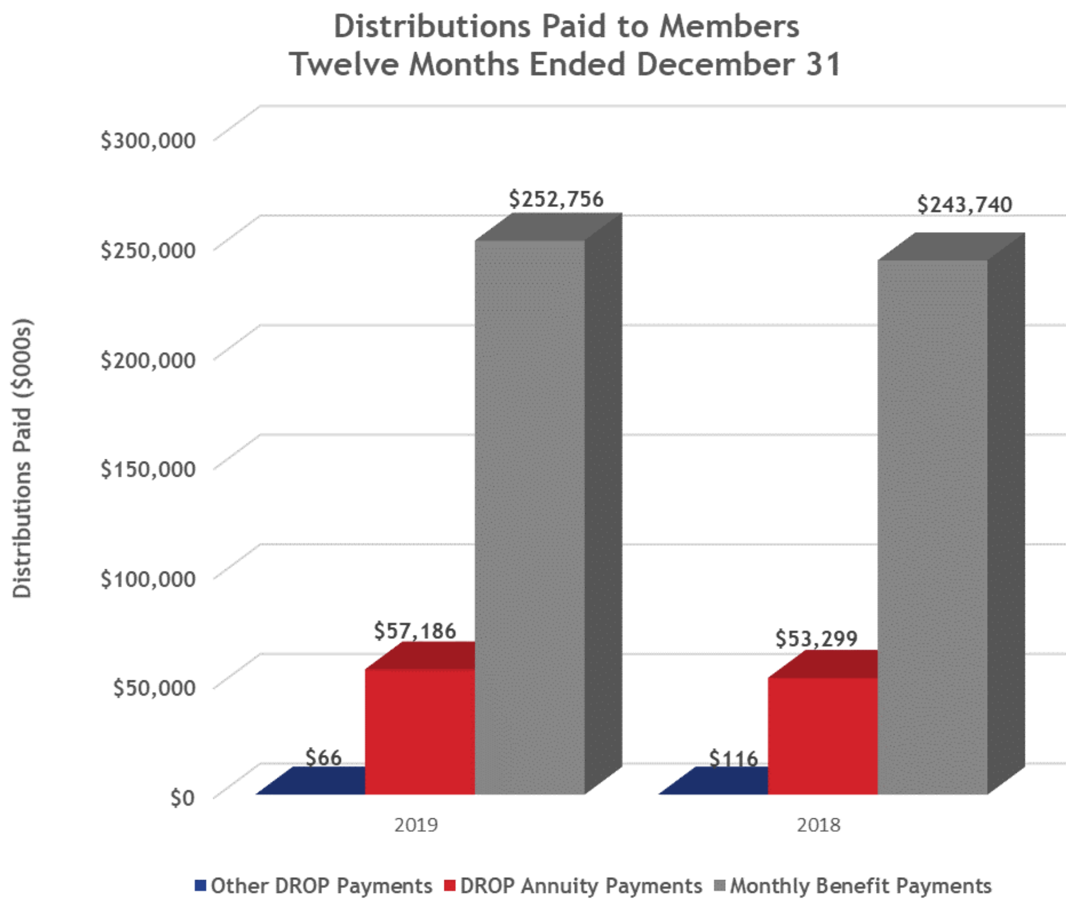
The City is required by ordinance to contribute amounts necessary to ensure the payment of benefits in the Supplemental Plan. The City's contributions shall be made in accordance with actuarial requirements established by the actuary and the board. City contributions to the Supplemental Plan in 2019 decreased by $449 thousand over 2018 contributions and City contributions to the Supplemental Plan in 2018 decreased by $98 thousand over 2017 contributions primarily due to contributions being redirected to the Excess Benefit Plan and Trust.

Net investment income during 2019 was primarily driven by the appreciation in the fair value of public equity assets. Net investment income during 2018 was primarily driven by the appreciation in the fair value of some private assets and was partially offset by public equity losses incurred especially during the fourth quarter of 2018.

Distributions to members consist of monthly payments of retirement, disability, and survivor benefits, as well as monthly DROP annuity payments and other DROP payments made in accordance with Section 6.14 of Article 6243a-1 of the Texas Statutes. The chart below compares the components of distributions paid to members for the years ended December 31, 2019 and 2018.

Dallas Police and Fire Pension System

Management's Discussion and Analysis (Unaudited)
December 31, 2019 and 2018



Total benefits paid in 2019 increased $12.9 million or 4.3% over 2018. Monthly benefit payments increased $9.0 million or 3.7% due to an additional 121 retirees and beneficiaries receiving monthly benefits in 2019. Distributions from DROP balances in 2019 totaled $57.3 million with $57.2 million paid as DROP annuity payments, up $3.9 million from 2018. See Note 6 for additional information on DROP.

No Interest expense was incurred in 2019 or 2018 as the line of credit and term loan were paid in full in 2017.

Refund expense declined $17 thousand in 2019 and declined $943 thousand in 2018 due in part to a change in the interpretation of the calculation of the liability accrual resulting in an additional expense of $460 thousand in 2017.

The cost of administering the benefit programs of the Plans, including administrative costs and professional fees, increased approximately $586 thousand in 2019. The increase in 2019 is primarily related to higher legal fees, (net of insurance reimbursement, up $220 thousand) and higher salaries and benefits, up $420 thousand. The cost of administering the benefits plans decreased approximately $2.2 million in 2018. The decrease in 2018 is primarily related to lower legal fees

Dallas Police and Fire Pension System

Management's Discussion and Analysis (Unaudited)
December 31, 2019 and 2018

(net of insurance reimbursement, down $642 thousand) and salaries and benefits, down $984 thousand. Actuarial expenses were $378 thousand lower in 2018 as expenses related to the implementation of HB 3158 were largely incurred during 2017. Legislative and communications expenses decreased $193 thousand and $247 thousand, respectively, from 2017 to 2018 as the legislative process for the new bill completed in 2017. A pro rata share of the total expenses of the Plans is allocated to the Combined Pension Plan and the Supplemental Plan according to the ratio of Combined Pension Plan and Supplemental Plan investment assets to the total investment assets of the Group Trust. Any expenses specific to either the Combined Pension Plan or the Supplemental Plan are charged directly as a reduction of such plan's net position.

Funding Overview

DPFP's actuarial firm, Segal Consulting (Segal), conducts the annual actuarial valuations to determine if the assets and contributions are sufficient to provide the prescribed benefits (funding positions) of the Plans.

The January 1, 2020 actuarial valuation reported a funded ratio of 45.7%, based on the actuarial value of assets, an unfunded actuarial accrued liability of $2.6 billion and an expected fully funded date of 2075 for the Combined Pension Plan compared to a funded ratio of 48.1%, based on the actuarial value of assets, an unfunded actuarial accrued liability of $2.3 billion and an expected fully funded date of 2057 for the Combined Pension Plan as reported in the January 1, 2019 actuarial valuation. These projections may vary on an annual basis due to actual experience and demographics, which may vary from the current actuarial assumptions. Beginning in 2025, once the City is contributing based solely on Computation Pay with no floor as discussed below, differences between actual payroll and the City's current projections may have a significant impact on the projected funding period.

For the Combined Plan, the total Actuarially Determined Contribution (ADC) rate required to pay the normal cost and to amortize the unfunded actuarial accrued liability over a closed 25-year period is currently 60.2% of Computation Pay compared to 55.4% as of January 1, 2019, which was amortized over a 30-year period. The ADC rate compares to the City's actual contribution rate of 34.5% of Computation Pay, which is subject to a minimum floor for the next seven years, plus the member contribution of 13.5%, plus an additional $13 million per year from the City until December 31, 2024.

The Board's funding policy for the Combined Plan was changed from an amortization period of 30 years to a closed 25-year period. Beginning in 2021, future gains or losses each year will be amortized over separate, closed 20-year periods.

The January 1, 2020 actuarial valuation reports a funded ratio of 48.3% and an unfunded actuarial accrued liability of $18.5 million for the Supplemental Plan compared to a funded ratio of 57.6%, and an unfunded actuarial accrued liability of $13.5 million for the Supplemental Plan as reported in the January 1, 2019 actuarial valuation. These projections may vary on an annual basis due to actual experience and demographics, which may vary from the current actuarial assumptions. The City's contributions for the Supplemental Plan are based on Computation Pay.

The Board's funding policy for the Supplemental Plan was changed from an open 10-year amortization period to a closed 20-year period. Beginning in 2021, future gains or losses each year will be amortized over separate, closed 10-year periods.

Dallas Police and Fire Pension System

Management's Discussion and Analysis (Unaudited)
December 31, 2019 and 2018

Governmental Accounting Standards Board Statement No. 67, *Financial Reporting for Pension Plans –An Amendment of GASB Statement No. 25*, (GASB No. 67) requires disclosure of the Net Pension Liability (NPL). The GASB No. 67 valuation is prepared by Segal and is a calculation for accounting purposes as opposed to the actuarial valuation, which is completed to determine the funding adequacy of the Plans. The NPL is the difference between the Total Pension Liability (TPL) and the market value of assets. GASB No. 67 requires the determination of the TPL using the individual entry age method, level percent of pay actuarial cost method, and a discount rate. The GASB No. 67 for December 31, 2019 reports a NPL of $2.7 billion, which is an increase of $214 million from the NPL reported at December 31, 2018 for the Combined Pension Plan. The Fiduciary Net Position as a Percentage of Total Pension Liabilities (FNP) is 43.5% at December 31, 2019 compared to 45.4% at December 31, 2018 for the Combined Pension Plan. The Supplemental Plan had a NPL of $18.5 million and $13.5 million at December 31, 2019 and 2018, respectively. The Supplemental Plan had a FNP of 48.3% and 57.6% at December 31, 2019 and 2018, respectively. The change in the Supplemental Plan was due to a change in the funding policy.

Information about whether the Plans' net positions are increasing or decreasing over time relative to the TPL is provided in the accompanying Schedule of Changes in the Net Pension Liability and Related Ratios.

Contacting DPFP's Financial Management

This financial report is designed to provide members and other users with a general overview of DPFP's finances and present the Plans' accountability for the funding received. If you have questions about this report, you may contact the Executive Director of the Dallas Police and Fire Pension System at 4100 Harry Hines Boulevard, Suite 100, Dallas, Texas 75219, by phone at 214-638-3863, or by email at info@dpfp.org.

Dallas Police and Fire Pension System

Combining Statements of Fiduciary Net Position

	2019			2018		
December 31,	**Combined Pension Plan**	**Supplemental Police and Fire Pension Plan of the City of Dallas**	**Total**	**Combined Pension Plan**	**Supplemental Police and Fire Pension Plan of the City of Dallas**	**Total**
Assets						
Investments, at fair value						
Short-term investments	$ 25,099,677	$ 211,352	$ 25,311,029	$ 40,949,194	$ 367,721	$ 41,316,915
Fixed income securities	550,746,613	4,637,555	555,384,168	511,184,404	4,590,396	515,774,800
Equity securities	550,594,317	4,636,273	555,230,590	432,055,193	3,879,822	435,935,015
Real assets	562,450,805	4,736,110	567,186,915	695,162,373	6,242,503	701,404,876
Private equity	265,352,308	2,234,396	267,586,704	310,090,215	2,784,586	312,874,801
Forward currency contracts	647,050	5,448	652,498	(268,300)	(2,409)	(270,709)
Total investments	1,954,890,770	16,461,134	1,971,351,904	1,989,173,079	17,862,619	2,007,035,698
Invested securities lending collateral	12,916,355	108,762	13,025,117	20,376,453	182,979	20,559,432
Receivables						
City	3,035,500	-	3,035,500	2,504,571	-	2,504,571
Members	1,053,322	2,547	1,055,869	801,661	1,583	803,244
Interest and dividends	4,422,424	37,239	4,459,663	4,759,677	42,742	4,802,419
Investment sales proceeds	52,131,442	438,972	52,570,414	33,926,492	304,657	34,231,149
Other receivables	184,550	1,554	186,104	290,170	2,606	292,776
Total receivables	60,827,238	480,312	61,307,550	42,282,571	351,588	42,634,159
Cash and cash equivalents	88,714,699	747,021	89,461,720	49,691,701	446,228	50,137,929
Prepaid expenses	399,234	3,362	402,596	362,262	3,253	365,515
Capital assets, net	12,225,827	102,947	12,328,774	12,377,791	111,152	12,488,943
Total assets	2,129,974,123	17,903,538	2,147,877,661	2,114,263,857	18,957,819	2,133,221,676
Liabilities						
Other payables						
Securities purchased	54,498,283	458,902	54,957,185	48,165,649	432,524	48,598,173
Securities lending obligations	12,916,355	108,762	13,025,117	20,376,453	182,979	20,559,432
Accounts payable and other accrued liabilities	4,702,168	28,441	4,730,609	3,807,625	24,423	3,832,048
Total liabilities	72,116,806	596,105	72,712,911	72,349,727	639,926	72,989,653
Net position						
Net investment in capital assets	12,225,827	102,947	12,328,774	12,377,791	111,152	12,488,943
Unrestricted	2,045,631,490	17,204,486	2,062,835,976	2,029,536,339	18,206,741	2,047,743,080
Net position - restricted for pension	$ 2,057,857,317	$ 17,307,433	$ 2,075,164,750	$ 2,041,914,130	$ 18,317,893	$ 2,060,232,023

See accompanying independent auditor's report and notes to combining financial statements.

Dallas Police and Fire Pension System

Combining Statements of Changes in Fiduciary Net Position

	2019			2018		
Years ended December 31,	**Combined Pension Plan**	**Supplemental Police and Fire Pension Plan of the City of Dallas**	**Total**	**Combined Pension Plan**	**Supplemental Police and Fire Pension Plan of the City of Dallas**	**Total**
Additions (Reductions)						
Contributions						
City	$ 155,721,087	$ 1,530,262	$ 157,251,349	$ 149,356,565	$ 1,979,285	$ 151,335,850
Members	52,268,293	110,660	52,378,953	49,332,262	73,880	49,406,142
Total contributions	207,989,380	1,640,922	209,630,302	198,688,827	2,053,165	200,741,992
Investment income						
Net appreciation in fair value of investments	94,213,367	(85,530)	94,127,837	5,588,891	886,129	6,475,020
Interest and dividends	37,657,218	319,000	37,976,218	44,664,963	401,088	45,066,051
Total gross investment income	131,870,585	233,470	132,104,055	50,253,854	1,287,217	51,541,071
Less: Investment expense	(8,081,019)	(68,456)	(8,149,475)	(8,017,586)	(71,997)	(8,089,583)
Net investment income	123,789,566	165,014	123,954,580	42,236,268	1,215,220	43,451,488
Securities lending income						
Securities lending income	840,502	7,120	847,622	309,613	2,780	312,393
Securities lending expense	(727,010)	(6,159)	(733,169)	(198,695)	(1,784)	(200,479)
Net securities lending income	113,492	961	114,453	110,918	996	111,914
Other income	356,549	3,020	359,569	475,111	4,266	479,377
Total additions	332,248,987	1,809,917	334,058,904	241,511,124	3,273,647	244,784,771
Deductions						
Benefits paid to members	307,243,319	2,764,781	310,008,100	294,447,006	2,707,773	297,154,779
Refunds to members	2,617,230	998	2,618,228	2,634,049	498	2,634,547
Professional and administrative expenses	6,445,251	54,598	6,499,849	5,861,410	52,636	5,914,046
Total deductions	316,305,800	2,820,377	319,126,177	302,942,465	2,760,907	305,703,372
Net increase/(decrease) in net position	15,943,187	(1,010,460)	14,932,727	(61,431,341)	512,740	(60,918,601)
Net position - restricted for pension						
Beginning of period	2,041,914,130	18,317,893	2,060,232,023	2,103,345,471	17,805,153	2,121,150,624
End of period	$ 2,057,857,317	$ 17,307,433	$ 2,075,164,750	$ 2,041,914,130	$ 18,317,893	$ 2,060,232,023

See accompanying independent auditor's report and notes to combining financial statements.

Dallas Police and Fire Pension System

Notes to Combining Financial Statements

1. Organization

General

The Dallas Police and Fire Pension System (DPFP) is an independently governed component unit of the City of Dallas (City, or Employer) and serves as a single-employer pension and retirement fund for police officers and firefighters employed by the City. The general terms "police officers" and "firefighters" also include fire and rescue operators, fire alarm operators, fire inspectors, apprentice police officers, and apprentice firefighters. DPFP is comprised of a single defined benefit pension plan (Combined Pension Plan) designed to provide retirement, death, and disability benefits for police officers and firefighters (collectively, members). DPFP was originally established under former Article 6243a of the Revised Civil Statutes of Texas and, since 1989, derives its authority to continue in operation under the provisions of Article 6243a-1 of the Revised Civil Statutes of Texas (the Governing Statute). All active police officers and firefighters employed by the City are required to participate in the Combined Pension Plan.

The Supplemental Police and Fire Pension Plan of the City of Dallas (Supplemental Plan) was created in 1973 to supplement DPFP's Plan B Defined Benefit Pension Plan (Plan B). Former Plan B members are now denominated as Group B members of the Combined Pension Plan. The intent of the Supplemental Plan is to provide additional retirement benefits to those members of the Supplemental Plan holding a rank higher than the highest corresponding civil service rank as provided in the Combined Pension Plan. Members receive a supplemental pension based upon the difference between compensation for the civil service position held before entrance into the Supplemental Plan and compensation while in the Supplemental Plan. The Supplemental Plan was established and derives its authority from a City ordinance.

The Combined Pension Plan and Supplemental Plan are collectively referred to as the Plans.

As of December 31, 2019 and 2018, the Combined Pension Plan's membership consisted of:

	2019	2018
Retirees and beneficiaries	4,956	4,849
Beneficiaries, DROP Only	83	70
Non-active vested members not yet receiving benefits	242	230
Non-active non-vested members not yet refunded	434	431
Total non-active members	5,715	5,580
Vested active members	3,692	3,677
Non-vested active members	1,429	1,335
Total active members	5,121	5,012

Dallas Police and Fire Pension System

Notes to Combining Financial Statements

As of December 31, 2019, and 2018, the Supplemental Plan's membership consisted of:

	2019	2018
Retirees and beneficiaries	139	138
Non-active vested members not yet receiving benefits	2	2
Non-active non-vested members not yet refunded	1	1
Total non-active members	142	141
Vested active members	40	38
Non-vested active members	1	1
Total active members	41	39

No changes to benefit, contribution or administration plan provisions were made to the Combined Pension Plan or the Supplemental Plan in 2019.

The benefit, contribution and administration plan provisions discussed below are as of December 31, 2019 and 2018.

Benefits

Members hired by the City before March 1, 1973 are Group A members of the Combined Pension Plan. Members hired on or after March 1, 1973 are Group B members of the Combined Pension Plan.

Group A members of the Combined Pension Plan have elected to receive one of two benefit structures as of December 31, 2019:

- Members with 20 years or more of pension service are entitled to monthly pension benefits beginning at age 50 equal to 50% of base pay, defined as the maximum monthly civil service pay established by the City for a police officer or firefighter at the time of retirement, plus 50% of the longevity pay the member was receiving either at the time he or she left active service with the City or the effective date the member joined the Deferred Retirement Option Plan (DROP). Benefit payments are adjusted annually according to changes in active service base pay, if any. Additionally, a member is eligible to receive 50% of the difference between any annualized City service incentive pay granted to the member less annual longevity pay.

- Members with 20 years or more of pension service are entitled to monthly pension benefits beginning at age 55 equal to 3% of their base pay, computed as noted in the prior paragraph, for each year of pension service with a maximum of 32 years. In addition, a member receives 50% of the longevity pay and $^{1}/_{24}{}^{th}$ of any City service incentive pay the member was receiving either at the time he or she left active service with the City or the effective date the member joined DROP. Prior to September 1, 2017 pension benefit payments increased annually on October 1st by 4% of the initial benefit amount. After September 1, 2017, pension benefit payments are eligible for an ad hoc cost of living increase as approved by the Board, if certain funding requirements are met. It is not anticipated that the funding requirements necessary to grant an ad hoc cost of living increase will be met for several decades.

Dallas Police and Fire Pension System

Notes to Combining Financial Statements

Group B members of the Combined Pension Plan receive one of two benefit structures as of December 31, 2019:

- Members who began membership before March 1, 2011 with 5 or more years of pension service are entitled to monthly pension benefits beginning at age 50 equal to 3% of the member's average base pay plus education and longevity pay (Computation Pay) determined over the highest 36 consecutive months of Computation Pay, multiplied by the number of years of pension service prior to September 1, 2017. The monthly pension benefit for service earned after September 1, 2017 is based on the highest 60 consecutive months of Computation Pay multiplied by a 2.5% multiplier at age 58. The multiplier is reduced to between 2.0% and 2.4% for retirement beginning at age 53 and prior to age 58. The member cannot accrue a monthly pension benefit that exceeds 90% of the member's average Computation Pay. Certain members may receive a 2.5% multiplier for pension service after September 1, 2017 prior to age 58 if the combination of their pre and post September 1, 2017 pension service calculations using the 2.5% multiplier for post September 1, 2017 meets or exceeds the 90% maximum benefit. Certain members who meet the service prerequisite or were 45 prior to September 1, 2017 may elect to take early retirement with reduced benefits starting at age 45, or earlier if the member has 20 years of pension service.
- Members who began membership after February 28, 2011 are entitled to monthly pension benefits after accruing 5 years of pension service and the attainment of age 58. Pension benefits are equal to the member's average Computation Pay determined over the highest 60 consecutive months of Computation Pay, multiplied by 2.5% for the number of years of pension service. The member cannot accrue a monthly pension benefit that exceeds 90% of the member's average Computation Pay. Certain members who meet the service prerequisite may elect to take early retirement with reduced benefits starting at age 53.
- A Group B member who has accrued 20 or more years of pension service and who has been on active service at any time on or after January 1, 1999 may take a pension benefit regardless of age except that the percent multiplier would be based on the member's age at the time of applying for the pension.
- After September 1, 2017, Group B benefits for all members are eligible for an ad hoc cost of living increase as approved by the Board, if certain funding requirements are met. It is not anticipated that the funding requirements necessary to grant an ad hoc cost of living increase will be met for several decades. Prior to September 1, 2017 Group B members hired prior to January 1, 2007 received an automatic annual increase of 4% of the initial benefit amount each October 1st. Group B members hired on or after January 1, 2007 were eligible for an ad hoc increase not to exceed 4% of the initial benefit amount.

Additional provisions under the Combined Pension Plan as of December 31, 2019 are as follows:

- Prior to September 1, 2017 members with over 20 years of pension service, upon attaining age 55, received a monthly supplement equal to the greater of $75 or 3% of their total monthly benefits (excluding the benefit supplement amount). After September 1, 2017, no additional members will receive the monthly supplement and no increases will be made to the amount of the supplement received by those members receiving the supplement prior to September 1, 2017.
- Service-connected disability benefits are available for members in active service who began service prior to March 1, 2011 and have not entered DROP who become disabled during the performance of their duties from the first day of employment. Members receiving service-connected disability benefits are given credit for the greater of actual pension service or 20 years of pension service. A benefit of 3% times the average of the highest 36 consecutive

months of Computation Pay times the number of years of pension service prior to September 1, 2017, plus a multiplier, based on their age at the time the disability is granted, for pension service after September 1, 2017, times the average of the highest 60 consecutive months of Computation Pay times the number of years of pension service. If needed, additional service time necessary to reach 20 years of service credit will be included with pension service after September 1, 2017. Members who began membership after February 28, 2011 and have not entered DROP are entitled to a disability benefit based on the average of the highest 60 consecutive months of Computation Pay times a 2.5% multiplier regardless of their age. If a member has more than 20 years of service and was hired prior to March 1, 2011, the benefit is calculated in the same manner as their service retirement pension. If the member has fewer than 36 or 60 months of service, based on hire date, the benefit is based on the average of Computation Pay during their entire pension service.

- Members who began membership before March 1, 2011, who are determined to be eligible for a non-service connected disability benefit are entitled to a benefit of 3% times the average of the highest 36 consecutive months of Computation Pay times the number of years of pension service prior to September 1, 2017, plus a multiplier based on their age at the time the disability is granted for pension service after September 1, 2017 times the average of the highest 60 consecutive months of Computation Pay. Total service is rounded to the nearest whole year. Members who began membership after February 28, 2011 are entitled to a disability benefit based on the average of the highest 60 consecutive months of Computation Pay, times a 2.5% multiplier regardless of their age. All non-service connected disability benefits are subject to a minimum benefit of $110 for every year of pension service. The minimum benefit cannot exceed $2,200 per month. If the member has fewer than 36 or 60 months of service, based on hire date, the benefit is based on the average of Computation Pay during their entire pension service.

- Members who are eligible to retire are eligible to enter the DROP program, which is an optional method of accruing monthly pension benefits prior to leaving active service. Members who are receiving disability benefits are not eligible to enter the DROP program. The amount of an active member's DROP balance is based on the accumulation of the member's monthly benefit each month while in active DROP, and interest accrued prior to September 1, 2017. DROP balances of retired members and other DROP account holders, excluding active member DROP account holders, were converted to annuities (a stream of payments) on November 30, 2017. DROP balances of active members are annuitized upon retirement. The life expectancy of a DROP account holder at the time of annuitization determines the term of the annuity. Interest is included in the annuity calculation for balances accrued prior to September 1, 2017. The interest rate is based on the provisions of HB 3158 and rules adopted by the Board. See Note 6 for information about the changes in the DROP program resulting from the passage of HB 3158. See below, under Contributions, for discussion of required DROP contributions. The total DROP account balance and the present values of the annuitized balances for the Combined Pension Plan was $1.04 billion at December 31, 2019 and $1.01 billion at December 31, 2018. The total DROP balances include amounts that may be paid out of the Excess Benefit Plan and Trust.

- A minimum benefit is paid to vested retired members of $2,200 per month subject to any restrictions contained in the Combined Pension Plan. The minimum benefit is prorated for members who retire with less than 20 years of service credit and equals $1,200 monthly for a qualified surviving spouse if there are no qualified surviving children receiving benefits. The minimum benefit is $1,100 monthly for qualified surviving children combined and qualified surviving spouses if qualified surviving children are receiving or had received benefits.

Dallas Police and Fire Pension System

Notes to Combining Financial Statements

Additional provisions under the Supplemental Plan as of December 31, 2019 are as follows:

- The Supplemental Plan's benefits are designed to supplement Group B benefits for those members holding a rank higher than the highest civil service rank because their Combined Pension Plan benefits are capped by the Combined Pension Plan's definition of considered compensation. Accordingly, when Group B benefits are amended, the Supplemental Plan's benefit calculation is also affected. The basis for a member's benefits are the difference between the monthly rate of pay a member is due as the base pay for the rank the member currently holds and the monthly rate of pay the member is due for the highest civil service rank (and pay step) the member held as a result of competitive examinations. The service time used to determine the member's Group B benefit is used to determine the member's benefit under the Supplemental Plan so that the same length of time is used for both plans. Average Computation Pay is calculated for each plan separately and combined in determining the benefit. Application for benefits under the provisions of the Combined Pension Plan is deemed to be an application for benefits under the Supplemental Plan and no additional application need be filed.

- Members of the Supplemental Plan who enter the DROP program in the Combined Pension Plan also enter the DROP program in the Supplemental Plan. The total DROP account balance and the present value of the annuitized balances related to the Supplemental Plan was $7.1 million and $4.5 million at December 31, 2019 and 2018, respectively. The total DROP balances include amounts that may be paid out of the Excess Benefit Plan and Trust.

Death benefits are available to a surviving spouse, dependent children, handicapped children, or dependent parents in the event of the death of a member either after disability or service retirement, prior to leaving active service or retirement eligible deferred vested members.

Members retiring with 20 years of pension service or who were receiving a service-connected disability benefit had been eligible to receive a benefit supplement upon reaching age 55. The supplement amount was 3% of the member's monthly benefit, with a minimum of $75 per month in the Combined Pension Plan. After September 1, 2017, no additional members will receive the monthly supplement and no supplement amount will increase.

Contributions

Employee contribution rates did not change in 2019.

HB 3158 amended the employee contribution rates to 13.5% of Computation Pay for all active members.

City contribution rates did not change in 2019.

The City contributes the greater of (i) 34.5% of Computation Pay and (ii) a bi-weekly minimum (floor) amount defined in the bill, plus $13 million annually until 2024. The floor amounts were $5.571 and $5.344 million, respectively, for 2019 and 2018. After 2024, the floor amount and the additional $13 million annual amount are eliminated.

During 2024 an independent actuary selected by the Texas State Pension Review Board (PRB) must perform an analysis that includes the independent actuary's 1) conclusion regarding whether the pension system meets State Pension Review Board funding guidelines and 2) recommendations regarding changes to benefits or to member or city contribution rates. The Board must adopt a plan that complies with the funding and amortization period requirements under Subchapter C, Section 802 of the Texas Government Code.

The City is required by ordinance to contribute amounts necessary to ensure the payment of benefits in the Supplemental Plan. The City's contributions shall be made in accordance with actuarial requirements established by the actuary and the board. Member contributions in the Supplemental Plan follow the same rules as the Combined Pension Plan on Computation Pay over the compensation of the highest civil service rank held as a result of competitive examinations.

City contributions can be changed by the legislature, by a majority vote of the voters of the city or in accordance with a written agreement entered into between the city and the pension system, where at least eight trustees have approved the agreement, provided that the change does not increase the period required to amortize the unfunded accrued liability of the Combined Pension Plan. Decreases in employee contributions require the approval of the legislature. Increases in employee contributions require the approval of at least a two-thirds vote of all trustees of the Board.

The Supplemental Plan's plan document can be amended only by the City Council in accordance with City ordinance. The benefit and contribution provisions of the Supplemental Plan follow those of the Combined Pension Plan.

Members of Group B are immediately vested in their member contributions. If a member's employment is terminated and the member is not vested, or the member elects not to receive present or future pension benefits, the member's contributions are refunded, without interest, upon written application. If application for a refund is not made within three years of normal retirement age, the member forfeits the right to a refund of his or her contribution; however, a procedure exists whereby the member's right to the contributions can be reinstated and refunded by the Board after the three-year period.

Administration

Collectively, the Combined Pension Plan Board of Trustees and the Supplemental Plan Board of Trustees are referred to as the Board. The Board is responsible for the general administration of DPFP and has the full power to invest the Plans' assets.

The Plans are administered by an eleven-member Board consisting of six Trustees appointed by the mayor of the City of Dallas, in consultation with the City Council; one current or former police officer, nominated and elected by active members; one current or former firefighter, nominated and elected by active members; and three non-member Trustees (who may not be active members or retirees) elected by the active members and retirees from a slate of nominees vetted and nominated by the Nominations Committee. The Nominations Committee consists of representatives from 11 named police and fire associations and the Executive Director of DPFP. The Executive Director is a nonvoting member of the committee.

To serve as a Trustee, a person must have demonstrated financial, accounting, business, investment, budgeting, real estate or actuarial expertise and may not be an elected official or current employee of the City of Dallas, with the exception of a current police officer or firefighter.

2. Summary of Significant Accounting Policies

Basis of Presentation

The accompanying financial statements are presented in accordance with accounting principles generally accepted in the United States (GAAP). In doing so, DPFP adheres to guidelines established by the Governmental Accounting Standards Board (GASB). The accompanying financial statements include solely the accounts of the Plans on a combined basis, which include all programs, activities and functions relating to the accumulation and investment of the net position and related income necessary to provide the service, disability and death benefits required under the terms of the governing statutes and amendments thereto.

Basis of Accounting

The accrual basis of accounting is used for the Plans. Revenues are recognized in the period in which they are earned and collection is reasonably assured. Expenses are recognized when the liability is incurred. Member and employer contributions are recognized in the period in which the contributions are due. Accrued income, when deemed uncollectible, is charged to operations.

Contributions for the final biweekly payroll of the year for the years ended December 31, 2019 and 2018 were not received by DPFP until subsequent to year end and accordingly, uncollected contributions are recorded as receivables in the accompanying financial statements. Benefits, lump sum payments, and refunds are recognized when due and payable. Dividend income is recorded on the ex-dividend date. Other income consists primarily of rental income, which is recognized on a straight-line basis over the lease term. Realized gains and losses on sales of securities are recognized on the trade date. The cost of investments sold is determined using the average cost method.

Reporting Entity

DPFP is an independently governed component unit of the City and the basic financial statements and required supplementary information of the Plans are therefore included in the City's Comprehensive Annual Financial Report.

Administrative Costs

All costs of administering the Plans are paid from the Plans' assets pursuant to an annual fiscal budget approved by the Board.

Federal Income Tax

Favorable determinations that the Plans are qualified and exempt from Federal income taxes were received on October 20, 2014. While the Board has authorized a filing with the Internal Revenue Service under the Voluntary Correction Program, the Board believes that the Plans are designed to meet and operate in material compliance with the applicable requirements of the Internal Revenue Code.

Use of Estimates

The preparation of financial statements in accordance with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the financial statements and the actuarial information included in the notes to the financial statements as of the benefit information date, the reported amounts of income and expenses during the reporting period, and when applicable, disclosures of contingent assets and liabilities at the date of the financial statements. Actual results could differ from those estimates.

Cash and Cash Equivalents

DPFP considers only demand deposits as cash. Cash equivalent securities, which are composed of all highly liquid investments with a maturity of three months or less when purchased, are considered to be cash equivalents. Highly liquid securities invested by third party investment managers as part of a short-term investment fund are not considered cash equivalents and are classified as short-term investments.

Plan Interest in the Group Master Trust

Effective January 1, 2006, the Board elected to establish a Group Master Trust (Group Trust) in order to unitize the investments of the Combined Pension Plan and the Supplemental Plan. JPMorgan Chase Bank, N.A. (JPMorgan) served as custodian of the Group Trust for the years ended December 31, 2019 and 2018. The fair value of the Combined Pension Plan's interest and the Supplemental Plan's interest in the Group Trust is based on the unitized interest that each plan has in the Group Trust. The Combined Pension Plan's interest in the Group Trust's investments was approximately 99.2% at December 31, 2019 and 99.1% at December 31, 2018, while the remaining interest belongs to the Supplemental Plan. The allocation of investment income and expenses between the Combined Pension Plan and the Supplemental Plan is based on percentage interest in the Group Trust. Shared professional and administrative expenses are allocated to each plan directly in proportion to each plan's ownership interest. Benefits and contributions are attributed directly to the plan that such receipts and disbursements relate to and are not subject to a pro-rated allocation.

Investments

Investment Policy

Statutes of the State of Texas authorize DPFP to invest surplus funds in the manner provided by Government Code, Title 8, Subtitle A, Subchapter C, which provides for the investment of surplus assets in any investment that is deemed prudent by the Board. These statutes stipulate that the governing body of the Plans is responsible for the management and administration of the funds of the Plans and shall determine the procedure it finds most efficient and beneficial for the management of the funds of the Plans. The governing body may directly manage the investments of the Plans or may contract for professional investment management services. Investments are reported at fair value.

The investment policy of the Board does not restrict the types of investments authorized to be made on behalf of the Group Trust. The Governing Statute requires at least eight members of the Board to approve an investment in an alternative asset. The Board determined that alternative assets include all asset classes other than traditional assets. Traditional assets include publicly traded stocks, bonds and cash equivalents. The investment policy considers the current and expected financial condition of the Plans, the expected long-term capital market outlook and DPFP's risk tolerance. The following is the Board's adopted asset allocation contained in the Investment Policy Statement as of December 31, 2019:

Dallas Police and Fire Pension System

Notes to Combining Financial Statements

Asset Class	Target Allocation
Equity	55%
Global Equity	40%
Emerging Markets Equity	10%
Private Equity	5%
Safety Reserve and Fixed Income	35%
Cash	3%
Short-term Investment Grade Bonds	12%
Investment Grade Bonds	4%
High Yield Bonds	4%
Bank Loans	4%
Global Bonds	4%
Emerging Market Debt	4%
Real Assets	10%
Private Real Estate	5%
Private Natural Resources	5%

The value and performance of DPFP's investments are subject to various risks, including, but not limited to, credit risk, interest rate risk, concentration of credit risk, custodial credit risk, and foreign currency risk, which are in turn affected by economic and market factors impacting certain industries, sectors or geographies. See Note 3 for disclosures related to these risks.

Investment Transactions

The accompanying Combining Statements of Changes in Fiduciary Net Position present the net appreciation (depreciation) in the fair value of investments, which consists of the realized gains and losses on securities sold and the changes in unrealized gains and losses on those investments still held in the portfolio at year end.

Purchases and sales of investments and forward foreign exchange contracts are recorded on the trade date. Unsettled investment trades as of fiscal year end are reported in the financial statements on the accrual basis of accounting. Realized gains or losses on forward foreign exchange contracts are recognized when the contract is settled.

Interest earned but not yet received and dividends declared but not yet received are recorded as accrued interest and dividends receivable, respectively. In addition, unsettled investment purchases and sales are accrued.

Valuation of Investments

The diversity of the investment types in which the Group Trust invests requires a wide range of techniques to determine fair value.

Short-term investments include money market funds and government bonds with a maturity of less than one year and are valued based on stated market rates.

Dallas Police and Fire Pension System

Notes to Combining Financial Statements

Fixed income investments include government securities such as Treasury securities, bank loans, US corporate bonds, foreign securities such as dollar denominated and non-dollar denominated issues of non-US governments and private corporations, plus units of commingled fixed income funds of both US and foreign securities. Equity securities consist of individual shares of equity securities plus units of commingled stock funds of both US and foreign entities. The stated market value of investments in publicly traded fixed income and equity securities is based on published market prices or quotations from major investment dealers as provided by JPMorgan, utilizing vendor supplied pricing. Vendor supplied pricing data for equity securities is based upon the daily closing price from the primary exchange of each security while vendor supplied pricing data for fixed income securities is based upon a combination of market maker quotes, recent trade activity, and observed cash flows. Securities traded on an international exchange are valued at the last reported sales price as of year-end at exchange rates as of year-end. The fair value of non-publicly traded commingled fixed income funds and commingled stock funds is based on their respective net asset value (NAV) as reported by the investment manager.

Real assets consist of privately held real estate, infrastructure, timberland, and farmland investments. Real estate is held in separate accounts, limited partnerships, joint ventures, and commingled funds, and as debt investments in the form of notes receivable. Infrastructure, timberland, and farmland are held in separate accounts, limited partnerships, and joint ventures. Real estate, timberland and farmland are generally subject to independent third-party appraisals performed in accordance with the Uniform Standards of Professional Appraisal Practice on a periodic basis, every three years at minimum, as well as annual financial statement audits. Infrastructure funds are valued based on audited NAV reported by the manager, which is based on internal manager valuation or independent appraisal at the discretion of the manager. Interests in joint ventures, limited partnerships and notes receivable are valued at the dollar value reported by the general partner or investment manager, as applicable. DPFP staff manage certain real estate investments internally and the real estate holdings of such ventures are subject to independent third-party appraisals on a periodic basis, every three years at minimum. Internally managed investments are valued at their net equity on a fair value basis. Externally managed partnerships, joint venture, commingled funds, and separate accounts are valued at the NAV provided by the investment or fund manager, as applicable. The investment or fund manager on a continuous basis values the underlying investment holdings.

Private equity investments consist of various investment vehicles including limited partnerships, commingled funds, trusts and notes receivable. Private equity limited partnership investments and notes receivable are valued as reported by the investment manager. Private equity funds are valued using their respective NAV as reported by the fund's custodian, investment manager or independent valuations obtained by DPFP, as applicable.

DPFP has established a framework to consistently measure the fair value of the Plans' assets and liabilities in accordance with applicable accounting, legal, and regulatory guidance. This framework has been provided by establishing valuation policies and procedures that provide reasonable assurance that assets and liabilities are carried at fair value as described above and as further discussed in Note 4.

Foreign Currency Transactions

DPFP, through its investment managers, is party to certain financial arrangements, utilizing forward contracts, options and futures as a hedge against foreign currency fluctuations. Entering into these arrangements involves not only the risk of dealing with counterparties and their ability to meet the terms of the contracts, but also the risk associated with market fluctuations. Realized gains and losses on option and future arrangements are recorded as they are incurred. Realized gains and losses on forward contracts are recorded on the settlement date.

Gains and losses resulting from foreign exchange contracts (transactions denominated in a currency other than the Group Trust's functional currency - US dollar) are recorded based on changes in market values and are included in investment income (loss) in the accompanying financial statements. Investment managers, on behalf of the Group Trust, structure foreign exchange contracts and enter into transactions to mitigate exposure to fluctuations in foreign exchange rates.

Investments and broker accounts denominated in foreign currencies outstanding at December 31, 2019 and 2018 were converted to the US dollar at the applicable foreign exchange rates quoted as of December 31, 2019 and 2018, respectively. The resulting foreign exchange gains and losses are included in net appreciation (depreciation) in fair value of investments in the accompanying financial statements.

Recent Accounting Pronouncements Applicable to DPFP

In 2017, GASB issued Statement No. 86, Certain Debt Extinguishment Issues. The effective date of GASB Statement No. 86 was June 30, 2018 and had no impact on the financial statements.

In 2017, GASB issued Statement No. 87, Leases. This standard will require recognition of certain lease assets and liabilities for leases that are currently classified as operating leases. It is not anticipated that GASB Statement No. 87 will have a material effect on the financial statements. The statement is effective for reporting periods beginning after June 15, 2021.

In March 2018, GASB issued Statement No. 88, Certain Disclosures Related To Debt, Including Borrowings and Direct Placements. This Statement requires increased disclosure in notes to financial statements of all state and local governments. The new disclosure requirements are effective for reporting periods beginning after June 15, 2019. It is not anticipated that GASB Statement No. 88 will have an impact on the DPFP financial statements.

3. Investments

The Board has contracted with investment managers to manage the investment portfolio of the Group Trust subject to the policies and guidelines established by the Board. The Board has a custody agreement with JPMorgan under which JPMorgan assumes responsibility for the safekeeping of certain investments, handling of transactions based on the instructions of investment managers, and reporting investment transactions.

Dallas Police and Fire Pension System

Notes to Combining Financial Statements

The fair value of investments at December 31, 2019 and 2018 is as follows (in thousands):

	2019	2018
Short-term investments		
Short-term investment funds	$ 25,311	$ 41,317
Fixed income securities		
US Treasury bonds	118,853	95,236
US government agencies	12,870	8,747
Corporate bonds	278,775	231,111
Foreign-denominated bonds	28,846	36,359
Commingled funds	111,385	141,465
Municipal bonds	4,655	2,857
Equity securities		
Domestic	279,709	265,626
Foreign	275,522	170,309
Real assets		
Real estate	382,374	470,026
Infrastructure	52,978	57,458
Timberland	39,600	40,699
Farmland	92,235	133,222
Private equity	267,587	312,875
Forward currency contracts	652	(271)
Total	$ 1,971,352	$ 2,007,036

Custodial Credit Risk

Deposits

Custodial credit risk is the risk that, in the event of a bank failure, the System's deposits might not be recovered. DPFP does not have a formal deposit policy for custodial credit risk of its deposits.

The Federal Depository Insurance Corporation (FDIC) insures any deposits of an employee benefit plan in an insured depository institution on a "pass- through" basis, in the amount of up to $250,000 for the non-contingent interest of each plan participant at each financial institution. The pass-through insurance applies only to vested participants. DPFP believes the custodial credit risk for deposits, if any, is not material.

Investments

Portions of DPFP's investments are classified as security investments. A security is a transferable financial instrument that evidences ownership or creditorship. Investments in companies, partnerships and real estate are investments that are evidenced by contracts rather than securities.

Custodial credit risk is the risk that, in the event of the failure of an investment counterparty, the investor will not be able to recover the value of its investment or collateral securities that are in the possession of an outside party. Investment securities are exposed to custodial credit risk if the securities are uninsured, are not registered in the name of the investor, and are held by either the counterparty or the counterparty's trust department or agent, but not in the investor's name. DPFP mitigates this risk by having investments held at a custodian bank on behalf of DPFP. At December 31, 2019 and 2018, all investment securities held by the custodian were registered in the name of DPFP and were held by JPMorgan in the name of DPFP. DPFP does not have a formal policy for custodial credit risk of its investments; however, management believes that custodial credit risk exposure is mitigated by the financial strength of the financial institutions in which the securities are held.

Concentration of Credit Risk

Concentration of credit risk is the risk of loss attributable to the magnitude of the Group Trust's investment in a single issue. DPFP does not have an investment policy specifically regarding concentration of credit risk; however, the target allocations of assets among various asset classes are determined by the Board with the objective of optimizing the investment return of the Group Trust within a framework of acceptable risk and diversification. For major asset classes, the Group Trust will further diversify the portfolio by employing multiple investment managers who provide guidance for implementing the strategies selected by the Board.

As of December 31, 2019 and 2018, the Group Trust did not have any single investment in an issuer which represented greater than 5% of the Plans' net position.

Interest Rate Risk

Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment. Interest rate risk is the greatest risk faced by an investor in the fixed income market. The price of a fixed income security typically moves in the opposite direction of the change in interest rates. The weighted average maturity of a fixed income security expresses investment time horizons (when the investment comes due and payable) in years, weighted to reflect the dollar size of individual investments within the investment type. DPFP does not have a formal investment policy that limits investment maturities as a means of managing its exposure to potential fair value losses arising from future changes in interest rates, but rather mandates such limits within investment management services contracts. Investment managers have full discretion in adopting investment strategies to address these risks.

The Group Trust invests in fixed income securities including, but not limited to, investments representing instruments with an obligated fixed rate of interest including public and private debentures, mortgage backed securities, guaranteed investment contracts with maturities greater than one year, and options/futures. Purchases and sales, investment selection, and implementation of investment strategies are delegated to the discretion of the investment manager, subject to compliance with its management agreement and DPFP's investment policy.

At December 31, 2019, the Group Trust had the following fixed income securities and maturities (in thousands):

Investment Type	Less than 1 year	1 to 5 years	6 to 10 years	More than 10 years	Total
US Treasury bonds	$ 7,855	$ 107,044	$ -	$ 3,954	$ 118,853
US Government Agencies	-	1,021	2,541	9,308	12,870
Corporate bonds	26,848	137,524	40,570	73,833	278,775
Municipal Bonds	-	3,067	-	1,588	4,655
Foreign-denominated bonds	1,579	10,860	7,332	9,075	28,846
Total	$ 36,282	$ 259,516	$ 50,443	$ 97,758	$ 443,999

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At December 31, 2018, the Group Trust had the following fixed income securities and maturities (in thousands):

Investment Type	Less than 1 year	1 to 5 years	6 to 10 years	More than 10 years	Total
US Treasury bonds	$ 896	$ 80,138	$ 7,560	$ 6,642	$ 95,236
US Government Agencies	-	-	1,138	7,609	8,747
Corporate bonds	20,786	157,009	24,035	29,281	231,111
Municipal Bonds	-	2,529	-	328	2,857
Foreign-denominated bonds	11,574	5,863	8,977	9,945	36,359
Total	$ 33,256	$ 245,539	$ 41,710	$ 53,805	$ 374,310

Commingled fixed income funds do not have specified maturity dates and are therefore excluded from the above tables.

Foreign Currency Risk

Foreign currency risk is the risk that changes in exchange rates will adversely affect the fair value of an investment or a deposit. The books and records of the Plans are maintained in US dollars. Foreign currencies and non-US dollar denominated investments are translated into US dollars at the bid prices of such currencies against US dollars at each balance sheet date. Realized and unrealized gains and losses on investments, which result from changes in foreign currency exchange rates, have been included in net appreciation (depreciation) in fair value of investments in the accompanying financial statements. Net realized foreign currency gains and losses resulting from changes in exchange rates include foreign currency gains and losses between trade date and settlement date of investment securities transactions, foreign currency transactions, and the difference between the amounts of interest and dividends are recorded on the books of the Plans and the amount actually received. International and global managers have permission to use currency forward and futures contracts to hedge currency against the US dollar. DPFP does not have an investment policy specific to foreign currency risk, however to mitigate foreign currency risk, investment managers with international exposure are expected to maintain diversified portfolios by sector and by issuer.

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The Group Trust's exposure to foreign currency risk in US dollars as of December 31, 2019 is as follows (in thousands):

Currency	Fixed Income	Equity	Real Assets	Total
Australian Dollar	$ 3,095	$ 6,263	$ 1,311	$ 10,669
Brazilian Real	2,880	942	4,689	8,511
British Pound Sterling	-	30,709	-	30,709
Canadian Dollar	-	5,001	-	5,001
Colombian Peso	3,074	-	-	3,074
Danish Krone	-	5,078	-	5,078
Euro	-	91,706	-	91,706
Hong Kong Dollar	-	8,403	-	8,403
Hungarian Forint	-	1,334	-	1,334
Indonesian Rupiah	2,611	730	-	3,341
Japanese Yen	-	44,759	-	44,759
Malaysian Ringgit	3,288	-	-	3,288
Mexican Peso	8,378	-	-	8,378
Norwegian Krone	217	138	-	355
Polish Zloty	2,525	-	-	2,525
Singaporean Dollar	-	1,159	-	1,159
South African Rand	2,778	-	25,968	28,746
South Korean Won	-	3,434	-	3,434
Swedish Krona	-	3,378	-	3,378
Swiss Franc	-	19,327	-	19,327
Total	$ 28,846	$ 222,361	$ 31,968	$ 283,175

The Group Trust's exposure to foreign currency risk in US dollars as of December 31, 2018 was as follows (in thousands):

Currency	Fixed Income	Equity	Real Assets	Total
Australian Dollar	$ 3,184	$ 6,225	$ 7,142	$ 16,551
Brazilian Real	2,732	367	7,074	10,173
British Pound Sterling	4,348	25,367	-	29,715
Canadian Dollar	-	2,149	-	2,149
Colombian Peso	1,608	-	-	1,608
Danish Krone	-	3,921	-	3,921
Euro	635	62,327	-	62,962
Hong Kong Dollar	-	11,346	-	11,346
Indonesian Rupiah	2,378	-	-	2,378
Japanese Yen	-	33,638	-	33,638
Malaysian Ringgit	4,107	-	-	4,107
Mexican Peso	9,172	-	-	9,172
Polish Zloty	4,803	-	-	4,803
Singaporean Dollar	-	148	-	148
South African Rand	3,392	-	24,366	27,758
South Korean Won	-	2,671	-	2,671
Swedish Krona	-	1,782	-	1,782
Swiss Franc	-	20,368	-	20,368
Total	$ 36,359	$ 170,309	$ 38,582	$ 245,250

In addition to the above exposures, certain fund-structure investments in the private equity, emerging markets debt, private debt and real assets asset classes with a total fair value of $137 million at both December 31, 2019 and 2018, have some level of investments in various countries

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with foreign currency risk at the fund level. The individual investments in these funds with such exposure are not included in the above table.

Credit Risk

Credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligations. DPFP was party to negotiated derivative contracts in the form of forward foreign exchange contracts as of December 31, 2019 as discussed below. DPFP does not have an investment policy specific to credit risk, however to mitigate credit risk on the currency forward contracts, investment managers who manage such contracts maintain a diversified portfolio by counterparty.

The Group Trust's exposure to credit risk in fixed income securities, including short-term investment funds classified as cash equivalents, as of December 31, 2019 and 2018 using the Standard & Poor's rating scale, at fair value, is as follows (in thousands):

December 31, 2019

Rating	Corporate Bonds	Municipal Bonds	Foreign-Denominated Bonds	Commingled Funds	Short-term Investment Funds (1)	US Government Securities	Total
AAA	$ 49,269	$ -	$ 1,906	$ -	$ -	$ 1,022	$ 52,197
AA+	4,203	-	1,406	-	-	130,701	136,310
AA	3,039	1,588	-	-	-	-	4,627
AA-	4,173	-	-	-	-	-	4,173
A+	8,784	-	-	-	-	-	8,784
A	12,043	1,364	-	-	-	-	13,407
A-	22,655	-	5,813	-	-	-	28,468
BBB+	37,102	1,703	8,378	-	-	-	47,183
BBB	19,539	-	2,611	-	-	-	22,150
BBB-	8,670	-	3,074	-	-	-	11,744
BB+	6,636	-	-	-	-	-	6,636
BB	9,568	-	2,778	-	-	-	12,346
BB-	14,934	-	2,880	-	-	-	17,814
B+	7,785	-	-	-	-	-	7,785
B	7,155	-	-	-	-	-	7,155
B-	8,483	-	-	-	-	-	8,483
CCC+	3,599	-	-	-	-	-	3,599
CCC	4,130	-	-	-	-	-	4,130
CCC-	861	-	-	-	-	-	861
CC	185	-	-	-	-	-	185
C	-	-	-	-	-	-	-
D	439	-	-	-	-	-	439
NR (2)	45,523	-	-	111,385	113,393	-	270,301
Total	$ 278,775	$ 4,655	$ 28,846	$ 111,385	$ 113,393	$ 131,723	$ 668,777

(1) Includes short-term money market funds classified as cash equivalents.
(2) NR represents those securities that are not rated.

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December 31, 2018

Rating	Corporate Bonds	Municipal Bonds	Foreign-Denominated Bonds	Commingled Funds	Short-term Investment Funds (1)	US Government Securities	Total
AAA	$ 7,064	$ -	$ 1,727	$ -	$ -	$ 95,236	$ 104,027
AA+	657	-	675	-	-	-	1,332
AA	1,742	-	782	-	-	-	2,524
AA-	7,583	1,400	-	-	-	-	8,983
A+	9,214	-	-	-	-	-	9,214
A	27,347	-	-	-	-	-	27,347
A-	20,914	-	17,141	-	-	-	38,055
BBB+	31,290	1,457	-	-	-	-	32,747
BBB	18,956	-	1,608	-	-	-	20,564
BBB-	3,917	-	5,770	-	-	-	9,687
BB+	2,223	-	-	-	-	-	2,223
BB	3,873	-	2,732	-	-	-	6,605
BB-	8,989	-	-	-	-	-	8,989
B+	3,628	-	-	-	-	-	3,628
B	2,629	-	-	-	-	-	2,629
B-	10,308	-	636	-	-	-	10,944
CCC+	4,504	-	-	-	-	-	4,504
CCC	2,482	-	-	-	-	-	2,482
CCC-	566	-	-	-	-	-	566
CC	3,770	-	-	-	-	-	3,770
C	3,615	-	-	-	-	-	3,615
D	771	-	-	-	-	-	771
NR (2)	55,069	-	5,288	141,465	41,317	8,747	251,886
Total	$ 231,111	$ 2,857	$ 36,359	$ 141,465	$ 41,317	$ 103,983	$ 557,092

(1) Includes short-term money market funds classified as cash equivalents.
(2) NR represents those securities that are not rated.

Securities Lending

The Board has authorized the Group Trust to enter into an agreement with JPMorgan for the lending of certain of the Group Trust's securities including, but not limited to, stocks and bonds to counterparty brokers and banks (borrowers) for a predetermined fee and period of time. Such transactions are allowed by State statute.

JPMorgan lends, on behalf of the Group Trust, securities held by JPMorgan as the Group Trust's custodian and receives US dollar cash and US government securities as collateral. JPMorgan does not have the ability to pledge or sell collateral securities absent a borrower default. Borrowers are required to put up collateral for each loan equal to: (i) in the case of loaned securities denominated in US dollars or whose primary trading market is in the US or sovereign debt issued by foreign governments, 102% of the fair market value of the loaned securities and (ii) in the case of loaned securities not denominated in US dollars or whose primary trading market is not in the US, 105% of the fair market value of the loaned securities.

The Board did not impose any restrictions during 2019 or 2018 on the amount of the loans that JPMorgan made on its behalf. There were no failures by any borrowers to return the loaned securities or pay distributions thereon during 2019 or 2018. Moreover, there were no losses during

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2019 or 2018 resulting from a default of the borrower. JPMorgan indemnifies the Group Trust with respect to any loan related to any non-cash distribution and return of securities.

During 2019 and 2018, the Board and the borrowers maintained the right to terminate all securities lending transactions on demand. The cash collateral was invested, together with the collateral of other qualified tax-exempt plan lenders, in a collective investment pool maintained by JPMorgan. The relationship between the maturities of the collateral pool and the Group Trust's securities lent has not been determined. The fair value for securities on loan for the Group Trust was $38.6 million at December 31, 2019 and 2018. Cash collateral held for the Group Trust was $13 million and $20.6 million at December 31, 2019 and 2018, respectively. Non-cash collateral held for the Group Trust was $26.6 million and $19 million at December 31, 2019 and 2018, respectively, consisting primarily of corporate bonds and equity securities. At year-end, credit risk is substantially mitigated as the amounts of collateral held by the Group Trust exceed the amounts the borrowers owe the Group Trust. Securities lending transactions resulted in income, net of expenses, of $114 thousand and $112 thousand during 2019 and 2018, respectively.

Forward Contracts

During fiscal years 2019 and 2018, certain investment managers, on behalf of the Group Trust, entered into forward foreign exchange contracts as permitted by guidelines established by the Board. DPFP's staff monitors guidelines and compliance. A currency forward is a contractual agreement between two parties to pay or receive specific amounts of foreign currency at a future date in exchange for another currency at an agreed upon exchange rate. Forward commitments are not standardized and carry credit risk due to possible nonperformance by one of the counterparties. The maximum potential loss is the aggregate face value in US dollars at the time the contract was entered into. Forwards are usually traded over-the-counter. These transactions are initiated in order to hedge risks from exposure to foreign currency rate fluctuation and to facilitate trade settlement of foreign security transactions. Forwards carry market risk resulting from adverse fluctuations in foreign exchange rates. Recognition of realized gain or loss depends on whether the currency exchange rate has moved favorably or unfavorably to the contract holder upon termination of the contract. Prior to termination of the contract, the Group Trust records the unrealized currency translation gain or loss based on the applicable forward exchange rates. Forward currency contracts are considered derivative financial instruments and are reported at fair value.

The fair value and notional amounts of derivative instruments outstanding at December 31, 2019 and 2018, classified by type, and the changes in fair value of such derivative instruments for the year then ended are as follows (in thousands):

December 31, 2019	Change in Fair Value	Fair Value	Notional Value
Currency forwards	$ 923	$ 652	$ 105,365

December 31, 2018	Change in Fair Value	Fair Value	Notional Value
Currency forwards	$ (406)	$ (271)	$ 66,729

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4. Fair Value Measurement

GASB Statement No. 72 requires all investments be categorized under a fair value hierarchy. Fair value of investments is determined based on both observable and unobservable inputs. Investments are categorized within the fair value hierarchy established by GASB and the levels within the hierarchy are as follows:

- Level 1 – quoted prices (unadjusted) for identical assets or liabilities in active markets that a government can access at the measurement date

- Level 2 – inputs (other than quoted prices included within Level 1) that are observable for an asset or liability, either directly or indirectly. These inputs can include quoted prices for similar assets or liabilities in active or inactive markets, or market-corroborated inputs.

- Level 3 – significant unobservable inputs for an asset or liability

The remaining investments not categorized under the fair value hierarchy are shown at NAV. These are investments in non-governmental entities for which a readily determinable fair value is not available, such as member units or an ownership interest in partners' capital, to which a proportionate share of net assets is attributed. Investments at NAV are commonly calculated by subtracting the fair value of liabilities from the fair value of assets.

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The following table presents a summary of the Group Trust's investments by type as of December 31, 2019, at fair value (in thousands):

	Fair Value December 31, 2019	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Investments by Fair Value Level				
Short-term investment funds	$ 25,311	$ 25,311	$ -	$ -
Fixed income securities				
US Treasury bonds	118,853	-	118,853	-
US government agencies	12,870	-	12,870	-
Corporate bonds	278,775	-	278,775	-
Foreign-denominated bonds	28,846	-	28,846	-
Municipal bonds	4,655	-	4,655	-
Equity securities				
Domestic	279,709	279,709	-	-
Foreign	275,522	275,522	-	-
Real assets				
Real estate(1)	254,812	-	-	254,812
Timberland	8,771	-	-	8,771
Farmland	92,235	-	-	92,235
Private equity	92,064	-	-	92,064
Forward currency contracts	652	-	652	-
Total Investments by Fair Value Level	$ 1,473,075	$ 580,542	$ 444,651	$ 447,882

Investments Measured at NAV

Fixed income - commingled funds	**$** 111,385
Real assets(1)	211,369
Private equity	175,523
Total Investments Measured at NAV	**$** 498,277
Total Investments Measured at Fair Value	$ 1,971,352

(1) Direct holdings of real estate at Level 3 include only the assets which are wholly-owned and valued using significant unobservable inputs. Remaining real estate investments are valued at NAV.

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The following table presents a summary of the Group Trust's investments by type as of December 31, 2018, at fair value (in thousands):

	Fair Value December 31, 2018	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Investments by Fair Value Level				
Short-term investment funds	$ 41,317	$ 41,317	$ -	$ -
Fixed income securities				
US Treasury bonds	95,236	-	95,236	-
US government agencies	8,747	-	8,747	-
Corporate bonds	231,111	-	231,111	-
Foreign-denominated bonds	36,359	-	36,359	-
Municipal bonds	2,857	-	2,857	-
Equity securities				
Domestic	265,626	265,626	-	-
Foreign	170,309	170,309	-	-
Real assets				
Real estate(1)	293,428	-	-	293,428
Timberland	8,722	-	-	8,722
Farmland	133,222	-	-	133,222
Private equity	91,585	-	-	91,585
Forward currency contracts	(271)	-	(271)	-
Total Investments by Fair Value Level	$ 1,378,248	$ 477,252	$ 374,039	$ 526,957
Investments Measured at NAV				
Fixed income - commingled funds	$ 141,465			
Real assets(1)	266,033			
Private equity	221,290			
Total Investments Measured at NAV	$ 628,788			
Total Investments Measured at Fair Value	$ 2,007,036			

(1) Direct holdings of real estate at Level 3 include only the assets which are wholly-owned and valued using significant unobservable inputs. Remaining real estate investments are valued at NAV.

Short-term investments consist of highly liquid securities invested by third party investment managers and held directly by the Group Trust with the custodian.

Fixed income securities consist primarily of US treasury securities, US corporate securities, international debt securities and commingled funds. Fixed income securities classified in Level 2 of the fair value hierarchy are valued using matrix pricing. This method uses quoted prices for securities with the same maturities and ratings rather than a fixed price for a designated security. Many debt securities are traded on a dealer market and much less frequently, which is consistent with a Level 2 classification as these investments are valued using observable inputs. Forward currency contracts are classified as Level 2 as these securities are priced using the cost approach on a dealer market traded on lower frequencies. Commingled funds classified as Level 3 involve internal evaluation of collectability and therefore involve unobservable inputs.

Equity securities, which include both domestic and foreign securities, are classified as Level 1 as fair value is obtained using a quoted price from active markets. The security price is generated by market transactions involving identical or similar assets, which is the market approach to measuring

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fair value. Inputs are observable in exchange markets, dealer markets, and brokered markets for which prices are based on trades of identical securities.

Real assets classified as Level 3 are investments in which DPFP either owns 100 percent of the asset or for which the valuation is based on non-binding offers from potential buyers to purchase the investments. Real asset investments, which are wholly-owned direct holdings, are valued at the income, cost, or market approach depending on the type of holding. All direct holdings are valued using unobservable inputs and are classified in Level 3 of the fair value hierarchy. Private equity investments classified as Level 3 are investments valued by an independent appraiser. Private equity and real assets valued at NAV are based on per share (or its equivalent) of DPFP's ownership interest in the partners' capital valued by the managers and based on third party appraisals, valuations and audited financials.

The following table presents a summary of the fair value and remaining unfunded commitments of the Group Trust's investments measured at NAV at December 31, 2019 (in thousands):

Asset Category/Class	Fair Value	Unfunded Commitments
Fixed income – commingled funds	$ 111,385	$ 640
Real assets	211,369	10,020
Private equity	175,523	3,996
Total	$ 498,277	$ 14,656

The following table presents a summary of the fair value and remaining unfunded commitments of the Group Trust's investments measured at NAV at December 31, 2018 (in thousands):

Asset Category/Class	Fair Value	Unfunded Commitments
Fixed income – commingled funds	$ 141,465	$ 1,445
Real assets	266,033	10,158
Private equity	221,290	5,541
Total	$ 628,788	$ 17,144

Investments measured at NAV include commingled funds, real assets and private equity.

Fixed income commingled funds are fund-structure investments reported by the fund managers at NAV. Certain of the commingled investments have a redemption notice period of 7-30 days and others are less liquid, with estimated redemption periods ranging from 5 to 10 years as assets within the funds are liquidated.

Real asset investments (real estate, infrastructure, timberland and farmland) are held in separate accounts, as a limited partner, or in a joint venture. These investments are illiquid and resold at varying rates, with distributions received over the life of the investments. They are typically not redeemed, nor do they have set redemption schedules.

Private equity holdings include fund-structure investments with general partners. By their nature, these investments are illiquid and typically not resold or redeemed. Distributions from each fund

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will be received as the underlying investments of the funds are liquidated. It is expected that the underlying assets of the funds will be liquidated over a period ranging from 5 to 15 years on average.

Upon initial investment with a general partner or in certain fund-structures, DPFP commits to a certain funding level for the duration of the contract. At will, the partners or fund managers may request that DPFP fund a portion of this amount. Such amounts remaining as of December 31, 2019 and 2018 for investments measured at NAV are disclosed above as unfunded commitments.

5. Net Pension Liability

The net pension liability is measured as the total pension liability, less the amount of the plan's fiduciary net position. The components of the net pension liability at December 31, 2019 and 2018 are as follows (in thousands):

Combined Pension Plan

	2019	2018
Total pension liability	$ 4,731,960	$ 4,501,670
Less: Plan fiduciary net position	(2,057,857)	(2,041,914)
Net pension liability	$ 2,674,103	$ 2,459,756

Plan fiduciary net position as a percentage of the total pension liability at December 31, 2019 and 2018 is 43.5% and 45.4%, respectively.

Supplemental Plan

	2019	2018
Total pension liability	$ 35,839	$ 31,831
Less: Plan fiduciary net position	(17,307)	(18,318)
Net pension liability	$ 18,532	$ 13,513

Plan fiduciary net position as a percentage of the total pension liability at December 31, 2019 and 2018 is 48.3% and 57.6%, respective.

Actuarial Assumptions as of December 31, 2019

The total pension liability was determined by an actuarial valuation as of January 1, 2020, using the below significant assumptions, applied to all periods included in the measurement, except as noted below. The 2019 assumptions are based on an actuarial experience review covering the period January 1, 2015 to December 31, 2019.

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Investment rate of return	7.00% per annum, compounded annually, net of investment expenses. This rate is based on an average inflation rate of 2.50% and a real rate of return of 4.50%. Market value asset returns are expected to be -6.00% in 2020, 5.25% in 2021, 5.75% in 2022, 6.25% in 2023 and 7.00% annually thereafter.
Discount rate	7.00%, used to measure the total pension liability
Administrative expenses	Explicit assumption of $8.5 million per year or 1% of Computation Pay, whichever is greater for the Combined Pension Plan and $65 thousand per year for the Supplemental Plan, increasing 2.50% annually. Includes investment-related personnel costs.
Projected salary increases	Range of 2.5% to 3.25% based on the City's pay plan, along with analysis completed in conjunction with an Experience Study Report for the five-year period ended December 31, 2019 and the 2019 Meet and Confer Agreement.
Payroll growth	2.50% per year, to match inflation assumption
Actuarial cost method	Entry age normal cost method (level percent of pay)
Post-retirement benefit increases	Ad hoc COLA after the Combined Plan is 70% funded after accounting for the impact of the COLA. 2% of original benefit, beginning October 1, 2063.
Actuarial Value of Assets	Combined Pension Plan – Reset of the actuarial value of assets to market value as of December 31, 2015, with a five-year smoothing in future periods; Supplemental Pension Plan – Market value of assets

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Amortization Methodology	Combined Pension Plan – Closed 25 years. Beginning January 1, 2021, each year's gains and losses will be amortized over a closed 20-year period. Supplemental Pension Plan – Closed 20 years. Beginning January 1, 2021, each year's gains and losses will be amortized over a closed 10-year period.
DROP interest, compounded annually, net of expenses	2.75% on active balances as of September 1, 2017, payable upon retirement, 0% on balances accrued after September 1, 2017.
Retirement age	Experience-based table of rates based on age, extending to age 65, with separate tables for police officers and firefighters.
Pre-retirement mortality	Pub-2010 Public Safety Employee Amount-Weighted Mortality Tables, set forward for males; projected generationally using the Scale MP-2019.
Post-retirement mortality	Pub-2010 Public Safety Retiree Amount-Weighted Mortality Table, with a one-year setback for females; projected generationally using Scale MP-2019.
Disabled mortality	Pub-2010 Public Safety Disabled Retiree Amount-Weighted Mortality Table, with a four-year set forward for both males and females; projected generationally using Scale MP-2019.
DROP election	The DROP Utilization factor is 0% for new entrants.

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Notes to Combining Financial Statements

Actuarial Assumptions as of December 31, 2018

The 2018 assumptions were based on an actuarial experience review covering January 1, 2010 to December 31, 2014. In addition, assumptions related to Plan changes which were effective September 1, 2017, as a result of the passage of HB 3158.

Investment rate of return	7.25% per annum, compounded annually, net of investment expenses. This rate is based on an average inflation rate of 2.75% and a real rate of return of 4.50%. Market value asset returns are expected to be 5.25% in 2019, 5.75% in 2020, 6.25% in 2021, 6.75% in 2022 and 7.25% annually thereafter.
Discount rate	7.25%, used to measure the total pension liability
Administrative expenses	Explicit assumption of $8.5 million per year or 1% of Computation Pay, whichever is greater for the Combined Pension Plan and $65 thousand per year for the Supplemental Plan, increasing 2.75% annually. Includes investment-related personnel costs.
Projected salary increases	2017: 10% if less than 10 years; 7% if 10-11 years; 2% if more than 11 years 2018: 5% if less than 10 years; 2% if more than 10 years 2019: 10% if less than 10 years; 7% if 10-11 years; 2% if more than 11 years 2020 and later: Range of 2% to 5% per year, inclusive of 2.75% inflation assumption, dependent upon years of service. 2017-2019 are based on the 2016 Meet and Confer Agreement. 2020 is based on the 2016 Meet and Confer Agreement, as amended in 2018. Remaining scale is based on the City's pay plan, along with analysis completed in conjunction with the most recent experience study.
Payroll growth	2.75% per year, to match inflation assumption
Actuarial cost method	Entry age normal cost method (level percent of pay)

Dallas Police and Fire Pension System

Notes to Combining Financial Statements

Post-retirement benefit increases	Ad hoc COLA after the Combined Plan is 70% funded after accounting for the impact of the COLA. 2% of original benefit, beginning October 1, 2050.
Actuarial Value of Assets	Combined Pension Plan – Reset of the actuarial value of assets to market value as of December 31, 2015, with a five-year smoothing in future periods; Supplemental Pension Plan – Market value of assets
Amortization Methodology	Combined Pension Plan - 30 years; Supplemental Pension Plan – 10 years
DROP interest, compounded annually, net of expenses	3% on active balances as of September 1, 2017, payable upon retirement, 0% on balances accrued after September 1, 2017.
Retirement age	Experience-based table of rates based on age, extending to age 62, with separate tables for police officers and firefighters.
Pre-retirement mortality	RP-2014 sex-distinct Employee Mortality Table, with a two-year setback for males and no adjustments for females; projected generationally using the MP-2015 improvement scale.
Post-retirement mortality	RP-2014 sex-distinct Blue Collar Healthy Annuitant Mortality Table, with no adjustment for males and a two-year set forward for females; projected generationally using the MP-2015 improvement scale.
Disabled mortality	RP-2014 sex-distinct Disabled Retiree Mortality Table, with a three-year setback for both males and females; projected generationally using the MP-2015 improvement scale.
DROP election	The DROP Utilization factor is 0% for new entrants.

Dallas Police and Fire Pension System

The long-term expected rate of return used by the external actuary to evaluate the assumed return on the Plans' investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. The actuary's best estimates of arithmetic real rates of return for each major asset class included in the Plans' target asset allocation as of December 31, 2019 are summarized as shown below. The rates of return below are net of the inflation component of 2.50%.

Asset Class	Long-Term Expected Real Rate of Return	Target Asset Allocation
Global Equity	5.29%	40%
Emerging Markets Equity	6.47%	10%
Private Equity	8.19%	5%
Cash	0.62%	3%
Short-Term Investment Grade Bonds	0.71%	12%
Investment Grade Bonds	1.00%	4%
High Yield Bonds	3.18%	4%
Bank Loans	2.85%	4%
Global Bonds	0.97%	4%
Emerging Market Debt	3.58%	4%
Real Estate	3.85%	5%
Natural Resources	5.54%	5%

Discount rate

The discount rate used to measure the Combined Pension Plan liability was 7.00%. The projection of cash flows used to determine the discount rate assumed City contributions will be made in accordance with the provisions of the Governing Statute, including statutory minimums through 2024 and 34.50% of Computation Pay thereafter. Members are expected to contribute 13.50% of Computation Pay. For cash flow purposes, projected payroll is based on 90% of the City's Hiring Plan payroll projections through 2037, increasing by 2.50% per year thereafter. This payroll projection is used for cash flow purposes only and does not impact the Total Pension Liability. The normal cost rate for future members is assumed to be 13.83% for all years. Based on these assumptions, the System's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

The discount rate used to measure the total pension liability for the Supplemental Plan was 7.00%. The projection of cash flows used to determine the discount rate assumed that City contributions will equal the employer's normal cost plus a twenty-year amortization payment on the unfunded actuarial accrued liability and member contributions will equal 13.50% of supplemental Computation Pay. Based on those assumptions, the Supplemental Plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Dallas Police and Fire Pension System

Notes to Combining Financial Statements

Sensitivity of the net pension liability to changes in the discount rate

The following tables present the net pension liability, calculated using the current discount rate, as well as what the net pension liability would be if it were calculated using a discount rate that is one percentage-point lower or one percentage-point higher than the current rate (in thousands).

December 31, 2019

Combined Pension Plan

	1% Decrease (6.00%)	Current Discount Rate (7.00%)	1% Increase (8.00%)
Net pension liability	$ 3,212,526	$ 2,674,103	$ 2,224,767

Supplemental Plan

	1% Decrease (6.00%)	Current Discount Rate (7.00%)	1% Increase (8.00%)
Net pension liability	$ 21,763	$ 18,532	$ 15,763

December 31, 2018

Combined Pension Plan

	1% Decrease (6.25%)	Current Discount Rate (7.25%)	1% Increase (8.25%)
Net pension liability	$ 2,953,141	$ 2,459,756	$ 2,046,452

Supplemental Plan

	1% Decrease (6.25%)	Current Discount Rate (7.25%)	1% Increase (8.25%)
Net pension liability	$ 16,363	$ 13,513	$ 11,069

6. Deferred Retirement Option Plan

Deferred Retirement Option Plan (DROP) interest for active DROP members was eliminated after September 1, 2017; only the balance as of September 1, 2017 is eligible for interest once active DROP members retire. Active DROP participation is limited to 10 years. Retirees are not allowed to defer payments into their DROP accounts. Retirees and other DROP account holders, excluding active DROP members, had their DROP balance converted to an annuity (stream of payments) on

Dallas Police and Fire Pension System

Notes to Combining Financial Statements

November 30, 2017. The term of the annuity was based on the DROP account holders expected lifetime at November 30, 2017. The annuity included interest on balances accrued prior to September 1, 2017 at a rate that is correlated to the United States Treasury Note or Bond rates based on the term of the annuity and rules adopted by the Board.

DROP account balances of a member that retires after November 30, 2017 are converted to an annuity (stream of payments) at the time the member retires. The annuity is based on the member's life expectancy and interest rates at the time of retirement. Interest on retiree DROP accounts is based on the length of the retiree's expected lifetime and will be based on U.S. Treasury Bond Rates and rules adopted by the Board. Interest is only payable on the September 1, 2017 account balance.

HB 3158 allowed active members an opportunity to revoke their DROP election prior to February 28, 2018 under rules adopted by the Board. 183 members revoked their prior DROP participation election.

Prior to the passage of HB 3158, DROP accounts earned interest based on the 2014 plan amendments, which instituted a gradual step-down in the interest rate paid on DROP accounts. The interest paid on DROP accounts beginning October 1, 2016 until September 1, 2017 was 6%. See Note 9 for discussion of the status of litigation related to the 2014 plan amendments.

The following tables reflect the change in DROP balances and the change in the present value of DROP annuities and the number of participants and annuitants during the year ended December 31, 2019:

Combined Pension Plan

	DROP Balance(000's)			DROP Participants
Balance at December 31, 2018	$	193,931	Participants at December 31, 2018	483
Accumulations		21,167		
Balances Annuitized		(49,885)		
Other Distributions/Deductions		(66)		
Adjustments		(9,804)		
Balance at December 31, 2019	$	155,343	Participants at December 31, 2019	383

	Annuity Balance(000's)			Annuity Participants
Present Value of Annuities at December 31, 2018	$	828,520	Annuitants at December 31, 2018	2,186
Present Values of Annuities at December 31, 2019[1]	$	880,306	Annuitants at December 31, 2019	2,342

Dallas Police and Fire Pension System

Notes to Combining Financial Statements

Supplemental Plan

	DROP Balance(000's)			DROP Participants
Balance at December 31, 2018	$	175	Participants at December 31, 2018	5
Accumulations		16		
Balances Annuitized		(54)		
Other Distributions/Deductions		-		
Adjustments		-		
Balance at December 31, 2019	$	137	Participants at December 31, 2019	3

	Annuity Balance(000's)			Annuity Participants
Present Value of Annuities at December 31, 2018	$	4,296	Annuitants at December 31, 2018	57
Present Value of Annuities at December 31, 2019[1]	$	6,988	Annuitants at December 31, 2019	66

[1] Includes annuities that may be paid out of the Excess Benefits and Trust.

7. Defined Contribution Retirement Plan

DPFP offers its employees a money purchase plan (MPP) created in accordance with Internal Revenue Code Section 401. An employee of DPFP becomes a participant in the MPP on their first day of service. Participation ceases, except for purposes of receiving distributions in accordance with the terms of the MPP, on the day employment with DPFP is terminated. Employees are required to contribute 6.5% of their regular pay. Employees are allowed to make after-tax contributions, not to exceed IRS Code limitations. In accordance with the MPP, DPFP is obligated to contribute 12% of permanent employees' regular rate of pay and 8% of part-time and temporary employees' regular rate of pay each year. During 2019 and 2018, DPFP contributed approximately $312 thousand and $275 thousand, respectively, and participants contributed approximately $169 thousand and $149 thousand, respectively, to the MPP. The MPP is administered by a third party, Voya Financial, Inc. (Voya), and the cost of administration is borne by the MPP participants. The MPP is held in trust by Voya and is not a component of the accompanying financial statements.

8. Capital Assets

The DPFP office building and land are recorded at acquisition value. Purchased capital assets which include building improvements, are recorded at historical cost. Depreciation is charged over the estimated useful lives of the assets using a straight-line method. Depreciation expense of $233 thousand and $226 thousand, respectively, is included in professional and administrative expenses in the accompanying financial statements for the years ended December 31, 2019 and 2018. All capital assets belong to DPFP. Maintenance and repairs are charged to expense as incurred.

Dallas Police and Fire Pension System

Notes to Combining Financial Statements

Capitalization thresholds for all capital asset classes and useful lives for exhaustible assets are as follows (in thousands):

Asset Class		Capitalization Threshold	Depreciable Life
Building	$	50	50 years
Building improvements	$	50	15 years
Information Technology Hardware	$	50	5 years

Capital asset balances and changes for the fiscal years ending December 31, 2019 and 2018 are as follows (in thousands):

Asset Class	Balance December 31, 2017	Increases	Decreases	Balance December 31, 2018	Increases	Decreases	Balance December 31, 2019
Land	$ 3,562	$ -	$ -	$ 3,562	$ -	$ -	$ 3,562
Building	8,921	-	190	8,731	-	190	8,541
Building improvements	232	-	36	196	-	36	160
IT Hardware	-	-	-	-	73	7	66
Total	$ 12,715	$	$ 226	$ 12,489	$ 73	$ 233	$ 12,329

9. Commitments and Contingencies

Members

As described in Note 1, certain members of the Plans whose employment with the City is terminated prior to being eligible for pension benefits are entitled to refunds of their accumulated contributions without interest, if they have less than five years of pension service. As of December 31, 2019, and 2018, aggregate contributions from active non-vested members for the Combined Pension Plan were $19.4 million and $20.3 million, respectively. The portion of these contributions that might be refunded to members who terminate prior to pension eligibility and request a refund has not been determined. Refunds due to terminated non-vested members in the amount of $1.3 million and $1.0 million for December 31, 2019 and 2018, respectively, were included in accounts payable and other accrued liabilities of the Combined Pension Plan. As of December 31, 2019, and 2018, the aggregate contributions from active non-vested members of the Supplemental Plan were $2 thousand and $38 thousand. No members are eligible for refunds from the Supplemental Plan as of December 31, 2019.

At December 31, 2019 the total accumulated DROP balance and the present value of the DROP annuities was $1.04 billion for the Combined Plan and $7.1 million for the Supplemental Plan. The total accumulated DROP balance at December 31, 2018 was $1.01 billion for the Combined Plan and $4.5 million for the Supplemental Plan.

Dallas Police and Fire Pension System

Notes to Combining Financial Statements

Investments

The following table depicts the total commitments and unfunded commitments to various limited partnerships and investment advisors at December 31, 2019, by asset class (in thousands).

Asset Class		Total Commitment		Total Unfunded Commitment
Real assets	$	117,000	$	10,020
Private equity		126,283		3,996
Fixed income – commingled funds		10,000		640
Total	$	253,283	$	14,656

Capital calls related to private equity and real assets were received after December 31, 2019, which reduced the unfunded commitments to $3.8 and $9.7 million, respectively. See Note 11.

Legal

DPFP was a defendant in litigation in which certain individual members have alleged that 2014 plan amendments to the Combined Pension Plan reducing the DROP interest rate and a related policy and procedure change to accelerate DROP distributions violated Article 16, Section 66 of the Texas Constitution. On April 14, 2015, the district court entered judgment for DPFP, holding these amendments and changes are constitutional. As a result of this court decision, the Board voted on April 16, 2015 to implement the changes approved by the members. Plaintiffs appealed and on December 13, 2016, the Fifth District Court of Appeals rendered a decision affirming the district court's ruling. On January 24, 2017, plaintiffs filed a petition for review with the Texas Supreme Court. On March 8, 2019, the Texas Supreme Court upheld the decisions by the lower courts and on June 14, 2019 denied the plaintiff's motion for rehearing thereby ending the case.

In 2017, a group of retirees filed a lawsuit in federal court which seeks to require the Board to distribute lump sum payments from DROP upon the retirees' request. On March 14, 2018, the district court granted DPFP's motion to dismiss the case. The plaintiffs appealed this decision to the Fifth Circuit and requested the Fifth Circuit certify certain issues relating to the case to the Texas Supreme Court. On March 20, 2019, the Fifth Circuit certified two questions to the Texas Supreme Court. In January 2020, the Supreme Court answered these questions and in April 2020 the Fifth Circuit subsequently upheld the decision of the district court. In August 2020, the plaintiffs filed a writ of certiorari to the United States Supreme Court which was denied thereby ending the case.

In February 2019, certain plaintiffs filed suit against the Texas Pension Review Board and its Chairman in state district court in Travis County alleging that changes to the provisions of the DPFP Plans relating to the benefit supplement and annual adjustment were violative of the Texas Constitution. The case is in its early stages. While DPFP is not a party to the lawsuit, a judgment for the plaintiffs would have a material effect upon DPFP and its financial statement and condition. The ultimate outcome of this lawsuit cannot be determined at this time and, accordingly, no amounts related to these claims have been recorded in the accompanying financial statements as of December 31, 2019.

10. Risks and Uncertainties

The Group Trust invests in various investment securities. Investment securities are exposed to various risks such as interest rate, market, and credit risks. The effect of such risks on the Group

Trust's investment portfolio is mitigated by the diversification of its holdings. Due to the level of risk associated with certain investment securities, it is reasonably possible that changes in the value of investment securities may occur over the course of different economic and market cycles and that such change could be material to the financial statements.

The Plans' actuarial estimates disclosed in Note 5 are based on certain assumptions pertaining to investment rate of return, inflation rates, and participant demographics, all of which are subject to change. Due to uncertainties inherent in the estimations and assumptions process, it is reasonably possible that changes in these estimates and assumptions in the near term could be material to the financial statements.

Several lawsuits were pending against the City by police officers and firefighters, which claim the right to significant back pay on behalf of many current and former City of Dallas police officers and firefighters. DPFP previously intervened in such lawsuits to protect DPFP's right to Member and City contributions if they were to become due upon a successful outcome of the police officers' and firefighters' claims. HB 3158, passed by the Texas Legislature in 2017, provided that any award of back pay arising out of litigation would not be included in Computation Pay, thereby eliminating any liability of DPFP for increased benefits regardless of the outcome of these suits. Additionally, a settlement agreement was signed by all parties in September 2018, which eliminates any liability for DPFP. Accordingly, no amounts related to these claims have been recorded in the accompanying financial statements as of December 31, 2019 and 2018.

11. Subsequent Events

Investment Policy Statement Amendments

In July 2020, the Board approved modifying the Investment Policy Statement (IPS) to include language referencing the objective of covering 2.5 years of expected net cash flows in the Safety Reserve.

Real Asset and Private Equity Sales

Subsequent to year end and prior to the issuance date of the financials, there were 3 sales of Real Estate properties that totaled $16.8 million in proceeds to DPFP and one Private Equity distribution of $1.2 million.

Capital Calls Resulting in the Reduction of Unfunded Commitments

Subsequent to December 31, 2019, DPFP received and paid the following material capital calls: Real Assets - $353 thousand and Private Equity - $230 thousand.

Voluntary Correction Program (VCP) Closing Agreement

In 2018, the system filed an application to participate in the Voluntary Correction Program (VCP) of the Internal Revenue Service (IRS). The issues were related to DROP distributions and the Excess Benefit Plan. In 2020, a closing agreement with the IRS was completed and no additional action is expected on this issue.

Dallas Police and Fire Pension System

Notes to Combining Financial Statements

COVID-19

The recent outbreak of coronavirus ("COVID-19"), which the World Health Organization has declared to constitute a pandemic, has impacted the global commercial activity and contributed to significant volatility in certain equity and debt markets. The general uncertainty surrounding the dangers and impact of COVID-19 are having a particularly adverse impact on transportation, hospitality, tourism, entertainment, and other industries. This has led to significant volatility and it is uncertain how long this volatility will continue. The potential impacts, including a global, regional, or other economic recession, are increasingly uncertain and difficult to assess. While governments and central banks have reacted with monetary interventions designed to stabilize economic conditions, the duration and extent of the impact of the COVID-19 outbreak, as well as the effectiveness of government and central bank responses, remains unclear at this time. The resulting financial and economic market uncertainty could have a significant adverse impact on the System, including the fair value of its investments.

Securities Lending Program

In August 2020, the Board approved the suspension of the Securities Lending Program.

Legal

In January 2020, in the retiree DROP lump sum case, the Supreme Court answered the two certified questions sent to it by the Fifth Circuit and in April 2020 the Fifth Circuit subsequently upheld the decision of the district court. In August 2020, the plaintiffs filed a writ of certiorari to the United States Supreme Court which was denied thereby ending the case.

Management has evaluated subsequent events through December 10, 2020, which is the date that the financial statements were available for issuance and noted no subsequent events to be disclosed other than those which are disclosed in this Note or elsewhere in the Notes to Combining Financial Statements.

Dallas Police and Fire Pension System

Required Supplementary Information (Unaudited)

Schedule of Changes in the Net Pension Liability and Related Ratios
For Last Six Fiscal Years
(in thousands)

Combined Pension Plan

For fiscal year ending December 31,	2019	2018	2017	2016	2015	2014
Total pension liability						
Service cost	$ 49,155	$ 44,792	$ 148,552	$ 167,432	$ 125,441	$ 131,312
Interest	318,703	318,536	348,171	360,567	359,023	369,408
Changes of benefit terms	-	16,091	(1,167,597)	-	-	(329,794)
Differences between expected and actual experience	16,723	(46,555)	(134,665)	(77,463)	379,461	(4,453)
Changes of assumptions	155,569	(31,460)	(2,851,241)	(712,003)	908,988	-
Benefit payments, including refunds of employee contributions	(309,860)	(297,081)	(296,154)	(825,092)	(285,003)	(245,932)
Net change in total pension liability	230,290	4,323	(3,952,934)	(1,086,559)	1,487,910	(79,459)
Total pension liability - beginning	4,501,670	4,497,347	8,450,281	9,536,840	8,048,930	8,128,389
Total pension liability - ending (a)	$4,731,960	$ 4,501,670	$ 4,497,347	$ 8,450,281	$9,536,840	$ 8,048,930
Plan fiduciary net position						
Employer contributions	$ 155,721	$ 149,357	$ 126,318	$ 119,345	$ 114,886	$ 109,792
Employee contributions	52,268	49,332	32,977	25,518	25,676	29,333
Net investment income (loss), net of expenses	124,260	42,822	98,911	164,791	(235,207)	(138,893)
Benefits payments	(309,861)	(297,081)	(296,154)	(825,092)	(285,003)	(245,932)
Interest expense	-	-	(1,279)	(4,532)	(8,417)	(7,361)
Administrative expenses	(6,445)	(5,861)	(8,090)	(9,492)	(6,006)	(8,003)
Net change in plan fiduciary net position	15,943	(61,431)	(47,317)	(529,462)	(394,071)	(261,064)
Plan fiduciary net position – beginning	2,041,914	2,103,345	2,150,662	2,680,124	3,074,195	3,335,259
Plan fiduciary net position – ending (b)	$2,057,857	$ 2,041,914	$ 2,103,345	$ 2,150,662	$2,680,124	$ 3,074,195
Net pension liability - ending (a) – (b)	$2,674,103	$ 2,459,756	$ 2,394,002	$ 6,299,619	$6,856,716	$ 4,974,735
Plan fiduciary net position as a percentage of total pension liability	43.5%	45.4%	46.8%	25.5%	28.1%	38.2%
Covered payroll	$ 396,955	$ 363,117	$ 346,037	$ 357,414	$ 365,210	$ 383,006
Net pension liability as a percentage of covered payroll	673.7%	677.4%	691.8%	1,762.6%	1,877.5%	1,298.9%

Schedule is intended to show information for 10 years. Additional years will be presented when they become available.

See Notes below related to this schedule.

Dallas Police and Fire Pension System

Required Supplementary Information (Unaudited)

Supplemental Pension Plan

For fiscal year ending December 31,	2019	2018	2017	2016	2015	2014
Total pension liability						
Service cost	$ 212	$ 222	$ 111	$ 70	$ 36	$ 28
Interest	2,223	2,359	2,799	2,911	2,953	2,969
Changes of benefit terms	-	888	(5,305)	-	-	(526)
Differences between expected and actual experience	3,007	(2,628)	(1,435)	1,105	928	336
Changes of assumptions	1,332	28	(479)	(916)	(600)	-
Benefit payments, including refunds of employee contributions	(2,766)	(2,708)	(2,668)	(5,912)	(2,640)	(3,414)
Net change in total pension liability	4,008	(1,839)	(6,977)	(2,742)	677	(607)
Total pension liability - beginning	31,831	33,670	40,647	43,389	42,712	43,319
Total pension liability - ending (a)	$ 35,839	$ 31,831	$ 33,670	$ 40,647	$ 43,389	$ 42,712
Plan fiduciary net position						
Employer contributions	$ 1,530	$ 1,979	$ 2,077	$ 3,064	$ 2,443	$ 1,817
Employee contributions	111	74	66	35	43	49
Net investment income (loss), net of expenses	169	1,220	740	1,141	(1,689)	(517)
Benefit payments	(2,766)	(2,708)	(2,668)	(5,912)	(2,640)	(3,414)
Interest expense	-	-	(11)	(78)	(44)	(51)
Administrative expenses	(55)	(52)	(69)	(37)	(61)	(56)
Net change in plan fiduciary net position	(1,011)	513	135	(1,787)	(1,948)	(2,172)
Plan fiduciary net position - beginning	18,318	17,805	17,670	19,457	21,405	23,577
Plan fiduciary net position - ending (b)	$ 17,307	$ 18,318	$ 17,805	$ 17,670	$ 19,457	$ 21,405
Net pension liability - ending (a) - (b)	$ 18,532	$ 13,513	$ 15,865	$ 22,978	$ 23,932	$ 21,307
Plan fiduciary net position as a percentage of total pension liability	48.3%	57.6%	52.9%	43.5%	44.8%	50.1%
Covered payroll	$ 584	$ 622	$ 916	$ 525	$ 725	$ 557
Net pension liability as a percentage of covered payroll	3,172.8%	2,173.8%	1,731.6%	4,376.2%	3,303.3%	3,827.3%

Schedule is intended to show information for 10 years. Additional years will be presented when they become available.

See Notes below related to this schedule.

Notes to Schedules:

<u>Changes of benefit terms:</u>

As of December 31, 2019 and 2018 - None

Dallas Police and Fire Pension System

Required Supplementary Information (Unaudited)

As of December 31, 2017

HB 3158 was signed by the Governor on May 31, 2017, the significant benefit and contribution changes in the bill were effective September 1, 2017.

- Normal Retirement Age increased from either age 50 or 55 to age 58
- For members less than the age of 45 on September 1, 2017, hired prior to March 1, 2011, and less than 20 years of pension service, the Early Retirement Age increased from age 45 to age 53
- Vesting for members hired after February 28, 2011 was reduced from ten years to five years of service
- Benefit multiplier for all future service for members hired prior to March 1, 2011 was lowered from 3.00% to 2.50%
- Benefit multiplier retroactively increased to 2.50% for members hired on or after March 1, 2011
- Benefit multipliers for 20 and Out benefit lowered
- Members hired after February 28, 2011 are eligible for an early retirement benefit after 20-years of service
- Maximum benefit reduced from 96% of Computation Pay to 90% of Computation Pay for members hired prior to March 1, 2011
- Average Computation Pay period changed from 36 months to 60 months for future service for members hired prior to March 1, 2011
- Annual Adjustment (COLA) discontinued for all members. The Board may choose to provide a COLA if the funded ratio on a market value basis is at least 70% after the implementation of a COLA.
- The supplemental benefit is eliminated prospectively; only those for whom the supplement was already granted as of September 1, 2017 will maintain the supplement
- Active DROP participation is limited to 10 years
- DROP interest for active DROP members was eliminated after September 1, 2017; only the balance as of September 1, 2017 will be eligible for interest once active DROP members retire
- Retirees with DROP accounts as of September 1, 2017 will have their DROP account balances paid out over their expected lifetime based on their age as of September 1, 2017
- Future retirees with DROP accounts will have their DROP account balances paid out over their expected lifetime as of the date of their retirement
- Interest on retiree DROP accounts as of August 31, 2017 will be paid based on the length of the retiree's expected lifetime and will be based on U.S. Treasury rates which correlate to expected lifetime, as determined by the Board of Trustees
- Member contributions for both DROP and non-DROP members increased to 13.5% effective September 1, 2017
- The City's contribution rate will increase to 34.5% of Computation Pay. Between September 1, 2017 and December 31, 2024, the City's contribution will be the greater of (i) 34.5% and (ii) a biweekly contribution floor amount as stated in HB 3158, plus $13 million per year.

As of December 31, 2016 and 2015 - None

Dallas Police and Fire Pension System

Required Supplementary Information (Unaudited)

As of December 31, 2014

The Board approved a plan amendment implementing changes to DROP interest rates on April 16, 2015. Such changes were reflected in the valuation of the net pension liability as of December 31, 2015 and 2014.

Changes of methods and assumptions:

The following assumption changes were adopted by the Board for use in the January 1, 2020 actuarial valuation. Some of the assumption changes were related to the actuarial experience study completed for the five-year period ending December 31, 2019. For further information regarding the changes to actuarial assumptions, refer to the January 1, 2020 Dallas Police and Fire Pension System actuarial valuation reports for the Combined Pension Plan and the Supplemental Plan.

As of December 31, 2019

- The net investment return assumption was lowered from 7.25% to 7.0%.
- The salary scale assumption was updated based on the 2019 Meet and Confer agreement, with a new ultimate rate of 2.50%.
- The payroll growth assumption was lowered from 2.75% to 2.50%.
- The mortality rates were updated to the Pub-2010 Public Safety Amount-weighted Mortality Tables, with varying adjustments by status and sex, projected generationally with Scale MP-2019.
- The withdrawal rates were updated and the ultimate 0% rate was moved up from 38 to 25 years of service.
- The DROP retirement rates were increased at most ages and the ultimate 100% retirement was updated from the earlier of 67 years or 8 years in DROP to the earlier of age 65 or 10 years in DROP.
- The non-DROP retirement rates were lowered at most ages and simplified from three sets to two sets of rates.
- The retirement assumption for inactive vested participants was updated to include an assumption that 75% of those who terminate with a vested benefit prior to age 40 will take a cash out at age 40.
- The DROP annuitization interest rate for account balances as of September 1, 2017 was lowered from 3.0% to 2.75%.
- The ad-hoc COLA assumption was updated to begin October 1, 2063. Last year, the COLA was assumed to begin October 1, 2050.
- The system's expectations for near-term market returns were lowered to -6.0% for 2020, +5.25% for 2021, +5.75% for 2022 and +6.25% for 2023. For valuation purposes, these return

Dallas Police and Fire Pension System

Required Supplementary Information (Unaudited)

assumptions are used for determining the projected full-funding date and the projected COLA start date.

As of December 31, 2018

- The salary scale assumption was updated to reflect the 2016 Meet and Confer Agreement, as amended in 2018.

- The ad-hoc COLA assumption was updated to begin October 1, 2050 based on the updated projection of the unfunded actuarial accrued liability; last year, the COLA was assumed to begin October 1, 2053.

As of December 31, 2017

The discount rate used to measure the total pension liability changed from a blended discount rate of 4.12% to the assumed rate of return of 7.25% for the Combined Pension Plan and from blended discount rate of 7.10% to the assumed rate of return of 7.25% for the Supplemental Plan.

As a result of the passage of HB 3158, the following assumptions were changed:

- The DROP utilization factor was changed from 100% to 0%
- Current DROP members with at least eight years in DROP as of January 1, 2017 are assumed to retire in 2018. Current DROP members with less than eight years in DROP as of January 1, 2017 are assumed to retire once they have been in the DROP for eight years.
- Retirement rates were changed effective January 1, 2018
- 100% retirement rate once the projected sum of age plus service equals 90
- New terminated vested members are assumed to retire at age 58
- DROP account balances annuitized as of September 1, 2017 are assumed to earn 2.75% interest; DROP account balances as of September 1, 2017 for active members are assumed to earn 3.00% interest upon retirement; DROP account balances accrued after September 1, 2017 for active members do not earn interest
- DROP payment period based on an 85%/15% male/female blend of the current healthy annuitant mortality tables
- COLA assumed to be a 2.00% COLA beginning October 1, 2053 and payable every October 1st thereafter.
- The administrative expense assumption was changed from the greater of $10 million per year or 1% of Computation Pay to the greater of $8.5 million per year or 1% of Computation Pay for the Combined Plan and changed from $60 thousand to $65 thousand for the Supplemental Plan

As of December 31, 2016

- The blended discount rate used to measure the total pension liability changed from 3.95% to 4.12% for the Combined Pension Plan and from 7.19% to 7.10% for the Supplemental Plan.

- The remaining amortization period was adjusted from 40 years to 30 years for the Combined Pension Plan based on Section 802.101(a) of the Texas Government Code.

- The salary scale was modified for valuation years 2017-2019 in accordance with the Meet and Confer Agreement. DROP interest is assumed to decline from 6.00% to 5.00% effective

Dallas Police and Fire Pension System

Required Supplementary Information (Unaudited)

October 1, 2017 and to 0.00% effective October 1, 2018, per Section 6.14(c) of the plan document as amended and restated through April 16, 2015.

As of December 31, 2015

The blended discount rate used to measure the total pension liability changed from 4.94% to 3.95% for the Combined Pension Plan and from 7.13% to 7.19% for the Supplemental Plan.

As a result of the actuarial experience study completed for the five-year period ending December 31, 2014, the following changes in assumptions were adopted by the Board. For further information regarding the changes to actuarial assumptions, refer to the January 1, 2016 Dallas Police and Fire Pension System actuarial valuation reports for the Combined Pension Plan and the Supplemental Plan.

- Salary scales were updated with separate service-based salary assumptions for police officers and firefighters, lowering the range of increase to 3.00% to 5.20% from the previous assumed range of 4.00% to 9.64%.
- The payroll growth rate assumption was lowered from 4.00% to 2.75% to equal the assumed inflation rate.
- In the prior valuation, the investment return assumption was net of both investment and administrative expenses. In the December 31, 2015 valuation, an explicit assumption for administrative expenses was added to the normal cost. Assumptions of $10 million and $60 thousand per year were utilized for the Combined Pension Plan and Supplemental Plan, respectively.
- In the prior valuation for the Combined Pension Plan, an asset valuation method using a 10-year smoothing period was applied. In the December 31, 2015 valuation, the actuarial value of assets was reset to market value as of the measurement date. A five-year smoothing period will be used in future periods.
- The remaining amortization period was adjusted from 30 years to 40 years for the Combined Pension Plan based on Section 802.101(a) of the Texas Government Code.
- Mortality tables were updated from the RP-2000 tables to the RP-2014 tables
- Assumed rates of turnover were lowered for police officers and raised for firefighters to reflect recent experience.
- Retirement rates were lowered for both police officers and firefighters, with the separation of service-based assumptions implemented based on recent experience.
- Disability rates were lowered for both police officers and firefighters and service-based assumptions were eliminated based on the similarity of recent experience between the two services.
- The assumption of the portion of active employees who are married was lowered from 80% to 75% and the age of the youngest child was raised from 1 to 10.

As of December 31, 2014

The assumption for the future interest rates credited to DROP balances was changed from 8.5% to the following rates prescribed by the 2014 plan amendment:

- At October 1, 2014 – 8.0%;
- At October 1, 2015 – 7.0%;
- At October 1, 2016 – 6.0%; and
- At October 1, 2017 and thereafter – 5.0%

Dallas Police and Fire Pension System

Required Supplementary Information (Unaudited)

Schedule of Employer Contributions – Combined Pension Plan (in thousands)

Measurement Year Ending December 31,	Actuarially Determined Contribution	Actual Contribution	Contribution Deficiency (Excess)	Covered Payroll	Actual Contribution as a % of Covered Payroll
2019	$ 152,084	$ 155,721	$ (3,637)	$ 363,117	42.9%
2018	157,100	149,357	7,743	346,037	43.2%
2017	168,865	126,318	42,547	357,414	35.3%
2016	261,859	119,345	142,514	365,210	32.7%

Schedule is intended to show information for 10 years. Additional years will be presented as they become available.

Prior to January 1, 2016, the actuarial determined contribution for the Combined Plan was not determined by the actuary.

The City's contribution rate for the Combined Pension Plan is set by State statutes. The difference between the actuarial determined contribution and the City contribution set by State statutes results in the contribution excess or deficiency.

Notes to Schedules:

The following methods and assumptions were used to calculate the actuarial determined contribution:

As of December 31, 2019

Actuarial cost method	Entry age normal cost method
Amortization method	30-year level percent of pay, using 2.75% annual increases
Remaining amortization period	38 years as of January 1, 2019
Asset valuation method	Market value of assets less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between the actual market return and the expected return on the market value, and is recognized over a five-year period, further adjusted, if necessary, to be within 20% of the market value.
Investment rate return	7.25% per annum, compounded annually, net of all expense, including administrative expenses. This rate is based on an average inflation rate of 2.75% and a real rate of return of 4.50%.
Inflation rate	2.75%
Projected salary increases	Inflation plus merit increases, varying by group and service,

Dallas Police and Fire Pension System

Required Supplementary Information (Unaudited)

Post-retirement benefit	COLA assumed to be a 2.00% COLA beginning October 1, 2050 and Increases payable every October 1 thereafter
Retirement age	Experienced-based table of rates, based on age
Mortality	Pre-retirement: Sex-distinct RP-2014 Employee Mortality Table, set back two years for males, projected generationally using Scale MP-2015
	Post-retirement: Sex-distinct RP-2014 Healthy Annuitant Mortality Table, set forward two years for females, projected generationally using Scale MP-2015
	Disabled: Sex-distinct RP-2014 Disabled Retiree Mortality Table, set back three years for males and females, projected generationally using Scale MP-2015
DROP balance returns	DROP account balances as of September 1, 2017 for active members are based on the United States Department of Commerce Daily Treasury Yield Curve Rates for durations between 5 and 30 years; interest rate is based on the expected lifetime of the members at the time they retire. Interest is only paid on DROP account balances as of September 1, 2017.
DROP election	The DROP utilization factor is 0% for new entrants.

As of December 31, 2018

Actuarial cost method	Entry age normal cost method
Amortization method	30-year level percent of pay
Remaining amortization period	45 years as of January 1, 2018
Asset valuation method	Reset of the actuarial value of assets to market value as of December 31, 2015, with a five-year smoothing in future periods
Investment rate return	7.25% per annum, compounded annually, net of all expense, including administrative expenses. This rate is based on an average inflation rate of 2.75% and a real rate of return of 4.50%.
Inflation rate	2.75%
Projected salary increases	Inflation plus merit increases, varying by group and service, ranging from 0.00% to 2.25%
Post-retirement benefit	COLA assumed to be a 2.00% COLA beginning October 1, 2053 and Increases payable every October 1 thereafter
Retirement age	Experienced-based table of rates, based on age

Dallas Police and Fire Pension System

Required Supplementary Information (Unaudited)

Mortality	Pre-retirement: Sex-distinct RP-2014 Employee Mortality Table, set back two years for males, projected generationally using Scale MP-2015 Post-retirement: Sex-distinct RP-2014 Blue Collar Healthy Annuitant Mortality Table, set forward two years for females, projected generationally using Scale MP-2015 Disabled: Sex-distinct RP-2014 Disabled Retiree Mortality Table, set back three years for males and females, projected generationally using Scale MP-2015
DROP balance returns	DROP account balances as of September 1, 2017 for active members are based on the United States Department of Commerce Daily Treasury Yield Curve Rates for durations between 5 and 30 years; interest rate is based on the expected lifetime of the members at the time they retire. Interest is only paid on DROP account balances as of September 1, 2017.
DROP election	The DROP utilization factor is 0% for new entrants.

As of December 31, 2017 that differed from above

Projected salary increases	Inflation plus merit increases, varying by group and service, ranging from 0.25% to 2.45%
Post-retirement benefit increases	COLA assumed to be a 2.00% COLA beginning October 1, 2049 and payable every October 1 thereafter
DROP balance returns	6% per year until September 1, 2017. Beginning September 1, 2017, DROP account balances for annuitants are assumed to earn 2.75% interest; DROP account balances as of September 1, 2017 for active members are assumed to earn 2.75% interest upon retirement; DROP account balances accrued after September 1, 2017 for active members do not earn interest.
DROP election	The DROP utilization factor is 0% for new entrants. Current DROP members with at least eight years in the DROP as of January 1, 2017 are assumed to retire in 2018. Current DROP members with less than eight years in DROP as of January 1, 2017 are assumed to retire once they have been in the DROP for eight years.

As of December 31, 2016 that differed from above

Post-retirement benefit increases	4.00% simple COLA, October 1st
DROP balance returns	At October 1, 2015 – 7.0% At October 1, 2016 – 6.0% At October 1, 2017 and thereafter – 5.0%

Dallas Police and Fire Pension System

Required Supplementary Information (Unaudited)

DROP election	Age 50 with 5 years of service. Any active member who satisfies these criteria and have not entered DROP are assumed never to join DROP. Active members who retire with a DROP account are assumed to receive the balance of their account over a 10-year time period.

Dallas Police and Fire Pension System

Required Supplementary Information (Unaudited)

Schedule of Employer Contributions – Supplemental Plan (in thousands)

Measurement Year Ending December 31,	Actuarially Determined Contribution	Actual Contribution	Contribution Deficiency	Covered Payroll	Actual Contribution as a % of Covered Payroll
2019	$ 1,881	$ 1,530	$ 351	$ 622	246.2%
2018	2,274	1,979	295	916	216.0%
2017	2,087	2,077	10	525	395.6%
2016	3,063	3,063	-	725	422.9%
2015	2,443	2,443	-	557	438.8%
2014	1,817	1,817	-	521	348.5%

Schedule is intended to show information for 10 years. Additional years will be presented as they become available.

The City is required by ordinance to contribute amounts necessary to ensure the payment of benefits in the Supplemental Plan. The City's contributions shall be made in accordance with actuarial requirements established by the actuary and the board. Actuarially determined contributions are calculated as of January 1 in the fiscal year in which the contribution is reported. The deficiency shown on the table is due to Supplemental Plan contributions paid directly to the Excess Benefit Plan in compliance with Internal Revenue Code Section 415.

Notes to Schedules:

The following methods and assumptions were used to calculate the actuarial determined contribution for the Supplemental Plan:

As of December 31, 2019

Actuarial cost method	Entry age normal cost method
Amortization method	10-year level percent of pay
Remaining amortization period	10 years
Asset valuation method	Market value of assets
Investment rate return	7.25% per annum, compounded annually, net of all expense, including administrative expenses. This rate is based on an average inflation rate of 2.75% and a real rate of return of 4.50%.
Inflation rate	2.75%
Projected salary increases	Inflation plus merit increases, varying by group and service

Dallas Police and Fire Pension System

Required Supplementary Information (Unaudited)

Post-retirement benefit increases	COLA assumed to be a 2.00% COLA beginning October 1, 2050 and payable every October 1 thereafter
Retirement age	Experienced-based table of rates, based on age
Mortality	Pre-retirement: Sex-distinct RP-2014 Employee Mortality Table, set back two years for males, projected generationally using Scale MP-2015
	Post-retirement: Sex-distinct RP-2014 Healthy Annuitant Mortality Table, set forward two years for females, projected generationally using Scale MP-2015
	Disabled: Sex-distinct RP-2014 Disabled Retiree Mortality Table, set back three years for males and females, projected generationally using Scale MP-2015
DROP balance returns	DROP account balances as of September 1, 2017 for active members are based on the United States Department of Commerce Daily Treasury Yield Curve Rates for durations between 5 and 30 years; interest rate is based on the expected lifetime of the members at the time they retire. Interest is only paid on DROP account balances as of September 1, 2017.
DROP election	The DROP utilization factor is 0% for new entrants.

As of December 31, 2018

Actuarial cost method	Entry age normal cost method
Amortization method	10-year level percent of pay
Remaining amortization period	10 years
Asset valuation method	Market value of assets
Investment rate return	7.25% per annum, compounded annually, net of all expense, including administrative expenses. This rate is based on an average inflation rate of 2.75% and a real rate of return of 4.50%.
Inflation rate	2.75%
Projected salary increases	Inflation plus merit increases, varying by group and service, ranging from 0.00% to 2.25%
Post-retirement benefit increases	COLA assumed to be a 2.00% COLA beginning October 1, 2053 and payable every October 1 thereafter
Retirement age	Experienced-based table of rates, based on age

Dallas Police and Fire Pension System

Required Supplementary Information (Unaudited)

Mortality	Pre-retirement: Sex-distinct RP-2014 Employee Mortality Table, set back two years for males, projected generationally using Scale MP-2015
	Post-retirement: Sex-distinct RP-2014 Blue Collar Healthy Annuitant Mortality Table, set forward two years for females, projected generationally using Scale MP-2015
	Disabled: Sex-distinct RP-2014 Disabled Retiree Mortality Table, set back three years for males and females, projected generationally using Scale MP-2015
DROP balance returns	DROP account balances as of September 1, 2017 for active members are based on the United States Department of Commerce Daily Treasury Yield Curve Rates for durations between 5 and 30 years; interest rate is based on the expected lifetime of the members at the time they retire. Interest is only paid on DROP account balances as of September 1, 2017.
DROP election	The DROP utilization factor is 0% for new entrants.

As of December 31, 2017 that differed from above

Projected salary increases	Inflation plus merit increases, varying by group and service, ranging from 0.25% to 2.45%
Post-retirement benefit increases	COLA assumed to be a 2.00% COLA beginning October 1, 2049 and payable every October 1 thereafter
DROP balance returns	6% per year until September 1, 2017. Beginning September 1, 2017, DROP account balances for annuitants are assumed to earn 2.75% interest; DROP account balances as of September 1, 2017 for active members are assumed to earn 2.75% interest upon retirement; DROP account balances accrued after September 1, 2017 for active members do not earn interest.
DROP election	The DROP utilization factor is 0% for new entrants. Current DROP members with at least eight years in the DROP as of January 1, 2017 are assumed to retire in 2018. Current DROP members with less than eight years in DROP as of January 1, 2017 are assumed to retire once they have been in the DROP for eight years.

As of December 31, 2016 that differed from above

Post-retirement benefit increases	4.00% simple COLA, October 1st
DROP balance returns	At October 1, 2015 – 7.0% At October 1, 2016 – 6.0% At October 1, 2017 and thereafter – 5.0%

Dallas Police and Fire Pension System

Required Supplementary Information (Unaudited)

DROP election	Age 50 with 5 years of service. Any active member who satisfies these criteria and have not entered DROP are assumed never to join DROP. Active members who retire with a DROP account are assumed to receive the balance of their account over a 10-year time period.

As of December 31, 2015 and 2014 that differed from above

Projected salary increases	Range of 4.00% - 9.64%
Mortality	RP-2000 Combined Healthy Mortality Table projected to 10 years beyond the valuation date using Scale AA for healthy retirees and active members

Dallas Police and Fire Pension System

Required Supplementary Information (Unaudited)

Schedule of Investment Returns

Fiscal Year Ended December 31,	Annual Money-weighted Rate of Return, net of Investment Expense
2019	11.51%
2018	(1.49%)
2017	5.07%
2016	3.09%
2015	(12.70%)
2014	3.98%

Notes to Schedule:

The annual money-weighted rate of return is calculated as the internal rate of return on pension plan investments, net of pension plan investment expense, and expresses investment performance adjusted for the changing amounts actually invested. Pension plan investment expense consists of manager fees. The return is calculated using a methodology which incorporates a one quarter lag for market value adjustments on private equity, debt, and real assets investments.

Schedule is intended to show information for 10 years. Additional years will be presented as they become available.

Dallas Police and Fire Pension System

Supplementary Information

Administrative, Investment, and Professional Services Expenses

Year Ended December 31, 2019

Administrative expenses:		
Information technology	$	369,085
Education		29,435
Insurance		515,938
Personnel		3,411,700
Office equipment		101,476
Dues and subscriptions		120,702
Board meetings		5,008
Office supplies		25,157
Utilities		65,080
Postage		19,916
Printing		2,125
Election		10,968
Facilities		634,348
Other		7,038
Total administrative expenses	$	5,317,976
Investment expenses:		
Investment management	$	6,377,841
Custodial		221,559
Investment level valuations and audits		664,880
Consulting and reporting		328,542
Legal		355,358
Tail-end advisory		190,281
Tax		6,588
Other		4,426
Total investment expenses	$	8,149,475
Professional services expenses:		
Consulting	$	23,986
Actuarial		174,920
Auditing		152,500
Accounting		61,719
Medical review		1,905
Legal		598,774
Mortality records		4,050
Legislative		157,116
Other		6,903
Total professional services expenses	$	1,181,873

Notes to Schedule:

Supplementary information on investment expenses does not include investment management fees and performance fees embedded in the structure of private equity and other limited partnership investments. Rather, these fees are a component of the net appreciation (depreciation) in fair value of investments in the accompanying Statements of Changes in Fiduciary Net Position. In addition, management fees paid directly by DPFP are included net of rebates received.

The members of the Board of Trustees serve without compensation; they are reimbursed for actual expenses incurred.

See accompanying independent auditor's report.

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C3

Topic: **2019 Comprehensive Annual Financial Report**

Discussion: Staff will present a draft of the 2019 Comprehensive Annual Financial Report.

The report is scheduled to be completed following final approval by the Executive Director, as well as BDO. Upon completion, the report will be posted to the DPFP website and provided to the Pension Review Board and the City of Dallas.

Staff Recommendation: **Authorize** the Executive Director to issue the 2019 Comprehensive Annual Financial Report upon finalization.

DRAFT

FINAL REVIEW AND FORMATTING TO BE COMPLETED

DALLAS
POLICE & FIRE
PENSION SYSTEM

COMPREHENSIVE ANNUAL FINANCIAL REPORT

for the Years Ended December 31, 2019 and 2018

An Independently Governed Component Unit of the City of Dallas, Texas

Protecting the Future

Serving those who protect the Dallas community

DALLAS POLICE & FIRE PENSION SYSTEM

An independently governed component unit of the City of Dallas, Texas

4100 Harry Hines Blvd, Suite 100, Dallas, Texas 75219
Phone: 214.638.3863|800.638.3861 **Fax:** 214.638.6403 **Website:** www.dpfp.org **Email:** info@dpfp.org

Comprehensive Annual Financial Report for the fiscal years ended December 31, 2019 and 2018

Kelly Gottschalk, *Executive Director*

Prepared through the combined efforts of the Dallas Police & Fire Pension System staff.

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Introduction

DALLAS POLICE & FIRE PENSION SYSTEM

Transmittal Letter


Government Finance Officers Association

Certificate of Achievement for Excellence in Financial Reporting

Presented to

Dallas Police & Fire Pension System

Texas

For its Comprehensive Annual Financial Report for the Fiscal Year Ended

December 31, 2018

Christopher P. Morrill

Executive Director/CEO

December 10, 2020

Board of Trustees
Dallas Police and Fire Pension System
4100 Harry Hines Blvd., Suite 100
Dallas, TX 75219

Dear Trustees and Members:

I am pleased to present the Comprehensive Annual Financial Report (CAFR) of the Dallas Police and Fire Pension System (DPFP), including the Combined Pension Plan and the Supplemental Police and Fire Pension Plan of the City of Dallas (Supplemental Plan), collectively referred to as the Plans, for the fiscal year ended December 31, 2019.

Management is responsible for establishing a system of internal controls to safeguard assets. The cost of a control should not exceed the benefits to be derived, the objective of the system of internal controls is to provide reasonable, rather than absolute, assurance that the financial statements are free of any material misstatements. BDO USA, LLP (BDO) audited the accompanying basic financial statements and related disclosures. The financial statement audit provides reasonable assurance that DPFP's financial statements are presented in conformity with accounting principles generally accepted in the United States of America and are free from material misstatement.

The financial statements include a narrative introduction, overview, and analysis to accompany the basic financial statements in the form of Management's Discussion and Analysis (MD&A). This letter of transmittal is designed to complement MD&A and should be read in conjunction with it. MD&A can be found immediately following the independent auditor's reports in the Financial section.

Profile of DPFP

DPFP is an independently governed component unit of the City of Dallas (City) and serves to provide retirement, death and disability benefits to police officers and firefighters employed by the City. DPFP is a single employer contributory defined benefit plan. The general terms "police officers" and "firefighters" also include fire and rescue operators, fire alarm operators, fire inspectors, apprentice police officers, and apprentice firefighters. A retirement plan for Dallas police officers and firefighters was first created in 1916 by City of Dallas ordinance. In 1933, the 43rd Legislature enacted 6243a, Vernon's Texas Civil Service Statutes, establishing DPFP. The Plan was restated and continued in 1989 by an Act of the 71st Legislature under Article 6243a-1. Article 6243a- 1 was significantly amended by House Bill 3158 (HB 3158 or the bill) which was passed unanimously by the 85th Legislature and was signed into law by Governor Abbott on May 31, 2017. This plan is referred to as the Combined Pension Plan. At December 31, 2019, there were 10,402 members and beneficiaries in the Combined Pension Plan.

The Supplemental Plan was created by City ordinance in 1973. The intent of the Supplemental Plan is to provide additional retirement benefits to those members holding a rank higher than the highest corresponding civil service rank as provided in the Combined Pension Plan. At December 31, 2019, there were 182 members and beneficiaries in the Supplemental Plan.

The assets of the Combined Pension Plan and the Supplemental Plan are co-invested through a Group Master Trust. Administrative and professional expenses of DPFP are allocated to each plan on a pro-rata share based on the assets of each plan.

Major Initiatives and Significant Events

Changes to the investment program and efforts to liquidate private assets were a major initiative in 2019. See additional discussion under Investment Program and Illiquid Real Estate and Private Asset Portfolio in this letter.

Continued focus on funding status, litigation management, Board member changes and policy reviews were areas that required specific attention in 2019 continuing into 2020.

Additional information is included in MD&A and the notes to the financial statements in the Financial section, as well as the Investment and Actuarial section of this report.

Funding Status

An Experience Study was conducted by Segal (Actuary) for the period January 1, 2015 to December 31, 2019, based on this study and the recommendations of Segal, the Board modified many of the economic and demographic assumptions used in preparing the January 1, 2020 actuarial valuation. The Board also lowered the assumed rate of return to 7.00% from 7.25%. In the short-term the estimated investment returns were lowered from the prior ramp-up assumptions. The use of lower rates of return in the short-term reflects the time and challenge of transitioning legacy illiquid assets to the asset allocation policy. The return assumption for 2020 was revised from a positive 5.75% to a negative 6.00% due to the impacts of the COVID-19 pandemic that were known or estimated at the time the actuarial valuation was prepared in 2020. The modification of the 2020 return estimate was the major reason for the extension of years-to-fund the Combined Plan from 38 to 55 years in the new valuation.

The Board revised the Funding Policy for both Plans to meet the requirements of the Texas Pension Review Board (PRB). Even though the Combined Plan contribution rates are set by State Statute, the PRB requires a closed amortization period of the unfunded liability. To meet this requirement, the amortization period in the Funding Policy was modified from a 30-year open period to a closed 25-year period with future gains and losses amortized over 20-year closed periods. This change does not impact the contributions rates to the Combined Plan. The amortization period for the Supplemental Plan was changed from a 10-year open period to a 20-year closed period with future gains and losses amortized over 10-year closed periods. The City was involved with the amendments to the Funding Policy and has agreed to fund the Supplemental Plan based on the Actuarial Determined Contribution plus any amounts paid out of the Excess Plan and Trust, as determined by the Actuary, that relate to the Supplemental Plan benefits.

The unfunded actuarial accrued liability of the Combined Pension Plan as of January 1, 2020 was $2.6 billion, an increase of approximately $231 million from the previous year. The January 1, 2020 funding ratio based on the actuarial value of assets for the Combined Pension Plan was 45.7% and the funding period was 55 years. A decrease in the funded ratio is expected for many years even if all assumptions are met. As has been described in detail in the prior year Comprehensive Annual Financial Reports and the MD&A of this report, the Combined Pension Plan experienced a funding crisis beginning in 2015. At the lowest point the Combined Plan was projected to be insolvent in seven years. HB 3158 created a path to 100% funding. The legislation increased contributions and lowered benefits for all active and retired members and their beneficiaries. The changes reduced the unfunded liability by over $1 billion or 32%. The funding level of 45.7% and 55 years to full funding is not ideal but is a significant change from the insolvency projection prior to the adoption of the legislation. As was known when the legislation was passed, the funding level of the Combined Plan will be fragile for many years.

The legislation was based on payroll projections that were prepared by the City of Dallas. The projections, referred to as the Hiring Plan, had total computation pay at $372 million in 2017 increasing to $684 million in 2037, an average annual growth rate of 3.1%. Through 2024 there is a minimum floor on City contribution levels, therefore the risk of underachieving contribution revenue only relates to the employee contributions through 2024. Beginning in 2025, when the City is expected to contribute based solely on computation pay, differences between actual computation pay and the City's Hiring Plan could have a significant impact on the funding level of the Plan. The actuarial valuation is based on the City's Hiring Plan projections. The pensionable payroll increased in 2019 due to additional hiring and salary adjustments. The City's computation pay met or exceeded the Hiring Plan estimates each month beginning in May 2019.

Due to the low and declining funding level projections, the Board of Trustees is closely monitoring the City's computation pay and other critical assumptions. HB 3158 added a requirement that mandates the Board adopt changes if the Combined Plan does not meet the Texas Pension Review Board funding guidelines in 2024. Potential changes include increases to City contribution rates, increases to member contribution rates or benefit decreases. At this time the Board believes it's certain that additional changes will be required. The member contributions are approximately equal to the normal cost of their benefit; therefore, the most appropriate option is additional funding from the City. The Board also believes that it is prudent to explore options, including pension obligation bonds, for additional City funding as soon as possible and not wait until 2024.

The changes resulting from HB 3158 also apply to the Supplemental Plan. The January 1, 2020 actuarial funding ratio for the Supplemental Plan was 48.3% and the unfunded liability was $18.5 million. The City's contribution to the Supplemental Plan was based on a ten-year open period less payments to the Excess Benefits Plan and Trust in 2019 and will be on a twenty-year closed amortization period plus payments to the Excess Benefits Plan and Trust as discussed above in 2020. The City's contribution to the Supplemental Plan decreased by 23.6% or $449 thousand in 2019 due to the change in membership and change in payments made out of the Excess Benefits Plan and Trust. The small size of the Supplemental Plan makes it more volatile to changes.

Additional information on the funding status, actuarial assumptions, asset values and DROP withdrawals can be found in MD&A, notes to the combining financial statements, Required Supplementary Information, and the Actuarial and Investment sections.

2019 Financial Results

The Plans' net position increased by $15 million in 2019 primarily the result of the increase in investment earning and contributions. However, the majority of the increase in income was offset by benefit payments. Of note is that member contributions for 2019 were 105% ($26.8 million) higher than 2016, while City contributions increased by 28.5% ($34.8 million) comparing 2019 to 2016. 2016 was the last full year of contributions under the rates prior to HB 3158.

The rate of return on investments during 2019 was 11.6% net of fees, compared to a rate of return of -1.5% and 5.1% for 2018 and 2017, respectively. The rate of return is provided by Meketa Investment Group, DPFP's investment consultant for the year ended December 31, 2019. The rate of return calculations were prepared using methodology consistent with standard industry practice and cannot be recalculated from the information provided herein.

Additional information on financial results is provided in the MD&A, Financial and Investment sections. The Investment Consultant's Report in the Investment section provides additional economic information and the rate of return for 2019.

Investment Program

The investment program saw significant changes in 2018, continuing into 2019. In April 2018, the Board hired Meketa Investment Group as its new general investment consultant. In July 2018, DPFP hired its new Chief Investment Officer, Kent Custer. After establishing a new long-term asset allocation, implementation plan, and Investment Policy Statement (IPS) in 2018, DPFP took steps towards the new long-term targets by reducing private asset exposure and building out parts of the public markets asset allocation in 2019. Due to the high current level of exposure to illiquid private assets, there is considerable variance between the current allocation and the new targets in several asset classes. In general, the implementation plan prioritizes allocating to target in the Safety Reserve and lower risk fixed income asset classes before reallocating to public equities. Key challenges for the investment portfolio continued to be an overallocation to private assets and the high level of cash outflows required for benefit payments.

Over the course of the year, the size of the investment portfolio increased by approximately $15 million to $2.06 billion in investment assets. Benefit payment cash outflows offset much of the investment gains. The portfolio returned 11.6% net of fees which is worse performance than many portfolios in 2019 due to the underweight to the equity market. The overweight to private assets is an ongoing challenge to achieving the assumed rate of return and returns on par with our peers. It will take several years to reduce the private assets to the levels in the asset allocation and the return on the portfolio is expected to lag during the transition.

The Board formed the Investment Advisory Committee (IAC), appointed members and the IAC began meeting in March 2019. The IAC provides advice to the Board of Trustees to ensure DPFP investments are prudently managed and advises regarding the search and selection process for investment managers.

Additional information regarding the investment program is included in MD&A and the notes to the financial statements in the Financial section, as well as the Investment section of this report.

Illiquid Real Estate and Private Asset Portfolio

DPFP made progress towards reducing an overallocation to private assets in 2019. Distributions from the private asset portfolio were $156 million in 2019, of which $144 million represented return of principal and gain. Capital calls during 2019 were only $2 million. At December 31, 2019, illiquid investments still comprised approximately 41% of the portfolio. The pace of liquidating the legacy assets has slowed in 2020 due to the COVID-19 pandemic.

Additional information regarding the investment program is included in MD&A and the notes to the financial statements in the Financial section, as well as the Investment section of this report.

Litigation

The challenges faced by DPFP involved extensive litigation matters related to DROP withdrawals, plan amendments and other matters. On March 8, 2019 the Texas Supreme Court ruled in favor of DPFP in the Eddington case which challenged a 2014 Plan amendment that prospectively lowered the interest rate paid on DROP accounts. In 2017, a group of retirees filed a lawsuit in federal court which sought to require the Board to distribute lump sum payments from DROP upon the retirees' request. This case ended in favor of DPFP after the plaintiffs filed a writ of certiorari to the United States Supreme Court which was denied thereby ending the case in August 2020. Additional litigation related matters are still pending in the courts.

Additional information on ongoing litigation is available in MD&A and Notes 9 and 11 of the financial statements in the Financial section of this report.

Awards and Acknowledgements

Certificate of Achievement for Excellence in Financial Reporting

The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to DPFP for its Comprehensive Annual Financial Report for the fiscal year ended December 31, 2018. This was the fifth consecutive year that the government has achieved this prestigious award. In order to be awarded a Certificate of Achievement a government must publish an easily readable and efficiently organized comprehensive annual financial report. This report must satisfy both generally accepted accounting principles and applicable legal requirements.

A Certificate of Achievement is valid for a period of one year. We believe that our current comprehensive annual financial report continues to meet the Certificate of Achievement Program's requirements and we are submitting it to GFOA to determine its eligibility for another certificate.

Public Pension Standards Award for Administration

The Public Pension Coordinating Council (PPCC) gave the 2019 Public Pension Standards Award for Administration to DPFP in recognition of meeting professional standards for plan administration as set forth in the Public Pension Standards. We believe we continue to meet the requirements and are applying to the PPCC for consideration again this year.

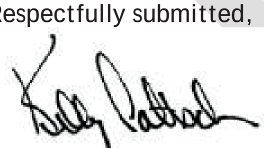
Acknowledgements

The compilation of this report reflects the combined effort of the staff under the leadership of the Board of Trustees. Specifically, I would like to acknowledge Brenda Barnes, Bill Scoggins, Larissa Branford, Milissa Romero, John Holt, Ryan Wagner, Greg Irlbeck and Jon McBrine for their work on the CAFR and the annual financial audit. I would like to express my gratitude to the Trustees, staff, advisors and others who have worked so diligently to assure the successful operation of DPFP.

Risk of Insolvency

At the time the legislature passed HB 3158 and continuing with the most recent actuarial valuation, the actuary reported that, even assuming all assumptions are met, the funding position of the Combined Plan would be at a very low level and fall for more than a decade before it begins to rise. If either 1) all plan assumptions are not met, such as not achieving the assumed rate of return or not meeting Computation Pay projected in the Hiring Plan or 2) assumptions changes in the future are determined by the Board, with the advice of the actuary, to be needed resulting in higher liabilities or lower projected assets, the Plan will be at serious risk for insolvency. Due to the time it takes for members with lower benefits to replace members who have accrued benefits at the higher pre-HB 3158 levels, the 2020 valuation projects the funding level to decline to below 30% and that funding will not begin to increase for 20 years.

Respectfully submitted,



Kelly Gottschalk, Executive Director

Board of Trustees

Article 6243a-1 of the Texas Statutes governs the makeup and responsibilities of the Board. The Board is responsible for the administration of DPFP and investment of the assets of the Combined Pension Plan and Supplemental Police and Fire Pension Plan of the City of Dallas.

The Board consists of eleven Trustees who are selected as follows:

- Six Trustees appointed by the mayor of the City of Dallas, in consultation with the City Council;
- One current or former police officer Trustee, nominated and elected by active members;
- One current or former firefighter Trustee, nominated and elected by active members; and
- Three Trustees (who may not be active members or retirees) elected by the active members and retirees from a slate of nominees vetted by the Nominations Committee. The Nominations Committee consists of representatives from 11 named police and fire associations and the Executive Director of DPFP. The Executive Director serves as the chair of the committee and is a nonvoting member.

To be appointed or elected, a person must have demonstrated financial, accounting, business, investment, budgeting, real estate or actuarial expertise and may not be an elected official or current employee of the City of Dallas, with the exception of a current police officer or firefighter.

The Board serves without compensation and meets not less than once each month. Six Trustees of the Board constitute a quorum at any meeting. Six affirmative votes are required to pass a motion regardless of the number of Trustees in attendance at a meeting. Some actions, specifically identified in Article 6243a-1, require a vote of at least eight Trustees.

Board of Trustees

Trustee Updates
September 2020

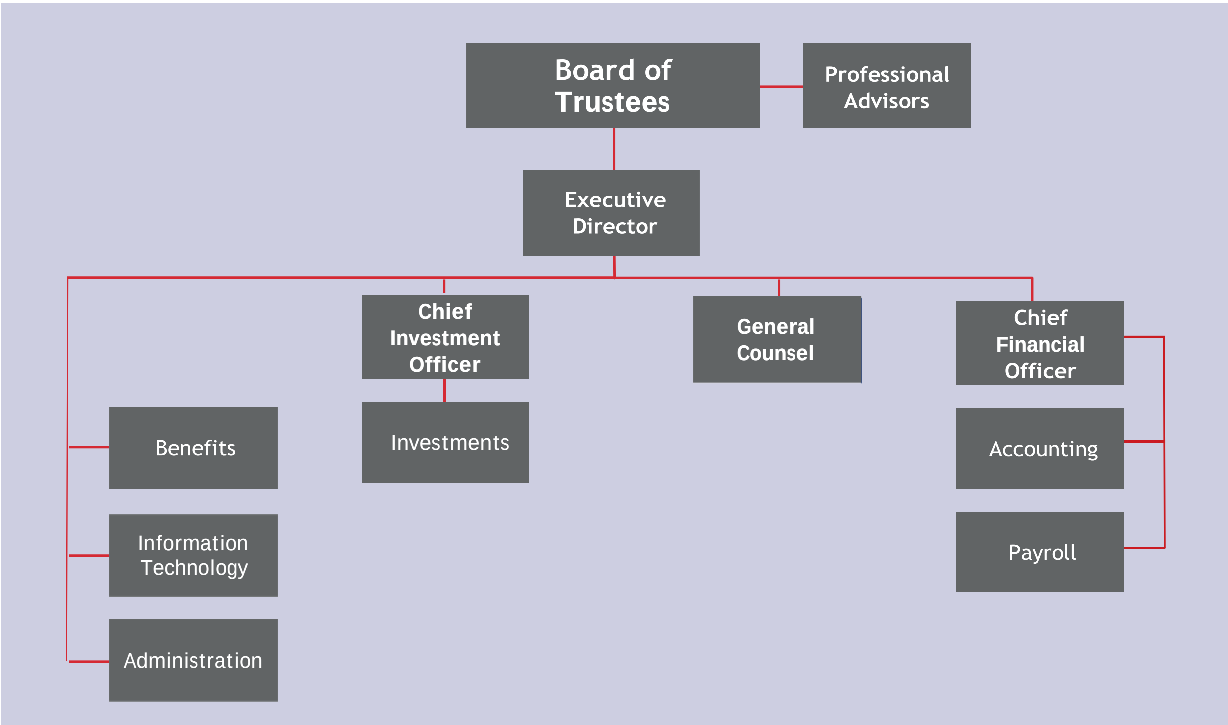
Kenneth S. Haben
Police Officer Trustee
Term Began 9/2020
Term Expires 8/2023

Michael Brown
Mayoral Appointee
Term Began 9/2020
Term Expires 8/2022

The terms of Joseph Schutz and Armando Garza expired on August 31, 2020. Kenneth S. Haben and incumbent Armando Garza, Police Officer and Fire Fighter Trustees, respectively, began serving 3-year terms effective September 1, 2020.

Additionally, the terms of William Quinn, Nicholas Merrick, and Susan Byrne expired on August 31, 2020 and they remained in place until the Mayor of Dallas appointed Michael Brown for a 2-year term, reappointed William Quinn for a 2-year term and reappointed Nicholas Merrick for a 3-year term.

Administrative Organization



Professional Advisors
as of December 31, 2019

Actuary
Segal Consulting

Auditor
BDO USA, LLP

Custodian Bank
JPMorgan Chase Bank, N.A.

Investment Accounting Firm
STP Investment Services, LLC

Investment Consultant
Meketa Investment Group

Investment Managers
(See page 87)

Legislative Consultants
HillCo Partners, LLC

Executive Staff
as of December 31, 2019

Executive Director
Kelly Gottschalk

General Counsel
Joshua Mond

Chief Financial Officer
Brenda Barnes, CPA

Chief Investment Officer
Kent Custer

Note: A schedule of investment management fees is provided in the Investment section of this report at page 84.

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Financial Information

Independent Auditor's Reports

BDO

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Fax: 214-953-0722
www.bdo.com

600 North Pearl, Suite 2000
Dallas, Texas 75201

Independent Auditor's Report

To the Board of Trustees
Dallas Police and Fire Pension System

Report on the Financial Statements

We have audited the accompanying financial statements of the Dallas Police and Fire Pension System (DPFP), including the Combined Pension Plan and the Supplemental Police and Fire Pension Plan of the City of Dallas (Supplemental Plan), collectively referred to as the "Plans", for the fiscal years ended December 31, 2019 and 2018, which comprise the combining statements of fiduciary net position, and the related combining statements of changes in fiduciary net position for the years then ended, and the related notes to the combining financial statements.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the fiduciary net position of DPFP as of December 31, 2019 and 2018, and the changes in fiduciary net position for the years then ended, in accordance with accounting principles generally accepted in the United States of America.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis (MD&A) and the required supplementary information, as listed in the table of contents, be presented to supplement the basic financial statements. Such information although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the MD&A and required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information

Our audits were conducted for the purpose of forming an opinion on the basic financial statements as a whole. The accompanying supplementary schedule of Administrative, Investment and Professional Services Expenses is presented for the purpose of additional analysis and is not a required part of the basic financial statements. Such information is the responsibility of DPFP management and was derived from and related directly to the underlying accounting and other records used to prepare the basic financial statements. The information has been subjected to the auditing procedures applied in the audits of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the information is fairly stated in all material respects in relation to the basic financial statements as a whole.

Other Reporting Required by Government Auditing Standards

In accordance with *Government Auditing Standards*, we have also issued our report dated December 10, 2020 on our consideration of DPFP's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering DPFP's internal control over financial reporting and compliance.

BDO USA, LLP

Dallas, Texas

December 10, 2020

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600 North Pearl, Suite 2000
Dallas, Texas 75201

Independent Auditor's Report on Internal Control Over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance With *Government Auditing Standards*

To the Board of Trustees
Dallas Police and Fire Pension System

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of the Dallas Police and Fire Pension System (DPFP), including the Combined Pension Plan and the Supplemental Police and Fire Pension Plan of the City of Dallas (Supplemental Plan), collectively referred to as the "Plans", for the fiscal years ended December 31, 2019 and 2018, which comprise the combining statements of fiduciary net position, and the related combining statements of changes in fiduciary net position for the years then ended, and the related notes to the combining financial statements, and have issued our report thereon dated December 10, 2020.

Internal Control Over Financial Reporting

In planning and performing our audit of the financial statements, we considered DPFP's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinion on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of DPFP's internal control. Accordingly, we do not express an opinion on the effectiveness of DPFP's internal control.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A material weakness is a deficiency or a combination of deficiencies in internal control, such that there is a reasonable possibility that a material misstatement of DPFP's financial statements will not be prevented, or detected and corrected on a timely basis. A significant deficiency is a deficiency or a combination of deficiencies in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit, we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the Dallas Police and Fire Pension System's financial statements are free of material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, and contracts, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of This Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of DPFP's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering DPFP's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

BDO USA, LLP

Dallas, Texas
December 10, 2020

Management's Discussion and Analysis *(Unaudited)*

Overview

Management's Discussion and Analysis (MD&A) provides an overall review of the financial activities of the Dallas Police and Fire Pension System (DPFP), including the Combined Pension Plan and the Supplemental Police and Fire Pension Plan of the City of Dallas (Supplemental Plan), collectively referred to as the Plans, for the fiscal years ended December 31, 2019 and 2018. This discussion and analysis is intended to serve as an introduction to the financial statements, which reflect the Plans' resources available for payment of benefits and other related expenses. MD&A should be read in conjunction with the combining financial statements, notes to the combining financial statements, required supplementary information, and additional supplementary information provided in this report.

Financial Statements

The combining financial statements consist of the following:

Combining Statements of Fiduciary Net Position which reflect a snapshot of the Plans' financial position and reflect resources available for the payment of benefits and related expenses at year end. The resulting Net Position (Assets – Liabilities = Net Position) represents the value of the assets held in trust for pension benefits net of liabilities owed as of the financial statement date.

Combining Statements of Changes in Fiduciary Net Position which reflect the results of all transactions that occurred during the fiscal year and present the additions to and deductions from the net position. Effectively, these statements present the changes in plan net position during the fiscal year. If change in net position increased, additions were more than deductions. If change in net position decreased, additions were less than deductions.

Notes to Combining Financial Statements which are an integral part of the combining financial statements and include additional information that may be needed to obtain an adequate understanding of the overall financial status of the Plans.

Required Supplementary Information (Unaudited) and additional Supplementary Information provide historical and additional information considered useful in obtaining an overall understanding of the financial positions and activities of the Plans.

Financial Highlights

The combining financial statements are presented solely on the accounts of the Plans. The accrual basis of accounting is utilized, whereby revenues are recognized when they are earned and collection is reasonably assured, and expenses are recognized when the related liability has been incurred. Investments are reported at fair value.

A summary of the Combining Statements of Fiduciary Net Position of the Plans is as follows (in thousands):

DECEMBER 31:	2019	2018	2017
Assets			
Investments, at fair value	$ 1,971,352	$ 2,007,036	$ 1,990,602
Invested securities lending collateral	13,025	20,560	12,153
Receivables	61,038	42,634	34,629
Cash and cash equivalents	89,462	50,138	118,587
Prepaid expenses	402	365	436
Capital assets, net	12,329	12,489	12,715
Total assets	**2,147,878**	**2,133,222**	**2,169,122**
Liabilities			
Securities purchased	54,957	48,598	31,411
Securities lending obligations	13,025	20,560	12,153
Accounts payable and accrued liabilities	4,731	3,832	4,407
Total liabilities	**72,713**	**72,990**	**47,971**
Net position restricted for pension benefits	**$ 2,075,165**	**$ 2,060,232**	**$ 2,121,151**

The assets of the Combined Pension Plan and the Supplemental Plan are co-invested through a Group Master Trust (Group Trust). The rate of return on Group Trust investments during 2019 was 11.51% net of fees, compared to a rate of return of -1.49% for 2018 and 5.07% for 2017. Meketa Investment Group, Inc., DPFP's investment consultant at December 31, 2019, provides the rate of return for 2019 and 2018. NEPC, LLC (NEPC), DPFP's investment consultant at December 31, 2017, provided the rate of return for 2017. The methodology used by the investment consultants to calculate the time-weighted rate of return incorporates a one-quarter lag on market value adjustments for private equity, private debt, and real assets investments. This "lagged with cash flow adjustments" methodology is consistent with standard industry practice and allows for timely reporting to the Board of Trustees (Board). Gains and losses on lagged investments, which occur in the fourth quarter of any year, are recognized in the following year's rate of return.

House Bill 3158 (HB 3158 or the bill) was passed by the Texas legislature during the 85th legislative session. Both the House of Representatives and the Senate passed HB 3158 unanimously and Governor Abbott signed it on May 31, 2017. HB 3158 was effective September 1, 2017 and made significant changes to governance, contributions and benefits, including the structure of the Deferred Retirement Option Plan (DROP). Additional information about HB 3158 is included in Notes 1, 5 and 6 and the Required Supplementary Information accompanying the financial statements.

The Plans' net position increased by $15 million in 2019 due to investment gains and contribution increases exceeding the increase in benefit payments.

The Plans' net position decreased by $61 million in 2018, primarily the result of benefit payments exceeding total contribution payments. The net benefit outflow was partially offset by investment gains.

Securities lending collateral and obligations decreased in 2019 due to a decrease in lending activity. Securities lending collateral and obligations increased in 2018 due to an increase in lending activity resulting from increased lendable assets due to the funding of equity and fixed income mandates in mid-2017 and increased demand for securities due to market volatility in 2018. Changes in receivables are primarily a result of the timing of settlement of pending investment trades, as well as the timing of the last payroll of the year for the City of Dallas as such timing impacts the collection of benefit contributions.

Cash increased significantly in 2019 as cash from the sale of some investments was received at the end of the year. In 2018, cash declined significantly, as cash held during the legislative process in 2017 was deployed during the year.

A summary of the Combining Statements of Changes in Fiduciary Net Position of the Plans is as follows (in thousands):

YEARS ENDED DECEMBER 31:	2019	2018	2017
Additions			
Contributions			
City	$ 157,251	$ 151,336	$ 128,395
Members	52,379	49,406	33,044
Total contributions	**209,630**	**200,742**	**161,439**
Net income from investing activities	123,955	43,452	97,456
Net income from securities lending activities	114	112	101
Other income	360	479	2,094
Total additions	**334,059**	**244,785**	**261,090**
Deductions			
Benefits paid to members	310,008	297,155	295,245
Refunds to members	2,618	2,635	3,578
Interest expense	-	-	1,290
Professional and administrative expenses	6,500	5,914	8,158
Total deductions	**319,126**	**305,704**	**308,271**
Net increase (decrease) in net position	14,933	(60,919)	(47,181)
Net position restricted for pension benefits			
Beginning of period	**2,060,232**	**2,121,151**	**2,168,332**
End of period	$ **2,075,165**	$ **2,060,232**	**$ 2,121,151**

The 2019 Contribution amounts for both members and the City were statutorily defined. Contributions for all active members (including members in DROP) were 13.5% of Computation Pay. Computation Pay is defined as base pay, education incentive pay and longevity pay. City contributions for the Combined Pension Plan were 34.5% of Computation Pay, plus a floor amount to meet the minimum required contribution, plus an additional amount of $13 million in 2019. The floor has been greater than the 34.5% of Computation Pay for all pay periods in 2019. See Note 1 for additional information on City contribution rates.

City contributions to the Plans increased by $5.9 million or 3.9% in 2019 due to an increase in the bi-weekly floor amount. Member contributions of $52.4 million exceeded 2018 contributions by $3 million because of increased salaries and an increase in members.

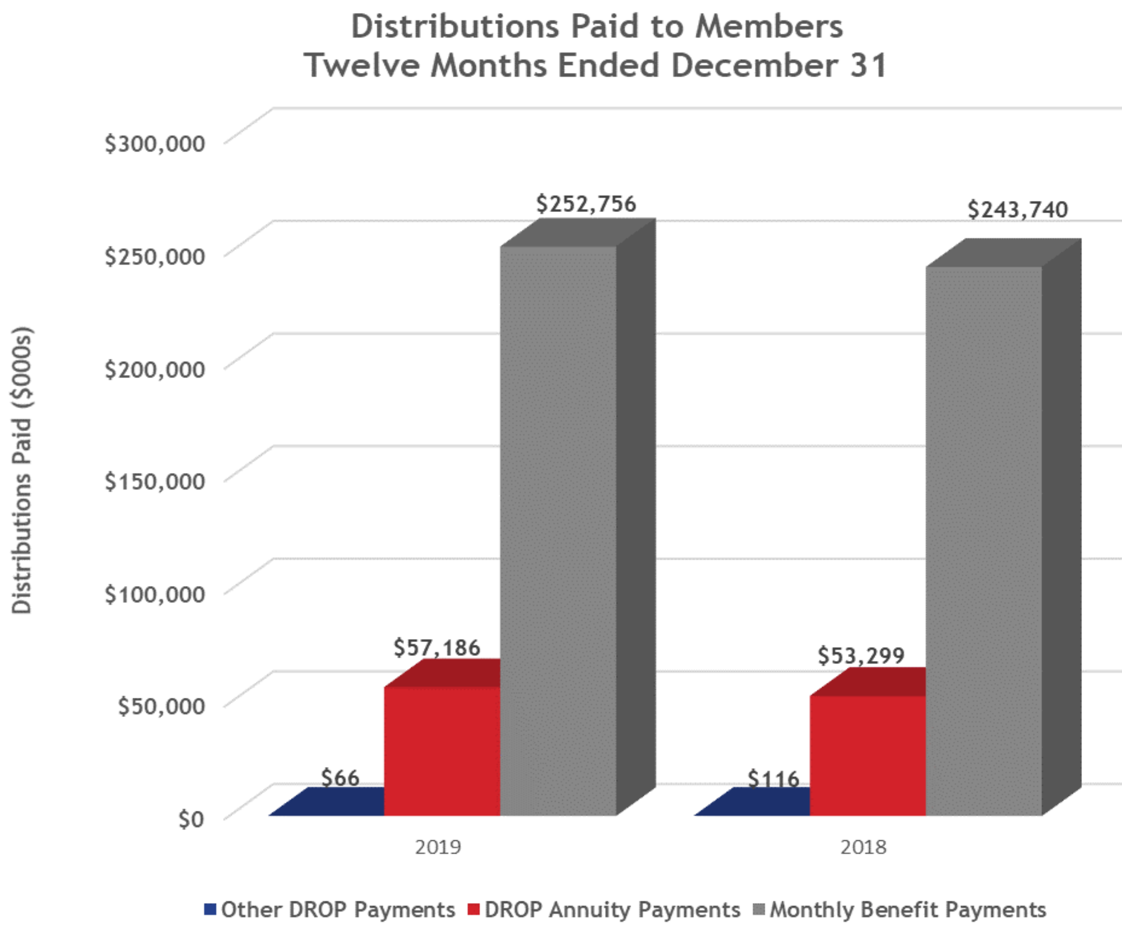
In 2018, the member and City contributions increased over 2017 due to twelve months of contributions at the legislative defined amounts. City contributions to the Plans increased by $23 million or 18% in 2018. Member contributions increased $16 million in 2018.

City Contributions to the Combined Pension Plan in 2019 increased $6.4 million or 4.3% due to the scheduled increase in the bi-weekly floor amount.

The City is required by ordinance to contribute amounts necessary to ensure the payment of benefits in the Supplemental Plan. The City's contributions shall be made in accordance with actuarial requirements established by the actuary and the Board. City contributions to the Supplemental Plan in 2019 decreased by $449 thousand over 2018 contributions and City contributions to the Supplemental Plan in 2018 decreased by $98 thousand over 2017 contributions primarily due to contributions being redirected to the Excess Benefit Plan and Trust.

Net investment income during 2019 was primarily driven by the appreciation in the fair value of public equity assets. Net investment income during 2018 was primarily driven by the appreciation in the fair value of some private assets and was partially offset by public equity losses incurred especially during the fourth quarter of 2018.

Distributions to members consist of monthly payments of retirement, disability, and survivor benefits, as well as monthly DROP annuity payments and other DROP payments made in accordance with Section 6.14 of Article 6243a-1 of the Texas Statutes. The chart on the following page compares the components of distributions paid to members for the years ended December 31, 2019 and 2018.



Total benefits paid in 2019 increased $12.9 million or 4.3% over 2018. Monthly benefit payments increased $9.0 million or 3.7% due to an additional 121 retirees and beneficiaries receiving monthly benefits in 2019. Distributions from DROP balances in 2019 totaled $57.3 million with $57.2 million paid as DROP annuity payments, up $3.9 million from 2018. See Note 6 for additional information on DROP.

No Interest expense was incurred in 2019 or 2018 as the line of credit and term loan were paid in full in 2017.

Refund expense declined $17 thousand in 2019 and declined $943 thousand in 2018 due in part to a change in the interpretation of the calculation of the liability accrual resulting in an additional expense of $460 thousand in 2017.

The cost of administering the benefit programs of the Plans, including administrative costs and professional fees, increased approximately $586 thousand in 2019. The increase in 2019 is primarily related to higher legal fees, (net of insurance reimbursement, up $220 thousand) and higher salaries and benefits, up $420 thousand. The cost of administering the benefits plans decreased approximately $2.2 million in 2018. The decrease in 2018 is primarily related to lower legal fees (net of insurance reimbursement, down $642 thousand) and salaries and benefits, down $984 thousand. Actuarial expenses were $378 thousand lower in 2018 as expenses related to the implementation of HB 3158 were largely incurred during 2017. Legislative and communications expenses decreased $193 thousand and $247 thousand, respectively, from 2017 to 2018 as the legislative process for the new bill completed in 2017. A pro rata share of the total expenses of the Plans is allocated to the Combined Pension Plan and the Supplemental Plan according to the ratio of Combined Pension Plan and Supplemental Plan investment assets to the total investment assets of the Group Trust. Any expenses specific to either the Combined Pension Plan or the Supplemental Plan are charged directly as a reduction of such plan's net position.

Funding Overview

DPFP's actuarial firm, Segal Consulting (Segal), conducts the annual actuarial valuations to determine if the assets and contributions are sufficient to provide the prescribed benefits (funding positions) of the Plans.

The January 1, 2020 actuarial valuation reported a funded ratio of 45.7%, based on the actuarial value of assets, an unfunded actuarial accrued liability of $2.6 billion and an expected fully funded date of 2075 for the Combined Pension Plan compared to a funded ratio of 48.1%, based on the actuarial value of assets, an unfunded actuarial accrued liability of $2.3 billion and an expected fully funded date of 2057 for the Combined Pension Plan as reported in the January 1, 2019 actuarial valuation. These projections may vary on an annual basis due to actual experience and demographics, which may vary from the current actuarial assumptions. Beginning in 2025, once the City is contributing based solely on Computation Pay with no floor as discussed below, differences between actual payroll and the City's current projections may have a significant impact on the projected funding period.

For the Combined Plan, the total Actuarially Determined Contribution (ADC) rate required to pay the normal cost and to amortize the unfunded actuarial accrued liability over a closed 25-year period is currently 60.2% of Computation Pay compared to 55.4% as of January 1, 2019, which was amortized over a 30-year period. The ADC rate compares to the City's actual contribution rate of 34.5% of Computation Pay , which is subject to a minimum floor for the next seven years, plus the member contribution of 13.5%, plus an additional $13 million per year from the City until December 31, 2024.

The Board's funding policy for the Combined Plan was changed from an amortization period of 30 years to a closed 25-year period. Beginning in 2021, future gains or losses each year will be amortized over separate, closed 20-year periods.

The January 1, 2020 actuarial valuation reports a funded ratio of 48.3% and an unfunded actuarial accrued liability of $18.5 million for the Supplemental Plan compared to a funded ratio of 57.6%, and an unfunded actuarial accrued liability of $13.5 million for the Supplemental Plan as reported in the January 1, 2019 actuarial valuation. These projections may vary on an annual basis due to actual experience and demographics, which may vary from the current actuarial assumptions. The City's contributions for the Supplemental Plan are based on Computation Pay.

The Board's funding policy for the Supplemental Plan was changed from an open 10-year amortization period to a closed 20-year period. Beginning in 2021, future gains or losses each year will be amortized over separate closed 10-year periods.

Governmental Accounting Standards Board Statement No. 67, *Financial Reporting for Pension Plans –An Amendment of GASB Statement No. 25*, (GASB No. 67) requires disclosure of the Net Pension Liability (NPL). The GASB No. 67 valuation is prepared by Segal and is a calculation for accounting purposes as opposed to the actuarial valuation, which is completed to determine the funding adequacy of the Plans. The NPL is the difference between the Total Pension Liability (TPL) and the market value of assets. GASB No. 67 requires the determination of the TPL using the individual entry age method, level percent of pay actuarial cost method, and a discount rate. The GASB No. 67 for December 31, 2019 reports a NPL of $2.7 billion, which is an increase of $214 million from the NPL reported at December 31, 2018 for the Combined Pension Plan. The Fiduciary Net Position as a Percentage of Total Pension Liabilities (FNP) is 43.5% at December 31, 2019 compared to 45.4% at December 31, 2018 for the Combined Pension Plan. The Supplemental Plan had a NPL of $18.5 million and $13.5 million at December 31, 2019 and 2018, respectively. The Supplemental Plan had a FNP of   48.3% and 57.6% at December 31, 2019 and 2018, respectively. The change in the Supplemental Plan was due to a change in the funding policy.

Information about whether the Plans' net positions are increasing or decreasing over time relative to the TPL is provided in the accompanying Schedule of Changes in the Net Pension Liability and Related Ratios.

Contacting DPFP's Financial Management

This financial report is designed to provide members and other users with a general overview of DPFP's finances and present the Plans' accountability for the funding received. If you have questions about this report, you may contact the Executive Director of the Dallas Police and Fire Pension System at 4100 Harry Hines Boulevard, Suite 100, Dallas, Texas 75219, by phone at 214-638-3863, or by email at info@dpfp.org.

Combining Statements of Fiduciary Net Position

	2019			2018		
DECEMBER 31,	COMBINED PENSION PLAN	SUPPLEMENTAL POLICE AND FIRE PENSION PLAN OF THE CITY OF DALLAS	TOTAL	COMBINED PENSION PLAN	SUPPLEMENTAL POLICE AND FIRE PENSION PLAN OF THE CITY OF DALLAS	TOTAL
Assets						
Investments, at fair value						
Short-term investments	$ 25,099,677	$ 211,352	$ 25,311,029	$ 40,949,194	$ 367,721	$ 41,316,915
Fixed income securities	550,746,613	4,637,555	555,384,168	511,184,404	4,590,396	515,774,800
Equity securities	550,594,317	4,636,273	555,230,590	432,055,193	3,879,822	435,935,015
Real assets	562,450,805	4,736,110	567,186,915	695,162,373	6,242,503	701,404,876
Private equity	265,352,308	2,234,396	267,586,704	310,090,215	2,784,586	312,874,801
Forward currency contracts	647,050	5,448	652,498	(268,300)	(2,409)	(270,709)
Total investments	1,954,890,770	16,461,134	1,971,351,904	1,989,173,079	17,862,619	2,007,035,698
Invested securities lending collateral	12,916,355	108,762	13,025,117	20,376,453	182,979	20,559,432
Receivables						
City	3,035,500	-	3,035,500	2,504,571	-	2,504,571
Members	1,053,322	2,547	1,055,869	801,661	1,583	803,244
Interest and dividends	4,422,424	37,239	4,459,663	4,759,677	42,742	4,802,419
Investment sales proceeds	52,131,442	438,972	52,570,414	33,926,492	304,657	34,231,149
Other receivables	184,550	1,554	186,104	290,170	2,606	292,776
Total receivables	60,827,238	480,312	61,307,550	42,282,571	351,588	42,634,159
Cash and cash equivalents	88,714,699	747,021	89,461,720	49,691,701	446,228	50,137,929
Prepaid expenses	399,234	3,362	402,596	362,262	3,253	365,515
Capital assets, net	12,225,827	102,947	12,328,774	12,377,791	111,152	12,488,943
Total assets	**2,129,974,123**	**17,903,538**	**2,147,877,661**	**2,114,263,857**	**18,957,819**	**2,133,221,676**
Liabilities						
Other Payables						
Securities purchased	54,498,283	458,902	54,957,185	48,165,649	432,524	48,598,173
Securities lending obligations	12,916,355	108,762	13,025,117	20,376,453	182,979	20,559,432
Accounts payable and other accrued liabilities	4,702,168	28,441	4,730,609	3,807,625	24,423	3,832,048
Total liabilities	**72,116,806**	**596,105**	**72,712,911**	**72,349,727**	**639,926**	**72,989,653**
Net position						
Net investment in capital assets	12,225,827	102,947	12,328,774	12,377,791	111,152	12,488,943
Unrestricted	2,045,631,490	17,204,486	2,062,835,976	2,029,536,339	18,206,741	2,047,743,080
Net position restricted for pension benefits	**$ 2,057,857,317**	**$ 17,307,433**	**$ 2,075,164,750**	**$ 2,041,914,130**	**$ 18,317,893**	**$ 2,060,232,023**

See accompanying independent auditor's report and notes to combining financial statements.

Combining Statements of Changes in Fiduciary Net Position

YEARS ENDED DECEMBER 31,	2019 COMBINED PENSION PLAN	2019 SUPPLEMENTAL POLICE AND FIRE PENSION PLAN OF THE CITY OFDALLAS	2019 TOTAL	2018 COMBINED PENSION PLAN	2018 SUPPLEMENTAL POLICE AND FIRE PENSION PLAN OF THE CITY OF DALLAS	2018 TOTAL
Additions (Reductions)						
Contributions						
City	$ 155,721,087	$ 1,530,262	$ 157,251,349	$ 149,356,565	$ 1,979,285	$ 151,335,850
Members	52,268,293	110,660	52,378,953	49,332,262	73,880	49,406,142
Total contributions	**207,989,380**	**1,640,922**	**209,630,302**	**198,688,827**	**2,053,165**	**200,741,992**
Investment income						
Net appreciation in fair value of investments	94,213,367	(85,530)	94,127,837	5,588,891	886,129	6,475,020
Interest and dividends	37,657,218	319,000	37,976,218	44,664,963	401,088	45,066,051
Total gross investment income	131,870,585	233,470	132,104,055	50,253,854	1,287,217	51,541,071
Less: Investment expense	(8,081,019)	(68,456)	(8,149,475)	(8,017,586)	(71,997)	(8,089,583)
Net investment income	123,789,566	165,014	123,954,580	42,236,268	1,215,220	43,451,488
Securities lending income						
Securities lending income	840,502	7,120	847,622	309,613	2,780	312,393
Securities lending expense	(727,010)	(6,159)	(733,169)	(198,695)	(1,784)	(200,479)
Net securities lending income	113,492	961	114,453	110,918	996	111,914
Other income	356,549	3,020	359,569	475,111	4,266	479,377
Total additions	**332,248,987**	**1,809,917**	**334,058,904**	**241,511,124**	**3,273,647**	**244,784,771**
Deductions						
Benefits paid to members	307,243,319	2,764,781	310,008,100	294,447,006	2,707,773	297,154,779
Refunds to members	2,617,230	998	2,618,228	2,634,049	498	2,634,547
Professional and administrative expenses	6,445,251	54,598	6,499,849	5,861,410	52,636	5,914,046
Total deductions	**316,305,800**	**2,820,377**	**319,126,177**	**302,942,465**	**2,760,907**	**305,703,372**
Net increase/(decrease) in net position	15,943,187	(1,010,460)	14,932,727	(61,431,341)	512,740	(60,918,601)
Net position restricted for pension benefits						
Beginning of period	2,041,914,130	18,317,893	2,060,232,023	2,103,345,471	17,805,153	2,121,150,624
End of period	$ 2,057,857,317	$ 17,307,433	$ 2,075,164,750	$ 2,041,914,130	$ 18,317,893	$ 2,060,232,023

See accompanying independent auditor's report and notes to combining financial statements.

Notes to Combining Financial Statements

1. Organization

General

The Dallas Police and Fire Pension System (DPFP) is an independently governed component unit of the City of Dallas (City, or Employer) and serves as a single-employer pension and retirement fund for police officers and firefighters employed by the City. The general terms "police officers" and "firefighters" also include fire and rescue operators, fire alarm operators, fire inspectors, apprentice police officers, and apprentice firefighters. DPFP is comprised of a single defined benefit pension plan (Combined Pension Plan) designed to provide retirement, death, and disability benefits for police officers and firefighters (collectively, members). DPFP was originally established under former Article 6243a of the Revised Civil Statutes of Texas and, since 1989, derives its authority to continue in operation under the provisions of Article 6243a-1 of the Revised Civil Statutes of Texas (the Governing Statute). All active police officers and firefighters employed by the City are required to participate in the Combined Pension Plan.

The Supplemental Police and Fire Pension Plan of the City of Dallas (Supplemental Plan) was created in 1973 to supplement DPFP's Plan B Defined Benefit Pension Plan (Plan B). Former Plan B members are now denominated as Group B members of the Combined Pension Plan. The intent of the Supplemental Plan is to provide additional retirement benefits to those members of the Supplemental Plan holding a rank higher than the highest corresponding civil service rank as provided in the Combined Pension Plan. Members receive a supplemental pension based upon the difference between compensation for the civil service position held before entrance into the Supplemental Plan and compensation while in the Supplemental Plan. The Supplemental Plan was established and derives its authority from a City ordinance.

The Combined Pension Plan and Supplemental Plan are collectively referred to as the Plans.

As of December 31, 2019 and 2018, the Combined Pension Plan's membership consisted of:

	2019	2018
Retirees and beneficiaries	4,956	4,849
Beneficiaries, DROP Only	83	70
Non-active vested members not yet receiving benefits	242	230
Non-active non-vested members not yet refunded	434	431
Total non-active members	**5,715**	**5,580**
Vested active members	3,692	3,677
Non-vested active members	1,429	1,335
Total active members	**5,121**	**5,012**

As of December 31, 2019 and 2018, the Supplemental Plan's membership consisted of:

	2019	2018
Retirees and beneficiaries	139	138
Non-active vested members not yet receiving benefits	2	2
Non-active non-vested members not yet refunded	1	1
Total non-active members	**142**	**141**
Vested active members	40	38
Non-vested active members	1	1
Total active members	**41**	**39**

No changes to benefit, contribution or administration plan provisions were made to the Combined Pension Plan or the Supplemental Plan in 2019.

The benefit, contribution and administration plan provisions discussed below are as of December 31, 2019 and 2018.

Benefits

Members hired by the City before March 1, 1973 are Group A members of the Combined Pension Plan. Members hired on or after March 1, 1973 are Group B members of the Combined Pension Plan.

Group A members of the Combined Pension Plan have elected to receive one of two benefit structures as of December 31, 2019:

- Members with 20 years or more of pension service are entitled to monthly pension benefits beginning at age 50 equal to 50% of base pay, defined as the maximum monthly civil service pay established by the City for a police officer or firefighter at the time of retirement, plus 50% of the longevity pay the member was receiving either at the time he or she left active service with the City or the effective date the member joined the Deferred Retirement Option Plan (DROP). Benefit payments are adjusted annually according to changes in active service base pay, if any. Additionally, a member is eligible to receive 50% of the difference between any annualized City service incentive pay granted to the member less annual longevitypay.

- Members with 20 years or more of pension service are entitled to monthly pension benefits beginning at age 55 equal to 3% of their base pay, computed as noted in the prior paragraph, for each year of pension service with a maximum of 32 years. In addition, a member receives 50% of the longevity pay and 1/24th of any City service incentive pay the member was receiving either at the time he or she left active service with the City or the effective date the member joined DROP. Prior to September 1, 2017 pension benefit payments increased annually on October 1st by 4% of the initial benefit amount. After September 1, 2017 pension benefit payments are eligible for an ad hoc cost of living increase as approved by the Board, if certain funding requirements are met. It is not anticipated that the funding requirements necessary to grant an ad hoc cost of living increase will be met for several decades.

Group B members of the Combined Pension Plan receive one of two benefit structures as of December 31, 2019:

- Members who began membership before March 1, 2011 with 5 or more years of pension service are entitled to monthly pension benefits beginning at age 50 equal to 3% of the member's average base pay plus education and longevity pay (Computation Pay) determined over the highest 36 consecutive months of Computation Pay, multiplied by the number of years of pension service prior to September 1, 2017. The monthly pension benefit for service earned after September 1, 2017 is based on the highest 60 consecutive months of Computation Pay multiplied by a 2.5% multiplier at age 58. The multiplier is reduced to between 2.0% and 2.4% for retirement beginning at age 53 and prior to age 58. The member cannot accrue a monthly pension benefit that exceeds 90% of the member's average Computation Pay. Certain members may receive a 2.5% multiplier for pension service after September 1, 2017 prior to age 58 if the combination of their pre and post September 1, 2017 pension service calculations using the 2.5% multiplier for post September 1, 2017 meets or exceeds the 90% maximum benefit. Certain members who meet the service prerequisite or were 45 prior to September 1, 2017 may elect to take early retirement with reduced benefits starting at age 45, or earlier if the member has 20 years of pension service.

- Members who began membership after February 28, 2011 are entitled to monthly pension benefits after accruing 5 years of pension service and the attainment of age 58. Pension benefits are equal to the member's average Computation Pay determined over the highest 60 consecutive months of Computation Pay, multiplied by 2.5% for the number of years of pension service. The member cannot accrue a monthly pension benefit that exceeds 90% of the member's average Computation Pay. Certain members who meet the service prerequisite may elect to take early retirement with reduced benefits starting at age 53.

- A Group B member who has accrued 20 or more years of pension service and who has been on active service at any time on or after January 1, 1999 may take a pension benefit regardless of age except that the percent multiplier would be based on the member's age at the time of applying for the pension.

- After September 1, 2017, Group B benefits for all members are eligible for an ad hoc cost of living increase as approved by the Board, if certain funding requirements are met. It is not anticipated that the funding requirements necessary to grant an ad hoc cost of living increase will be met for several decades. Prior to September 1, 2017 Group B members hired prior to January 1, 2007 received an automatic annual increase of 4% of the initial benefit amount each October 1st. Group B members hired on or after January 1, 2007 were eligible for an ad hoc increase not to exceed 4% of the initial benefit amount.

Additional provisions under the Combined Pension Plan as of December 31, 2019 are as follows:

- Prior to September 1, 2017 members with over 20 years of pension service, upon attaining age 55, received a monthly supplement equal to the greater of $75 or 3% of their total monthly benefits (excluding the benefit supplement amount). After September 1, 2017, no additional members will receive the monthly supplement and no increases will be made to the amount of the supplement received by those members receiving the supplement prior to September 1, 2017.

- Service-connected disability benefits are available for members in active service who began service prior to March 1, 2011 and have not entered DROP who become disabled during the performance of their duties from the first day of employment. Members receiving service-connected disability benefits are given credit for the greater of actual pension service or 20 years of pension service. A benefit of 3% times the average of the highest 36 consecutive months of Computation Pay times the number of years of pension service prior to September 1, 2017, plus a multiplier, based on their age at the time the disability is granted, for pension service after September 1, 2017, times the average of the highest 60 consecutive months of Computation Pay times the number of years of pension service. If needed, additional service time necessary to reach 20 years of service credit will be included with pension service after September 1, 2017. Members who began membership after February 28, 2011 and have not entered DROP are entitled to a disability benefit based on the average of the highest 60 consecutive months of Computation Pay times a 2.5% multiplier regardless of their age. If a member has more than 20 years of service and was hired prior to March 1, 2011, the benefit is calculated in the same manner as their service retirement pension. If the member has fewer than 36 or 60 months of service, based on hire date, the benefit is based on the average of Computation Pay during their entire pension service.

- Members who began membership before March 1, 2011, who are determined to be eligible for a non-service connected disability benefit are entitled to a benefit of 3% times the average of the highest 36 consecutive months of Computation Pay times the number of years of pension service prior to September 1, 2017, plus a multiplier based on their age at the time the disability is granted for pension service after September 1, 2017 times the average of the highest 60 consecutive months of Computation pay. Total service is rounded to the nearest whole year. Members who began membership after February 28, 2011 are entitled to a disability benefit based on the average of the highest 60 consecutive months of Computation Pay, times a 2.5% multiplier regardless of their age. All non-service connected disability benefits are subject to a minimum benefit of $110 for every year of pension service. The minimum benefit cannot exceed $2,200 per month. If the member has fewer than 36 or 60 months of service, based on hire date, the benefit is based on the average of Computation Pay during their entire pension service.

- Members who are eligible to retire are eligible to enter the DROP program, which is an optional method of accruing monthly pension benefits prior to leaving active service. Members who are receiving disability benefits are not eligible to enter the DROP program. The amount of an active member's DROP balance is based on the accumulation of the member's monthly benefit each month while in active DROP, and interest accrued prior to September 1, 2017. DROP balances do not earn interest after September 1, 2017. DROP balances of retired members and other DROP account holders, excluding active member DROP account holders, were converted to annuities (a stream of payments) on November 30, 2017. DROP balances of active members are annuitized upon retirement. The life expectancy of a DROP account holder at the time of annuitization determines the term of the annuity. Interest is included in the annuity calculation for balances accrued prior to September 1, 2017. The interest rate is based on the provisions of HB 3158 and rules adopted by the Board. See Note 6 for information about the changes in the DROP program resulting from the passage of HB 3158. See below, under Contributions, for discussion of required DROP contributions. The total DROP account balance and the present values of the annuitized balances for the Combined Pension Plan was $1.04 billion at December 31, 2019 and $1.01 billion at 2018. The total DROP balances include amounts that may be paid out of the Excess Benefit Plan and Trust.

- A minimum benefit is paid to vested retired members of $2,200 per month subject to any restrictions contained in the Combined Pension Plan. The minimum benefit is prorated for members who retire with less than 20 years of service credit and equals $1,200 monthly for a qualified surviving spouse if there are no qualified surviving children receiving benefits. The minimum benefit is $1,100 monthly for qualified surviving children combined and qualified surviving spouses if qualified surviving children are receiving or had received benefits.

Additional provisions under the Supplemental Plan as of December 31, 2019 are as follows:

- The Supplemental Plan's benefits are designed to supplement Group B benefits for those members holding a rank higher than the highest civil service rank because their Combined Pension Plan benefits are capped by the Combined Pension Plan's definition of considered compensation. Accordingly, when Group B benefits are amended, the Supplemental Plan's benefit calculation is also affected. The basis for a member's benefits are the difference between the monthly rate of pay a member is due as the base pay for the rank the member currently holds and the monthly rate of pay the member is due for the highest civil service rank (and pay step) the member held as a result of competitive examinations. The service time used to determine the member's Group B benefit is used to determine the member's benefit under the Supplemental Plan so that the same length of time is used for both plans. Average Computation Pay is calculated for each plan separately and combined in determining the benefit. Application for benefits under the provisions of the Combined Pension Plan is deemed to be an application for benefits under the Supplemental Plan and no additional application need be filed.

- Members of the Supplemental Plan who enter the DROP program in the Combined Pension Plan also enter the DROP program in the Supplemental Plan. The total DROP account balance and the present value of the annuitized balances related to the Supplemental Plan was $7.1 million and $4.5 million at December 31, 2019 and 2018, respectively. The total DROP balances include amounts that may be paid out of the Excess Benefit Plan and Trust.

Death benefits are available to a surviving spouse, dependent children, handicapped children, or dependent parents in the event of the death of a member either after disability or service retirement, prior to leaving active service or retirement eligible deferred vested members.

Members retiring with 20 years of pension service or who were receiving a service-connected disability benefit had been eligible to receive a benefit supplement upon reaching age 55. The supplement amount was 3% of the member's monthly benefit, with a minimum of $75 per month in the Combined Pension Plan. After September 1, 2017, no additional members will receive the monthly supplement and no supplement amount will increase.

Contributions

Employee contribution rates did not change in 2019.

HB 3158 amended the employee contribution rates to 13.5% of Computation Pay for all active members.

City contribution rates did not change in 2019.

The City contributes the greater of (i) 34.5% of Computation Pay and (ii) a bi-weekly minimum (floor) amount defined in the bill, plus $13 million annually until 2024. The floor amounts were $5.571 and $5.344 million, respectively, for 2019 and 2018. After 2024, the floor amount and the additional $13 million annual amount are eliminated.

During 2024 an independent actuary selected by the Texas State Pension Review Board (PRB) must perform an analysis that includes the independent actuary's 1) conclusion regarding whether the pension system meets State Pension Review Board funding guidelines; and 2) recommendations regarding changes to benefits or to member or city contribution rates. The Board must adopt a plan that complies with the funding and amortization period requirements under Subchapter C, Section 802 of the Texas Government Code.

The City is required by ordinance to contribute amounts necessary to ensure the payment of benefits in the Supplemental Plan. The City's contributions shall be made in accordance with actuarial requirements established by the actuary and the board. Member contributions in the Supplemental Plan follow the same rules as the Combined Pension Plan on Computation Pay over the compensation of the highest civil service rank held as a result of competitive examinations.

City contributions can be changed by the legislature, by a majority vote of the voters of the city or in accordance with a written agreement entered into between the city and the pension system, where at least eight trustees have approved the agreement, provided that the change does not increase the period required to amortize the unfunded accrued liability of the Combined Pension Plan. Decreases in employee contributions require the approval of the legislature. Increases in employee contributions require the approval of at least a two-thirds vote of all trustees of the Board.

The Supplemental Plan's plan document can be amended only by the City Council in accordance with City ordinance. The benefit and contribution provisions of the Supplemental Plan follow those of the Combined Pension Plan.

Members of Group B are immediately vested in their member contributions. If a member's employment is terminated and the member is not vested, or the member elects not to receive present or future pension benefits, the member's contributions are refunded, without interest, upon written application. If application for a refund is not made within three years of normal retirement age, the member forfeits the right to a refund of his or her contribution; however, a procedure exists whereby the member's right to the contributions can be reinstated and refunded by the Board after the three-year period.

Administration

Collectively, the Combined Pension Plan Board of Trustees and the Supplemental Plan Board of Trustees are referred to as the Board. The Board is responsible for the general administration of DPFP and has the full power to invest the Plans' assets.

The Plans are administered by an eleven-member Board consisting of six Trustees appointed by the mayor of the City of Dallas, in consultation with the City Council; one current or former police officer, nominated and elected by active members; one current or former firefighter, nominated and elected by active members; and three non-member Trustees (who may not be active members or retirees) elected by the active members and retirees from a slate of nominees vetted and nominated by the Nominations Committee. The Nominations Committee consists of representatives from 11 named police and fire associations and the Executive Director of DPFP. The Executive Director is a nonvoting member of the committee.

To serve as a Trustee, a person must have demonstrated financial, accounting, business, investment, budgeting, real estate or actuarial expertise and may not be an elected official or current employee of the City of Dallas, with the exception of a current police officer or firefighter.

2. Summary of Significant Accounting Policies

Basis of Presentation

The accompanying financial statements are presented in accordance with accounting principles generally accepted in the United States (GAAP). In doing so, DPFP adheres to guidelines established by the Governmental Accounting Standards Board (GASB). The accompanying financial statements include solely the accounts of the Plans on a combined basis, which include all programs, activities and functions relating to the accumulation and investment of the net position and related income necessary to provide the service, disability and death benefits required under the terms of the governing statutes and amendments thereto.

Basis of Accounting

The accrual basis of accounting is used for the Plans. Revenues are recognized in the period in which they are earned and collection is reasonably assured. Expenses are recognized when the liability is incurred. Member and employer contributions are recognized in the period in which the contributions are due. Accrued income, when deemed uncollectible, is charged to operations.

Contributions for the final biweekly payroll of the year for the years ended December 31, 2019 and 2018 were not received by DPFP until subsequent to year end and accordingly, uncollected contributions are recorded as receivables in the accompanying financial statements. Benefits, lump sum payments, and refunds are recognized when due and payable. Dividend income is recorded on the ex-dividend date. Other income consists primarily of rental income which is recognized on a straight-line basis over the lease term. Realized gains and losses on sales of securities are recognized on the trade date. The cost of investments sold is determined using the average cost method.

Reporting Entity

DPFP is an independently governed component unit of the City and the basic financial statements and required supplementary information of the Plans are therefore included in the City's Comprehensive Annual Financial Report.

Administrative Costs

All costs of administering the Plans are paid from the Plans' assets pursuant to an annual fiscal budget approved by the Board.

Federal Income Tax

Favorable determinations that the Plans are qualified and exempt from Federal income taxes were received on October 20, 2014. While the Board has authorized a filing with the Internal Revenue Service under the Voluntary Correction Program, the Board believes that the Plans are designed to meet and operate in material compliance with the applicable requirements of the Internal Revenue Code.

Use of Estimates

The preparation of financial statements in accordance with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the financial statements and the actuarial information included in the notes to the financial statements as of the benefit information date, the reported amounts of income and expenses during the reporting period, and when applicable, disclosures of contingent assets and liabilities at the date of the financial statements. Actual results could differ from those estimates.

Cash and Cash Equivalents

DPFP considers only demand deposits as cash. Cash equivalent securities, which are composed of all highly liquid investments with a maturity of three months or less when purchased, are considered to be cash equivalents. Highly liquid securities invested by third party investment managers as part of a short-term investment fund are not considered cash equivalents and are classified as short-term investments.

Plan Interest in the Group Master Trust

Effective January 1, 2006, the Board elected to establish a Group Master Trust (Group Trust) in order to unitize the investments of the Combined Pension Plan and the Supplemental Plan. JPMorgan Chase Bank, N.A. (JPMorgan) served as custodian of the Group Trust for the years ended December 31, 2019 and 2018. The fair value of the Combined Pension Plan's interest and the Supplemental Plan's interest in the Group Trust is based on the unitized interest that each plan has in the Group Trust. The Combined Pension Plan's interest in the Group Trust's investments was approximately 99.2% at December 31, 2019 and 99.1% at 2018, while the remaining interest belongs to the Supplemental Plan. The allocation of investment income and expenses between the Combined Pension Plan and the Supplemental Plan is based on percentage interest in the Group Trust. Shared professional and administrative expenses are allocated to each plan directly in proportion to each plan's ownership interest. Benefits and contributions are attributed directly to the plan that such receipts and disbursements relate to and are not subject to a pro-rated allocation.

Investments

Investment Policy

Statutes of the State of Texas authorize DPFP to invest surplus funds in the manner provided by Government Code, Title 8, Subtitle A, Subchapter C which provides for the investment of surplus assets in any investment that is deemed prudent by the Board. These statutes stipulate that the governing body of the Plans is responsible for the management and administration of the funds of the Plans and shall determine the procedure it finds most efficient and beneficial for the management of the funds of the Plans. The governing body may directly manage the investments of the Plans or may contract for professional investment management services. Investments are reported at fair value.

The investment policy of the Board does not restrict the types of investments authorized to be made on behalf of the Group Trust. The Governing Statute requires at least eight members of the Board to approve an investment in an alternative asset. The Board determined that alternative assets include all asset classes other than traditional assets. Traditional assets include publicly traded stocks, bonds and cash equivalents. The investment policy considers the current and expected financial condition of the Plans, the expected long-term capital market outlook and DPFP's risk tolerance. The following is the Board's adopted asset allocation contained in the Investment Policy Statement as of December 31, 2019:

ASSET CLASS	TARGET ALLOCATION
Equity	**55%**
Global Equity	40%
Emerging Markets Equity	10%
Private Equity	5%
Safety Reserve and Fixed Income	**35%**
Cash	3%
Short-term Investment Grade Bonds	12%
Investment Grade Bonds	4%
High Yield	4%
Bank Loans	4%
Global Bonds	4%
Emerging Markets Debt	4%
Real Assets	**10%**
Private Real Estate	5%
Private Natural Resources	5%

The value and performance of DPFP's investments are subject to various risks, including, but not limited to, credit risk, interest rate risk, concentration of credit risk, custodial credit risk, and foreign currency risk, which are in turn affected by economic and market factors impacting certain industries, sectors or geographies. See Note 3 for disclosures related to these risks.

Investment Transactions

The accompanying Combining Statements of Changes in Fiduciary Net Position present the net appreciation (depreciation) in the fair value of investments which consists of the realized gains and losses on securities sold and the changes in unrealized gains and losses on those investments still held in the portfolio at year end.

Purchases and sales of investments and forward foreign exchange contracts are recorded on the trade date. Unsettled investment trades as of fiscal year end are reported in the financial statements on the accrual basis of accounting. Realized gains or losses on forward foreign exchange contracts are recognized when the contract is settled.

Interest earned but not yet received and dividends declared but not yet received are recorded as accrued interest and dividends receivable, respectively. In addition, unsettled investment purchases and sales are accrued.

Valuation of Investments

The diversity of the investment types in which the Group Trust invests requires a wide range of techniques to determine fair value.

Short-term investments include money market funds and government bonds with a maturity of less than one year and are valued based on stated market rates.

Fixed income investments include government securities such as Treasury securities, bank loans, US corporate bonds, foreign securities such as dollar denominated and non-dollar denominated issues of non-US governments and private corporations, plus units of commingled fixed income funds of both US and foreign securities. Equity securities consist of individual shares of equity securities plus units of commingled stock funds of both US and foreign entities. The stated market value of investments in publicly traded fixed income and equity securities is based on published market prices or quotations from major investment dealers as provided by JPMorgan, utilizing vendor supplied pricing. Vendor supplied pricing data for equity securities is based upon the daily closing price from the primary exchange of each security while vendor supplied pricing data for fixed income securities is based upon a combination of market maker quotes, recent trade activity, and observed cash flows. Securities traded on an international exchange are valued at the last reported sales price as of year-end at exchange rates as of year-end. The fair value of non-publicly traded commingled fixed income funds and commingled stock funds is based on their respective net asset value (NAV) as reported by the investment manager.

Real assets consist of privately held real estate, infrastructure, timberland, and farmland investments. Real estate is held in separate accounts, limited partnerships, joint ventures, and commingled funds, and as debt investments in the form of notes receivable. Infrastructure, timberland, and farmland are held in separate accounts, limited partnerships, and joint ventures. Real estate, timberland and farmland are generally subject to independent third-party appraisals performed in accordance with the Uniform Standards of Professional Appraisal Practice on a periodic basis, every three years at minimum, as well as annual financial statement audits. Infrastructure funds are valued based on audited NAV reported by the manager which is based on internal manager valuation or independent appraisal at the discretion of the manager. Interests in joint ventures, limited partnerships and notes receivable are valued at the dollar value reported by the general partner or investment manager, as applicable. DPFP staff manage certain real estate investments internally and the real estate holdings of such ventures are subject to independent third-party appraisals on a periodic basis, every three years at minimum. Internally managed investments are valued at their net equity on a fair value basis. Externally managed partnerships, joint venture, commingled funds, and separate accounts are valued at the NAV provided by the investment or fund manager, as applicable. The investment or fund manager on a continuous basis values the underlying investment holdings.

Private equity investments consist of various investment vehicles including limited partnerships, commingled funds, trusts and notes receivable. Private equity limited partnership investments and notes receivable are valued as reported by the investment manager. Private equity funds are valued using their respective NAV as reported by the fund's custodian, investment manager or independent valuations obtained by DPFP, as applicable.

DPFP has established a framework to consistently measure the fair value of the Plans' assets and liabilities in accordance with applicable accounting, legal, and regulatory guidance. This framework has been provided by establishing valuation policies and procedures that provide reasonable assurance that assets and liabilities are carried at fair value as described above and as further discussed in Note 4.

Foreign Currency Transactions

DPFP, through its investment managers, is party to certain financial arrangements, utilizing forward contracts, options and futures as a hedge against foreign currency fluctuations. Entering into these arrangements involves not only the risk of dealing with counterparties and their ability to meet the terms of the contracts, but also the risk associated with market fluctuations. Realized gains and losses on option and future arrangements are recorded as they are incurred. Realized gains and losses on forward contracts are recorded on the settlement date.

Gains and losses resulting from foreign exchange contracts (transactions denominated in a currency other than the Group Trust's functional currency - US dollar) are recorded based on changes in market values and are included in investment income (loss) in the accompanying financial statements. Investment managers, on behalf of the Group Trust, structure foreign exchange contracts and enter into transactions to mitigate exposure to fluctuations in foreign exchange rates.

Investments and broker accounts denominated in foreign currencies outstanding at December 31, 2019 and 2018 were converted to the US dollar at the applicable foreign exchange rates quoted as of December 31, 2019 and 2018, respectively. The resulting foreign exchange gains and losses are included in net appreciation (depreciation) in fair value of investments in the accompanying financial statements.

Recent Accounting Pronouncements Applicable to DPFP

In 2017, GASB issued Statement No. 86, Certain Debt Extinguishment Issues. The effective date of GASB Statement No. 86 was June 30, 2018 and had no impact on the financial statements.

In 2017, GASB issued Statement No. 87, Leases. This standard will require recognition of certain lease assets and liabilities for leases that are currently classified as operating leases. It is not anticipated that GASB Statement No. 87 will have a material effect on the financial statements. The statement is effective for reporting periods beginning after June 15, 2021.

In March 2018, GASB issued Statement No. 88, Certain Disclosures Related To Debt, Including Borrowings and Direct Placements. This Statement requires increased disclosure in notes to financial statements of all state and local governments. The new disclosure requirements are effective for reporting periods beginning after June 15, 2019. It is not anticipated that GASB Statement No. 88 will have an impact on the DPFP financial statements.

3. Investments

The Board has contracted with investment managers to manage the investment portfolio of the Group Trust subject to the policies and guidelines established by the Board. The Board has a custody agreement with JPMorgan under which JPMorgan assumes responsibility for the safekeeping of certain investments, handling of transactions based on the instructions of investment managers, and reporting investment transactions.

The fair value of investments at December 31, 2019 and 2018 is as follows (in thousands):

	2019	2018
Short-term investments		
Short-term investment funds	$ 25,311	$ 41,317
Fixed income securities		
US Treasury bonds	118,853	95,236
US government agencies	12,870	8,747
Corporate bonds	278,775	231,111
Foreign-denominated bonds	28,846	36,359
Commingled funds	111,385	141,465
Municipal bonds	4,655	2,857
Equity securities		
Domestic	279,709	265,626
Foreign	275,522	170,309
Real assets		
Real estate	382,374	470,026
Infrastructure	52,978	57,458
Timberland	39,600	40,699
Farmland	92,235	133,222
Private equity	267,587	312,875
Forward currency contracts	652	(271)
Total	**$ 1,971,352**	**$ 2,007,036**

Custodial Credit Risk

Deposits

Custodial credit risk is the risk that, in the event of a bank failure, the System's deposits might not be recovered. DPFP does not have a formal deposit policy for custodial credit risk of its deposits.

The Federal Depository Insurance Corporation (FDIC) insures any deposits of an employee benefit plan in an insured depository institution on a "pass- through" basis, in the amount of up to $250,000 for the non-contingent interest of each plan participant at each financial institution. The pass-through insurance applies only to vested participants. DPFP believes the custodial credit risk for deposits, if any, is not material.

Investments

Portions of DPFP's investments are classified as security investments. A security is a transferable financial instrument that evidences ownership or creditorship. Investments in companies, partnerships and real estate are investments that are evidenced by contracts rather than securities.

Custodial credit risk is the risk that, in the event of the failure of an investment counterparty, the investor will not be able to recover the value of its investment or collateral securities that are in the possession of an outside party. Investment securities are exposed to custodial credit risk if the securities are uninsured, are not registered in the name of the investor, and are held by either the counterparty or the counterparty's trust department or agent, but not in the investor's name. DPFP mitigates this risk by having investments held at a custodian bank on behalf of DPFP. At December 31, 2019 and 2018, all investment securities held by the custodian were registered in the name of DPFP and were held by JPMorgan in the name of DPFP. DPFP does not have a formal policy for custodial credit risk of its investments; however, management believes that custodial credit risk exposure is mitigated by the financial strength of the financial institutions in which the securities are held.

Concentration of Credit Risk

Concentration of credit risk is the risk of loss attributable to the magnitude of the Group Trust's investment in a single issue. DPFP does not have an investment policy specifically regarding concentration of credit risk; however, the target allocations of assets among various asset classes are determined by the Board with the objective of optimizing the investment return of the Group Trust within a framework of acceptable risk and diversification. For major asset classes, the Group Trust will further diversify the portfolio by employing multiple investment managers who provide guidance for implementing the strategies selected by the Board.

As of December 31, 2019 and 2018, the Group Trust did not have any single investment in an issuer which represented greater than 5% of the Plans' net position.

Interest Rate Risk

Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment. Interest rate risk is the greatest risk faced by an investor in the fixed income market. The price of a fixed income security typically moves in the opposite direction of the change in interest rates. The weighted average maturity of a fixed income security expresses investment time horizons (when the investment comes due and payable) in years, weighted to reflect the dollar size of individual investments within the investment type. DPFP does not have a formal investment policy that limits investment maturities as a means of managing its exposure to potential fair value losses arising from future changes in interest rates, but rather mandates such limits within investment management services contracts. Investment managers have full discretion in adopting investment strategies to address these risks.

The Group Trust invests in fixed income securities including, but not limited to, investments representing instruments with an obligated fixed rate of interest including public and private debentures, mortgage backed securities, guaranteed investment contracts with maturities greater than one year, and options/futures. Purchases and sales, investment selection, and implementation of investment strategies are delegated to the discretion of the investment manager, subject to compliance with its management agreement and DPFP's investment policy.

At December 31, 2019, the Group Trust had the following fixed income securities and maturities (in thousands):

INVESTMENT TYPE	LESS THAN 1 YEAR	1 TO 5 YEARS	6 TO 10 YEARS	MORE THAN 10 YEARS	TOTAL
US Treasury bonds	$ 7,855	$ 107,044	$ -	$ 3,954	$ 118,853
US Government agencies	-	1,021	2,541	9,308	12,870
Corporate bonds	26,848	137,524	40,570	73,833	278,775
Municipal bonds	-	3,067	-	1,588	4,655
Foreign-denominated bonds	1,579	10,860	7,332	9,075	28,846
Total	**$ 36,282**	**$ 259,516**	**$ 50,443**	**$ 97,758**	**$ 443,999**

At December 31, 2018, the Group Trust had the following fixed income securities and maturities (in thousands):

INVESTMENT TYPE	LESS THAN 1 YEAR	1 TO 5 YEARS	6 TO 10 YEARS	MORE THAN 10 YEARS	TOTAL
US Treasury bonds	$ 896	$ 80,138	$ 7,560	$ 6,642	$ 95,236
US Government agencies	-	-	1,138	7,609	8,747
Corporate bonds	20,786	157,009	24,035	29,281	231,111
Municipal bonds	-	2,529	-	328	2,857
Foreign-denominated bonds	11,574	5,863	8,977	9,945	36,359
Total	**$ 33,256**	**$ 245,539**	**$ 41,710**	**$ 53,805**	**$ 374,310**

Commingled fixed income funds do not have specified maturity dates and are therefore excluded from the above tables.

Foreign Currency Risk

Foreign currency risk is the risk that changes in exchange rates will adversely affect the fair value of an investment or a deposit. The books and records of the Plans are maintained in US dollars. Foreign currencies and non-US dollar denominated investments are translated into US dollars at the bid prices of such currencies against US dollars at each balance sheet date. Realized and unrealized gains and losses on investments which result from changes in foreign currency exchange rates, have been included in net appreciation (depreciation) in fair value of investments in the accompanying financial statements. Net realized foreign currency gains and losses resulting from changes in exchange rates include foreign currency gains and losses between trade date and settlement date of investment securities transactions, foreign currency transactions, and the difference between the amounts of interest and dividends are recorded on the books of the Plans and the amount actually received. International and global managers have permission to use currency forward and futures contracts to hedge currency against the US dollar. DPFP does not have an investment policy specific to foreign currency risk, however to mitigate foreign currency risk, investment managers with international exposure are expected to maintain diversified portfolios by sector and by issuer.

The Group Trust's exposure to foreign currency risk in US dollars as of December 31, 2019 is as follows (in thousands):

CURRENCY	FIXED INCOME	EQUITY	REAL ASSETS	TOTAL
Australian Dollar	$ 3,095	$ 6,263	$ 1,311	$ 10,669
Brazilian Real	2,880	942	4,689	8,511
British Pound Sterling	-	30,709	-	30,709
Canadian Dollar	-	5,001	-	5,001
Colombian Peso	3,074	-	-	3,074
Danish Krone	-	5,078	-	5,078
Euro	-	91,706	-	91,706
Hong Kong Dollar	-	8,403	-	8,403
Hungarian Forint	-	1,334	-	1,334
Indonesian Rupiah	2,611	730	-	3,341
Japanese Yen	-	44,759	-	44,759
Malaysian Ringgit	3,288	-	-	3,288
Mexican Peso	8,378	-	-	8,378
Norwegian Krone	217	138		355
Polish Zloty	2,525	-	-	2,525
Singaporean Dollar	-	1,159	-	1,159
South African Rand	2,778	-	25,968	28,746
South Korean Won	-	3,434	-	3,434
Swedish Krona	-	3,378	-	3,378
Swiss Franc	-	19,327	-	19,327
Total	**$ 28,846**	**$ 222,361**	**$ 31,968**	**$ 283,175**

The Group Trust's exposure to foreign currency risk in US dollars as of December 31, 2018 is as follows (in thousands):

CURRENCY	FIXED INCOME	EQUITY	REAL ASSETS	TOTAL
Australian Dollar	$ 3,184	$ 6,225	$ 7,142	$ 16,551
Brazilian Real	2,732	367	7,074	10,173
British Pound Sterling	4,348	25,367	-	29,715
Canadian Dollar	-	2,149	-	2,149
Colombian Peso	1,608	-	-	1,608
Danish Krone	-	3,921	-	3,921
Euro	635	62,327	-	62,962
Hong Kong Dollar	-	11,346	-	11,346
Indonesian Rupiah	2,378	-	-	2,378
Japanese Yen	-	33,638	-	33,638
Malaysian Ringgit	4,107	-	-	4,107
Mexican Peso	9,172	-	-	9,172
Polish Zloty	4,803	-	-	4,803
Singaporean Dollar	-	148	-	148
South African Rand	3,392	-	24,366	27,758
South Korean Won	-	2,671	-	2,671
Swedish Krona	-	1,782	-	1,782
Swiss Franc	-	20,368	-	20,368
Total	**$ 36,359**	**$ 170,309**	**$ 38,582**	**$ 245,250**

In addition to the above exposures, certain fund-structure investments in the private equity, emerging markets debt, private debt and real assets asset classes, with a total fair value of $137.0 million at both December 31, 2019 and 2018, have some level of investments in various countries with foreign currency risk at the fund level. The individual investments in these funds with such exposure are not included in the above table.

Credit Risk

Credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligations. DPFP was party to negotiated derivative contracts in the form of forward foreign exchange contracts as of December 31, 2018 as discussed below. DPFP does not have an investment policy specific to credit risk, however to mitigate credit risk on the currency forward contracts, investment managers who manage such contracts maintain a diversified portfolio by counterparty.

The Group Trust's exposure to credit risk in fixed income securities, including short-term investment funds classified as cash equivalents, as of December 31, 2019 and 2018 using the Standard & Poor's rating scale, at fair value, is as follows (in thousands):

DECEMBER 31, 2019

RATING	CORPORATE BONDS	MUNICIPAL BONDS	FOREIGN-DENOMINATED BONDS	COMMINGLED FUNDS	SHORT-TERM INVESTMENT FUNDS(1)	US GOVERNMENT SECURITIES	TOTAL
AAA	$ 49,269	$ -	$ 1,906	$ -	$ -	$ 1,022	$ 52,197
AA+	4,203	-	1,406	-	-	130,701	136,310
AA	3,039	1,588	-	-	-	-	4,627
AA-	4,173	-	-	-	-	-	4,173
A+	8,784	-	-	-	-	-	8,784
A	12,043	1,364	-	-	-	-	13,407
A-	22,655	-	5,813	-	-	-	28,468
BBB+	37,102	1,703	8,378	-	-	-	47,183
BBB	19,539	-	2,611	-	-	-	22,150
BBB-	8,670	-	3,074	-	-	-	11,744
BB+	6,636	-	-	-	-	-	6,636
BB	9,568	-	2,778	-	-	-	12,346
BB-	14,934	-	2,880	-	-	-	17,814
B+	7,785	-	-	-	-	-	7,785
B	7,155	-	-	-	-	-	7,155
B-	8,483	-	-	-	-	-	8,483
CCC+	3,599	-	-	-	-	-	3,599
CCC	4,130	-	-	-	-	-	4,130
CCC-	861	-	-	-	-	-	861
CC	185	-	-	-	-	-	185
C	-	-	-	-	-	-	-
D	439	-	-	-	-	-	439
NR(2)	45,523	-	-	111,385	113,393	-	270,301
Total	**$ 278,775**	**$ 4,655**	**$ 28,846**	**$ 111,385**	**$ 113,393**	**$ 131,723**	**$ 668,777**

(1) Includes short-term money market funds classified as cash equivalents.
(2) NR represents those securities that are not rated.

DECEMBER 31, 2018

RATING	CORPORATE BONDS	MUNICIPAL BONDS	FOREIGN-DENOMINATED BONDS	COMMINGLED FUNDS	SHORT-TERM INVESTMENT FUNDS[(1)]	US GOVERNMENT SECURITIES	TOTAL
AAA	$ 7,064	$ -	$ 1,727	$ -	$ -	$ 95,236	$ 104,027
AA+	657	-	675	-	-	-	1,332
AA	1,742	-	782	-	-	-	2,524
AA-	7,583	1,400	-	-	-	-	8,983
A+	9,214	-	-	-	-	-	9,214
A	27,347	-	-	-	-	-	27,347
A-	20,914	-	17,141	-	-	-	38,055
BBB+	31,290	1,457	-	-	-	-	32,747
BBB	18,956	-	1,608	-	-	-	20,564
BBB-	3,917	-	5,770	-	-	-	9,687
BB+	2,223	-	-	-	-	-	2,223
BB	3,873	-	2,732	-	-	-	6,605
BB-	8,989	-	-	-	-	-	8,989
B+	3,628	-	-	-	-	-	3,628
B	2,629	-	-	-	-	-	2,629
B-	10,308	-	636	-	-	-	10,944
CCC+	4,504	-	-	-	-	-	4,504
CCC	2,482	-	-	-	-	-	2,482
CCC-	566	-	-	-	-	-	566
CC	3,770	-	-	-	-	-	3,770
C	3,615	-	-	-	-	-	3,615
D	771	-	-	-	-	-	771
NR[(2)]	55,069	-	5,288	141,465	41,317	8,747	251,886
Total	**$ 231,111**	**$ 2,857**	**$ 36,359**	**$ 141,465**	**$ 41,317**	**$ 103,983**	**$ 557,092**

(1) Includes short-term money market funds classified as cash equivalents.
(2) NR represents those securities that are not rated.

Securities Lending

The Board has authorized the Group Trust to enter into an agreement with JPMorgan for the lending of certain of the Group Trust's securities including, but not limited to, stocks and bonds to counterparty brokers and banks (borrowers) for a predetermined fee and period of time. Such transactions are allowed by State statute.

JPMorgan lends, on behalf of the Group Trust, securities held by JPMorgan as the Group Trust's custodian and receives US dollar cash and US government securities as collateral. JPMorgan does not have the ability to pledge or sell collateral securities absent a borrower default. Borrowers are required to put up collateral for each loan equal to: (i) in the case of loaned securities denominated in US dollars or whose primary trading market is in the US or sovereign debt issued by foreign governments, 102% of the fair market value of the loaned securities and (ii) in the case of loaned securities not denominated in US dollars or whose primary trading market is not in the US, 105% of the fair market value of the loaned securities.

The Board did not impose any restrictions during 2019 or 2018 on the amount of the loans that JPMorgan made on its behalf. There were no failures by any borrowers to return the loaned securities or pay distributions thereon during 2019 or 2018. Moreover, there were no losses during 2019 or 2018 resulting from a default of the borrower. JPMorgan indemnifies the Group Trust with respect to any loan related to any non-cash distribution and return of securities.

During 2019 and 2018, the Board and the borrowers maintained the right to terminate all securities lending transactions on demand. The cash collateral was invested, together with the collateral of other qualified tax-exempt plan lenders, in a collective investment pool maintained by JPMorgan. The relationship between the maturities of the collateral pool and the Group Trust's securities lent has not been determined. The fair value for securities on loan for the Group Trust was $38.6 million at December 31, 2019 and 2018. Cash collateral held for the Group Trust was $13 million and $20.6 million at December 31, 2019 and 2018, respectively. Non-cash collateral held for the Group Trust was $26.6 million and $19 million at December 31, 2019 and 2018, respectively, consisting primarily of corporate bonds and equity securities. At year-end, credit risk is substantially mitigated as the amounts of collateral held by the Group Trust exceed the amounts the borrowers owe the Group Trust. Securities lending transactions resulted in income, net of expenses, of $114 thousand and $112 thousand during 2019 and 2018, respectively.

Forward Contracts

During fiscal years 2019 and 2018, certain investment managers, on behalf of the Group Trust, entered into forward foreign exchange contracts as permitted by guidelines established by the Board. DPFP's staff monitors guidelines and compliance. A currency forward is a contractual agreement between two parties to pay or receive specific amounts of foreign currency at a future date in exchange for another currency at an agreed upon exchange rate. Forward commitments are not standardized and carry credit risk due to possible nonperformance by one of the counterparties. The maximum potential loss is the aggregate face value in US dollars at the time the contract was entered into. Forwards are usually traded over-the-counter. These transactions are initiated in order to hedge risks from exposure to foreign currency rate fluctuation and to facilitate trade settlement of foreign security transactions. Forwards carry market risk resulting from adverse fluctuations in foreign exchange rates. Recognition of realized gain or loss depends on whether the currency exchange rate has moved favorably or unfavorably to the contract holder upon termination of the contract. Prior to termination of the contract, the Group Trust records the unrealized currency translation gain or loss based on the applicable forward exchange rates. Forward currency contracts are considered derivative financial instruments and are reported at fair value.

The fair value and notional amounts of derivative instruments outstanding at December 31, 2019 and 2018, classified by type, and the changes in fair value of such derivative instruments for the year then ended are as follows (in thousands):

DECEMBER 31, 2019

	CHANGE IN FAIR VALUE	FAIR VALUE	NOTIONAL VALUE
Currency Forwards	$ 923	$ 652	$ 105,365

DECEMBER 31, 2018

	CHANGE IN FAIR VALUE	FAIR VALUE	NOTIONAL VALUE
Currency Forwards	$ (406)	$ (271)	$ 66,729

4. Fair Value Measurement

GASB No. 72 requires all investments be categorized under a fair value hierarchy. Fair value of investments is determined based on both observable and unobservable inputs. Investments are categorized within the fair value hierarchy established by GASB and the levels within the hierarchy are as follows:

- Level 1 – quoted prices (unadjusted) for identical assets or liabilities in active markets that a government can access at the measurement date

- Level 2 – inputs (other than quoted prices included within Level 1) that are observable for an asset or liability, either directly or indirectly. These inputs can include quoted prices for similar assets or liabilities in active or inactive markets, or market-corroborated inputs.

- Level 3 – significant unobservable inputs for an asset or liability

The remaining investments not categorized under the fair value hierarchy are shown at NAV. These are investments in non-governmental entities for which a readily determinable fair value is not available, such as member units or an ownership interest in partners' capital to which a proportionate share of net assets is attributed. Investments at NAV are commonly calculated by subtracting the fair value of liabilities from the fair value of assets.

The following table presents a summary of the Group Trust's investments by type as of December 31, 2019, at fair value (in thousands):

	FAIR VALUE DECEMBER 31, 2019	QUOTED PRICES IN ACTIVE MARKETS FOR IDENTICAL ASSETS (LEVEL 1)	SIGNIFICANT OTHER OBSERVABLE INPUTS (LEVEL 2)	SIGNIFICANT UNOBSERVABLE INPUTS (LEVEL 3)
Investments by Fair Value Level				
Short-term investment funds	$ 25,311	$ 25,311	$ -	$ -
Fixed income securities				
US Treasury bonds	118,853	-	118,853	-
US government agencies	12,870	-	12,870	-
Corporate bonds	278,775	-	278,775	-
Foreign-denominated bonds	28,846	-	28,846	-
Municipal bonds	4,655	-	4,655	-
Equity securities				
Domestic	279,709	279,709	-	-
Foreign	275,522	275,522	-	-
Real assets				
Real estate (1)	254,812	-	-	254,812
Timberland	8,771	-	-	8,771
Farmland	92,235	-	-	92,235
Private equity	92,064	-	-	92,064
Forward currency contracts	652	-	652	-
Total Investments by Fair Value Level	**$ 1,473,075**	**$ 580,542**	**$ 444,651**	**$ 447,882**

Investments Measured at NAV	
Fixed income - commingled funds	111,385
Real assets (1)	211,369
Private equity	175,523
Total Investments Measured at NAV	**$ 498,277**

Total Investments Measured at Fair Value	**$ 1,971,352**

(1) Direct holdings of real estate at Level 3 include only the assets which are wholly-owned and valued using significant unobservable inputs. Remaining real assets are valued at NAV.

The following table presents a summary of the Group Trust's investments by type as of December 31, 2018, at fair value (in thousands):

	FAIR VALUE DECEMBER 31, 2018	QUOTED PRICES IN ACTIVE MARKETS FOR IDENTICAL ASSETS (LEVEL 1)	SIGNIFICANT OTHER OBSERVABLE INPUTS (LEVEL 2)	SIGNIFICANT UNOBSERVABLE INPUTS (LEVEL 3)
Investments by Fair Value Level				
Short-term investment funds	$ 41,317	$ 41,317	$ -	$ -
Fixed income securities				
US Treasury bonds	95,236	-	95,236	-
US government agencies	8,747	-	8,747	-
Corporate bonds	231,111	-	231,111	-
Foreign-denominated bonds	36,359	-	36,359	-
Municipal bonds	2,857	-	2,857	-
Equity securities				
Domestic	265,626	265,626	-	-
Foreign	170,309	170,309	-	-
Real assets				
Real estate [(1)]	293,428	-	-	293,428
Timberland	8,722	-	-	8,722
Farmland	133,222	-	-	133,222
Private equity	91,585	-	-	91,585
Forward currency contracts	(271)	-	(271)	-
Total Investments by Fair Value Level	**$ 1,378,248**	**$ 477,252**	**$ 374,039**	**$ 526,957**

Investments Measured at NAV	
Fixed income - commingled funds	141,465
Real assets [(1)]	266,033
Private equity	221,290
Total Investments Measured at NAV	**$ 628,788**
Total Investments Measured at Fair Value	**$ 2,007,036**

(1) Direct holdings of real estate at Level 3 include only the assets which are wholly-owned and valued using significant unobservable inputs. Remaining real assets are valued at NAV.

Short-term investments consist of highly liquid securities invested by third party investment managers and held directly by the Group Trust with the custodian.

Fixed income securities consist primarily of US treasury securities, US corporate securities, international debt securities and commingled funds. Fixed income securities classified in Level 2 of the fair value hierarchy are valued using matrix pricing. This method uses quoted prices for securities with the same maturities and ratings rather than a fixed price for a designated security. Many debt securities are traded on a dealer market and much less frequently, which is consistent with a Level 2 classification as these investments are valued using observable inputs. Forward currency contracts are classified as Level 2 as these securities are priced using the cost approach on a dealer market traded on lower frequencies. Commingled funds classified as Level 3 involve internal evaluation of collectability and therefore involve unobservable inputs.

Equity securities, which include both domestic and foreign securities, are classified as Level 1 as fair value is obtained using a quoted price from active markets. The security price is generated by market transactions involving identical or similar assets, which is the market approach to measuring fair value. Inputs are observable in exchange markets, dealer markets, and brokered markets for which prices are based on trades of identical securities.

Real assets classified as Level 3 are investments in which DPFP either owns 100 percent of the asset or for which the valuation is based on non-binding offers from potential buyers to purchase the investments. Real asset investments, which are wholly-owned direct holdings, are valued at the income, cost, or market approach depending on the type of holding. All direct holdings are valued using unobservable inputs and are classified in Level 3 of the fair value hierarchy. Private equity investments classified as Level 3 are investments valued by an independent appraiser. Private equity and real assets valued at NAV are based on per share (or its equivalent) of DPFP's ownership interest in the partners' capital valued by the managers and based on third party appraisals, valuations and audited financials.

The following table presents a summary of the fair value and remaining unfunded commitments of the Group Trust's investments measured at NAV at December 31, 2019 (in thousands):

ASSET CATEGORY/CLASS	FAIR VALUE	UNFUNDED COMMITMENTS
Fixed Income - commingled funds	$ 111,385	$ 640
Real assets	211,369	10,020
Private equity	175,523	3,996
Total	**$ 498,277**	**$ 14,656**

The following table presents a summary of the fair value and remaining unfunded commitments of the Group Trust's investments measured at NAV at December 31, 2018 (in thousands):

ASSET CATEGORY/CLASS	FAIR VALUE	UNFUNDED COMMITMENTS
Fixed Income - commingled funds	$ 141,465	$ 1,445
Real assets	266,033	10,158
Private equity	221,290	5,541
Total	**$ 628,788**	**$ 17,144**

Investments measured at NAV include commingled funds, real assets, and private equity.

Fixed income commingled funds are fund-structure investments reported by the fund managers at NAV. Certain of the commingled investments have a redemption notice period of 7-30 days and others are less liquid, with estimated redemption periods ranging from 5 to 10 years as assets within the funds are liquidated.

Real asset investments (real estate, infrastructure, timberland and farmland) are held either in separate accounts, as a limited partner, or in a joint venture. These investments are illiquid and resold at varying rates, with distributions received over the life of the investments. They are typically not redeemed, nor do they have set redemption schedules.

Private equity holdings include fund-structure investments with general partners. By their nature, these investments are illiquid and typically not resold or redeemed. Distributions from each fund will be received as the underlying investments of the funds are liquidated. It is expected that the underlying assets of the funds will be liquidated over a period ranging from 5 to 15 years on average.

Upon initial investment with a general partner or in certain fund-structures, DPFP commits to a certain funding level for the duration of the contract. At will, the partners or fund managers may request that DPFP fund a portion of this amount. Such amounts remaining as of December 31, 2019 and 2018 for investments measured at NAV are disclosed above as unfunded commitments.

5. Net Pension Liability

The net pension liability is measured as the total pension liability, less the amount of the plan's fiduciary net position. The components of the net pension liability at December 31, 2019 and 2018 are as follows (in thousands):

Combined Pension Plan

	2019	2018
Total pension liability	$ 4,731,960	$ 4,501,670
Less: Plan fiduciary net position	(2,057,857)	(2,041,914)
Net pension liability	$ 2,674,103	$ 2,459,756

Plan fiduciary net position as a percentage of the total pension liability at December 31, 2019 and 2018 is 43.5% and 45.4%, respectively.

Supplemental Plan

	2019	2018
Total pension liability	$ 35,839	$ 31,831
Less: Plan fiduciary net position	(17,307)	(18,318)
Net pension liability	$ 18,532	$ 13,513

Plan fiduciary net position as a percentage of the total pension liability at December 31, 2019 and 2018 is 48.3% and 57.6%, respectively.

Actuarial Assumptions as of December 31, 2019

The total pension liability was determined by an actuarial valuation as of January 1, 2020, using the below significant assumptions, applied to all periods included in the measurement, except as noted below. The 2019 assumptions are based on an actuarial experience review covering the period January 1, 2015 to December 31, 2019.

Investment rate of return	7.00% per annum, compounded annually, net of investment expenses. This rate is based on an average inflation rate of 2.50% and a real rate of return of 4.50%. Market value asset returns are expected to be -6.00% in 2020, 5.25% in 2021, 5.75% in 2022, 6.25% in 2023 and 7.00% annually thereafter.
Discount rate	7.00%, used to measure the total pension liability
Administrative expenses	Explicit assumption of $8.5 million per year or 1% or Computation Pay, whichever is greater for the Combined Pension Plan and $65 thousand per year for the Supplemental Plan, increasing 2.50% annually. Includes investment-related personnel costs.
Projected salary increases	Range of 2.5% to 3.25% based on the City's pay plan, along with analysis completed in conjunction with an Experience Study Report for the five-year period ended December 31, 2019 and the 2019 Meet and Confer Agreement.
Payroll growth	2.50% per year, to match inflation assumption
Actuarial cost method	Entry age normal cost method (level percent of pay)
Post-retirement benefit increases	Ad hoc COLA after the Combined Plan is 70% funded after accounting for the impact of the COLA. 2% of original benefit, beginning October 1, 2063.
Actuarial Value of Assets	Combined Pension Plan – Reset of the actuarial value of assets to market value as of December 31, 2015, with a five-year smoothing in future periods; Supplemental Pension Plan – Market value of assets
Amortization methodology	Combined Pension Plan – Closed 25 years. Beginning January 1, 2021, each year's gains and losses will be amortized over a closed 20-year period. Supplemental Pension Plan – Closed 20 years. Beginning January 1, 2021, each year's gains and losses will be amortized over a closed 10-year period.
DROP interest, compounded annually, net of expenses	2.75% on active balances as of September 1, 2017, payable upon retirement, 0% on balance accruals after September 1, 2017.
Retirement age	Experience-based table of rates based on age, extending to age 65, with separate tables for police officers and firefighters.
Pre-retirement mortality	Pub-2010 Public Safety Employee Amount-Weighted Mortality Tables, with set forward for males; projected generationally using the Scale MP-2019.

Post-retirement mortality	Pub-2010 Public Safety Retiree Amount-Weighted Mortality Table, with a one-year setback for females; projected generationally using Scale MP-2019.
Disabled mortality	Pub-2010 Public Safety Disabled Retiree Amount-Weighted Mortality Table, with a four-year set forward for both males and females; projected generationally using Scale MP-2019.
DROP election	The DROP utilization factor is 0% for new entrants.

Actuarial Assumptions as of December 31, 2018:

The 2018 assumptions were based on an actuarial experience review covering January 1, 2010 to December 31, 2014. In addition, assumptions related to Plan changes which were effective September 1, 2017, as a result of the passage of HB 3158.

Investment rate of return	7.25% per annum, compounded annually, net of investment expenses. This rate is based on an average inflation rate of 2.75% and a real rate of return of 4.50%. Market value asset returns are expected to be 5.25% in 2019, 5.75% in 2020, 6.25% in 2021, 6.75% in 2022 and 7.25% annually thereafter.
Discount rate	7.25%, used to measure the total pension liability
Administrative expenses	Explicit assumption of $8.5 million per year or 1% or Computation Pay, whichever is greater for the Combined Pension Plan and $65 thousand per year for the Supplemental Plan, increasing 2.75% annually. Includes investment-related personnel costs.
Projected salary increases	2017: 10% if less than 10 years; 7% if 10-11 years; 2% if more than 11 years 2018: 5% if less than 10 years; 2% if more than 10 years 2019: 10% if less than 10 years; 7% if 10-11 years; 2% if more than 11 years 2020 and later: Range of 2% to 5% per year, inclusive of 2.75% inflation assumption, dependent upon years of service. 2017-2019 are based on the 2016 Meet and Confer Agreement. 2020 is based on the 2016 Meet and Confer Agreement, as amended in 2018. Remaining scale is based on the City's pay plan, along with analysis completed in conjunction with the most recent experience study.
Payroll growth	2.75% per year, to match inflation assumption
Actuarial cost method	Entry age normal cost method (level percent of pay)
Post-retirement benefit increases	Ad hoc COLA after the Combined Plan is 70% funded after accounting for the impact of the COLA. 2% of original benefit, beginning October 1, 2050.

Actuarial Value of Assets	Combined Pension Plan – Reset of the actuarial value of assets to market value as of December 31, 2015, with a five-year smoothing in future periods; Supplemental Pension Plan – Market value of assets
Amortization Methodology	Combined Pension Plan - 30 years; Supplemental Pension Plan – 10 years
DROP interest, compounded annually, net of expenses	3% on active balances as of September 1, 2017, payable upon retirement, 0% on balances accrued after September 1, 2017.
Retirement age	Experience-based table of rates based on age, extending to age 62, with separate tables for police officers and firefighters.
Pre-retirement mortality	RP-2014 sex-distinct Employee Mortality Table, with a two-year setback for males and no adjustments for females; projected generationally using the MP-2015 improvement scale.
Post-retirement mortality	RP-2014 sex-distinct Blue Collar Healthy Annuitant Mortality Table, with no adjustment for males and a two-year set forward for females; projected generationally using the MP-2015 improvement scale.
Disabled mortality	RP-2014 sex-distinct Disabled Retiree Mortality Table, with a three-year setback for both males and females; projected generationally using the MP-2015 improvement scale.
DROP election	The DROP Utilization factor is 0% for new entrants.

The long-term expected rate of return used by the external actuary to evaluate the assumed return on the Plans' investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. The actuary's best estimates of arithmetic real rates of return for each major asset class included in the Plans' target asset allocation as of December 31, 2019 are summarized as shown below. The rates of return below are net of the inflation component of 2.50%.

ASSET CLASS	LONG-TERM EXPECTED REAL RATE OF RETURN	TARGET ASSET ALLOCATION
Global Equity	5.29%	40%
Emerging Markets Equity	6.47%	10%
Private Equity	8.19%	5%
Cash	0.62%	3%
Short-Term Investment Grade Bonds	0.71%	12%
Investment Grade Bonds	1.00%	4%
High Yield Bonds	3.18%	4%
Bank Loans	2.85%	4%
Global Bonds	0.97%	4%
Emerging Market Debt	3.58%	4%
Real Estate	3.85%	5%
Natural Resources	5.54%	5%

Discount rate

The discount rate used to measure the Combined Pension Plan liability was 7.00%. The projection of cash flows used to determine the discount rate assumed City contributions will be made in accordance with the provisions of Governing Statue, including statutory minimums through 2024 and 34.50% of Computation Pay thereafter. Members are expected to contribute 13.50% of Computation Pay. For cash flow purposes, projected payroll is based on 90% of the City's Hiring Plan payroll projections through 2037, increasing by 2.50% per year thereafter. This payroll projection is used for cash flow purposes only and does not impact the Total Pension Liability. The normal cost rate for future members is assumed to be 13.83% for all years. Based on these assumptions, the System's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

The discount rate used to measure the total pension liability for the Supplemental Plan was 7.00%. The projection of cash flows used to determine the discount rate assume that City contributions will equal the employer's normal cost plus a twenty-year amortization payment on the unfunded actuarial accrued liability and member contributions will equal 13.50% of supplemental Computation Pay. Based on those assumptions, the Supplemental Plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Sensitivity of the net pension liability to changes in the discount rate

The following tables present the net pension liability, calculated using the current discount rate, as well as what the net pension liability would be if it were calculated using a discount rate that is one percentage-point lower or one percentage-point higher than the current rate (in thousands).

DECEMBER 31, 2019

Combined Pension Plan	1% DECREASE (6.00%)	CURRENT DISCOUNT RATE (7.00%)	1% INCREASE (8.00%)
Net pension liability	$ 3,212,526	$ 2,674,103	$ 2,224,767

Supplemental Plan	1% DECREASE (6.00%)	CURRENT DISCOUNT RATE (7.00%)	1% INCREASE (8.00%)
Net pension liability	$ 21,763	$ 18,532	$ 15,763

DECEMBER 31, 2018

Combined Pension Plan	1% DECREASE (6.25%)	CURRENT DISCOUNT RATE (7.25%)	1% INCREASE (8.25%)
Net pension liability	$ 2,953,141	$ 2,459,756	$ 2,046,452

Supplemental Plan	1% DECREASE (6.25%)	CURRENT DISCOUNT RATE (7.25%)	1% INCREASE (8.25%)
Net pension liability	$ 16,363	$ 13,513	$ 11,069

6. Deferred Retirement Option Plan

Deferred Retirement Option Plan (DROP) interest for active DROP members was eliminated after September 1, 2017; only the balance as of September 1, 2017 is eligible for interest once active DROP members retire. Active DROP participation is limited to 10 years. Retirees are not allowed to defer payments into their DROP accounts. Retirees and other DROP account holders, excluding active DROP members, had their DROP balance converted to an annuity (stream of payments) on November 30, 2017. The term of the annuity was based on the DROP account holders expected lifetime at November 30, 2017. The annuity included interest on balances accrued prior to September 1, 2017 at a rate that is correlated to the United States Treasury Note or Bond rates based on the term of the annuity and rules adopted by the Board.

DROP account balances of a member that retires after November 30, 2017 are converted to an annuity (stream of payments) at the time the member retires. The annuity is based on the member's life expectancy and interest rates at the time of retirement. Interest on retiree DROP accounts is based on the length of the retiree's expected lifetime and will be based on U.S. Treasury Bond Rates and rules adopted by the Board. Interest is only payable on the September 1, 2017 account balance.

HB 3158 allowed active members an opportunity to revoke their DROP election prior to February 28, 2018 under rules adopted by the Board. 183 members revoked their prior DROP participation election.

Prior to the passage of HB 3158, DROP accounts earned interest based on the 2014 plan amendments, which instituted a gradual step-down in the interest rate paid on DROP accounts. The interest paid on DROP accounts beginning October 1, 2016 until September 1, 2017 was 6%. See Note 9 for discussion of the status of litigation related to the 2014 plan amendments.

The following tables reflect the change in DROP balances and the change in the present value of DROP annuities and the number of participants and annuitants during the year ended December 31, 2019:

Combined Pension Plan

	DROP BALANCE (000'S)		DROP PARTICIPANTS
Balance at December 31, 2018	$ 193,931	Participants at December 31, 2018	483
Accumulations	21,167		
Balances Annuitized	(49,885)		
Other Distributions/Deductions[1]	(66)		
Adjustments	(9,804)		
Balance at December 31, 2019	**$ 155,343**	**Participants at December 31, 2019**	**383**
	ANNUITY BALANCE (000'S)		ANNUITY PARTICIPANTS
Present Value of Annuities at December 31, 2018	$ 828,520	Annuitants at December 31, 2018	2,186
Present Value of Annuities at December 31, 2019	$ 880,306	**Annuitants at December 31, 2019**	**2,342**

Supplemental Plan

	DROP BALANCE (000'S)		DROP PARTICIPANTS
Balance at December 31, 2018	$ 175	Participants at December 31, 2018	5
Accumulations	16		
Balances Annuitized	(54)		
Other Distributions/Deductions[1]	-		
Adjustments	-		
Balance at December 31, 2019	**$ 137**	**Participants at December 31, 2019**	3
	ANNUITY BALANCE (000'S)		ANNUITY PARTICIPANTS
Present Value of Annuities at December 31, 2018	$ 4,296	Annuitants at December 31, 2018	57
Present Value of Annuities at December 31, 2019[2]	**$ 6,988**	**Annuitants at December 31, 2019**	**66**

[1] Includes annuities that may be paid out of the Excess Benefits and Trust.

7. Defined Contribution Retirement Plan

DPFP offers its employees a money purchase plan (MPP) created in accordance with Internal Revenue Code Section 401. An employee of DPFP becomes a participant in the MPP on their first day of service. Participation ceases, except for purposes of receiving distributions in accordance with the terms of the MPP, on the day employment with DPFP is terminated. Employees are required to contribute 6.5% of their regular pay. Employees are allowed to make after- tax contributions, not to exceed IRS Code limitations. In accordance with the MPP, DPFP is obligated to contribute 12% of permanent employees' regular rate of pay and 8% of part-time and temporary employees' regular rate of pay each year. During 2019 and 2018, DPFP contributed approximately $312 thousand and $275 thousand, respectively, and participants contributed approximately $169 thousand and $149 thousand, respectively, to the MPP. The MPP is administered by a third party, Voya Financial, Inc. (Voya), and the cost of administration is borne by the MPP participants. The MPP is held in trust by Voya and is not a component of the accompanying financial statements.

8. Capital Assets

The DPFP office building and land are recorded at acquisition value. Purchased capital assets which include building improvements, are recorded at historical cost. Depreciation is charged over the estimated useful lives of the assets using a straight-line method. Depreciation expense of $233 thousand and $226 thousand, respectively, is included in professional and administrative expenses in the accompanying financial statements for the years ended December 31, 2019 and 2018. All capital assets belong to DPFP. Maintenance and repairs are charged to expense as incurred.

Capitalization thresholds for all capital asset classes and useful lives for exhaustible assets are as follows (in thousands):

ASSET CLASS	CAPITALIZATION THRESHOLD	DEPRECIABLE LIFE
Building	$ 50	50 years
Building improvements	$ 50	15 years
Information Technology Hardware	$ 50	5 years

Capital asset balances and changes for the fiscal years ending December 31, 2019 and 2018 are as follows (in thousands):

ASSET CLASS	BALANCE DECEMBER 31, 2017	INCREASES	DECREASES	BALANCE DECEMBER 31, 2018	INCREASES	DECREASES	BALANCE DECEMBER 31, 2019
Land	$ 3,562	$ -	$ -	$ 3,562	$ -	$ -	$ 3,562
Building	8,921	-	190	8,731	-	190	8,541
Building improvements	232	-	36	196	-	36	160
IT Hardware	-	-	-	-	73	7	66
Total	**$ 12,715**	**$ -**	**$ 226**	**$ 12,489**	**$ 73**	**$ 233**	**$ 12,329**

9. Commitments and Contingencies

Members

As described in Note 1, certain members of the Plans whose employment with the City is terminated prior to being eligible for pension benefits are entitled to refunds of their accumulated contributions without interest, if they have less than five years of pension service. As of December 31, 2019, and 2018, aggregate contributions from active non-vested members for the Combined Pension Plan were $19.4 million and $20.3 million, respectively. The portion of these contributions that might be refunded to members who terminate prior to pension eligibility and request a refund has not been determined. Refunds due to terminated non-vested members in the amount of $1.3 million and $1.0 million for December 31, 2019 and 2018, respectively, were included in accounts payable and other accrued liabilities of the Combined Pension Plan. As of December 31, 2019, and 2018, the aggregate contributions from active non-vested members of the Supplemental Plan were $2 thousand and $38 thousand. No members are eligible for refunds from the Supplemental Plan as of December 31, 2019.

At December 31, 2019 the total accumulated DROP balance and the present value of the DROP annuities was $1.04 billion for the Combined Plan and $7.1 million for the Supplemental Plan. The total accumulated DROP balance at December 31, 2018 was $1.01 billion for the Combined Plan and $4.5 million for the Supplemental Plan.

Investments

The following table depicts the total commitments and unfunded commitments to various limited partnerships and investment advisors at December 31, 2019, by asset class (in thousands).

ASSET CLASS	TOTAL COMMITMENT	TOTAL UNFUNDED COMMITMENT
Real assets	$ 117,000	$ 10,020
Private equity	126,283	3,996
Fixed income – commingled funds	10,000	640
Total	**$ 253,283**	**$ 14,656**

Capital calls related to private equity and real assets were received after December 31, 2019, which reduced the unfunded commitments to $3.8 and $9.7 million, respectively. See Note 11.

Legal

DPFP was a defendant in litigation in which certain individual members have alleged that 2014 plan amendments to the Combined Pension Plan reducing the DROP interest rate and a related policy and procedure change to accelerate DROP distributions violated Article 16, Section 66 of the Texas Constitution. On April 14, 2015, the district court entered judgment for DPFP, holding these amendments and changes are constitutional. As a result of this court decision, the Board voted on April 16, 2015 to implement the changes approved by the members. Plaintiffs appealed and on December 13, 2016, the Fifth District Court of Appeals rendered a decision affirming the district court's ruling. On January 24, 2017, plaintiffs filed a petition for review with the Texas Supreme Court. On March 8, 2019, the Texas Supreme Court upheld the decisions by the lower courts and on June 14, 2019 denied the plaintiff's motion for rehearing thereby ending the case.

In 2017, a group of retirees filed a lawsuit in federal court which seeks to require the Board to distribute lump sum payments from DROP upon the retirees' request. On March 14, 2018, the district court granted DPFP's motion to dismiss the case. The plaintiffs appealed this decision to the Fifth Circuit and requested the Fifth Circuit certify certain issues relating to the case to the Texas Supreme Court. On March 20, 2019, the Fifth Circuit certified two questions to the Texas Supreme Court. In January 2020, the Supreme Court answered these questions and in April 2020 the Fifth Circuit subsequently upheld the decision of the district court. In August 2020, the plaintiffs filed a writ of certiorari to the United States Supreme Court which was denied thereby ending the case.

In February 2019, certain plaintiffs filed suit against the Texas Pension Review Board and its Chairman in state district court in Travis County alleging that changes to the provisions of the DPFP Plans relating to the benefit supplement and annual adjustment were violative of the Texas Constitution. The case is in its early stages. While DPFP is not a party to the lawsuit, a judgment for the plaintiffs would have a material effect upon DPFP and its financial statement and condition. The ultimate outcome of this lawsuit cannot be determined at this time and, accordingly, no amounts related to these claims have been recorded in the accompanying financial statements as of December 31, 2019.

10. Risks and Uncertainties

The Group Trust invests in various investment securities. Investment securities are exposed to various risks such as interest rate, market, and credit risks. The effect of such risks on the Group Trust's investment portfolio is mitigated by the diversification of its holdings. Due to the level of risk associated with certain investment securities, it is reasonably possible that changes in the value of investment securities may occur over the course of different economic and market cycles and that such change could be material to the financial statements.

The Plans' actuarial estimates disclosed in Note 5 are based on certain assumptions pertaining to investment rate of return, inflation rates, and participant demographics, all of which are subject to change. Due to uncertainties inherent in the estimations and assumptions process, it is reasonably possible that changes in these estimates and assumptions in the near term could be material to the financial statements.

Several lawsuits were pending against the City by police officers and firefighters, which claim the right to significant back pay on behalf of many current and former City of Dallas police officers and firefighters. DPFP previously intervened in such lawsuits to protect DPFP's right to Member and City contributions if they were to become due upon a successful outcome of the police officers' and firefighters' claims. HB 3158, passed by the Texas Legislature in 2017, provided that any award of back pay arising out of litigation would not be included in Computation Pay, thereby eliminating any liability of DPFP for increased benefits regardless of the outcome of these suits. Additionally, a settlement agreement was signed by all parties in September 2018, which eliminates any liability for DPFP. Accordingly, no amounts related to these claims have been recorded in the accompanying financial statements as of December 31, 2019 and 2018.

11. Subsequent Events

Investment Policy Statement Amendments

In July 2020, the Board approved modifying the Investment Policy Statement (IPS) to include language referencing the objective of covering 2.5 years of expected net cash flows in the Safety Reserve.

Real Asset Sales and Private Equity Sales

Subsequent to year end and prior to the issuance date of the financials, there were 3 sales of Real Estate properties that totaled $16.8 million in proceeds to DPFP and one Private Equity distribution of $1.2 million.

Capital Calls Resulting in the Reduction of Unfunded Commitments

Subsequent to December 31, 2019, DPFP received and paid the following material capital calls: Real Assets - $353 thousand and Private Equity - $230 thousand.

Voluntary Correction Program (VCP) Closing Agreement

In 2018, the system filed an application to participate in the Voluntary Correction Program (VCP) of the Internal Revenue Service (IRS). The issues were related to DROP distributions and the Excess Benefit Plan. In 2020, a closing agreement with the IRS was completed and no additional action is expected on this issue.

COVID-19

The recent outbreak of coronavirus ("COVID-19"), which the World Health Organization has declared to constitute a pandemic, has impacted the global commercial activity and contributed to significant volatility in certain equity and debt markets. The general uncertainty surrounding the dangers and impact of COVID-19 are having a particularly adverse impact on transportation, hospitality, tourism, entertainment and other industries. This has led to significant volatility and it is uncertain how long this volatility will continue. The potential impacts, including a global, regional or other economic recession, are increasingly uncertain and difficult to assess. While governments and central banks have reacted with monetary interventions designed to stabilize economic conditions, the duration and extent of the impact of the COVID-19 outbreak, as well as the effectiveness of government and central bank responses, remains unclear at this time. The resulting financial and economic market uncertainty could have a significant adverse impact on the System, including the fair value of its investments.

Securities Lending Program

In August 2020, the Board approved the suspension of the Securities Lending Program.

Legal

In January 2020, in the retiree DROP lump sum case, the Supreme Court answered the two certified questions sent to it by the Fifth Circuit and in April 2020 the Fifth Circuit subsequently upheld the decision of the district court. In August 2020, the plaintiffs filed a writ of certiorari to the United States Supreme Court which was denied thereby ending the case.

Management has evaluated subsequent events through December 10, 2020, which is the date that the financial statements were available for issuance and noted no subsequent events to be disclosed other than those which are disclosed in this Note or elsewhere in the Notes to Combining Financial Statements.

Required Supplementary Information

(Unaudited)

Schedule of Changes in the Net Pension Liability and Related Ratios

For Last Six Fiscal Years (in Thousands)

COMBINED PENSION PLAN

FOR FISCAL YEAR ENDING DECEMBER 31,	2019	2018	2017	2016	2015	2014
Total pension liability						
Service cost	$ 49,155	$ 44,792	$ 148,552	$ 167,432	$ 125,441	$ 131,312
Interest	318,703	318,536	348,171	360,567	359,023	369,408
Changes of benefit terms	-	16,091	(1,167,597)	-	-	(329,794)
Differences between expected and actual experience	16,723	(46,555)	(134,665)	(77,463)	379,461	(4,453)
Changes of assumptions	155,569	(31,460)	(2,851,241)	(712,003)	908,988	-
Benefit payments, including refunds of employee contributions	(309,860)	(297,081)	(296,154)	(825,092)	(285,003)	(245,932)
Net change in total pension liability	230,290	4,323	(3,952,934)	(1,086,559)	1,487,910	(79,459)
Total pension liability - beginning	4,501,670	4,497,347	8,450,28	9,536,840	8,048,930	8,128,389
Total pension liability - ending (a)	**$ 4,731,960**	**$ 4,501,670**	**$ 4,497,347**	**$ 8,450,281**	**$ 9,536,840**	**$ 8,048,930**

Plan fiduciary net position						
Employer contributions	$ 155,721	$ 149,357	$ 126,318	$ 119,345	$ 114,886	$ 109,792
Employee contributions	52,268	49,332	32,977	25,518	25,676	29,333
Net investment income (loss), net of expenses	124,260	42,822	98,911	164,791	(235,207)	(138,893)
Benefits payments	(309,861)	(297,081)	(296,154)	(825,092)	(285,003)	(245,932)
Interest expense	-	-	(1,279)	(4,532)	(8,417)	(7,361)
Administrative expenses	(6,445)	(5,861)	(8,090)	(9,492)	(6,006)	(8,003)
Net change in plan fiduciary net position	15,943	(61,431)	(47,317)	(529,462)	(394,071)	(261,064)
Plan fiduciary net position - beginning	2,041,914	2,103,345	2,150,662	2,680,124	3,074,195	3,335,259
Plan fiduciary net position - ending (b)	**$ 2,057,857**	**$ 2,041,914**	**$ 2,103,345**	**$ 2,150,662**	**$2,680,124**	**$ 3,074,195**

Net pension liability - ending (a) - (b)	$ 2,674,103	$ 2,459,756	$ 2,394,002	$ 6,299,619	$ 6,856,716	$ 4,974,735
Plan fiduciary net position as a percentage of total pension liability	43.5%	45.4%	46.8%	25.5%	28.1%	38.2%
Covered payroll	$ 369,955	$ 363,117	$ 346,037	$ 357,414	$ 365,210	$ 383,006
Net pension liability as a percentage of covered payroll	673.7%	677.4%	691.8%	1,762.6%	1,877.5%	1,298.9%

(Continued)

Schedule is intended to show information for 10 years. Additional years will be presented when they become available.

SUPPLEMENTAL PENSION PLAN

FOR FISCAL YEAR ENDING DECEMBER 31,	2019	2018	2017	2016	2015	2014
Total pension liability						
Service cost	$ 212	$ 222	$ 111	$ 70	$ 36	$ 28
Interest	2,223	2,359	2,799	2,911	2,953	2,969
Changes of benefit terms	-	888	(5,305)	-	-	(526)
Differences between expected and actual experience	3,007	(2,628)	(1,435)	1,105	928	336
Changes of assumptions	1,332	28	(479)	(916)	(600)	-
Benefit payments, including refunds of employee contributions	(2,766)	(2,708)	(2,668)	(5,912)	(2,640)	(3,414)
Net change in total pension liability	4,008	(1,839)	(6,977)	(2,742)	677	(607)
Total pension liability - beginning	31,831	33,670	40,647	43,38	42,712	43,319
Total pension liability - ending (a)	**$ 35,839**	**$ 31,831**	**$ 33,670**	**$ 40,647**	**$ 43,389**	**$ 42,712**

Plan fiduciary net position						
Employer contributions	$ 1,530	$ 1,979	$ 2,077	$ 3,064	$ 2,443	$ 1,817
Employee contributions	111	74	66	35	43	49
Net investment income (loss), net of expenses	169	1,220	740	1,141	(1,689)	(517)
Benefits payments	(2,766)	(2,708)	(2,668)	(5,912)	(2,640)	(3,414)
Interest expense	-	-	(11)	(78)	(44)	(51)
Administrative expenses	(55)	(52)	(69)	(37)	(61)	(56)
Net change in plan fiduciary net position	(1,011)	513	135	(1,787)	(1,948)	(2,172)
Plan fiduciary net position - beginning	18,318	17,805	(17,670)	(19,457)	21,405	23,577
Plan fiduciary net position - ending (b)	**$ 17,307**	**$ 18,318**	**$ 17,805**	**$ 17,670**	**$ 19,457**	**$ 21,405**

Net pension liability - ending (a) - (b)	$ 18,532	$ 13,513	$ 15,865	$ 22,977	$ 23,932	$ 21,307
Plan fiduciary net position as a percentage of total pension liability	48.3%	57.6%	52.9%	43.5%	44.8%	50.1%
Covered payroll	584	$ 622	$ 916	$ 525	$ 725	$ 557
Net pension liability as a percentage of covered payroll	3,172.8%	2,173.8%	1,731.6%	4,376.2%	3,303.3%	3,827.3%

Schedule is intended to show information for 10 years. Additional years will be presented when they become available.

Notes to Schedule:

Changes of benefit terms:

As of December 31, 2019 and 2018 – None

As of December 31, 2017
HB 3158 was signed by the Governor on May 31, 2017, the significant benefit and contribution changes in the bill were effective September 1, 2017.

- Normal Retirement Age increased from either age 50 or 55 to age 58
- For members less than the age of 45 on September 1, 2017, hired prior to March 1, 2011, and had less than 20 years of pension service the Early Retirement Age increased from age 45 to age 53
- Vesting for members hired after February 28, 2011 was reduced from ten years to five years of service
- Benefit multiplier for all future service for members hired prior to March 1, 2011 was lowered from 3.00% to 2.50%
- Benefit multiplier retroactively increased to 2.50% for members hired on or after March 1, 2011
- Benefit multipliers for 20 and Out benefit lowered
- Members hired after February 28, 2011 are eligible for an early retirement benefit after 20-years of service
- Maximum benefit reduced from 96% of computation pay to 90% of computation pay for members hired prior to March 1, 2011
- Average computation pay period changed from 36 months to 60 months for future service for members hired prior to March 1, 2011
- Annual Adjustment (COLA) discontinued for all members. The Board may choose to provide a COLA if the funded ratio on a market value basis is at least 70% after the implementation of a COLA.
- The supplemental benefit is eliminated prospectively; only those for whom the supplement was already granted as of September 1, 2017 will maintain the supplement
- Active DROP participation is limited to 10 years
- DROP interest for active DROP members was eliminated after September 1, 2017; only the balance as of September 1, 2017 will be eligible for interest once active DROP members retire
- Retirees with DROP accounts as of September 1, 2017 will have their DROP account balances paid out over their expected lifetime based on their age as of September 1, 2017
- Future retirees with DROP accounts will have their DROP account balances paid out over their expected lifetime as of the date of their retirement
- Interest on retiree DROP accounts as of August 31, 2017 will be paid based on the length of the retiree's expected lifetime and will be based on U.S. Treasury rates which correlate to expected lifetime, as determined by the Board of Trustees
- Member contributions for both DROP and non-DROP members increased to 13.5% effective September 1, 2017
- The City's contribution rate will increase to 34.5% of computation pay. Between September 1, 2017 and December 31, 2024, the City's contribution will be the greater of (i) 34.5% and (ii) a biweekly contribution amount as stated in HB3158, plus $13 million per year.

As of December 31, 2016 and 2015 - None

As of December 31, 2014

The Board approved a plan amendment implementing changes to DROP interest rates on April 16, 2015. Such changes were reflected in the valuation of the net pension liability as of December 31, 2015 and 2014.

Changes of methods and assumptions:

The following assumption changes were adopted by the Board for use in the January 1, 2020 actuarial valuation. Some of the assumption changes were related to the actuarial experience study completed for the five-year period ending December 31, 2019. For further information regarding the changes to actuarial assumptions, refer to the January 1, 2020 Dallas Police and Fire Pension System actuarial valuation reports for the Combined Pension Plan and the Supplemental Plan.

As of December 31, 2019

- The net investment return assumption was lowered from 7.25% to 7.0%.
- The salary scale assumption was updated based on the 2019 Meet and Confer agreement, with a new ultimate rate of 2.50%.
- The payroll growth assumption was lowered from 2.75% to 2.50%.
- The mortality rates were updated to the Pub-2010 Public Safety Amount-weighted Mortality Tables, with varying adjustments by status and sex, projected generationally with Scale MP-2019.
- The withdrawal rates were updated and the ultimate 0% rate was moved up from 38 to 25 years of service.
- The DROP retirement rates were increased at most ages and the ultimate 100% retirement was updated from the earlier of 67 years or 8 years in DROP to the earlier of age 65 or 10 years in DROP.
- The non-DROP retirement rates were lowered at most ages and simplified from three sets to two sets of rates.
- The retirement assumption for inactive vested participants was updated to include an assumption that 75% of those who terminate with a vested benefit prior to age 40 will take a cash out at age 40.
- The DROP annuitization interest rate for account balances as of September 1, 2017 was lowered from 3.0% to 2.75%.
- The ad-hoc COLA assumption was updated to begin October 1, 2063. Last year, the COLA was assumed to begin October 1, 2050.
- The system's expectations for near-term market returns were lowered to -6.0% for 2020, +5.25% for 2021, +5.75% for 2022 and +6.25% for 2023. For valuation purposes, these return assumptions are used for determining the projected full-funding date and the projected COLA start date.

As of December 31, 2018

- The salary scale assumption was updated to reflect the 2016 Meet and Confer Agreement, as amended in 2018.
- The ad-hoc COLA assumption was updated to begin October 1, 2050 based on the updated projection of the unfunded actuarial accrued liability; last year, the COLA was assumed to begin October 1, 2053

As of December 31, 2017

The discount rate used to measure the total pension liability changed from a blended discount rate of 4.12% to the assumed rate of return of 7.25% for the Combined Pension Plan and from a blended discount rate of 7.10% to the assumed rate of return of 7.25% for the Supplemental Plan.

As a result of the passage of HB 3158 the following assumption were changed:

- The DROP utilization factor was changed from 100% to 0%
- Current DROP members with at least eight years in DROP as of January 1, 2017 are assumed to retire in 2018. Current DROP members with less than eight years in DROP as of January 1, 2017 are assumed to retire once they have been in the DROP for eight years
- Retirement rates were changed effective January 1, 2018
- 100% retirement rate once the projected sum of age plus service equals 90
- New terminated vested members are assumed to retire at age 58
- DROP account balances annuitized as of September 1, 2017 are assumed to earn 2.75% interest; DROP account balances as of September 1, 2017 for active members are assumed to earn 3.00% interest upon retirement; DROP account balances accrued after September 1, 2017 for active members do not earn interest
- DROP payment period based on an 85%/15% male/female blend of the current healthy annuitant mortality tables
- COLA assumed to be a 2.00% COLA beginning October 1, 2053 and payable every October 1st thereafter
- The administrative expense assumption was changed from the greater of $10 million per year or 1% of computation pay to the greater of $8.5 million per year or 1% of computation pay for the Combined Plan and from $60 thousand to $65 thousand for the Supplemental Plan

As of December 31, 2016

- The blended discount rate used to measure the total pension liability changed from 3.95% to 4.12% for the Combined Pension Plan and from 7.19% to 7.10% for the Supplemental Plan.
- The remaining amortization period was adjusted from 40 years to 30 years for the Combined Pension Plan based on Section 802.101(a) of the Texas Government Code.
- The salary scale was modified for valuation years 2017-2019 in accordance with the Meet and Confer Agreement. DROP interest is assumed to decline from 6.00% to 5.00% effective October 1, 2017, and to 0.00% effective October 1, 2018, per Section 6.14(c) of the plan document as amended and restated through April 16, 2015.

As of December 31, 2015

The blended discount rate used to measure the total pension liability changed from 4.94% to 3.95% for the Combined Pension Plan and from 7.13% to 7.19% for the Supplemental Plan.

As a result of the actuarial experience study completed for the five-year period ending December 31, 2014, the following changes in assumptions were adopted by the Board. For further information regarding the changes to actuarial assumptions, refer to the January 1, 2016 Dallas Police and Fire Pension System actuarial valuation reports for the Combined Pension Plan and the Supplemental Plan.

- Salary scales were updated with separate service-based salary assumptions for police officers and firefighters, lowering the range of increase to 3.00% to 5.20% from the previous assumed range of 4.00% to 9.64%.
- The payroll growth rate assumption was lowered from 4.00% to 2.75% to equal the assumed inflation rate.
- In the prior valuation, the investment return assumption was net of both investment and administrative expenses. In the December 31, 2015 valuation, an explicit assumption for administrative expenses was added to the normal cost. Assumptions of $10 million and $60 thousand per year were utilized for the Combined Pension Plan and Supplemental Plan, respectively.
- In the prior valuation for the Combined Pension Plan, an asset valuation method using a 10-year smoothing period was applied. In the December 31, 2015 valuation, the actuarial value of assets was reset to market value as of the measurement date. A five-year smoothing period will be used in future periods.
- The remaining amortization period was adjusted from 30 years to 40 years for the Combined Pension Plan based on Section 802.101(a) of the Texas Government Code.
- Mortality tables were updated from the RP-2000 tables to the RP-2014 tables.
- Assumed rates of turnover were lowered for police officers and raised for firefighters to reflect recent experience.
- Retirement rates were lowered for both police officers and firefighters, with the separation of service-based assumptions implemented based on recent experience.
- Disability rates were lowered for both police officers and firefighters and service-based assumptions were eliminated based on the similarity of recent experience between the two services.
- The assumption of the portion of active employees who are married was lowered from 80% to 75% and the age of the youngest child was raised from 1 to 10.

As of December 31, 2014

The assumption for the future interest rates credited to DROP balances was changed from 8.5% to the following rates prescribed by the 2014 plan amendment:

- At October 1, 2014 – 8.0%;
- At October 1, 2015 – 7.0%;
- At October 1, 2016 – 6.0%; and
- At October 1, 2017 and thereafter – 5.0%

Schedule of Employer Contributions – Combined Pension Plan

(In Thousands)

MEASUREMENT YEAR ENDING DECEMBER 31,	ACTUARIALLY DETERMINED CONTRIBUTION	ACTUAL CONTRIBUTION	CONTRIBUTION DEFICIENCY (EXCESS)	COVERED PAYROLL	ACTUAL CONTRIBUTION AS A % OF COVERED PAYROLL
2019	$ 152,084	$ 155,721	$ (3,637)	$ 363,117	42.9%
2018	$ 157,100	$ 149,357	$ 7,743	$ 346,037	43.2%
2017	$ 168,865	$ 126,318	$ 42,547	$ 357,414	35.3%
2016	$ 261,859	$ 119,345	$ 142,514	$ 365,210	32.7%

Schedule is intended to show information for 10 years. Additional years will be presented as they become available.

Prior to January 1, 2016, the actuarial determined contribution for the Combined Plan was not determined by the actuary.

The City's contribution rate for the Combined Pension Plan is set by State statutes. The difference between the actuarial determined contribution and the City contribution set by State statutes results in the contribution excess or deficiency.

Notes to Schedule:

The following methods and assumptions used to calculate the actuarial determined contribution:

As of December 31, 2019

Actuarial cost method	Entry age normal cost method
Amortization method	30-year level percent of pay, using 2.75% annual increases
Remaining amortization period	38 years as of January 1, 2019
Asset valuation method	Market value of assets less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between the actual market return and the expected return on the market value, and is recognized over a five-year period, further adjusted, if necessary, to be within 20% of the market value.
Investment rate return	7.25% per annum, compounded annually, net of all expense, including administrative expenses. This rate is based on an average inflation rate of 2.75% and a real rate of return of 4.50%.
Inflation rate	2.75%
Projected salary increases	Inflation plus merit increases, varying by group and service
Post-retirement benefit	COLA assumed to be a 2.00% COLA beginning October 1, 2050 and increases payable every October 1 thereafter
Retirement age	Experienced-based table of rates, based on age

Mortality	Pre-retirement: Sex-distinct RP-2014 Employee Mortality Table, set back two years for males, projected generationally using Scale MP-2015 Post-retirement: Sex-distinct RP-2014 Healthy Annuitant Mortality Table, set forward two years for females, projected generationally using Scale MP-2015 Disabled: Sex-distinct RP-2014 Disabled Retiree Mortality Table, set back three years for males and females, projected generationally using Scale MP- 2015
DROP balance returns	DROP account balances as of September 1, 2017 for active members are based on the United States Department of Commerce Daily Treasury Yield Curve Rates for durations between 5 and 30 years; interest rate is based on the expected lifetime of the members at the time they retire. Interest is only paid on DROP account balances as of September 1, 2017.
DROP election	The DROP utilization factor is 0% for new entrants.

As of December 31, 2018

Actuarial cost method	Entry age normal cost method
Amortization method	30-year level percent of pay
Remaining amortization period	45 years as of January 1, 2018
Asset valuation method	Reset of the actuarial value of assets to market value as of December 31, 2015, with a five-year smoothing in future periods
Investment rate return	7.25% per annum, compounded annually, net of all expense, including administrative expenses. This rate is based on an average inflation rate of 2.75% and a real rate of return of 4.50%.
Inflation rate	2.75%
Projected salary increases	Inflation plus merit increases, varying by group and service, ranging from 0.00% to 2.25%
Post-retirement benefit	COLA assumed to be a 2.00% COLA beginning October 1, 2053 and increases payable every October 1 thereafter
Retirement age	Experienced-based table of rates, based on age
Mortality	Pre-retirement: Sex-distinct RP-2014 Employee Mortality Table, set back two years for males, projected generationally using Scale MP-2015 Post-retirement: Sex-distinct RP-2014 Blue Collar Healthy Annuitant Mortality Table, set forward two years for females, projected generationally using Scale MP-2015 Disabled: Sex-distinct RP-2014 Disabled Retiree Mortality Table, set back three years for males and females, projected generationally using Scale MP- 2015

DROP balance returns	DROP account balances as of September 1, 2017 for active members are based on the United States Department of Commerce Daily Treasury Yield Curve Rates for durations between 5 and 30 years; interest rate is based on the expected lifetime of the members at the time they retire. Interest is only paid on DROP account balances as of September 1, 2017.
DROP election	The DROP utilization factor is 0% for new entrants.

As of December 31, 2017 that differed from above

Projected salary increases	Inflation plus merit increases, varying by group and service, ranging from 0.25% to 2.45%
Post-retirement benefit increases	COLA assumed to be a 2.00% COLA beginning October 1, 2049 and payable every October 1 thereafter
DROP balance returns	6% per year until September 1, 2017. Beginning September 1, 2017, DROP account balances for annuitants are assumed to earn 2.75% interest; DROP account balances as of September 1, 2017 for active members are assumed to earn 2.75% interest upon retirement; DROP account balances accrued after September 1, 2017 for active members do not earn interest.
DROP election	The DROP utilization factor is 0% for new entrants. Current DROP members with at least eight years in the DROP as of January 1, 2017 are assumed to retire in 2018. Current DROP members with less than eight years in DROP as of January 1, 2017 are assumed to retire once they have been in the DROP for eight years.

As of December 31, 2016 that differed from above

Post-retirement benefit increases	4.00% simple COLA, October 1st
DROP balance returns	At October 1, 2015 – 7.0% At October 1, 2016 – 6.0% At October 1, 2017 and thereafter – 5.0%
DROP election	Age 50 with 5 years of service. Any active member who satisfies these criteria and have not entered DROP are assumed never to join DROP. Active members who retire with a DROP account are assumed to receive the balance of their account over a 10-year time period.

Schedule of Employer Contributions – Supplemental Plan

(In Thousands)

MEASUREMENT YEAR ENDING DECEMBER 31,	ACTUARIALLY DETERMINED CONTRIBUTION	ACTUAL CONTRIBUTION	CONTRIBUTION DEFICIENCY	COVERED PAYROLL	ACTUAL CONTRIBUTION AS A % OF COVERED PAYROLL
2019	$ 1,881	$ 1,530	$ 351	$ 622	246.2%
2018	2,274	1,979	295	916	216.0%
2017	2,087	2,077	10	525	395.6%
2016	3,063	3,063	-	725	422.9%
2015	2,443	2,443	-	557	438.8%
2014	1,817	1,817	-	521	348.5%

Schedule is intended to show information for 10 years. Additional years will be presented as they become available. Actuarially determined employer contributions for the Supplemental Plan are required by City ordinance.

The City is required by ordinance to contribute amounts necessary to ensure the payment of benefits in the Supplemental Plan. The City's contributions shall be made in accordance with actuarial requirements established by the actuary and the Board. Actuarially determined contributions are calculated as of January 1 in the fiscal year in which the contribution is reported. The deficiency shown on the table is due to Supplemental Plan contributions paid directly to the Excess Benefit Plan in compliance with Internal Revenue Code Section 415.

Notes to Schedules:
The following methods and assumptions were used to calculate the actuarial determined contribution for the Supplemental Plan:

As of December 31, 2019

Actuarial cost method	Entry age normal cost method
Amortization method	10 years level percent of pay
Remaining amortization period	10 years
Asset valuation method	Market value of assets
Investment rate of return	7.25% per annum, compounded annually, net of all expense, including administrative expenses. This rate is based on an average inflation rate of 2.75% and a real rate of return of 4.50%
Inflation rate	2.75%
Projected salary increases	Inflation plus merit increases, varying by group and service
Post-retirement benefit increases	COLA assumed to be a 2.00% COLA beginning October 1, 2050 and payable every October 1st thereafter
Retirement age	Experienced-based table of rates, based on age

Mortality	Pre-retirement: Sex-distinct RP-2014 Employee Mortality Table, set back two years for males, projected generationally using Scale MP-2015 Post-retirement: Sex-distinct RP-2014 Healthy Annuitant Mortality Table, set forward two years for females, projected generationally using Scale MP-2015 Disabled: Sex-distinct RP-2014 Disabled Retiree Mortality Table, set back three years for males and females, projected generationally using Scale MP-2015
DROP balance returns	DROP account balances as of September 1, 2017 for active members are based on the United States Department of Commerce Daily Treasury Yield Curve Rates for durations between 5 and 30 years; interest rate is based on the expected lifetime of the members at the time they retire. Interest is only paid on DROP account balances as of September 1, 2017.
DROP election	The DROP utilization factor is 0% for new entrants.

As of December 31, 2018

Actuarial cost method	Entry age normal cost method
Amortization method	10 years level percent of pay
Remaining amortization period	10 years
Asset valuation method	Market value of assets
Investment rate of return	7.25% per annum, compounded annually, net of all expense, including administrative expenses. This rate is based on an average inflation rate of 2.75% and a real rate of return of 4.50%
Inflation rate	2.75%
Projected salary increases	Inflation plus merit increases, varying by group and service, ranging from 0.00% to 2.25%
Post-retirement benefit increases	COLA assumed to be a 2.00% COLA beginning October 1, 2053 and payable every October 1st thereafter
Retirement age	Experienced-based table of rates, based on age

Mortality	Pre-retirement: Sex-distinct RP-2014 Employee Mortality Table, set back two years for males, projected generationally using Scale MP-2015 Post-retirement: Sex-distinct RP-2014 Blue Collar Healthy Annuitant Mortality Table, set forward two years for females, projected generationally using Scale MP-2015 Disabled: Sex-distinct RP-2014 Disabled Retiree Mortality Table, set back three years for males and females, projected generationally using Scale MP-2015
DROP balance returns	DROP account balances as of September 1, 2017 for active members are based on the United States Department of Commerce Daily Treasury Yield Curve Rates for durations between 5 and 30 years; interest rate is based on the expected lifetime of the members at the time they retire. Interest is only paid on DROP account balances as of September 1, 2017.
DROP election	The DROP utilization factor is 0% for new entrants.

As of December 31, 2017 that differed from the above

Projected salary increases	Inflation plus merit increases, varying by group and service, ranging from 0.25% to 2.45%
Post-retirement benefit increases	COLA assumed to be a 2.00% COLA beginning October 1, 2049 and payable every October 1 thereafter
DROP balance returns	6% per year until September 1, 2017. Beginning September 1, 2017, DROP account balances for annuitants are assumed to earn 2.75% interest; DROP account balances as of September 1, 2017 for active members are assumed to earn 2.75% interest upon retirement; DROP account balances accrued after September 1, 2017 for active members do not earn interest.
DROP election	The DROP utilization factor is 0% for new entrants. Current DROP members with at least eight years in the DROP as of January 1, 2017 are assumed to retire in 2018. Current DROP members with less than eight years in DROP as of January 1, 2017 are assumed to retire once they have been in the DROP for eight years.

As of December 31, 2016 that differed from above

Post-retirement benefit increases	4.00% simple COLA, October 1st
DROP balance returns	October 1, 2015 – 7% October 1, 2016 – 6% October 1, 2017 and thereafter – 5%
DROP election	Age 50 with 5 years of service. Any active member who satisfy these criteria and have not entered DROP are assumed never to join DROP. Active members who retire with a DROP account are assumed to receive the balance of their account over a 10-year time period.

As of December 31, 2015 and 2014 that differed from above

Projected salary increases	Range of 4.00% - 9.64%
Mortality	RP-2000 Combined Healthy Mortality Table projected to 10 years beyond the valuation date using Scale AA for healthy retirees and active members

Schedule of Investment Returns

FISCAL YEAR ENDED DECEMBER 31,	ANNUAL MONEY-WEIGHTED RATE OF RETURN, NET OF INVESTMENT EXPENSE
2019	11.51%
2018	(1.49%)
2017	5.07%
2016	3.09%
2015	(12.70%)
2014	3.98%

Notes to Schedule:

The annual money-weighted rate of return is calculated as the internal rate of return on pension plan investments, net of pension plan investment expense, and expresses investment performance, adjusted for the changing amounts actually invested. Pension plan investment expense consists of manager fees. The return is calculated using a methodology which incorporates a one quarter lag for market value adjustments on private equity, debt, and real assets investments.

Schedule is intended to show information for 10 years. Additional years will be presented as they become available.

Supplementary Information

Administrative, Investment, and Professional Services Expenses

Year Ended December 31, 2019

ADMINISTRATIVE EXPENSES	
Information technology	$ 369,085
Education	29,435
Insurance	515,938
Personnel	3,411,700
Office equipment	101,476
Dues and subscriptions	120,702
Board meetings	5,008
Office supplies	25,157
Utilities	65,080
Postage	19,916
Printing	2,125
Election	10,968
Facilities	634,348
Other	7,038
Total administrative expenses	**$ 5,317,976**
INVESTMENT EXPENSES	
Investment management	$ 6,377,841
Custodial	221,559
Investment level valuations and audits	664,880
Consulting and reporting	328,542
Legal	355,358
Tail-end advisory	190,281
Tax	6,588
Other	4,426
Total investment expenses	**$ 8,149,475**
PROFESSIONAL SERVICES EXPENSES	
Consulting	$ 23,986
Actuarial	174,920
Auditing	152,500
Accounting	61,719
Medical review	1,905
Legal	598,774
Mortality records	4,050
Legislative	157,116
Other	6,903
Total professional services expenses	**$ 1,181,873**

Notes to Schedule:
Supplementary information on investment expenses does not include investment management fees and performance fees embedded in the structure of private equity and other limited partnership investments. Rather, these fees are a component of the net appreciation (depreciation) in fair value of investments in the accompanying Statements of Changes in Fiduciary Net Position. In addition, management fees paid directly by DPFP are included net of rebates received. The members of the Board of Trustees serve without compensation; they are reimbursed for actual expenses incurred.

See accompanying independent auditor's report.

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Investment Information

Investment Consultant's Report

MEKETA
INVESTMENT GROUP

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Carlsbad, CA 92008

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Meketa.com

MEMORANDUM

TO: Board of Trustees, Dallas Police & Fire Pension System
FROM: Leo Festino, Aaron Lally, Alli Wallace, Sidney Kawanguzi, Meketa Investment Group
DATE: October 14, 2020
RE: Investment Consultant's Statement for CAFR

This letter reviews the global capital markets in 2019 and the investment performance of the Dallas Police and Fire Pension System ("DPFP") for the year ending December 31, 2019.

Investment decisions were made during the calendar year with the following investment objectives in mind (as stated in DPFP's Investment Policy Statement):

- Maintain a diversified asset allocation;
- Accept the minimum level of risk required to achieve the return objective;
- Outperform the Policy Benchmark over rolling five-year periods;
- Control and monitor the costs of administering and managing the investments.

Despite strong absolute performance of 11.6% net of fees in calendar year 2019, DPFP underperformed its policy benchmark return of 15.7%.

DPFP's rates of return are represented using a net-of-fees time-weighted rate of return methodology based upon monthly market values and cash flows. Consistent with industry best practices, DPFP's private market valuations are included on a one-quarter lag, cash flow adjusted basis, to account for the typical 60-90 day delayed reporting cycle for most private market investments. Data was provided by J.P. Morgan, DPFP's custodian, and investment manager valuation statements.

Meketa Investment Group, DPFP's general investment consultant, works with the Board of Trustees, the Investment Advisory Committee and Investment Staff, to assist with performance evaluation, asset allocation, manager selection, governance, and other industry best practices.

2019 Capital Markets Year in Review

Following a volatile fourth quarter in 2018 during which major asset classes delivered negative returns, 2019 saw sharply positive returns across nearly all asset classes. The Federal Reserve began 2019 with an abrupt "dovish pivot" towards a more accommodative monetary policy stance, after a gradual tightening of monetary policy in 2018.

US equities, were up between 20% - 30%+ in 2019 with large cap stocks outperforming small cap stocks and growth companies outperforming value companies. Non-US equities generally underperformed US equities but still produced strong absolute returns. The MSCI EAFE Index was up 22% in calendar year 2019 and the MSCI Emerging Markets Index was up 18%.

Bonds also produced strong returns. Trade concerns, benign inflation, and incrementally lower global growth expectations were all tailwinds. Over the calendar year, the broad US bond market, as measured by the Bloomberg Barclays Aggregate Index, returned 8.7% for the year, high yield bonds returned 14.3% and TIPS returned 8.4%.

The VIX Index, which had seen a jump in Q4 2018 above 30.0, remained low for much of 2019 despite a spike in August 2019 after the yield curve briefly inverted.

DPFP's 2019 Performance and Investment Activity

DPFP ended 2019 with $2.06 billion in investment assets. In a year where nearly every public market asset class produced a positive return, DPFP trailed its benchmarks and peers given its underweight exposure to public equities and overweight exposure to illiquid investments in real estate.

	Calendar Year 2019 Return (%)
DPFP (net of fees)	11.6
Policy Index	15.7
Peer Median Return[1]	17.1
60% Stock/40% Bond mix[2]	18.4

**Returns are time-weighted, net of fees. DPFP's private market valuations are included on a one-quarter lag, cash flow adjusted basis, to account for the typical 60-90 day delayed reporting cycle for most private market investments.

[1] InvestorForce Public DB $1-$5 billion Net Performance universe.
[2] 60% MSCI ACWI IMI Net/40% Barclays Global Aggregate Index.

DPFP's longer-term returns (3-year, 5-year, and 10-year) trailed its policy benchmark and actuarial target. Poor manager selection within real estate and private equity and an over-allocation in these asset classes (paired with an under-allocation to public equities) have been the biggest drivers of longer-term underperformance.

If you have any questions, please contact us at (760) 795-3450.

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Investment Information

Investment Activities and Initiatives

Over the course of the year, the size of the investment portfolio increased by approximately $15 million to $2.061 billion in investment assets primarily due to positive investment returns and contributions which were mostly offset by benefit payments.

After establishing a new long-term asset allocation, implementation plan, and Investment Policy Statement (IPS) in 2018, DPFP took steps towards the new long-term targets by reducing private asset exposure and building out parts of the public markets asset allocation in 2019. Due to the high current level of exposure to illiquid private assets, there is considerable variance between the current allocation and the new targets in several asset classes. In general, the implementation plan prioritizes allocating to target in the Safety Reserve and lower risk fixed income asset classes before reallocating to public equities. Key challenges for the investment portfolio continued to be an overallocation to private assets and the high level of cash outflows required for benefit payments.

The Investment Advisory Committee (IAC), which is comprised of both DPFP Board of Trustees members and a majority of outside investment professionals, held their first of quarterly meetings in March 2019. The IAC provides advice to the Board of Trustees to ensure DPFP investments are prudently managed and advises regarding the search and selection process for investment managers.

Investment initiatives in the public asset portfolio included Public Equity Portfolio Structure reviews throughout the year with the Board and IAC, funding the Investment Grade Bonds allocation through a passive investment with Vanguard in September 2019 and consolidating the Bank Loans portfolio to one portfolio managed by Pacific Asset Management early in 2020. In consultation with the consultant, DPFP took rebalancing actions in 2019 to equally balance the Global Equity manager's allocations and fund the above-mentioned Investment Grade bonds portfolio.

The private asset portfolio, which includes Private Equity, Private Debt, Natural Resources, Infrastructure and Real Estate, was valued at $844 million or 41% of the portfolio at year-end. Staff continued to work with managers to sell assets in an orderly fashion and reduce the over allocation. Distributions from the private asset portfolio totaled approximately $156 million in 2019, while capital calls totaled only $2 million.

Performance Reporting and Results

Performance Reporting Methodology

The rate of return calculation is prepared by the investment consultant at December 31, 2019, using a time- weighted rate of return. The methodology used to calculate the rate of return is a "lagged with cash flow adjustments" methodology, which incorporates a one quarter lag on the market values of Private Equity, Private Debt, Infrastructure, Real Estate, Timberland and Farmland investments (collectively, Private Investments). The lagged methodology was recommended by DPFP's investment consultant, is consistent with standard industry practice, and allows for timelier reporting to the Board. Though the investment return information provided in the Investment section is based on the "lagged with cash flow adjustments" methodology, all the net asset value and allocation information is based on the final audited December 31, 2019 values (unlagged) which are reported in the Financial section.

Investment Performance

DPFP's investment performance is reported to the Board, on a quarterly basis, by the investment consultant. The overall investment performance is measured against the median return of public defined benefit plans included in the InvestorForce universe by comparison to the InvestorForce Public DB Net Median Index. DPFP's overall performance is also compared to the Policy Benchmark. The Policy Benchmark is calculated as the weighted return based on the asset class target allocations and their corresponding benchmarks. Each asset class and investment manager are measured against the return of an appropriate benchmark, as represented by a specific index return. All returns disclosed in the Investment section are calculated net of all fees paid to investment managers. The below table includes the 1, 3, 5 and 10-year returns by asset category and class as measured against the representative benchmarks (dollars in thousands).

	NET ASSET VALUE	% OF PORTFOLIO	2019 RETURN	3 YRS	5 YRS	10 YRS
Total Investment Assets	$ 2,061,315	100.0%	11.6%	4.9%	0.8%	3.3%
Policy Benchmark [1]			15.7%	8.1%	7.7%	8.5%
InvestorForce DB Median			17.1%	8.7%	6.6%	7.9%
EQUITY	836,047	40.6%	26.0%	4.0%	2.6%	-
MSCI ACWI IMI Net			26.4%	12.1%	8.3%	-
Global Equity	**515,300**	**25.0%**	**28.3%**	**14.1%**	**9.6%**	**10.0%**
MSCI ACWI IMI Net			26.4%	12.1%	8.3%	-
Boston Partners	127,967	6.2%	19.6%	-	-	-
MSCI World Net			*27.7%*	-	-	-
Manulife	129,298	6.3%	30.4%	-	-	-
Invesco Global Equity	129,906	6.3%	32.0%	16.1%	10.6%	10.8%
Walter Scott	127,967	6.2%	30.5%	17.0%	11.6%	10.5%
MSCI ACWI Net			*26.6%*	*12.4%*	*8.4%*	*8.8%*
Transition	162	0.0%	-	-	-	-
Emerging Markets Equity	**53,160**	**2.6%**	**17.9%**	**-**	**-**	**-**
MSCI Emerging Markets IMI Net			17.7%	-	-	-
RBC	53,160	2.6%	17.9%	-	-	-
MSCI Emerging Markets IMI Net			*17.7%*	-	-	-
Private Equity	**267,587**	**13.0%**	**23.5%**	**(3.8%)**	**(6.8%)**	**(1.0%)**
Cambridge Associates US All PE (1 Qtr Lag)			8.0%	14.2%	11.4%	14.1%
FIXED INCOME	658,081	31.9%	5.8%	3.2%	2.7%	6.0%
BBgBarc Multiverse TR			7.1%	4.4%	2.5%	2.7%
Cash	**91,181**	**4.4%**	**2.4%**	**1.7%**	**-**	**-**
91 Day T-Bills			2.1%	1.6%	-	-
Short Term Core Bonds	**263,097**	**12.8%**	**4.3%**	**-**	**-**	**-**
BBgBarc US Treasury 1-3 Yr TR			3.6%	-	-	-
IR&M	263,097	12.8%	4.3%	-	-	-
BBgBarc US Govt/Credit 1-3 Yr TR			*4.0%*	-	-	-
Investment Grade Bonds	**36,718**	**1.8%**	**-**	**-**	**-**	**-**
BBgBarc US Aggregate TR			-	-	-	-
Vanguard VBTIX	36,718	1.8%	-	-	-	-
BBgBarc US Aggregate Index Float Adjusted TR			-	-	-	-
Global Bonds	**69,662**	**3.4%**	**9.4%**	**5.4%**	**2.7%**	**-**
BBgBarc Global Aggregate Index			6.8%	4.3%	2.3%	-
Brandywine	69,662	3.4%	9.4%	5.4%	2.4%	4.7%
BBgBarc Global Aggregate Index			*6.8%*	*4.3%*	*2.3%*	*2.5%*

	NET ASSET VALUE	% OF PORTFOLIO	2019 RETURN	3 YRS	5 YRS	10 YRS
FIXED INCOME (continued)						
Bank Loans	**$ 81,262**	**3.9%**	**6.9%**	**4.3%**	**4.5%**	**-**
Credit Suisse Leveraged Loan			8.2%	4.5%	4.5%	-
Loomis Sayles Sr Floating Rate and Fixed Income	39,807	1.9%	5.3%	3.9%	4.2%	-
S&P/LSTA Leveraged Loan (All Loans Index Levels)			*8.6%*	*4.4%*	*4.5%*	-
Pacific Asset Management	41,454	2.0%	8.7%	-	-	-
Credit Suisse Leveraged Loan			*8.2%*	-	-	-
High Yield	**86,038**	**4.2%**	**9.1%**	**5.6%**	**4.6%**	**-**
BBgBarc Global High Yield			12.6%	6.1%	5.8%	-
Loomis Sayles	86,038	4.2%	9.1%	5.7%	4.9%	7.6%
BBgBarc Global High Yield			*12.6%*	*6.1%*	*5.8%*	*7.3%*
Emerging Markets Debt	**21,185**	**1.0%**	**10.6%**	**6.2%**	**5.2%**	**-**
50% JPM EMBI/50% JPM GBI-EM			14.3%	6.9%	4.6%	-
Ashmore Emerging Markets Blended Debt	21,185	1.0%	10.6%	-	-	-
50% JPM EMBI/25% JPM GBI-EM/25% JPM ELMI+			*12.2%*	-	-	-
Private Debt	**8,938**	**0.4%**	**2.5%**	**(3.7%)**	**-**	**-**
BBgBarc Global High Yield + 2%			*14.8%*	8.2%	-	-
REAL ASSETS	567,187	27.5%	0.5%	4.7%	(2.9%)	-
50% NCREIF Property /50% Farmland Total Return			5.8%	6.4%	8.2%	-
Real Estate	**382,374**	**18.5%**	**0.2%**	**3.4%**	**(6.0%)**	**(3.5%)**
NCRIEF Property (1Qtr Lag)			6.2%	6.8%	8.6%	9.8%
Natural Resources	**131,835**	**6.4%**	**3.6%**	**(2.6%)**	**1.1%**	**-**
NCRIEF Farmland Total Return Index (1Qtr Lag)			5.3%	6.1%	7.9%	-
Infrastructure	**52,978**	**2.6%**	**(6.7%)**	**15.3%**	**8.3%**	**-**
S&P Global Infrastructure Index			27.0%	11.4%	6.6%	-

(1) The Policy Benchmark is calculated as the weighted return based on the asset class target allocations and their corresponding benchmarks. The Policy Benchmark was changed on April 1, 2016 to match the new asset allocation and asset class benchmarks in the Investment Policy Statement. The current benchmark has been linked with the Policy Benchmark for the prior asset allocation policy.

Overview and Goals

The general investment goals of DPFP are broad in nature in order to encompass the purpose of DPFP and its investments. By achieving allocation and performance objectives consistently, the long-term investment goals of DPFP are expected to be achieved. The goals, objectives and constraints as outlined in the Investment Policy Statement (IPS) are as follows:

Goals

- To ensure funds are available to meet current and future obligations of DPFP when due while earning a long-term, net of fees investment return greater than the actuarial return assumption.
- To consistently rank in the top half of the public fund universe over the rolling five-year period, net of fees.

Objectives

- To maintain a diversified asset allocation.
- To accept the minimum level of risk required to achieve the return objective.
- To outperform the Policy Benchmark over rolling and five-year periods.
- To control and monitor the costs of administering and managing the investments.

Constraints

- DPFP will be managed on a going-concern basis. The assets of the Fund will be invested with a long-term time horizon, while being cognizant of the weak actuarial funded ratio and ongoing liquidity needs.
- The Board intends to maintain sufficient liquidity in either cash equivalents or short-term investment grade bonds to meet two to three years of anticipated benefit payments and expenses (net of contributions).
- DPFP is a tax-exempt entity. Therefore, investments and strategies will be evaluated on a basis that is generally indifferent to tax status.

DPFP's portfolio strategy is implemented primarily through the use of external investment managers. Each investment manager operates under a set of guidelines specific to the strategic role its portfolio is intended to fulfill in the overall investment portfolio. As part of the due diligence process for any new manager, DPFP negotiates fees with these external managers to the lowest reasonable cost to administer the investments without sacrificing quality of service.

DPFP's investment staff serve as the primary liaisons between the Board, Investment Advisory Committee, investment consultant, investment managers, and custodian bank. The investment staff's responsibilities include, but are not limited to, managing assets within the scope of DPFP's policies, implementing Board actions regarding asset allocation and investment managers, portfolio rebalancing, monitoring investment activities and performance, managing liquidity, performing investment manager due diligence, and coordinating manager searches and selection processes.

Investment Policy

The IPS is designed to guide investment of the assets of DPFP and sets forth an appropriate set of goals and objectives for DPFP. It defines guidelines to assist fiduciaries and staff in the management of the investments of DPFP.

The IPS outlines the asset allocation, details due diligence and investment review procedures, and clearly defines the roles of the Board, IAC, consultants and DPFP staff in the investment decision making process.

In late 2018, investment staff and Meketa completed a comprehensive review of the Investment Policy Statement (IPS) and proposed numerous changes to update for the new long-term asset allocation and implementation plan, incorporate best practices, improve clarity and structure of the policy. The Board approved the revised policy at the January 2019 Board meeting.

Major changes to the IPS approved in 2019 incorporated the following, among others:

- Updated for new long-term asset allocation, ranges, benchmarks and implementation plan.
- Addressed asset class structure, rebalancing procedures, and private market limitations.
- Significant changes to the Investment Advisory Committee (IAC) section relating to IAC roles, responsibilities, composition and selection.
- Significant changes in Core Beliefs and Long-Term Acknowledgements, to incorporate best practices and views of Board, Consultant, and Investment Staff.
- Updated the investment manager search, selection and monitoring sections.

The IPS was further revised in March 2019 to provide for the requirement that a majority of outside members be present at any meeting of the IAC and that the Board be advised of how each IAC member voted on any vote for any action reported to the Board by the IAC. The IPS was revised in February 2020 as part of the annual IPS review process to allow DPFP to engage advisors that may not be fiduciaries to DPFP and provided minor updates to the roles and responsibilities of the consultant and staff. In July 2020, the IPS was updated by the Board to clarify that the Safety Reserve will be viewed both in terms of the 15% target and two and a half years of projected net cash outflows when making rebalancing decisions.

To review the IPS in full, visit DPFP's website at www.dpfp.org.

Asset Allocation

The updated asset allocation includes three broad asset categories: Equity, Fixed Income and Real Assets. The broad asset categories are further categorized into 14 separate asset classes. Initial variances to long-term allocation targets may be quite large but are expected to gradually diminish. Rebalancing ranges have been established to accommodate current variances to target and will be tightened over time as appropriate. The asset allocation as of December 31, 2019, along with targets and ranges, is as follows:

ASSET CATEGORY/CLASS	CURRENT ALLOCATION	TARGET ALLOCATION	MINIMUM ALLOCATION	MAXIMUM ALLOCATION
Equity	40.6%	55%		
Global Equity	25.0%	40%	18%	48%
Emerging Markets Equity	2.6%	10%	0%	12%
Private Equity	13.0%	5%	-	-
Fixed Income	31.9%	35%		
Cash	4.4%	3%	0%	5%
Short-Term Core Bonds	12.8%	12%	5%	15%
Investment Grade Bonds	1.8%	4%	2%	6%
Global Bonds	3.4%	4%	2%	6%
Bank Loans	3.9%	4%	2%	6%
High Yield	4.2%	4%	2%	6%
Emerging Market Debt	1.0%	4%	2%	6%
Private Debt	0.4%	0%	-	-
Real Assets	27.5%	10%		
Real Estate	18.5%	5%	-	-
Natural Resources	6.4%	5%	-	-
Infrastructure	2.6%	0%	-	-

The updated long-term asset allocation included increases to the overall targets for public liquid asset and decreases to the targets for illiquid private assets. The investment portfolio is undergoing a transition from a current allocation with substantial exposure to illiquid private market assets to a more traditional allocation profile. In November 2018, the Board approved an asset allocation implementation plan to prioritize the reallocation of cash distributions from private market assets as follows:

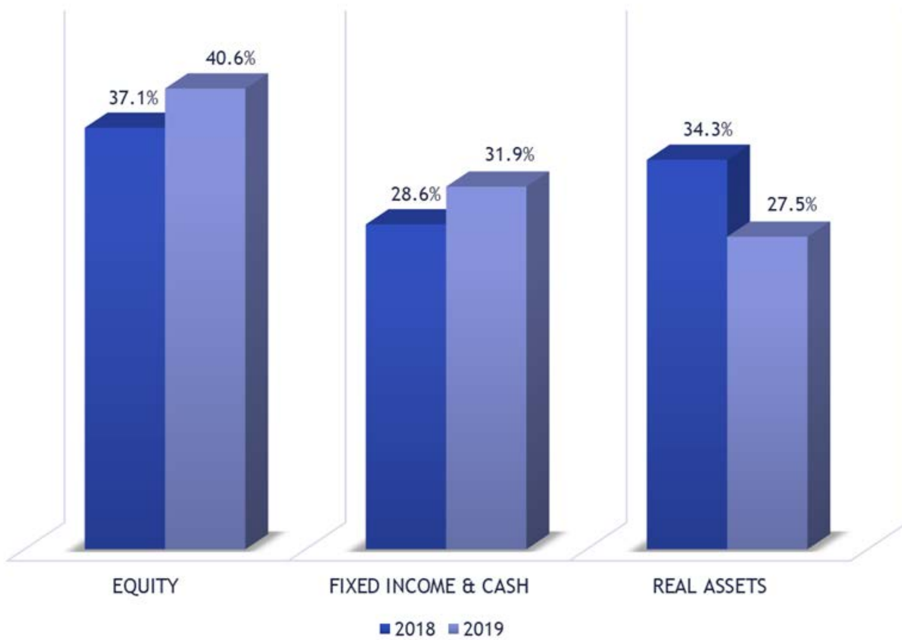
ORDER OF REALLOCATION
Allocate up to Target, then proceed to next asset class
1. Safety Reserve – Cash[1]
2. Safety Reserve – Short-Term Investment Grade Bonds[1]
3. Global Equity, only if current exposure is less than 22% of DPFP[2]
4. Emerging Markets Equity, only if current exposure is less than 2.5% of DPFP[3]
5. Investment Grade Bonds
6. Global Bonds
7. Bank Loans
8. High Yield Bonds
9. Global Equity above 22%, contributions limited to 6% per year
10. Emerging Market Debt
11. Emerging Markets Equity above 2.5%, contributions limited to 2.5% per year
12. Private Real Estate (aggregate illiquid exposure must be under 20%)
13. Private Equity (aggregate illiquid exposure must be under 15%)

(1) The Safety Reserve is not required to be allocated to target if deemed prudent by Staff and Consultant.
(2) Global Equity target weight is 40%. If current exposure is more than 22% proceed to next asset class in the matrix. The reallocation framework is designed to maintain at least the mid-2018 exposure to public equity, prior to increasing fixed-income exposure.
(3) Emerging Market Equity Target weight is 10%. If current exposure is more than 2.5% proceed to next asset class in the matrix. The reallocation framework is designed to maintain at least the mid-2018 exposure to public equity, prior to increasing fixed-income exposure.

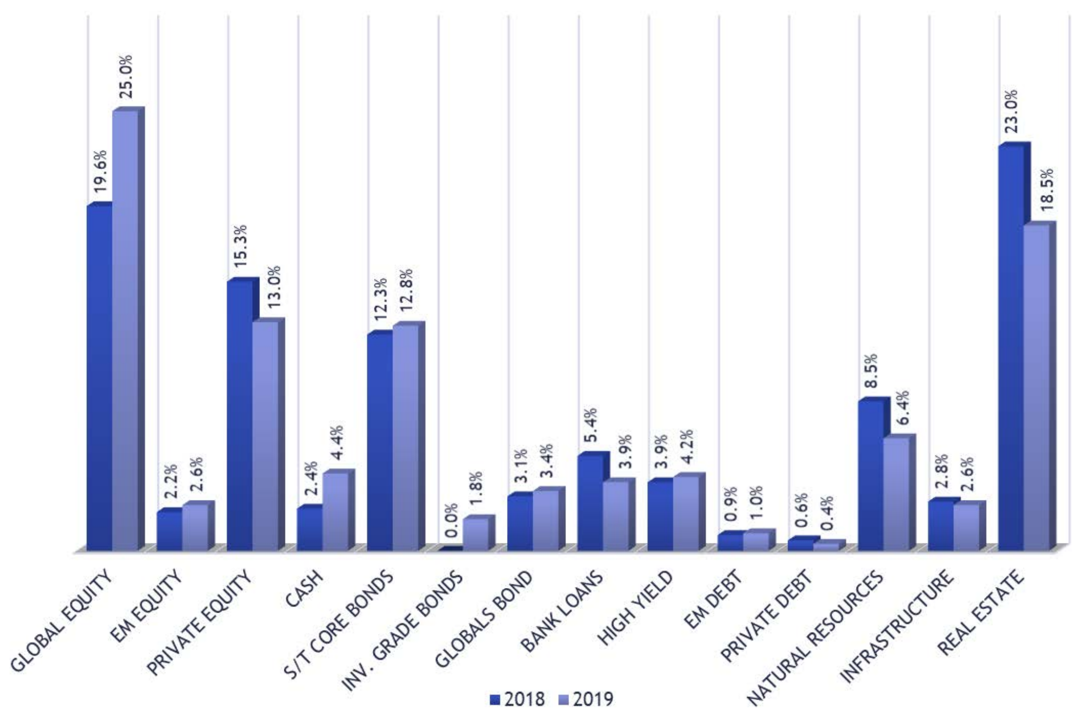
Investment Grade Bonds and Emerging Market Debt were the only asset classes that ended the year with actual allocations below the minimum range outlined in the asset allocation in the IPS. These under allocations are by design and follow the Asset Allocation Implementation Plan discussed above. DPFP funded $37 million to the Investment Grade Bonds asset class in September 2019 through an investment in the Vanguard Total Bond Market Index Fund Institutional Shares (VBTIX). Investment Grade Bonds would be the next asset class to receive distributions from private asset distributions based on the implementation plan and asset class weight at 12/31/19. All the private markets asset classes (Private Equity, Private Debt, Real Estate, Natural Resources and Infrastructure) ended the year above their respective target allocations. Given the overallocation to private markets, many public asset classes ended the year below the target allocation though progress was made throughout 2019 in getting most fixed income asset classes at or near their respective targets. As discussed above, distributions from private markets will be reallocated into public investments according to the Asset Allocation Implementation Plan.

The following graphs reflect the portfolio allocation at December 31, 2018 and 2019 by broad asset category and asset class.

Asset Allocation by Broad Asset Category

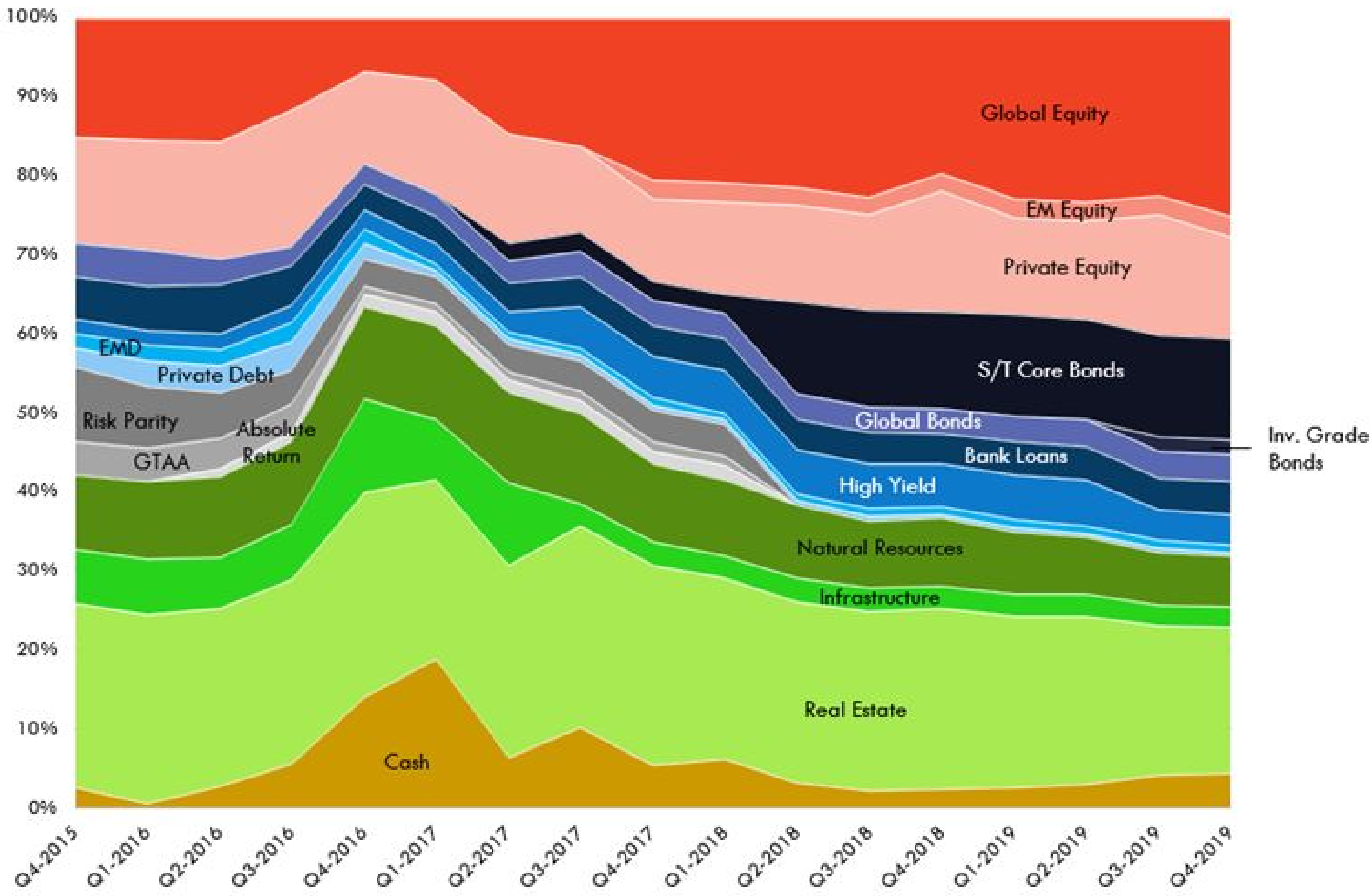


Asset Allocation by Asset Class



Over the past several years, DPFP has been focused on transitioning private assets proceeds into a greater allocation to public markets. The below graph reflects the asset allocation changes over the past four years, on a quarterly basis. Prior to 2016, the assets have been reclassified to match the asset classes in the 2016 IPS.

Asset Allocation Evolution



Investment Management Fees and Brokerage Commissions

Investment management fees included in the Administrative, Investment and Professional Services Expenses supplementary schedule in the Financial section of this report represent only those fees paid directly by DPFP. In addition to the fees paid directly, DPFP incurs investment management fees which are charged by general partners or investment managers at the fund level. Fees charged at the fund level are typically seen in public equity and fixed income commingled funds or private equity, private debt, and infrastructure funds. DPFP considers any incentive, performance or disposition fees paid directly to the investment manager a management fee and therefore is included in the below table. The below table presents all fees paid in 2019, net of any rebates or discounts received (dollars in thousands).

ASSET CLASS	MANAGEMENT FEES PAID FROM THE GROUP TRUST	MANAGEMENT FEES PAID AT FUND LEVEL	TOTAL INVESTMENT MANAGEMENT FEES	2019 AVERAGE MARKET VALUE	TOTAL MANAGEMENT FEES PAID AS A % OF AVERAGE MARKET VALUE
Equity	$ 2,560	$ 3,765	$ 6,325	$ 782,856	0.81%
Fixed Income & Cash	1,071	454	1,525	625,380	0.24%
Real Assets	2,747	1,921	4,668	613,017	0.76%
TOTAL	**$ 6,378**	**$ 6,140**	**$ 12,518**	**$ 2,021,253**	**0.62%**

In 2019, the Texas Legislature passed Senate Bill 322 which modified Section 802.109 of the Texas Government Code to require a listing, by asset class, of all direct and indirect commissions and fees paid by the retirement system during the system's previous fiscal year for the sale, purchase, or management of system assets. DPFP has included all management fees as outlined above. Brokerage Fees and Commissions include brokerage commissions for public debt and equity securities that are held directly by DPFP through our custody bank and all third-party brokerage commissions paid on wholly-owned private assets. Carried Interest includes any preferred return paid to an investment manager, which is typical in private equity structures. Other Investment Expenses includes consultant, custodian, legal, valuation, and other expenses that are paid directly by DPFP and related to the operation and management of the investment portfolio. For the purposes of the SB 322 schedule, these investment expenses are not allocated to specific asset classes and are considered DPFP Plan Level expenses.

ASSET CLASS	INVESTMENT MANAGEMENT FEES	BROKERAGE FEES OR COMMISSIONS	CARRIED INTEREST	OTHER INVESTMENT EXPENSES	TOTAL OF ALL FEES AND EXPENSES
Cash	$ -	$ -	$ -	$ -	$ -
Equity	2,905	327	-	-	3,232
Fixed Income	1,526	-	139	-	1,665
Real Assets	4,668	1,013	-	-	5,681
Alternatives (GAA & Private Equity)	3,419	-	42	-	3,461
DPFP Plan Level	-	-	-	1,772	1,772
TOTAL	**$ 12,518**	**$ 1,340**	**$ 181**	**$ 1,772**	**$ 15,811**

Below is a breakdown of DPFP Plan Level investment expenses by category:

OTHER INVESTMENT EXPENSES (000's)		
Custodial	$	222
Investment Level Valuation & Audit		665
Consulting and Reporting		329
Legal		355
Tail-end Advisory		190
Tax		7
Other		4
TOTAL	**$**	**1,772**

During 2019, DPFP incurred approximately $327 thousand in brokerage fees and commissions paid through managers to trade a total of approximately 18 million shares across 179 brokerage firms. This represents an average cost of $0.018 per share traded.

BROKERAGE FIRM	NUMBER OF SHARES TRADED (000's)	TOTAL FEES AND COMMISSIONS (000's)	FEES AND COMMISSIONS PER SHARE
J.P. Morgan Securities Ltd.	1,234	$ 44	$ 0.035
J.P. Morgan Securities Inc., NY	1,907	22	0.011
Citigroup Global Markets Ltd.	637	16	0.025
Credit Suisse Securities (USA) LLC	830	14	0.017
Sanford C Bernstein Ltd	344	13	0.038
Jefferies International	634	12	0.020
Goldman Sachs International	425	10	0.023
Morgan Stanley and Co.	46	9	0.200
Goldman Sachs	549	9	0.016
Societe Generale London	817	9	0.011
All other firms	10,636	169	0.016
TOTAL	**18,059**	**$ 327**	**$ 0.018**

Largest Public Equity and Fixed Income Holdings

The below tables contain the ten largest public equity and fixed income securities owned at December 31, 2019. A full list of securities owned is available upon written request.

PUBLIC EQUITY HOLDING	MARKET VALUE (000's)
Alphabet Inc.	$ 13,276
Microsoft Corp.	13,120
LVMH Moet Hennessy Louis Vuitton SE	7,874
Adobe Inc.	7,732
Johnson & Johnson	7,527
Apple Inc.	6,900
Airbus SE	6,807
Oracle Corp.	6,542
Keyence Corp.	6,270
Raytheon Technologies Corp.	5,675

PUBLIC FIXED INCOME HOLDING	MATURITY DATE	INTEREST RATE	MARKET VALUE (000's)
United States of America Notes	6/30/2022	1.75%	$ 33,435
United States of America Notes	11/30/2022	2.00%	27,103
United States of America Notes	5/31/2022	1.75%	20,900
United States of America Notes	4/30/2021	Floating	11,527
United States of America Notes	7/31/2021	Floating	7,998
United States of America Notes	10/31/2021	Floating	3,909
GE Capital International Funding Co.	11/15/2020	2.34%	3,650
Fenix Marine Service Holdings, LTD	1/15/2024	8.00%	3,546
GMF Floorplan Owner Revolving Trust	1/18/2022	2.22%	3,512
Bank of America Corp Callable Medium-	7/21/2021	2.37%	3,336

Investment Managers
Assets under management during 2019

AEW Capital Management
Alvarez & Marsal
Ashmore Investment Management Limited
Barings Real Estate Advisors
BentallGreenOak
Boston Partners Global Investors
Brandywine Global Investment Management
BTG Pactual Asset Management
Clarion Partners
Forest Investment Associates
Hancock Agricultural Investment Group
Hearthstone, Inc.
Highland Capital Management
Hudson Clean Energy Partners
Income Research and Management
Industry Ventures
Invesco, Ltd.
JPMorgan Asset Management
L&B Realty Advisors
Lone Star Investment Advisors
Loomis, Sayles & Company
Manulife Asset Management
Pacific Asset Management
RBC Global Asset Management
Riverstone Credit Partners
The Rohatyn Group
Vanguard
Walter Scott & Partners Limited
W.R. Huff Asset Management
Yellowstone Capital Partners

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Actuarial Information

Actuary's Report

Segal Consulting

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November 20, 2020

Dallas Police & Fire Pension System
4100 Harry Hines Blvd., Suite 100
Dallas, TX 75219

Re: Actuarial Valuations as of January 1, 2020

Dear Board Members:

At the request of the Dallas Police and Fire Pension System (DPFP), Segal has completed January 1, 2020 actuarial valuations for the Combined Pension Plan and the Supplemental Plan (the Plans). This letter certifies that the information contained in this report is accurate and fairly presents the actuarial position of the Plans as of the valuation date.

All calculations have been made in conformity with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, the results presented also comply with the requirements of Texas state law and, where applicable, the Internal Revenue Code, ERISA, and the Statements of the Governmental Accounting Standards Board (GASB). The undersigned are independent actuaries and consultants. Mr. Williams and Ms. Brigham are Fellows of the Conference of Consulting Actuaries, Associates of the Society of Actuaries, Enrolled Actuaries, and Members of the American Academy of Actuaries, and both are experienced in performing valuations for large public retirement systems. They meet the Qualification Standards of the American Academy of Actuaries to render this opinion.

ACTUARIAL VALUATION

The primary purposes of the valuation reports are to determine the adequacy of the current employer contribution rates, to describe the current financial condition of the Plans, and to analyze changes in the Plans' financial condition. In addition, this report provides information required in connection with Governmental Accounting Standards Board Statement No. 67 (GASB 67), and provides various summaries of the data. Valuations are prepared annually as of January 1 of each year, the first day of DPFP's plan year.

FINANCING OBJECTIVES

The City of Dallas ("City") and member contribution rates for the Combined Pension Plan, along with the member contribution rates for the Supplemental Plan, are established by State statute. The City's contribution for the Supplemental Plan is determined with the actuarial valuation each year and is the sum of the normal cost and a 20-year amortization of the unfunded actuarial accrued liability (UAL).

In order to determine the adequacy of the Combined Pension Plan's contribution rates, they are compared to an actuarially determined contribution intended to be sufficient to pay the normal cost (the current year's cost) and to amortize the UAL as a level percentage of payroll over a set period. In accordance with July 2020 amendments to the funding policy adopted by the System's Board, the 30-year amortization period was changed to a closed, 25-year amortization with this year's valuation. Beginning in 2021, future gains or losses each year will be amortized over separate, closed, 20-year periods. For these calculations, payroll is assumed to increase 2.50% per year. For actuarial valuation purposes, Combined Plan assets are valued at actuarial value. Under the actuarial asset method, the assets used to determine employer contribution rates take into account market value by recognizing the differences between the actual and expected return on market value over a five-year period.

The Board monitors the margin or deficit between the actuarially determined recommended contribution and the statutory contribution rates. Under the System's funding policy, if the City's actual contributions are at least 2% below the actuarially determined contribution for two consecutive years, with a two-thirds vote of the Board, the Trustees will recommend an increase in the City's contribution rates. The City's contributions exceeded the actuarially determined contribution for the plan year ended December 31, 2019; the amortization period used for that calculation was still 30 years. The System and the actuary will monitor the contributions on the shorter amortization basis going forward.

PROGRESS TOWARD REALIZATION OF FINANCING OBJECTIVES

Combined Pension Plan

As of January 1, 2020, the City's 25-year actuarially determined contribution for the Combined Pension Plan is 46.71% of computation pay. The City's contribution rate is 34.50% of computation pay, but not less than the bi-weekly contribution amounts stated in HB3158, plus $13 million annually, through December 31, 2024. Beginning January 1, 2025, City contributions will be 34.50% of computation pay. Based on Dallas's hiring plan projections, these contribution rates are expected to achieve full funding of the System by January 1, 2075 if actuarial assumptions are met in the aggregate. This full-funding date, which is effectively a 55-year amortization of the UAL, is significantly later than was expected last year. The delay is due, in part, to the implementation of new actuarial assumptions, but more significantly due to the System's expectation that 2020 asset returns will be quite a bit lower than was anticipated previously. The changes implemented under HB3158, which became effective September 1, 2017, significantly improved projected plan funding over the long-term. Prior to these changes, the System had a projected insolvency. The Texas Pension Review Board is aware of the System's status and progress.

The funded ratio is equal to the ratio of the actuarial value of assets to the actuarial accrued liability. The Combined Pension Plan's funded ratio on an actuarial value basis decreased from 48.10% to 45.73% between January 1, 2019 and January 1, 2020. This decrease was primarily due to investment losses, demographic experience and assumption changes. The UAL increased from $2.3 billion to $2.6 billion on an actuarial basis.

Supplemental Plan

The Supplemental Plan funded ratio decreased from 57.56% to 48.30% between January 1, 2019 and January 1, 2020. This decrease is primarily due to investment losses, demographic experience and assumption changes. The supplemental nature of this plan makes it more susceptible to fluctuations than a typical defined benefit plan. Also, Supplemental Plan assets are valued at market value, and investment gains and losses are recognized immediately. Although the funded ratio currently is low, the City contributions to this Plan are calculated in such a way as to ensure that benefits will be funded. Further, the funding policy was changed from an open, 10-year amortization of the UAL to a closed, 20-year amortization with this year's valuation. Beginning in 2021, future gains or losses each year will be amortized over separate, closed, 10-year periods. The closure of the amortization periods should accelerate progress towards 100% funding.

ASSUMPTIONS AND METHODS

Actuarial assumptions and methods are set by the Board of Trustees, based upon recommendations made by DPFP's actuary. The results of the actuarial valuation are dependent on the actuarial assumptions used. Actual results can and almost certainly will differ, as actual experience deviates from the assumptions. Even seemingly minor changes in assumptions can materially change the liabilities, actuarially determined contribution rates, and funding periods.

All actuarial assumptions and methods are described under Section 4 of our actuarial valuation reports, and a summary is included in this Actuarial Information section as well. The assumptions and methods used for funding purposes conform to the Actuarial Standards of Practice, and we believe them to be internally consistent and reasonable.

The majority of the assumptions used in the January 1, 2020 actuarial valuation were adopted by the Board following a five-year experience review for the period ended December 31, 2019. Changes were made to the net investment return rate, salary scale, payroll growth rate, mortality tables, retirement rates, DROP annuitization rates, and withdrawal (or turnover) rates. The COLA assumption was also updated, as it is annually.

We believe the actuarial assumptions and methods are internally consistent and are reasonable, based upon past experience and future expectations of the Plans. However, it should be noted that the retirement assumptions were set based on the plan changes effective September 1, 2017, and there have not been enough retirements subsequent to the plan changes becoming effective to evaluate the appropriateness of those rates.

Since the population of the Supplemental Plan is a subset of the Combined Pension Plan, and is too small to be independently credible, the valuation for the Supplemental Plan uses most of the same assumptions as the Combined Pension Plan. The explicit administrative expense assumption is set independently. Also, the Supplemental Plan uses market value for funding, with no smoothing of gains and losses.

BENEFIT PROVISIONS

There were no changes to the plan provisions in the last year. The current provisions are outlined in the Financial Information section of this Comprehensive Annual Financial Report (CAFR).

DATA

Member data for retired, active and inactive participants was supplied as of December 31, 2019 by the staff of DPFP. We have not subjected this data to any auditing procedures, but have examined the data for reasonableness and consistency with the prior year's data. The staff also supplied asset and financial information as of December 31, 2019.

COMPREHENSIVE ANNUAL FINANCIAL REPORT SCHEDULES

Segal Consulting prepared the supporting schedules in this Actuarial Information section of the CAFR, including:

- Historical Nominal Rates of Return
- Reconciliation of Unfunded Actuarial Accrued Liability
- Solvency Test
- Active Member Valuation Data
- Retirees and Beneficiaries Added to and Removed from Rolls
- Funding Progress

In addition, we prepared the following schedules in the Financial Information Section:

- Schedule of Changes in the Net Pension Liability
- Sensitivity of the Net Pension Liability to Changes in Discount Rate
- Schedule of Actuarially Determined Contributions

We would like to thank the Board, the Executive Director, and DPFP's staff for their assistance and input necessary to complete the actuarial valuations.

Respectfully submitted,

Segal Consulting, a Member of The Segal Group, Inc.

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Actuarial Information

Introduction

DPFP's Combined Pension Plan and Supplemental Plan are single-employer defined benefit plans. The Plans provide retirement, death and disability benefits. The Combined Pension Plan requires an annual actuarial valuation to determine the adequacy of the current contribution rate of the City, to describe the current financial condition of DPFP, and to analyze changes in DPFP's financial condition. The Supplemental Plan requires an annual actuarial valuation to determine the amount of the City's annual contribution as required by City ordinance.

Funding

Defined benefit plans represent a commitment to pay specific benefits to employees and their survivors. Refer to Note 1 in the Financial Section for a description of benefits. The benefit to employees and their survivors is usually much more than the combined contributions of the employee and the employer. Determining adequate funding requires making a variety of assumptions to assure full payments can be made from the plan.

There are a number of actuarial assumptions necessary in order to estimate the amount of funding required to provide future benefits. Once the assumptions have been determined, the actuary must select a cost method to determine the amount of funding required in order for the committed benefits to be provided.

As of January 1, 2015, the funding period of the Combined Pension Plan increased to an infinite period. This increase was primarily due to returns on the actuarial value of assets that were below the long-term expectations, as well as a change to the assumed rate of return from 8.50% to 7.25% in the January 1, 2015 valuation. Based on the January 1, 2016 valuation, the Combined Pension Plan was projected to become insolvent within 15 years.

Plan changes resulting from the passage of HB 3158 were taken into account in the January 1, 2018 actuarial valuation performed by Segal. Although the effective date of the plan changes was September 1, 2017, contribution and benefit changes required under the Bill significantly impacted the future funding of the Plans and therefore were reflected in the January 1, 2018 funding analysis. The funding level as of January 1, 2018 would have been 40.2% and the plan was projected to be insolvent without the Plan changes. It is expected that the funding level will decline for many years even if all assumptions are realized.

Based on assumption changes and asset returns, the Combined Pension Plan's funded ratio declined from 48.1% as of January 1, 2019 to 45.7% as of January 1, 2020. Additionally, the Combined Pension Plan is projected to become fully funded by 2075 as of the January 1, 2020 valuation, an extension over the January 1, 2019 fully funded expectation of 2057. The Plan funding is based on statutorily defined rates. The Board adopted a new funding policy in December 2019 and amended the policy in July 2020. In the Board's amended policy, the amortization period was changed from 30 years to a closed 25-year period.

The funding policy for the Supplemental Plan was changed from an open 10-year amortization of the UAL to a closed, 20-year amortization with this year's valuation. The funding policy is based on the assumption that the annual actuarially determined contribution is received from the City each year.

Cost Method

Using an actuarial cost method requires estimating the ultimate cost of the plan. The ultimate cost of the plan includes all specific benefits that are committed to be paid, plus all administrative expenses, less any investment earnings realized over the life of the plan. As the exact ultimate cost of the plan cannot be determined until the last retired member of a plan dies, it must be actuarially estimated by forecasting the plan's expenses and investment return.

Assumptions must be made for all the years the plan is in existence, including the number of active members and beneficiaries who will retire, terminate service, or become disabled, the duration of retirement and disability payments, mortality rates, salary increases, DROP participation, inflation, and long-term rate of return on investments. Administrative expenses must also be estimated.

Actuary's Report

The actuarial information that follows was determined using specific actuarial methods which have been described in general above. Such methods were applied to census data related to active members, retirees, and beneficiaries of DPFP as of January 1, 2020. Content throughout the Actuarial section has been obtained from reports provided by DPFP's external actuaries for the periods noted. The Actuary's Report at page 89 is a summary from Segal regarding the January 1, 2020 valuations.

Actuarial Assumptions and Methods

In conjunction with the January 1, 2020 actuarial valuations, a comprehensive experience study was performed by Segal, reviewing all assumptions incorporated in the actuarial valuations and covering the five-year period ended December 31, 2019. Adjustments to the demographic and economic assumptions were made in the January 1, 2020 valuation based on the results of the experience study.

The following assumptions were changed for the January 1, 2020 valuation:

- The net investment return assumption was lowered from 7.25% to 7.0%.
- The salary scale assumption was updated based on the 2019 Meet and Confer agreement, with a new ultimate rate of 2.5%.
- The payroll growth assumption was lowered from 2.75% to 2.50%.
- The mortality rates were updated to the Pub-2010 Public Safety Amount-weighted Mortality Tables, with varying adjustments by status and sex, projected generationally with Scale MP-2019.
- The withdrawal rates were updated and the ultimate 0% rate was moved up from 38 to 25 years of service.
- The DROP retirement rates were increased at most ages and the ultimate 100% retirement was updated from the earlier of 67 years or 8 years in DROP to the earlier of age 65 or 10 years in DROP.
- The non-DROP retirement rates were lowered at most ages and simplified from three sets to two sets of rates.
- The retirement assumption for inactive vested participants was updated to include an assumption that 75% of those who terminate with a vested benefit prior to age 40 will take a cash out at age 40.
- The DROP annuitization interest rate for account balances as of September 1, 2017 was lowered from 3.0% to 2.75%.
- The ad-hoc COLA assumption was updated to begin October 1, 2063. Last year, the COLA was assumed to begin October 1, 2050.
- The system's expectations for near-term market returns were lowered to -6.00% for 2020, +5.25% for 2021, +5.75% for 2022 and +6.25% for 2023. For valuation purposes, these return assumptions are used for determining the projected full-funding date and the projected COLA start date.

The following assumptions were changed for the January 1, 2019 valuation:

- The salary scale assumption was updated to reflect the 2016 Meet and Confer Agreement, as amended in 2018.
- The ad-hoc COLA assumption was updated to begin October 1, 2050 based on the updated projection of the unfunded actuarial accrued liability; the COLA was assumed to begin October 1, 2053 in the January 1, 2018 valuation.

The following assumptions were changed for the January 1, 2018 valuation:

- The DROP annuity interest rate applied to the DROP balance accrued prior to September 1, 2017 for future retirees was increased from 2.75% to 3.00% to reflect the rising interest rates.
- The cost of living adjustment is assumed to begin in 2053.
- The administrative expense assumption was decreased from $10 million to $8.5 million.
- The salary scale assumption was updated to reflect the 2016 Meet and Confer Agreement.

The following significant changes in assumptions were incorporated in the January 1, 2017 valuation as a result of the passage of HB 3158:

- The DROP utilization factor was changed from 100% to 0%
- Retirement rates for DROP participants were accelerated
- Retirement rates for members not in DROP were adjusted effective January 1, 2018
- Beginning September 1, 2017, DROP balances for annuitants are assumed to earn 2.75% interest; DROP balances for active participants are assumed to earn 2.75% upon retirement; DROP balances accrued after September 1, 2017 do not earn interest
- The DROP payment period for annuitization is based on an 85%/15% male/female blend of the current healthy annuitant mortality tables
- The cost of living adjustment is assumed to be 2.0% beginning in 2049 and thereafter

The Combined Pension Plan's contribution rate is set by State statute. See the Required Supplementary Information in the Financial Section for a ten-year schedule of actuarial determined contribution and actual contributions. As of September 6, 2017 the contribution rate for all employees is 13.5%. As of September 6, 2017 the City contribution rate is 34.5% of Computation Pay, with certain minimum floor amounts as specified in the Bill through 2024, plus $13 million per year through 2024. There is no direct policy to fund the unfunded liability in a certain number of years. The PRB requires that municipal plans develop a Funding Soundness Restoration Plan if their effective amortization period exceeds 40 years for three consecutive annual valuations. The PRB was involved with the plan changes throughout the legislative process and DPFP will continue to provide annual reporting to the PRB as required. In accordance with HB 3158, in 2024, an actuarial analysis shall be conducted with an independent actuary making recommendations to the Board for changes to bring the Combined Pension Plan in line with funding guidelines set by the PRB, if needed. The Board shall adopt changes based on the actuary's recommendations to meet the funding amortization period required by the Texas Government Code. The PRB shall review the changes and submit a report to the Texas legislature regarding such review. The changes adopted by the Board will remain in effect until either amended by the Board or a law is enacted by the Texas legislature which preempts the changes.

The January 1, 2020 valuation projects the full funding of the plan at 55 years.

The actual expense for the employer's financial disclosure purposes is determined in accordance with GASB No. 68, *Accounting and Financial Reporting for Pensions – An Amendment of GASB No. 27.*

Member contributions for the Supplemental Plan are established by State statute. Per City ordinance, the City makes a contribution each year sufficient to pay for the annual normal cost of the Supplemental Plan, plus enough to amortize the unfunded actuarial accrued liability of the Supplemental Plan over a closed 20 years.

A summary of the actuarial assumptions and methods used in the January 1, 2020 actuarial valuation follows.

Investment Rate of Return: 7.00% per annum, compounded annually, net of investment expenses. This rate reflects an underlying inflation rate of 2.50% and a real rate of return of 4.50%. Market value asset returns are expected to be -6.00% in 2020, 5.25% in 2021, 5.75% in 2022, 6.25% in 2023 and 7.00% annually thereafter.

Discount Rate: 7.00% is the rate used to discount the liabilities.

Administrative Expenses: An explicit assumption of annual administrative expenses, including investment-related personnel costs has been added to the normal cost in the amount of the greater of $8.5 million per year or 1% of Computation Pay for the Combined Pension Plan and $65 thousand for the Supplemental Plan.

DROP Interest: DROP balances for active participants are assumed to earn 2.75% upon retirement and balances accrued after September 1, 2017 do not earn interest.

Salary Scale: Range of 2.5% to 3.25% based on the City's pay plan, along with analysis completed in conjunction with an Experience Study report for the five-year period ended December 31, 2019 and the 2019 Meet and Confer Agreement.

In years 2020 and thereafter:

	OFFICERS	CORPORALS, DRIVERS, SENIOR OFFICERS & CHIEFS	SERGEANTS, LIEUTENANTS, CAPTAINS, MAJORS, DEPUTY CHIEFS & ASSISTANT CHIEFS
Year	**RATE (%)**		
2020 – 2022	3.25%	3.00%	2.50%
2023 and thereafter	2.50%	2.50%	2.50%

Payroll Growth Rate: Total payroll is assumed to increase 2.50% per year, which is consistent with the assumed inflation rate.

Retirements-DROP active members: The percentage of the population assumed to retire at various ages in 2020 is as follows:

AGE	ANNUAL RATE OF RETIREMENT	
	Police	**Fire**
Under 50	1.00%	0.75%
50	10.00%	0.75%
51	15.00%	0.75%
52 - 53	15.00%	10.00%
54	25.00%	10.00%
55 - 57	25.00%	15.00%
58 - 62	30.00%	40.00%
63	40.00%	50.00%
64	50.00%	50.00%
65 and over	100.00%	100.00%

Retirements-Non-DROP active members: The percentage of non-DROP members assumed to retire at various ages is as follows:

	MEMBERS HIRED PRIOR TO MARCH 1, 2011 WITH AT LEAST 20 YEARS OF SERVICE AS OF SEPTEMBER 1, 2017	MEMBERS HIRED PRIOR TO MARCH 1, 2011 WITH LESS THAN 20 YEARS OF SERVICE AS OF SEPTEMBER 1, 2017 & MEMBERS HIRED ON OR AFTER MARCH 1, 2011
Age	Annual Rate of Retirement	
Under 50	1.00%	1.00%
50 - 51	8.00%	2.00%
52	10.00%	2.00%
53	15.00%	2.00%
54	20.00%	2.00%
55	35.00%	2.00%
56 – 57	40.00%	2.00%
58 – 60	75.00%	25.00%
61	75.00%	50.00%
62	100.00%	100.00%

Note: 100% retirement rate once benefit multiplier hits 90% maximum.

Mortality Rates: The tables used for mortality assumptions are as follows:

Healthy Pre-retirement – Pub-2010 Public Safety Employee Amount-Weighted Mortality Table, set forward five years for males

Healthy annuitants and dependent spouses - Pub-2010 Public Safety Retiree Amount-Weighted Mortality Table, set back one year for females

Healthy contingent beneficiaries - Pub-2010 Public Safety Contingent Survivor Amount-Weighted Mortality Table, set back one year for females

Disabled annuitants – Pub-2010 Public Safety Disabled Retiree Amount-Weighted Mortality Table, set forward four years for males and females

All tables are projected generationally using Scale MP-2019.

Turnover: The assumed annual rates of turnover (withdrawal) differ by employee group, with higher rates assumed for police officers than for firefighters. Rates for each group are based on service and reflect recent experience as follows. Rates cut off at normal retirement age.

YEARS OF SERVICE	TURNOVER	
	Police	Fire
<1	20.00%	10.00%
1	5.50%	5.50%
2	5.50%	5.50%
3	5.50%	5.50%
4	5.50%	5.50%
5	5.50%	5.50%
6	3.50%	5.50%
7	3.50%	1.00%
8	3.50%	1.00%
9	3.50%	1.00%
10	3.50%	1.00%
11 - 14	2.00%	1.00%
15 - 24	1.00%	1.00%
25 and over	0.00%	0.00%

Disability Rates: The percentage of members assumed to leave active service due to disability at various ages is as follows. Rates cut off at normal retirement age.100% of disabilities are assumed to be service-related.

AGE	DISABILITY RATE
20	0.010%
25	0.015%
30	0.020%
35	0.025%
40	0.030%
45	0.035%
50	0.040%

DROP Election: Based on changes to the DROP program as set forth by HB 3158, the DROP utilization factor was changed from 100% to 0%.

Spouses and Children: 75% of active members are assumed to be married, with the male assumed to be three years older than the female. The age of the youngest child is assumed to be 10 years.

Retiree Payment Form Assumption: All married members are assumed to receive a joint and survivor annuity.

Assumed Post-Retirement Cost of Living: As a result of HB 3158, the Board may grant an ad hoc cost of living adjustment not to exceed 4.0% of the original benefit if, after granting a cost of living adjustment, the funded ratio on a market value of assets basis is no less than 70%. Such ad hoc adjustment is subject to limitation based on the trailing five years of investment returns at the time the 70% ratio is met. The adjustment is assumed to be 2.0% beginning October 1, 2063 and payable every October 1st thereafter.

Actuarial Cost Method: The method used to determine the cost of future service (normal cost) and the actuarial accrued liability (AAL) is the Entry Age Actuarial Cost Method. Under this method, the present value of future normal cost is determined for all active members, which is the contribution required to provide all the projected pension benefits assuming this contribution is payable over a period ending on the date of retirement (separation from active service) and expressed as a level percentage of the present value of future compensation for all active members. The AAL is determined as the excess of the total present value of all pension benefits over the total present value of future normal costs. The unfunded actuarial accrued liability as of the valuation date is determined as the excess of the AAL over the assets of the Plans.

The normal cost and AAL are derived by making certain assumptions as to the rates of interest, mortality, and turnover, among others, which are assumed to reflect experience for many years into the future. Since actual experience will differ from the assumptions, the costs determined must be regarded as estimates of the true costs of the plans. The effects of any actuarial gains or losses are immediately reflected in the unfunded actuarial accrued liability and the normal cost.

Amortization Method: The effective amortization period is developed using a level percent of pay, with pay assumed to increase at the payroll growth rate. Combined Pension Plan amortizes the liability over a closed 25-year period. The Supplemental Pension Plan amortizes the unfunded liability over a closed 20-year period.

Asset Valuation Method: Actuarial valuation methods include "smoothing" investment returns over a period of time to provide a more stable actuarial rate of return and more predictable pension costs. In conjunction with the 2014 experience study and as a result of significant write-downs to the carrying value of investment assets in 2013 through 2015 which were not considered to be market-driven, the asset valuation method was altered as of January 1, 2016. The revised method involved resetting the actuarial value of assets to market value as of December 31, 2015. Future gains and losses are recognized over a five-year smoothing period, further adjusted, if necessary, to be within 20% of market value.

The Supplemental Plan actuarial value of assets is equal to the market value of assets.

Long-term Rate of Return on Plan Assets: The long-term rate of return on plan assets used to value the liabilities of the Plans is 7.00%. This assumption was last changed as of January 1, 2020 to better anticipate future expectations and the assumed inflation rate. Based on the asset allocation policy, expectations of future real rates of return and the expected investment expenses, a long-term rate of return of 7.00% is considered reasonable.

A summary of historical nominal rates of return is as follows:

YEAR ENDED DECEMBER 31,	ACTUARIAL VALUE INVESTMENT RETURN	MARKET VALUE INVESTMENT RETURN
2008	(6.14%)	(24.8%)
2009	12.29%	13.78%
2010	2.69%	10.72%
2011	0.43%	(1.78%)
2012	14.79%*	9.92%
2013	4.52%	7.70%
2014	(1.98%)	(5.35%)
2015	(24.03%)*	(8.47%)
2016	7.16%	6.82%
2017	6.63%	4.74%
2018	5.48%	2.09%
2019	5.05%	6.25%
5-year average return	(7.18%)	1.48%
10-year average return	(0.67%)	2.90%
12-year average return	(0.04%)	0.88%

Note: Each annual yield is weighted by the average asset value for that year.

** Includes effects of change in asset valuation method. As of December 31, 2012, the smoothing method was extended from 5 to 10 years. As of December 31, 2015, the actuarial value of assets was reset to market value and the smoothing method was altered from 10 to 5 years.*

Analysis of Financial Experience

An analysis of financial experience is a gain/loss analysis of changes in the actuarial accrued liability or unfunded actuarial accrued liability that considers variances between actual experience and assumed experience for different types of risk. Such analysis is as follows (in thousands):

COMBINED PENSION PLAN	
Unfunded actuarial accrued liability as of January 1, 2019	$ 2,332,923
Normal cost at beginning of year	60,600
Total contributions	(207,989)
Total interest	166,079
Expected unfunded actuarial accrued liability as of January 1, 2020 **(a)**	2,351,613
Changes due to:	
Net experience loss	59,892
Plan provisions	-
Assumptions	152,342
Total changes **(b)**	212,234
Unfunded actuarial accrued liability at year end **(a+b)**	2,563,847
Actuarial accrued liability at beginning of year	4,494,823
Net (gain)/loss as a percentage of actuarial accrued liability at beginning of year	1.3%

SUPPLEMENTAL PLAN	
Unfunded actuarial accrued liability as of January 1, 2019	$ 13,507
Normal cost at beginning of year	279
Total contributions	(1,641)
Total interest	941
Expected unfunded actuarial accrued liability as of January 1, 2020 **(a)**	13,086
Changes due to:	
Net experience loss	4,111
Plan provisions	-
Assumptions	1,326
Total changes **(b)**	5,437
Unfunded actuarial accrued liability at year end **(a+b)**	18,523
Actuarial accrued liability at beginning of year	31,825
Net (gain)/loss as a percentage of actuarial accrued liability at beginning of year	8.7%

Refer to the Financial Section and the Actuarial Section for additional information on Plan changes and changes in actuarial methods and assumptions.

Short-Term Solvency Test

A short-term solvency test is one means of checking a plan's progress under its funding program. In a short-term solvency test, the plan's valuation assets are compared with: 1) active member contributions on deposit; 2) the liabilities for future benefits to present retired lives; and 3) the liabilities for service already rendered by active members. In a plan that has been following the discipline of level percent of payroll financing, the liabilities for active member contributions on deposit (liability 1) and the liabilities for future benefits to present retired lives (liability 2) will typically be fully covered by present assets. In addition, the liabilities for service already rendered by active members (liability 3) will be partially covered by the remainder of present assets. Liability 3 being fully funded is very rare. As a result of the decline in the actuarial value of assets as of January 1, 2016, the liabilities for future benefits to present retired lives is no longer fully covered by present assets. Solvency test results for the Plans for the last 10 years are as follows (dollars in thousands):

Combined Pension Plan

	AGGREGATE ACCRUED LIABILITIES FOR							
	(1)	(2)	(3)					
Jan. 1 Valuation Date	Active Member Contribution	Retirees, Beneficiaries, and Vested Termination	Active Members (Employer Financed Portion)	Total Actuarial Accrued Liability	Actuarial Value of Assets	Portion of Accrued Liabilities Covered by Assets (1)	(2)	(3)*
2011	270,978	2,134,212	1,911,159	4,316,349	3,430,819	100.0%	100.0%	53.7%
2012	274,302	2,376,907	1,917,642	4,568,851	3,378,481	100.0%	100.0%	37.9%
2013	278,391	2,570,327	2,009,488	4,858,206	3,795,025	100.0%	100.0%	47.1%
2014	281,440	2,810,346	2,037,410	5,129,196	3,877,321	100.0%	100.0%	38.6%
2015	286,637	3,282,406	2,223,173	5,792,216	3,695,274	100.0%	100.0%	5.7%
2016	290,395	3,385,527	2,271,252	5,947,174	2,680,124	100.0%	70.6%	0.0%
2017	284,871	2,734,837	1,347,472	4,367,180	2,157,800	100.0%	69.2%	0.0%
2018	280,965	3,018,210	1,206,262	4,505,437	2,151,039	100.0%	62.6%	0.0%
2019	292,370	3,129,484	1,072,969	4,494,823	2,161,900	100.0%	60.4%	0.0%
2020	317,954	3,301,584	1,104,434	4,723,972	2,160,126	100.0%	56.4%	0.0%

** The portion of accrued liabilities for active members (employer financed portion) is calculated as follows: [Actuarial value of assets-(1) - (2)]/(3).*

Short-Term Solvency Test (continued)

Supplemental Plan

	AGGREGATE ACCRUED LIABILITIES FOR							
	(1)	(2)	(3)					
Jan. 1 Valuation Date	Active Member Contributions	Retirees, Beneficiaries, and Vested Termination	Active Members (Employer Financed Portion)	Total Actuarial Accrued Liability	Actuarial Value of Assets	Portion of Accrued Liabilities Covered by Assets (1)	(2)	(3)*
2011	265	27,394	6,649	34,308	21,119	100.0%	76.1%	0.0%
2012	226	28,001	8,102	36,329	20,823	100.0%	73.6%	0.0%
2013	138	31,871	5,256	37,265	21,563	100.0%	67.2%	0.0%
2014	122	33,660	4,995	38,777	24,037	100.0%	71.0%	0.0%
2015	134	35,739	6,038	41,911	21,439	100.0%	59.6%	0.0%
2016	150	34,968	7,362	42,480	19,457	100.0%	55.2%	0.0%
2017	106	30,161	3,117	33,384	17,664	100.0%	58.2%	0.0%
2018	170	30,680	3,700	34,550	17,805	100.0%	57.5%	0.0%
2019	202	28,757	2,866	31,825	18,318	100.0%	63.3%	0.0%
2020	203	32,120	3,507	35,830	17,307	100.0%	53.5%	0.0%

** The portion of accrued liabilities for active members (employer financed portion) is calculated as follows: [Actuarial value of assets-(1) - (2)]/(3).*

Active Member Valuation Data

Combined Pension Plan (Dollars in Thousands)

JAN. 1 VALUATION DATE	ACTIVE MEMBERS	ANNUAL COVERED PAYROLL	ANNUAL AVERAGE PAY	% CHANGE IN ANNUAL AVERAGE PAY
2011	5,482	365,126	67	(0.5%)
2012	5,376	349,495	65	(2.4%)
2013	5,400	361,044	67	2.8%
2014	5,397	377,943	70	4.7%
2015	5,487	383,006	70	(0.3%)
2016	5,415	365,210	67	(3.4%)
2017	5,104	357,414	70	3.8%
2018	4,952	346,037	70	(0.2%)
2019	5,012	363,117	72	3.8%
2020	5,121	396,955	78	7.0%

Supplemental Plan (Dollars in Thousands)

JAN. 1 VALUATION DATE	ACTIVE MEMBERS	ANNUAL COVERED PAYROLL	ANNUAL AVERAGE PAY	% CHANGE IN ANNUAL AVERAGE PAY
2011	39	886	23	(13.0%)
2012	37	621	17	(26.2%)
2013	39	450	12	(31.2%)
2014	38	521	14	19.0%
2015	39	557	14	4.0%
2016	45	725	16	12.8%
2017	47	525	11	(30.6%)
2018	44	961	22	95.5%
2019	39	659	17	(22.6%)
2020	41	599	15	(13.5%)

Refer to the Financial Section and the Actuarial Section for additional information on Plan changes and changes in actuarial methods and assumptions.

Retirees and Beneficiaries Added to and Removed from Rolls

Consolidated Plans* (Dollars in Thousands)

	ADDED TO PAYROLL		REMOVED FROM PAYROLL		TOTAL			
Jan. 1 Valuation Date	Number	Annual Benefits	Number	Annual Benefits	Number**	Annual Benefits	Average Annual Benefits	% Change in Average Annual Benefits
2011	146	10,231	61	2,239	3,535	141,522	40	6.0%
2012	209	13,671	75	2,750	3,669	152,444	42	7.7%
2013	192	13,452	78	7,436	3,783	158,453	42	3.9%
2014	183	14,188	76	3,499	3,890	169,144	43	6.7%
2015	248	14,491	69	2,850	4,069	180,785	44	6.9%
2016	243	11,242	130	4,475	4,182	199,419	48	7.3%
2017	360	19,869	127	4,257	4,415	219,691	50	4.4%
2018	443	24,229	152	6,314	4,706	238,014	51	1.6%
2019	268	14,251	125	5,058	4,849	247,848	51	1.1%
2020	238	12,205	131	5,128	4,956	255,251	52	0.8%

** Due to confidentiality issues arising from the small number of members in the Supplemental Plan, data from the Combined Pension Plan and Supplemental Plan is presented on a consolidated basis.*

*** Excludes beneficiaries who are annuity account holders but do not receive a monthly benefit.*

Funding Progress

Combined Pension Plan (Dollars in Thousands)

JAN. 1 VALUATION DATE	ACTUARIAL VALUE OF ASSETS (AVA)	ACTUARIAL ACCRUED LIABILITY (AAL)	AVA AS A PERCENTAGE OF AAL	UNFUNDED AAL (UAAL)	ANNUAL COVERED PAYROLL	UAAL AS A PERCENTAGE OF ANNUAL COVERED PAYROLL	FUNDING PERIOD (YEARS)
2011	3,430,819	4,316,349	79.5%	885,530	365,126	243%	21
2012	3,378,481	4,568,851	73.9%	1,190,370	349,495	341%	30
2013	3,795,025	4,858,206	78.1%	1,063,181	361,044	295%	23
2014	3,877,321	5,129,196	75.6%	1,251,875	377,943	331%	26
2015	3,695,274	5,792,216	63.8%	2,096,942	383,006	548%	Infinite
2016	2,680,124	5,947,174	45.1%	3,267,050	365,210	895%	Infinite
2017	2,157,800	4,367,180	49.4%	2,209,381	357,414	618%	44
2018	2,151,039	4,505,437	47.7%	2,354,398	346,037	680%	45
2019	2,161,900	4,494,823	48.1%	2,332,923	363,117	642%	38
2020	2,160,126	4,723,972	45.7%	2,563,846	396,955	646%	55

Supplemental Plan (Dollars in Thousands)

JAN. 1 VALUATION DATE	ACTUARIAL VALUE OF ASSETS (AVA)	ACTUARIAL ACCRUED LIABILITY (AAL)	AVA AS A PERCENTAGE OF AAL	UNFUNDED AAL (UAAL)	ANNUAL COVERED PAYROLL	UAAL AS A PERCENTAGE OF ANNUAL COVERED PAYROLL
2011	21,119	34,309	61.6%	13,190	886	1,489%
2012	20,823	36,330	57.3%	15,507	621	2,497%
2013	21,563	37,265	57.9%	15,702	450	3,489%
2014	24,037	38,777	62.0%	14,740	521	2,829%
2015	21,439	41,910	51.2%	20,471	557	3,675%
2016	19,457	42,480	45.8%	23,023	725	3,178%
2017	17,664	33,384	52.9%	15,720	525	2,994%
2018	17,805	34,550	51.5%	16,745	961	1,743%
2019	18,318	31,825	57.6%	13,507	659	2,050%
2020	17,307	35,830	48.3%	18,523	599	3,091%

Refer to the Financial Section and the Actuarial Section for additional information on Plan changes and changes in actuarial methods and assumptions.

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Statistical Information

Statistical Information

Introduction

The Statistical section provides additional historical perspective, context, and detail to assist the reader in using the information in the financial statements, notes to the financial statements, and required supplementary information to understand and assess the economic condition of DPFP. The schedules within the Statistical section reflect financial trends and operating information. All information was derived from the audited annual financial statements, actuarial valuation reports, and/or DPFP's pension administration database. Refer to Note 1 in the Financial Section for additional information about the benefits.

Financial Trends

Financial trend information is intended to assist users in understanding and assessing the changes in the financial position of DPFP over time.

The Changes in Fiduciary Net Position schedule presents member and employer contributions and the net investment income/loss and administrative expenses to arrive at the net increase/decrease to changes in plan net assets for the 10 years ending December 31, 2019.

The Distributions by Type schedules present the amount of monthly benefit payments and DROP distributions by type for the 10 years ending December 31, 2019.

The DROP Growth schedule presents the changes in interest rate credited to DROP balances, the amounts deferred into and interest credited to DROP balances, DROP withdrawals, the DROP balances annuitized in accordance with HB 3158 and the change in DROP balances year over year. In addition, the annual annuity payments as well as the present value of the annuity balances are presented.

Operating Information

Operating information is intended to provide contextual information about the operations and resources of DPFP to assist readers in understanding and assessing the economic condition of DPFP.

The schedule of Benefit Recipients by Type presents, for given benefit ranges, the total number of benefit recipients by retirement type as of December 31, 2019.

The schedule of Yearly Retirements by Service Years presents, in five-year increments of credited service, the average monthly benefit, the average final average salary, and the number of retirements for the 10 years ending December 31, 2019.

The Benefits Payable schedules present the number of retired members and beneficiaries by status type, as well as the total annual benefits paid and average annual benefit by status type as of December 31, 2019.

The Value of Assets vs. Funded Ratio schedules present the actuarial and market values of assets and the related funded ratios for the 10 years ending December 31, 2019.

The Membership Count schedules reflect the number of members by status type for the 10 years ending December 31, 2019.

The DROP Participation schedule reflects a roll forward of the number of DROP participants and DROP balance and present value of the annuity balance for the 10 years ending December 31, 2019.

Throughout this Statistical section, certain schedules include a combination of data for both the Combined Pension Plan and the Supplemental Plan, jointly referred to as the Consolidated Plans. The combination of the two plans for certain data is necessary due to the small number of Supplemental Plan members and the need to maintain confidentiality of members' personal data.

Changes in Fiduciary Net Position

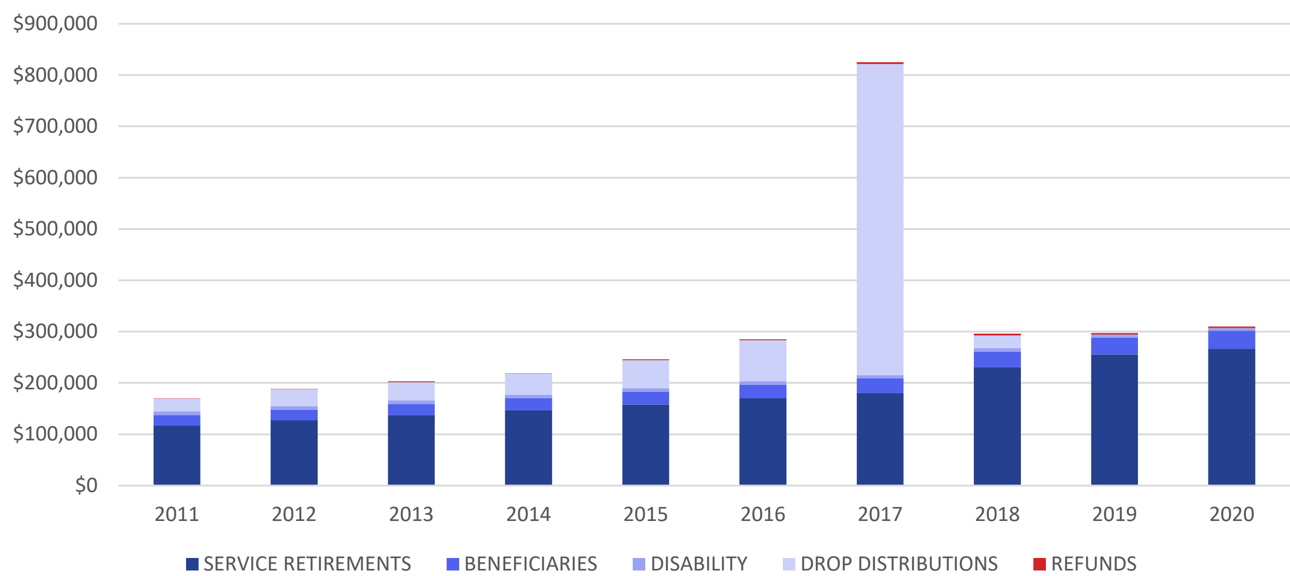
Consolidated Plans* (In Millions)

YEARS ENDED DECEMBER 31,	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Additions (Reductions)										
Contributions										
City	$ 157.2	$ 151.3	$ 128.4	$ 122.4	$ 117.3	$ 111.6	$ 108.0	$ 105.9	$ 104.0	$ 109.7
Members	52.4	49.4	33.0	25.6	25.7	29.4	26.3	22.8	19.5	19.8
Total contributions	209.6	200.7	161.4	148.0	143.0	141.0	134.3	128.7	123.5	129.5
Investment income (loss)										
Net appreciation (depreciation) in fair value of investments	94.1	6.5	75.4	122.3	(300.9)	(223.2)	94.2	301.5	(44.8)	248.7
Interest and dividends	38.0	45.1	31.2	54.8	73.4	94.5	86.5	67.2	59.4	65.8
Total gross investment income (loss)	132.1	51.6	106.6	177.1	(227.5)	(128.7)	180.7	368.7	14.6	314.5
Less: Investment expense	(8.1)	(8.1)	(9.1)	(11.8)	(10.1)	(11.3)	(10.1)	(28.8)	(32.3)	(18.4)
Net investment income (loss)	124.0	43.5	97.5	165.3	(237.6)	(140.0)	170.6	339.9	(17.7)	296.1
Securities lending income	0.8	0.3	0.2	0.7	0.7	0.8	1.1	0.9	0.8	1.0
Securities lending expense	(0.7)	(0.2)	(0.1)	(0.3)	(0.2)	(0.2)	(0.3)	(0.2)	(0.2)	(0.4)
Net securities lending income	0.1	0.1	0.1	0.4	0.5	0.6	0.8	0.7	0.6	0.6
Other income	0.4	0.5	2.1	0.2	0.3	-	-	-	-	-
Total additions (reductions)	**334.1**	**244.8**	**261.1**	**313.9**	**(93.8)**	**1.6**	**305.7**	**469.3**	**106.4**	**426.2**
Deductions										
Benefits paid to members	310.0	297.2	295.2	827.6	285.9	247.6	220.2	203.4	190.2	171.4
Refunds paid to members	2.6	2.6	3.6	3.4	1.8	1.7	0.9	1.5	0.7	0.8
Interest expense	-	-	1.3	4.6	6.0	7.4	5.9	6.3	6.7	7.3
Professional and administrative expenses	6.5	5.9	8.2	9.6	8.5	8.1	7.5	6.1	7.0	6.5
Total deductions	**319.1**	**305.7**	**308.3**	**845.2**	**302.2**	**264.8**	**234.5**	**217.3**	**204.6**	**186.0**
Net increase (decrease) in net position	15.0	(60.9)	(47.2)	(531.3)	(396.0)	(263.2)	71.2	252.0	(98.2)	240.2
Net position held in trust restricted for pension benefits										
Beginning of period	2,060.2	2,121.1	2,168.3	2,699.6	3,095.6	3,358.8	3,287.6	3,035.6	3,133.8	2,893.6
End of period	$ 2,075.2	$ 2,060.2	$ 2,121.1	$ 2,168.3	$ 2,699.6	$ 3,095.6	$ 3,358.8	$ 3,287.6	$ 3,035.6	$ 3,133.8

** Includes both the Combined Pension Plan and the Supplemental Pension Plan.*

Distributions by Type

Combined Pension Plan (In Thousands)

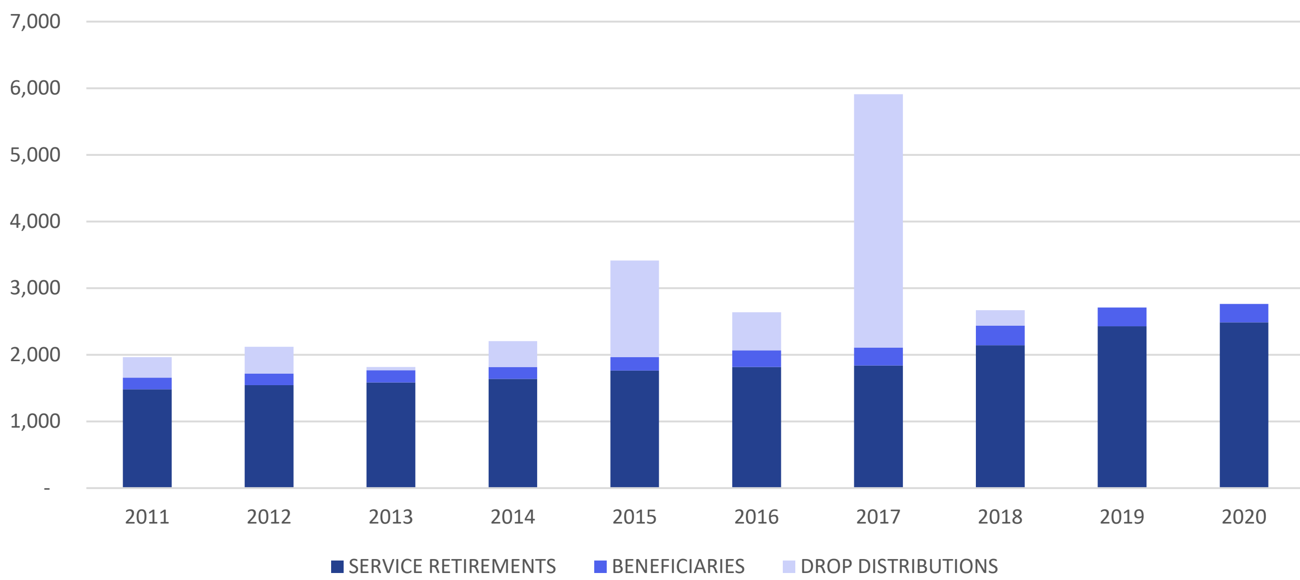


JAN. 1 VALUATION DATE	SERVICE RETIREMENTS*	BENEFICIARIES	DISABILITIES	DROP LUMP SUM DISTRIBUTIONS	REFUNDS	TOTAL
2011	117,350	20,369	6,842	24,898	814	170,273
2012	127,048	20,860	6,860	33,325	736	188,829
2013	136,677	22,338	6,724	35,826	1,535	203,100
2014	146,846	23,849	6,543	40,744	900	218,882
2015	157,987	25,104	6,433	54,675	1,733	245,932
2016	170,323	26,559	6,335	80,000	1,786	285,003
2017**	180,577	28,392	6,340	606,429	3,354	825,092
2018	230,774	30,706	6,154	24,942	3,578	296,154
2019	255,664	32,954	5,806	23	2,634	297,081
2020	266,578	35,026	5,609	31	2,617	309,861

**Includes monthly DROP installment payments.*
***The January 1, 2017 valuation date data reflects the $600 million withdrawal from DROP accounts that occurred during the funding crisis.*

Distributions by Type (continued)

Supplemental Plans (In Thousands)



JAN. 1 VALUATION DATE	SERVICE RETIREMENTS*	BENEFICIARIES	DROP LUMP SUM DISTRIBUTIONS	TOTAL
2011	1,482	174	308	1,964
2012	1,545	172	402	2,119
2013	1,584	182	53	1,819
2014	1,637	182	388	2,207
2015	1,761	202	1,451	3,414
2016	1,817	251	572	2,640
2017**	1,841	266	3,805	5,912
2018	2,143	295	230	2,668
2019	2,428	280	-	2,708
2020	2,486	279	-	2,765

*Includes monthly DROP installment payments.
**The January 1, 2017 valuation date data reflects the $600 million withdrawal from DROP accounts that occurred during the funding crisis.

DROP Growth

Consolidated Plans* (Dollars in Thousands)

JAN. 1 VALUATION DATE	INTEREST RATE CREDIT	DEFERRALS	INTEREST CREDITED	WITHDRAWALS	ADJUSTMENTS	CHANGE	BALANCE	ANNUITY PAYMENTS	ANNUITY BALANCE
2011	9.25%	82,306	78,780	(42,721)	-	118,364	936,674	-	-
2012	8.00%	86,880	84,846	(53,815)	-	117,911	1,054,586	-	-
2013	8.00%	90,154	85,373	(58,441)	-	117,085	1,171,671	-	-
2014	8.78%	96,062	97,066	(66,190)	-	126,938	1,298,609	-	-
2015	8.00%	96,071	111,856	(83,940)	-	123,988	1,422,597	-	-
2016	7.00%	96,510	110,060	(112,552)	-	94,018	1,516,615	-	-
2017	6.00%	89,533	92,986	(637,993)	-	(455,473)	1,061,168	-	-
2018[1]	6.00%/0.00%[2]	18,293[3]	40,616[2]	(876,365)[4]	-	(817,456)	243,712	(8,819)	817,106
2019	0.00%	26,029[5]	(1) [6]	(75,634)	-	(49,606)	194,106	(53,299)	832,816
2020	0.00%	21,184	(1) [6]	(50,005)	(9,804)	(38,626)	155,480	(57,183)	887,294

** Due to confidentiality issues arising from the small number of members in the Supplemental Plan, data from the Combined Pension Plan and Supplemental Plan is presented on a consolidated basis.*

[1] 2018 reflects the changes to the DROP program as a result of HB 3158.

[2] Interest was credited at 6% until August 31, 2017. Interest does not accrue beginning September 1, 2017. DROP balances accrued prior to September 1, 2017 are annuitized with interest upon retirement or at the initial annuitization date of November 30, 2017 for those already retired. Balances accrued after September 1, 2017 are annuitized upon retirement with no interest.

[3] Includes $45,413 in Deferrals and $27,120 in DROP Revocations.

[4] Includes withdrawals of $56,421 and DROP balance annuitization of $819,944.

[5] Includes $26,934 in deferrals and $905 in DROP revocations.

[6] Interest is due to DROP corrections prior to 9-1-2017

Benefit Recipients by Type

Consolidated Plans* (As of December 31, 2019)

MONTHLY BENEFIT RANGE	TOTAL NUMBER OF BENEFITS	SERVICE RETIREMENTS	DISABILITIES	BENEFICIARIES	NON-ACTIVE VESTED	ACTIVE DROP
$0 - $500	90	34	2	49	4	1
$501 - $1,000	259	57	-	83	118	1
$1,001 - $1,500	287	85	1	134	63	4
$1,501 - $2,000	560	82	1	439	30	8
$2,001 - $2,500	260	80	9	149	8	14
$2,501 - $3,000	287	160	22	77	14	14
$3,001 - $3,500	254	163	21	47	-	23
$3,501 - $4,000	476	393	40	17	3	23
$4,001 - $4,500	488	387	14	34	-	53
$4,501 - $5,000	530	441	6	32	-	51
$5,001 - $5,500	517	431	2	23	-	61
$5,501 - $6,000	486	412	5	24	2	43
$6,001 - $6,500	336	280	1	16	-	39
$6,501 - $7,000	299	266	1	17	-	15
$7,001 - $7,500	206	185	2	2	-	17
$7,501 - $8,000	117	102	-	5	-	10
$8,001 - $8,500	55	52	-	2	-	1
Over $8,500	74	66	-	3	-	5
Total	**5,581**	**3,676**	**127**	**1,153**	**242**	**383**

** Due to confidentiality issues arising from the small number of members in the Supplemental Plan, data from the Combined Pension Plan and Supplemental Plan is presented on a consolidated basis.*
***Refer to the Financial Section for additional information on the major features of the plans.*

Yearly Retirements by Service Years

Consolidated Plans* (Monthly Benefit) (As of December 31st)

	YEARS OF SERVICE							
	0-5	6-10	11-15	16-20	21-25	26-30	30+	TOTAL
2010								
Retirements	1	2	10	24	52	34	15	138
Avg. FAS	$ 3,597	$ 2,655	$ 2,579	$ 1,718	$ 3,094	$ 3,947	$ 3,466	$ 3,065
Avg. benefit	$ 2,160	$ 740	$ 1,119	$ 1,017	$ 2,659	$ 4,395	$ 4,383	$ 2,845
2011								
Retirements	-	2	10	40	74	66	12	204
Avg. FAS	$ -	$ 3,361	$ 2,367	$ 1,299	$ 2,840	$ 4,371	$ 2,910	$ 3,019
Avg. benefit	$ -	$ 1,068	$ 1,148	$ 1,016	$ 2,462	$ 4,740	$ 3,905	$ 2,922
2012								
Retirements	-	4	10	28	64	48	13	167
Avg. FAS	$ -	$ 3,624	$ 1,912	$ 2,045	$ 2,840	$ 3,473	$ 2,149	$ 2,798
Avg. benefit	$ -	$ 944	$ 968	$ 1,148	$ 2,535	$ 3,674	$ 2,899	$ 2,526
2013								
Retirements	-	2	9	25	63	74	11	184
Avg. FAS	$ -	$ 2,775	$ 2,849	$ 1,825	$ 2,930	$ 4,237	$ 957	$ 3,182
Avg. benefit	$ -	$ 670	$ 1,348	$ 1,167	$ 2,615	$ 4,607	$ 1,359	$ 3,061
2014								
Retirements	-	2	7	16	47	44	5	121
Avg. FAS	$ -	$ 3,812	$ 3,478	$ 1,661	$ 3,144	$ 4,628	$ 3,047	$ 3,514
Avg. benefit	$ -	$ 921	$ 1,672	$ 1,053	$ 2,851	$ 4,870	$ 3,550	$ 3,276
2015								
Retirements	-	4	12	23	55	40	8	142
Avg. FAS	$ -	$ 4,142	$ 3,101	$ 2,649	$ 3,898	$ 4,947	$ 791	$ 3,756
Avg. benefit	$ -	$ 1,277	$ 1,456	$ 1,840	$ 3,360	$ 5,383	$ 1,807	$ 3,376
2016								
Retirements	2	8	15	66	125	69	4	289
Avg. FAS	$ 6,566	$ 1,455	$ 2,954	$ 1,454	$ 4,622	$ 6,208	$ 5,553	$ 4,129
Avg. benefit	$ 1,220	$ 586	$ 1,270	$ 1,024	$ 3,851	$ 6,841	$ 5,882	$ 3,705
2017								
Retirements	1	11	15	77	171	83	3	361
Avg. FAS	$ 6,403	$ 2,873	$ 2,741	$ 2,121	$ 4,572	$ 6,628	$ 5,938	$ 4,410
Avg. benefit	$ 2,041	$ 882	$ 1,349	$ 1,350	$ 3,736	$ 6,677	$ 7,488	$ 3,743
2018								
Retirements	1	2	9	38	79	54	2	185
Avg. FAS	$ 2,883	$ 2,191	$ 3,248	$ 1,557	$ 4,416	$ 6,676	$ 7,463	$ 4,432
Avg. benefit	$ 575	$ 450	$ 1,490	$ 980	$ 3,525	$ 6,230	$ 7,377	$ 3,685
2019								
Retirements	3	5	7	28	64	50	2	159
Avg. FAS	$ 3,789	$ 1,563	$ 2,044	$ 2,499	$ 4,468	$ 6,626	$ 6,769	$ 4,618
Avg. benefit	$ 898	$ 426	$ 882	$ 1,612	$ 3,593	$ 6,160	$ 5,092	$ 3,800

** Due to confidentiality issues arising from the small number of members in the Supplemental Plan, data from the Combined Pension Plan and Supplemental Plan is presented on a consolidated basis.*

***FAS: Final average salary*

****Retirements include non-active vested members who have begun receiving a monthly benefit.*

Benefits Payable

Combined Pension Plan (Dollars in Thousands)

DECEMBER 31, 2019		NUMBER	ANNUAL BENEFIT	AVERAGE ANNUAL BENEFIT
Retired members				
	Service pensions	3,676	$ 214,178	$ 58
	Disabilities	127	5,464	43
	Total	3,803	$ 219,642	$ 58
Beneficiaries*				
	Total	1,153	$ 31,596	$ 27
Total		**4,956**	**$ 251,238**	**$ 51**

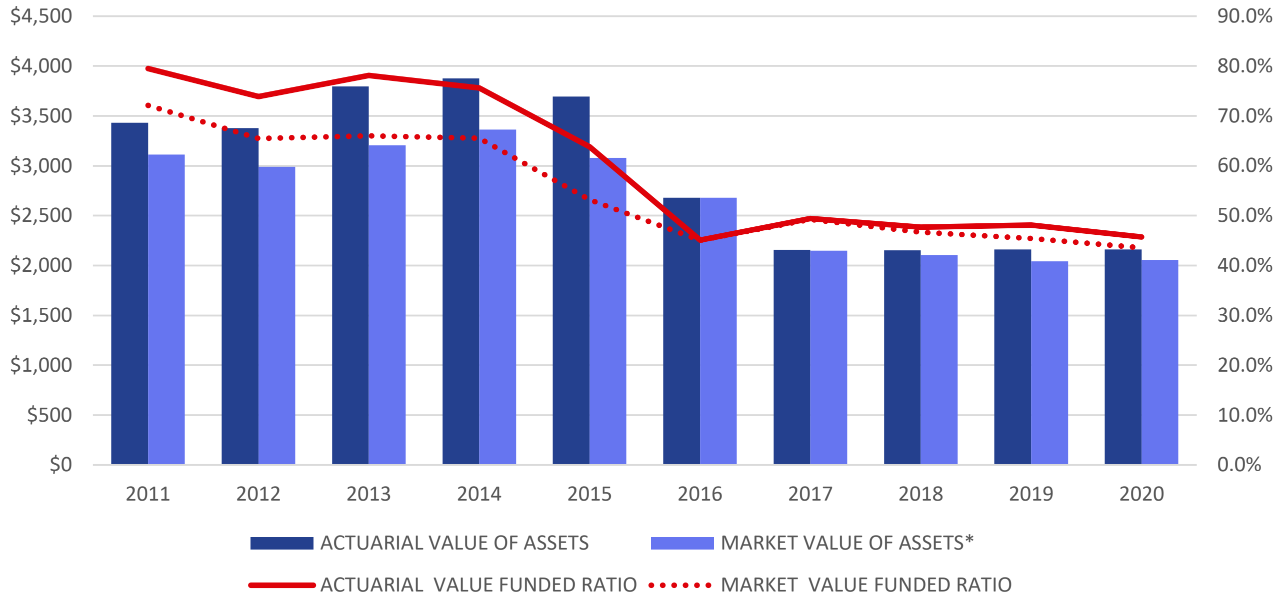
Supplemental Plan (Dollars in Thousands)

DECEMBER 31, 2019		NUMBER	ANNUAL BENEFIT	AVERAGE ANNUAL BENEFIT
Retired members				
	Service pensions	116	$ 2,215	$ 19
	Total	116	$ 2,215	$ 19
Beneficiaries*				
	Total	23	$ 262	$ 11
Total		**139**	**$ 2,477**	**$ 18**

** Excludes beneficiaries who maintain a DROP account balance but do not receive a monthly benefit.*

Value of Assets vs. Funded Ratio

Combined Pension Plan (Dollars in Millions)

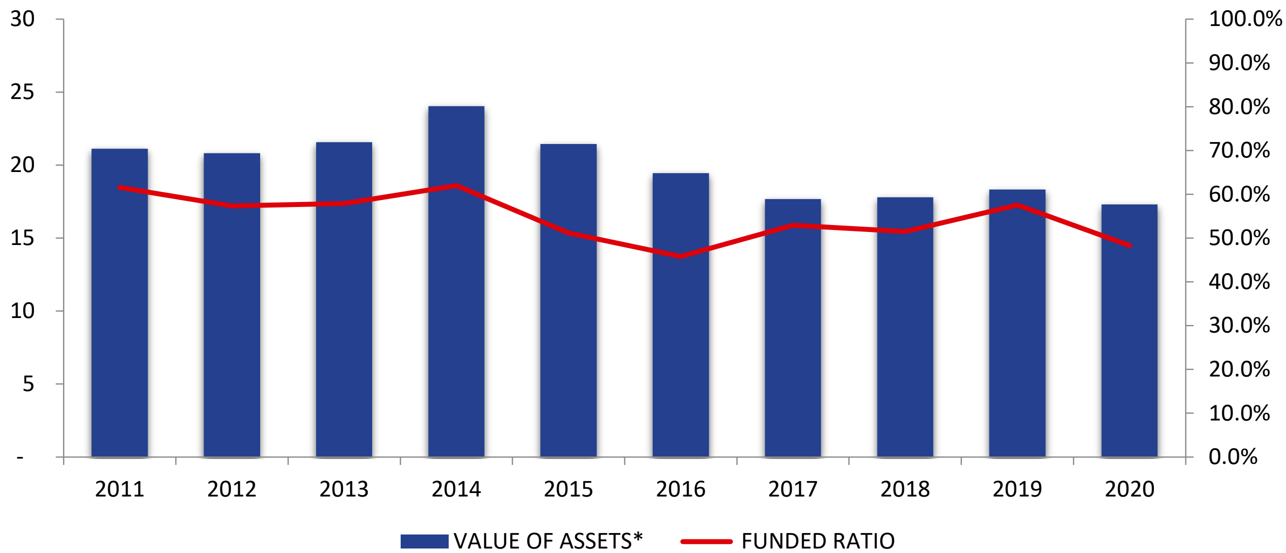


JAN. 1 VALUATION DATE	ACTUARIAL VALUE OF ASSETS	MARKET VALUE OF ASSETS*	ACTUARIAL VALUE FUNDED RATIO	MARKET VALUE FUNDED RATIO
2011	3,431	3,113	79.5%	72.1%
2012	3,378	2,991	73.9%	65.5%
2013	3,795	3,206	78.1%	66.0%
2014	3,877	3,363	75.6%	65.6%
2015	3,695	3,079	63.8%	53.2%
2016	2,680	2,680	45.1%	45.1%
2017	2,158	2,150	49.4%	49.2%
2018	2,151	2,103	47.7%	46.7%
2019	2,162	2,042	48.1%	45.4%
2020	2,160	2,058	45.7%	43.6%

** The market value of assets is per the actuarial valuation report as of the valuation date. This value may differ immaterially from the audited market value for the prior December 31 due to timing of adjustments made to valuations after the finalization of the actuarial valuation report.*

Value of Assets vs. Funded Ratio (continued)

Supplemental Plan (Dollars in Millions)



JAN. 1 VALUATION DATE	VALUE OF ASSETS*	FUNDED RATIO
2011	21	61.6%
2012	21	57.3%
2013	22	57.9%
2014	24	62.0%
2015	21	51.2%
2016	19	45.8%
2017	18	52.9%
2018	18	51.5%
2019	18	57.6%
2020	17	48.3%

** The value of assets represents both the market value of assets and the actuarial value of assets.*

Membership Count

Combined Pension Plan

JAN. 1 VALUATION DATE	ACTIVE (EXCLUDING DROP)	ACTIVE DROP	RETIREES	BENEFICIARIES	NON-ACTIVE VESTED	NON-ACTIVE NON-VESTED	TOTAL
2011	4,085	1,397	2,644	908	135	68	9,237
2012	3,995	1,381	2,767	926	128	75	9,272
2013	3,974	1,426	2,854	969	96	86	9,405
2014	3,983	1,414	2,956	969	122	106	9,550
2015	4,107	1,380	3,033	1,092	157	99	9,868
2016	4,077	1,338	3,115	1,115	200	126	9,971
2017	4,002	1,102	3,338	1,118	215	295	10,070
2018	4,326	626	3,598	1,158	226	399	10,333
2019	4,529	483	3,717	1,202	230	431	10,592
2020	4,738	383	3,803	1,236	242	434	10,836

Supplemental Plan

JAN. 1 VALUATION DATE	ACTIVE (EXCLUDING DROP)	ACTIVE DROP	RETIREES	BENEFICIARIES	NON-ACTIVE VESTED	TOTAL
2011	11	28	87	26	-	152
2012	9	28	90	23	-	150
2013	19	20	96	24	-	159
2014	18	20	99	21	-	158
2015	21	19	99	22	-	161
2016	25	20	98	26	-	169
2017	31	16	100	28	-	175
2018	37	7	110	30	1	185
2019	34	5	112	26	2	179
2020	38	3	116	23	2	182

DROP Participation

Consolidated Plans* (Dollars in Millions)

	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Active - DROP Participants										
Beginning of year	483	626	1,102	1,338	1,399	1,434	1,446	1,409	1,425	1,333
Entrants	15	15	17	36	121	107	155	190	176	208
Withdrawals	(115)	(158)	(493)	(272)	(182)	(142)	(167)	(153)	(192)	(116)
End of year	383	483	626	1,102	1,338	1,399	1,434	1,446	1,409	1,425
DROP balance at December 31	$ 154	$ 192	$ 242	$ 358	$ 479	$ 461	$ 441	$ 434	$ 425	$ 406

Retirees and Beneficiaries - DROP Participants										
Beginning of year	16	16	1,876	2,085	1,971	1,855	1,718	1,525	1,414	1,265
Additions	-	3	-	204	168	170	190	215	173	164
Closures	(5)	(3)	(1,860)	(413)	(54)	(54)	(53)	(22)	(62)	(15)
End of year	11	16	16	1,876	2,085	1,971	1,855	1,718	1,525	1,414
DROP balance at December 31	$ 1	$ 2	$ 2	$ 703	$ 1,038	$ 962	$ 858	$ 738	$ 630	$ 531

Total DROP participants	**394**	**499**	**642**	**2,978**	**3,423**	**3,370**	**3,289**	**3,164**	**2,934**	**2,839**

** Due to confidentiality issues arising from the small number of members in the Supplemental Plan, data from the Combined Pension Plan and Supplemental Plan is presented on a consolidated basis.*

Combined Pension Plan

Retirees and Beneficiaries - DROP Annuities										
Beginning of year	2,186	1,978	-	-	-	-	-	-	-	-
Additions	173	216	1,978	-	-	-	-	-	-	-
Closures	(17)	(8)	-	-	-	-	-	-	-	-
End of year	2,342	2,186	1,978	-	-	-	-	-	-	-
Present Value of Annuities at December 31	$ 880	$ 829	$ 810	-	-	-	-	-	-	-

Supplemental Plan

Retirees and Beneficiaries - DROP Annuities										
Beginning of year	57	55	-	-	-	-	-	-	-	-
Additions	9	2	55	-	-	-	-	-	-	-
Closures	-	-	-	-	-	-	-	-	-	-
End of year	66	57	55	-	-	-	-	-	-	-
Present Value of Annuities at December 31	$ 7	$ 4	$ 7	-	-	-	-	-	-	-

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DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C4

Topic: **Chairman's Discussion Item**

2021 Board Calendar

Discussion: The Chairman will brief the Board on the status of this item.

DALLAS POLICE & FIRE PENSION SYSTEM

2021 BOARD MEETING DATES

Date	Starting Time	Type of Meeting	Posting/ Publication Date
Jan. 14	8:30 AM	Regular	Jan. 8
Feb. 11	8:30 AM	Regular	Feb. 5
Mar. 11	8:30 AM	Regular	Mar. 5
Apr. 8	8:30 AM	Regular	Apr. 2
May 13	8:30 AM	Regular and Required Public Meeting	May 7
Jun. 10	8:30 AM	Regular	Jun. 4
Jul. 8	8:30 AM	Regular	Jul. 2
Aug. 12	8:30 AM	Regular	Aug. 6
Sep. 9	8:30 AM	Regular	Sep. 3
Oct. 14	8:30 AM	Regular	Oct. 8
Nov. 11	8:30 AM	Regular and Required Public Meeting*	Nov. 5
Dec. 9	8:30 AM	Regular	Dec. 3

Board meetings normally are held on the second Thursday of the month in the Second Floor Board Room, 4100 Harry Hines Blvd., Dallas, but due to the COVID-19 pandemic they have been held virtually via teleconference and zoom.

*The second Required Public Meeting date is subject to change; it will coincide when the Actuarial Valuation is presented.

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C5

Topic: **Communication Plan**

Discussion: During the November 2020 Board meeting the Board directed the Executive Director to develop a communication plan related to funding issues. A preliminary discussion document was received from the firm FleishmanHillard (FH). FH worked with DPFP in 2016 and 2017 and understands the unique history and challenges of DPFP and defined benefit plans. Staff would like to get further direction from the Board on the focus, scope, budget and goal of the communication plan.

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

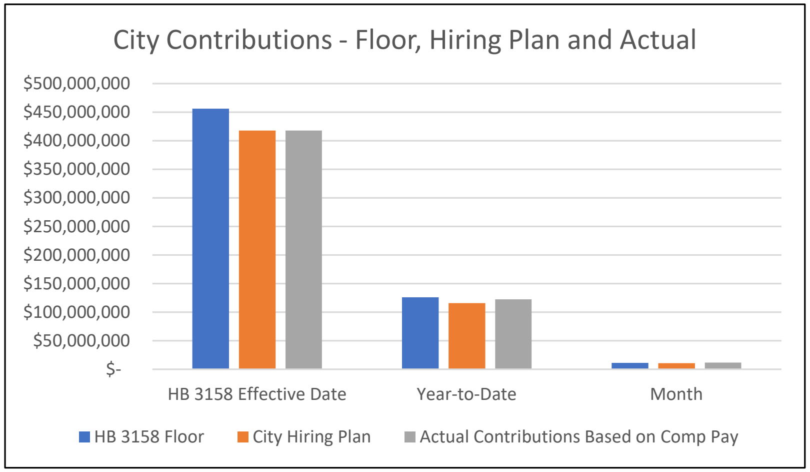
ITEM #C6

Topic: **Monthly Contribution Report**

Discussion: Staff will review the Monthly Contribution Report.

Regular Board Meeting – Thursday, December 10, 2020

Contribution Tracking Summary - December 2020 (October 2020 Data)



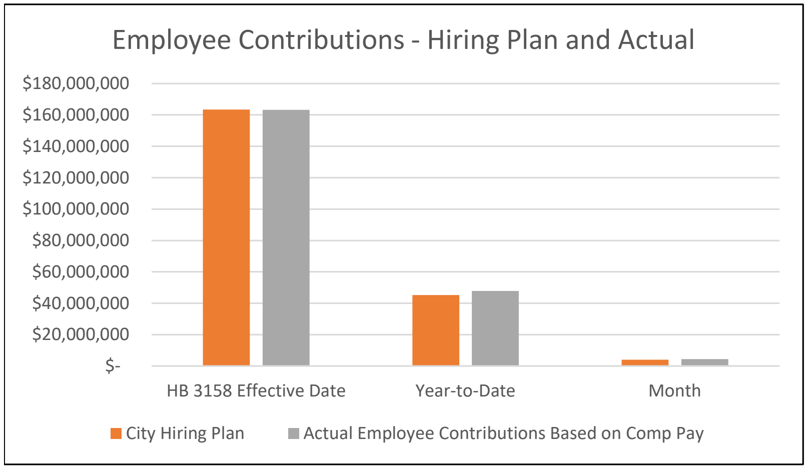
Actual Comp Pay was 100% of the Hiring Plan estimate since the effective date of HB 3158.

In the most recent month Actual Comp Pay was 109% of the Hiring Plan estimate and 100% of the Floor amount.

The Hiring Plan Comp Pay estimate increased by 3.39% in 2020. The Floor increased by 2.75%.

Through 2024 the HB 3158 Floor is in place so there is no City Contribution shortfall.

The combined actual hiring was 89 lower than the Hiring Plan for the pay period ending November 10, 2020. Fire was over the estimate by 32 fire fighters and Police under by 121 officers.



Employee contributions exceeded the Hiring Plan estimate for the month and the year.

There is no Floor on employee contributions.

Contribution Summary Data

City Contributions

Oct-20	Number of Pay Periods Beginning in the Month	HB 3158 Floor	City Hiring Plan	Actual Contributions Based on Comp Pay	Additional Contributions to Meet Floor Minimum	Comp Pay Contributions as a % of Floor Contributions	Comp Pay Contributions as a % of Hiring Plan Contributions
Month	2	$ 11,448,000	$ 10,509,231	$ 11,460,671	$ 953	100%	109%
Year-to-Date		$ 125,928,000	$ 115,601,538	$ 122,537,829	$ 3,414,515	97%	106%
HB 3158 Effective Date		$ 456,275,000	$ 417,741,923	$ 417,595,037	$ 38,704,307	92%	100%

Due to the Floor through 2024, there is no cumulative shortfall in City Contributions
Does not include the flat $13 million annual City Contribution payable through 2024.
Does not include Supplemental Plan Contributions.

Employee Contributions

Oct-20	Number of Pay Periods Beginning in the Month	City Hiring Plan	Actual Employee Contributions Based on Comp Pay	Actual Contribution Shortfall Compared to Hiring Plan	Actuarial Valuation Contribution Assumption	Actual Contributions as a % of Hiring Plan Contributions	Actual Contributions as a % of Actuarial Val Assumption
Month	2	$ 4,112,308	$ 4,451,566	$ 339,258	$ 4,112,308	108%	108%
Year-to-Date		$ 45,235,385	$ 47,825,276	$ 2,589,891	$ 45,235,388	106%	106%
HB 3158 Effective Date		$ 163,464,231	$ 163,294,356	$ (169,874)	$ 158,355,026	100%	103%
Potential Earnings Loss from the Shortfall based on Assumed Rate of Return				$ (532,783)			

Does not include Supplemental Plan Contributions.

Reference Information

City Contributions: HB 3158 Bi-weekly Floor and the City Hiring Plan Converted to Bi-weekly Contributions

	HB 3158 Bi-weekly Floor	City Hiring Plan-Bi-weekly	HB 3158 Floor Compared to the Hiring Plan	Hiring Plan as a % of the Floor	% Increase/ (decrease) in the Floor	% Increase/ (decrease) in the Hiring Plan
2017	$ 5,173,000	$ 4,936,154	$ 236,846	95%		
2018	$ 5,344,000	$ 4,830,000	$ 514,000	90%	3.31%	-2.15%
2019	$ 5,571,000	$ 5,082,115	$ 488,885	91%	4.25%	5.22%
2020	$ 5,724,000	$ 5,254,615	$ 469,385	92%	2.75%	3.39%
2021	$ 5,882,000	$ 5,413,846	$ 468,154	92%	2.76%	3.03%
2022	$ 6,043,000	$ 5,599,615	$ 443,385	93%	2.74%	3.43%
2023	$ 5,812,000	$ 5,811,923	$ 77	100%	-3.82%	3.79%
2024	$ 6,024,000	$ 6,024,231	$ (231)	100%	3.65%	3.65%

The HB 3158 Bi-weekly Floor ends after 2024

Employee Contributions: City Hiring Plan and Actuarial Val. Converted to Bi-weekly Contributions

		City Hiring Plan Converted to Bi-weekly Employee Contributions	Actuarial Valuation Assumption Converted to Bi-weekly Employee contributions	Actuarial Valuation as a % of Hiring Plan
2017		$ 1,931,538	$ 1,931,538	100%
2018		$ 1,890,000	$ 1,796,729	95%
2019		$ 1,988,654	$ 1,885,417	95%
2020		$ 2,056,154	**$ 2,056,154**	100%
2021		$ 2,118,462	**$ 2,118,462**	100%
2022		$ 2,191,154	**$ 2,191,154**	100%
2023		$ 2,274,231	**$ 2,274,231**	100%
2024		$ 2,357,308	**$ 2,357,308**	100%

The information on this page is for reference. The only numbers on this page that may change before 2025 are the Actuarial Valuation Employee Contributions Assumptions for the years 2020-2024 and the associated percentage.

Reference Information - Actuarial Valuation and GASB 67/68 Contribution Assumptions

Actuarial Assumptions Used in the Most Recent Actuarial Valuation - These assumptions will be reevaluated annually & may change.

City Contributions are based on the Floor through 2024, the Hiring Plan from 2025 to 2037, after 2037 an annual growth rate of 2.75% is assumed

Employee Contributions for 2018 are based on the 2017 actual employee contributions inflated by the growth rate of 2.75% and the Hiring Plan for subsequent years until 2038, when the 2037 Hiring Plan is increased by the 2.75 growth rate for the next 10 years

Actuarial/GASB Contribution Assumption Changes Since the Passage of HB 3158

	Actuarial Valuation	GASB 67/68
YE 2017 (1/1/2018 Valuation)		
2018 Employee Contributions Assumption - based on 2017 actual plus growth rate not the Hiring Plan Payroll	$ (2,425,047)	*
2019 Estimate (1/1/2019 Valuation)		
2019 Employee Contribution Assumption	$ 9,278	*

**90% of Hiring Plan was used for the Cash Flow Projection for future years in the 12/31/2017 GASB 67/68 calculation. At 12-31-17, 12-31-18 and 12-31-2019 this did not impact the pension liability or the funded percentage.*

The information on this page is for reference. It is intended to document contribution related assumptions used to prepare the Actuarial Valuation and changes to those assumptions over time, including the dollar impact of the changes. Contribution changes impacting the GASB 67/68 liability will also be included.

City Hiring Plan - Annual Computation Pay and Numbers of Employees						
	Computation Pay			**Number of Employees**		
Year	**Hiring Plan**	**Actual**	**Difference**	**Hiring Plan**	**Actual EOY**	**Difference**
2017	$ 372,000,000	Not Available	Not Available	5,240	4,935	(305)
2018	$ 364,000,000	$ 349,885,528	$ (14,114,472)	4,988	4,983	(5)
2019	$ 383,000,000	$ 386,017,378	$ 3,017,378	5,038	5,104	66
2020	$ 396,000,000			5,063		
2021	$ 408,000,000			5,088		
2022	$ 422,000,000			5,113		
2023	$ 438,000,000			5,163		
2024	$ 454,000,000			5,213		
2025	$ 471,000,000			5,263		
2026	$ 488,000,000			5,313		
2027	$ 507,000,000			5,363		
2028	$ 525,000,000			5,413		
2029	$ 545,000,000			5,463		
2030	$ 565,000,000			5,513		
2031	$ 581,000,000			5,523		
2032	$ 597,000,000			5,523		
2033	$ 614,000,000			5,523		
2034	$ 631,000,000			5,523		
2035	$ 648,000,000			5,523		
2036	$ 666,000,000			5,523		
2037	$ 684,000,000			5,523		

Comp Pay by Month - 2020	**Annual Divided by 26 Pay Periods**	**Actual**	**Difference**	**2020 Cumulative Difference**	**Number of Employees - EOM**	**Difference**
January	$ 30,461,538	$ 31,291,360	$ 829,821	$ 829,821	5136	73
February	$ 30,461,538	$ 31,414,646	$ 953,108	$ 1,782,929	5114	51
March	$ 30,461,538	$ 31,492,765	$ 1,031,226	$ 2,814,156	5093	30
April	$ 45,692,308	$ 47,775,422	$ 2,083,114	$ 4,897,270	5125	62
May	$ 30,461,538	$ 32,261,636	$ 1,800,098	$ 6,697,367	5113	50
June	$ 30,461,538	$ 32,512,380	$ 2,050,842	$ 8,748,209	5173	110
July	$ 30,461,538	$ 32,568,582	$ 2,107,043	$ 10,855,252	5175	112
August	$ 30,461,538	$ 32,861,998	$ 2,400,460	$ 13,255,712	5033	(30)
September	$ 45,692,308	$ 49,783,989	$ 4,091,681	$ 17,347,393	5001	(62)
October	$ 30,461,538	$ 33,219,336	$ 2,757,797	$ 20,105,190		(5,063)
November	$ 30,461,538					
December	$ 30,461,538					

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C7

Topic: **Board approval of Trustee education and travel**

a. Future Education and Business-related Travel
b. Future Investment-related Travel

Discussion:

a. Per the Education and Travel Policy and Procedure, planned Trustee education and business-related travel and education which does not involve travel requires Board approval prior to attendance.

Attached is a listing of requested future education and travel noting approval status.

b. Per the Investment Policy Statement, planned Trustee travel related to investment monitoring, and in exceptional cases due diligence, requires Board approval prior to attendance.

There is no future investment-related travel for Trustees at this time.

Future Education and Business Related Travel & Webinars
Regular Board Meeting – December8, 2020

ATTENDING APPROVED

1. **Conference:** **NCPERS FALL Conference**
   Dates: February 2-3, 2021
   Location: Virtual
   Cost: $350

2. **Conference:** **NCPERS Accredited Fiduciary Program (NAF) Modules 1 and 2**
   Dates: March 2-5, 2021
   Location: Virtual
   Cost: $400

3. **Conference:** **NCPERS Accredited Fiduciary Program (NAF) Modules 3 and 4**
   Dates: March 9-12, 2021
   Location: Virtual
   Cost: $400

4. **Conference:** **TEXPERS Annual Conference**
   Dates: March 28, 2021
   Location: Austin, TX
   Cost: TBD

5. **Conference:** **TEXPERS Summer Conference**
   Dates: August 29-31, 2021
   Location: San Antonio, TX
   Cost: TBD

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C8

Topic: **Report on Professional Services Provider Meetings**

Discussion: According to the Committee Policy and Procedure, the Professional Services Committee is responsible for meeting privately with the external service providers, without DPFP staff present, at minimum on an annual basis. The purpose of such a meeting is to provide a forum for the service provider to provide candid comments to the Professional Services Committee.

The Professional Service Committee had a phone meeting with Jeff Williams and Caitlin Grice of Segal and Chuck Campbell of Jackson Walker LLP in December.

Staff Recommendation: The Professional Services Committee shall **report** to the Board any material comments and **recommend** to the Board any appropriate actions needed as a result of the meetings with Segal and Jackson Walker.

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C9

Topic: **Staff Retirement Plan**

Discussion: The retirement plan for the DPFP staff is a 401(a) defined contribution plan. DPFP and the employee contribute 12% and 6.5% of compensation, respectively, to the plan on a bi-weekly basis. DPFP employees do not contribute to any retirement system where they are entitled to an annuity upon retirement. Without some form of an annuity, employees are at risk of not having a secure retirement. As providing secure retirements is the goal of DPFP, this would appear to be a reasonable goal to achieve for DPFP employees as well.

In May and June of 2019, staff presented a possible staff defined benefit plan where the staff plan would join the group trust for the regular and supplemental plans. The Board indicated it would not approve such a plan and directed the Executive Director to seek an alternative plan.

Recently, Staff approached the Texas Municipal Retirement System (TMRS) about possible revisions to the TMRS statute to allow DPFP staff to join the TMRS plan. TMRS has indicated they would be amenable to such plan revisions. The TMRS plan is a hybrid cash balance plan that provides for the choice of an annuity upon an employee's retirement. The contribution levels

DISCUSSION SHEET

ITEM #C9
(continued)

both for employee and employer would be similar under the TMRS plan to the levels under the current DPFP 401(a) plan.

Recommendation: **Authorize** staff to facilitate necessary legislative changes to allow DPFP employees join the TMRS plan.

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C10

Topic: **Portfolio Update**

Discussion: Investment Staff will brief the Board on recent events and current developments with respect to the investment portfolio.

Regular Board Meeting – Thursday, December 10, 2020

DALLAS POLICE & FIRE PENSION SYSTEM

Portfolio Update

December 10, 2020

Adjusted Asset Allocation

In this view staff adjusts reported private market values to roughly estimate the unrecognized impact from lower oil prices and Covid-19.

DPFP Asset Allocation Using Stressed Private Market Values	11/30/20	Adjustments		Adjusted NAV		Target		Variance	
	NAV	$ mil.	% of NAV	$ mil.	%	$ mil.	%	$ mil.	%
Equity	**866**	**-38**	**-4.4%**	**828**	**44.9%**	**1,014**	**55.0%**	**-186**	**-10.1%**
Global Equity	622	0	0.0%	622	33.7%	737	40.0%	-116	-6.3%
Emerging Markets	58	0	0.0%	58	3.1%	184	10.0%	-126	-6.9%
Private Equity*	186	-38	-20.3%	149	8.1%	92	5.0%	56	3.1%
Fixed Income	**572**	**0**	**0.0%**	**572**	**31.0%**	**645**	**35.0%**	**-74**	**-4.0%**
Safety Reserve - Cash	95	0	0.0%	95	5.2%	55	3.0%	40	2.2%
Safety Reserve - ST IG Bonds	217	0	0.0%	217	11.7%	221	12.0%	-5	-0.3%
Investment Grade Bonds	74	0	0.0%	74	4.0%	74	4.0%	1	0.0%
Global Bonds	0	0	0.0%	0	0.0%	74	4.0%	-74	-4.0%
Bank Loans	71	0	0.0%	71	3.8%	74	4.0%	-3	-0.2%
High Yield Bonds	73	0	0.0%	73	3.9%	74	4.0%	-1	-0.1%
Emerging Mkt Debt	37	0	0.0%	37	2.0%	74	4.0%	-37	-2.0%
Private Debt*	6	0	0.0%	6	0.3%	0	0.0%	6	0.3%
Real Assets*	**520**	**-77**	**-14.7%**	**444**	**24.1%**	**184**	**10.0%**	**259**	**14.1%**
Real Estate*	351	-67	-19.1%	284	15.4%	92	5.0%	192	10.4%
Natural Resources*	126	-9	-7.5%	116	6.3%	92	5.0%	24	1.3%
Infrastructure*	44	0	0.0%	44	2.4%	0	0.0%	44	2.4%
Total	**1,958**	**-115**	**-5.8%**	**1,844**	**100.0%**	**1,844**	**100.0%**	**0**	**0.0%**
Safety Reserve ~$270M=30 mo net CF	312	0	0.0%	312	16.9%	277	15.0%	35	1.9%
*Private Mkt. Assets w/NAV Discount	712	-115	-16.1%	598	32.4%	277	15.0%	321	17.4%

Source: JP Morgan Custodial Data, Staff Estimates and Calculations

Numbers may not foot due to rounding

data is preliminary

DALLAS POLICE & FIRE PENSION SYSTEM

Public Market Performance Estimates

	4Q20 through 11/30/20			YTD through 11/30/20		
Net of fees	Manager	Index	Excess	Manager	Index	Excess
Global Equity	10.82%	10.23%	0.59%	10.78%	10.75%	0.03%
Boston Partners	15.97%	9.33%	6.64%	1.59%	11.19%	-9.60%
Boston Partners vs. value index	15.97%	11.76%	4.21%	1.59%	-4.55%	6.14%
Manulife	6.48%	9.60%	-3.12%	3.42%	11.11%	-7.69%
Invesco (fka OFI)	12.82%	9.60%	3.22%	24.35%	11.11%	13.23%
Walter Scott	8.02%	9.60%	-1.58%	13.78%	11.11%	2.67%
RBC, EM Equity	10.85%	11.72%	-0.87%	9.11%	10.32%	-1.21%
Fixed Income	2.25%	2.08%	0.18%	5.39%	7.50%	-2.11%
IR+M, short term debt	0.32%	0.12%	0.20%	4.50%	3.24%	1.26%
Fixed Income transition	-	-	-	1.41%	1.49%	-0.08%
Vanguard IG Bonds	-	-	-	6.19%	6.30%	-0.11%
Longfellow, IG Bonds*	1.08%	0.53%	0.55%	0.62%	-0.34%	0.96%
Brandywine, global bonds	5.77%	1.92%	3.85%	6.87%	7.76%	-0.89%
Loomis, High Yield	5.60%	5.06%	0.53%	6.08%	4.44%	1.64%
Loomis, Bank Loans (liquidating)	2.58%	2.30%	0.28%	-0.64%	1.45%	-2.09%
Pacific Asset Mgt., Bank Loans	1.68%	2.30%	-0.63%	1.71%	1.45%	0.26%
Ashmore, EMD**	5.43%	5.72%	-0.29%	-2.25%	2.82%	-5.07%

Source: JPM Morgan custody data, manager reports, Investment Staff estimates and calculations

*Longfellow returns start from 7/31/20

**Ashmore index return estimated for prior month

4Q20 data is preliminary

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Public Market Impact Estimate

This table estimates the gain/loss contribution from public market investments including market contribution (equity and fixed income composite index returns), structural implementation (manager benchmark vs. composite benchmark), and the active contribution for each investment manager (manager relative performance vs. their benchmark).

	4Q20 through 11/30/20				YTD through 11/30/20			
$ millions	Market	Structure	Active	Total	Market	Structure	Active	Total
Public Markets	68.6	(1.1)	10.2	77.7	105.2	(10.3)	4.8	99.6
Public Equity (GE+EM)	62.4	(3.0)	7.0	66.4	76.7	(0.0)	(1.3)	75.4
Global Equity (excludes EM)	56.8	(3.6)	7.4	60.7	71.0	0.1	(0.6)	70.5
Boston Partners	13.5	(1.0)	8.5	21.0	17.1	0.1	(8.8)	8.4
Manulife	13.7	(0.8)	(4.0)	8.9	16.7	0.0	(9.3)	7.5
OFI	15.6	(0.9)	4.9	19.6	19.7	(0.1)	15.9	35.6
Walter Scott	14.1	(0.8)	(2.0)	11.2	17.4	0.0	1.6	19.1
RBC, EM Equity	5.6	0.5	(0.4)	5.7	5.7	(0.1)	(0.7)	4.8
Fixed Income (ex IR+M)	5.9	1.9	2.8	10.6	20.8	(10.3)	4.3	14.8
Fixed Income transition					2.0	(1.1)	(0.0)	0.8
Vanguard IG Bonds					1.5	2.1	(0.1)	3.5
Longfellow, IG Bonds*	1.3	(0.9)	0.3	0.7	0.9	(1.1)	0.6	0.4
Brandywine, global bonds	1.4	(0.1)	2.6	3.9	4.9	0.2	(0.4)	4.7
Loomis, High Yield	1.4	2.1	0.4	3.9	5.5	(2.2)	1.1	4.5
Loomis, Bank Loans (liquidating)	0.0	0.0	0.0	0.0	(0.2)	(4.6)	4.3	(0.6)
Pacific Asset Mgt., Bank Loans	1.4	0.2	(0.4)	1.2	4.8	(2.6)	(0.3)	1.9
Ashmore, EMD	0.4	0.7	(0.1)	1.1	1.3	(1.0)	(0.9)	(0.5)
IR+M, short term debt	0.3	0.0	0.4	0.7	7.7	0.0	1.8	9.5

Source: JPM Morgan custody data, manager reports, Investment Staff estimates and calculations

*Longfellow returns start from 7/31/20

**Ashmore index return estimated for prior month

4Q20 data is preliminary

DALLAS POLICE & FIRE PENSION SYSTEM

Investment Initiatives

- Liquidation of private market assets remains the top focus. Significant delays expected due to COVID-19 market disruption.
- Staff continuing evaluation of and engagement with private equity funds.
- Global Equity recommendation at December Board meeting.
- Global Bond transition completed on Nov. 30. $71 million redeemed from Brandywine, $13 million to Longfellow Investment Grade Bonds, $16 million to Ashmore Emerging Markets Debt and the remainder to control to be used for cash flow.
- Updating Loomis HY IMA for product change per Nov. Board.
- On-deck: IAC meeting next week, IPS review, asset allocation study (early/mid 2021)

2021 Investment Review Plan*

January	• Real Estate Reviews: Vista 7, King’s Harbor, & Museum Twr.
February	• Real Estate: AEW Presentation
March	• Real Estate: Clarion Presentation
April	• Timber: Staff Review of FIA & BTG
May	• Natural Resources: Hancock Presentation
July	• Infrastructure: Staff review of AIRRO and JPM Maritime
August	• Staff review of Private Equity and Debt
Sept.	• Public Equity Manager Reviews
October	• Fixed Income Manager Reviews

*Presentation schedule is subject to change.

Staff presentations targeted for 15 minutes, Manager presentations 30 – 60 minutes.

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C11

Topic: **Investment Advisory Committee Reappointments**

Discussion: The Investment Policy stipulates that members of the Investment Advisory Committee shall serve two-year terms (Sec. 5.B.1.e). The Investment Advisory Committee terms for Gilbert Garcia, Scott Freeman, and Robert Jones expire in December 2020. Each member is willing to continue serving on the Committee.

Recommendation: Staff recommends reappointing Gilbert Garcia, Scott Freeman, and Robert Jones to serve on the Investment Advisory Committee for two-year terms ending 12/31/22.

Board Member #1	Gilbert Garcia	9/13/18	12/31/22
Board Member #2	Michael Brown	11/12/20	12/31/22
Board Member #3	Ken Haben	11/12/20	12/31/22
External #1	Scott Freeman	9/13/18	12/31/22
External #2	Robert Jones	1/10/19	12/31/22
External #3	Rakesh Dahiya	7/9/20	12/31/21
External #4	William Velasco, II	7/9/20	12/31/21

Regular Board Meeting – Thursday, December 10, 2020

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C12

Topic: **Global Equity Structure**

Discussion: Staff and Meketa have been evaluating potential improvements to the structure of the Global Equity portfolio. A proposed structure that includes introduction of a small cap component and a passive global equity component will be presented. Additionally, staff will recommend an allocation and implementation solution for the passive global equity component.

Staff Recommendation: **Approve** the proposed global equity structure and investment in Blackrock MSCI ACWI IMI fund.

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Global Equity Structure Review
December 2020

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Global Equity Structure Review

History

- **July 2017** – The current structure (four active global equity managers) was implemented.
- **August 2018** - When Meketa started working with DPFP, we evaluated the global equity program as part of our Initial Fund Review.
  - Based on our preliminary analysis we were pleased with how the strategies complemented one another.
  - Correlations between the strategies and position overlap were generally low.
  - We noted marginal underweight to small cap and US, relative to the MSCI ACWI IMI index.
  - We agreed to conduct a deeper dive in first half of 2019.
- **February 2019** – Meketa conducted a comprehensive global equity program review. The focus areas are listed below. We are happy to provide the full report to the IAC members if interested.

Regional exposures	Attribution
Market cap exposures	Historical returns and standard deviation
Historical correlations	Tracking error
Holdings overlap analysis	Standard deviation vs. tracking error contribution
Factor exposures	Passive exposure

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Global Equity Structure Review

History (continued)

- The key observations from the **February 2019** analysis included:
  - The portfolio has generated excess returns above the index with less standard deviation.
  - Excess returns have come mostly from stock selection and sector tilts, not from regional or market cap tilts.
  - It could be potentially beneficial to hire one (or more) small cap manager(s) given the underweight.
  - Tracking error is expected to be around 1.7% going forward, assuming the current roster is maintained at present weights. We were reasonably pleased with the tracking error expectations given the five managers in use.
- **March 2019 –** the IAC provided feedback on the Meketa analysis. Key discussion items were:
  - Opinions varied on home country bias.
  - The Committee favored adding a passive component to the public equity portfolio.
  - Consideration of a value tilt was suggested following a long period of relative outperformance of growth vs. value.
  - The Committee was supportive of adding small cap exposure to address the structural underweight to small cap.
  - Adding another active manager for emerging markets was considered when the allocation grows.

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Global Equity Structure Review

History (continued)

- April 2019 – Meketa conducted a benchmark review of the global equity managers.
  - We surveyed the managers on their recommended benchmark and evaluated each strategy's historic global and market cap weights and how each should dictate the appropriate global benchmark.
- October 2019 - DPFP staff conducted its annual global equity structure and manager review.
- December 2019 – DPFP staff presented a public equity structure review at the December 2019 IAC meeting.

  The Committee provided the following perspective.
  - Research indicates outperformance of managers with higher active share and higher tracking error.
  - Passive exposure could be sourced from up to half the current global equity exposure or future contributions from private market distributions.
- Items for future consideration after the December 2019 IAC meeting included:
  - Evaluate manager contribution to risk.
  - Evaluate manager and portfolio factor exposure.
  - Review the investment management agreements with eye toward consistency and risk control.
  - Evaluate the benefits of dedicated small cap exposure.

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Global Equity Structure Review

History (continued)

- **January 2020** – Meketa provided its updated annual factor analysis report to DPFP staff.
  - Overall it showed the portfolio had a quality and momentum bias, and less sensitivity to value and leverage (i.e. measured as less exposure to companies with high net debt/equity).
- **September 2020** - DPFP staff presented its annual global equity structure and manager review at the September 2020 IAC meeting.
  - The Committee approved the proposed Global Equity structure that would limit current manager size, and add passive and small cap exposure. Meketa's analysis is provided in the following pages. Staff to come up with an implementation plan.

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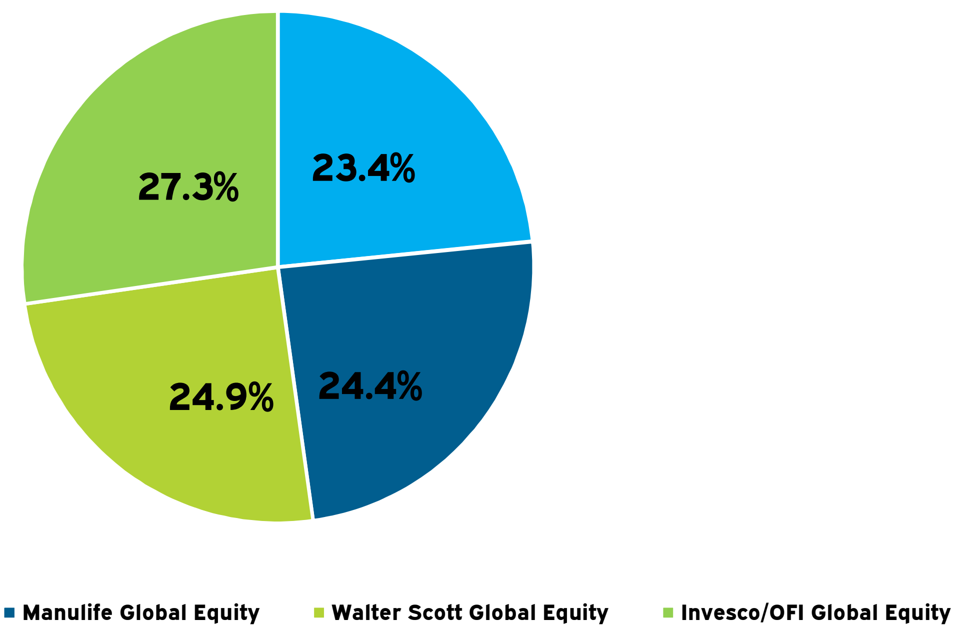
Global Equity Structure Review

Current Exposure

- The four active global equity managers are generally roughly equal weighted (by market value).

Exposure as of September 30, 2020



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Global Equity Structure Review

Recent Discussions

- Meketa and Staff have sought to determine what the best structure for the global equity program going forward is.
- Staff outlined a rough estimate of possible changes based on prior feedback from the IAC and Meketa. These changes included:
  - Addition of a passive core global index.
  - Inclusion of dedicated small cap exposure.
- The starting point estimated exposure is detailed on the following page.
- At this stage in the discussion, the approach kept the four global equity managers at equal market cap weights.
- Meketa and Staff discussed emerging market exposure, but decided to focus exclusively on the global equity managers/exposure at this time.
  - It may take many years in the implementation plan before additional assets are added to emerging markets exposure.

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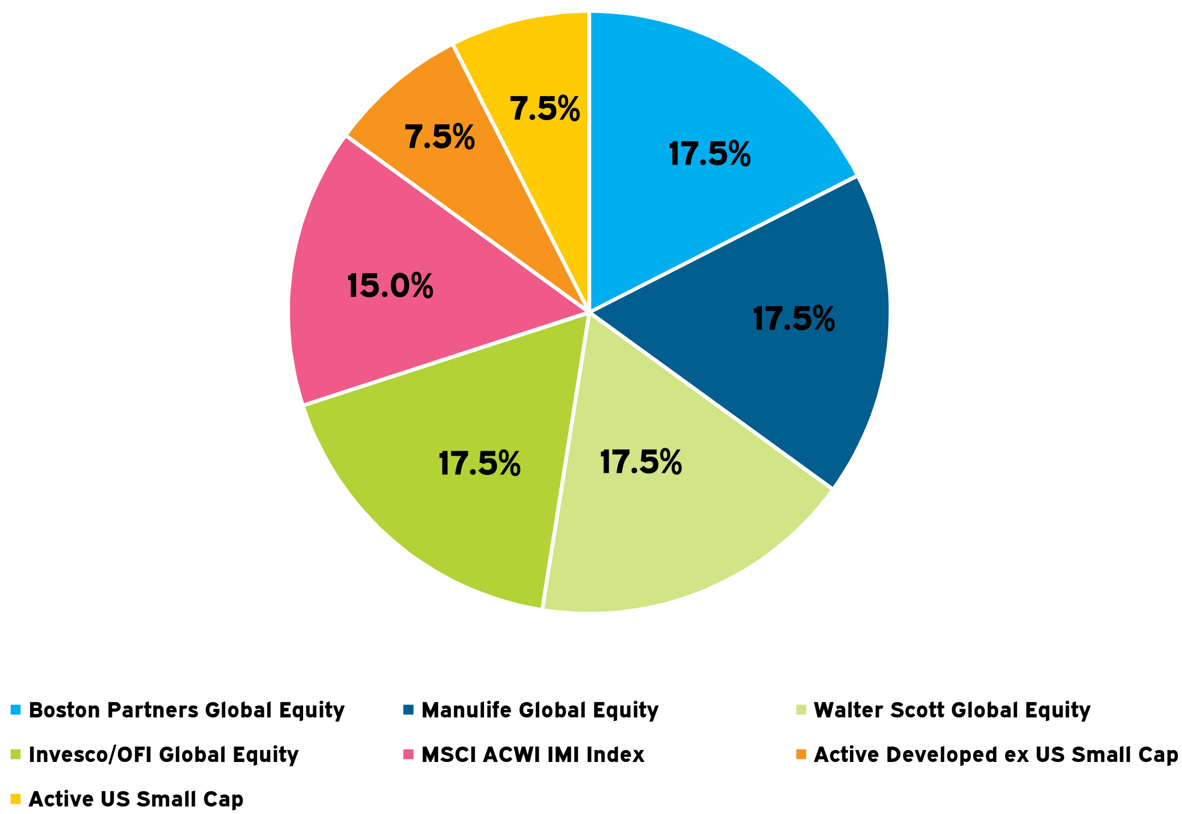
Global Equity Structure Review

DPFP Staff Potential Equity Structure



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Global Equity Structure Review

DPFP Staff Potential Equity Structure

Manager	Portfolio Weights (as % of global equity)	Portfolio Weights (as % of total DPFP)	Market Value Based on current DPFP equity exposure[1]	Market Value Once global equity is fully funded to 40% of DPFP[2]
Boston Partners Global Equity	17.5%	7.0%	$100 mm	$126 mm
Manulife Global Equity	17.5%	7.0%	$100 mm	$126 mm
Walter Scott Global Strategy	17.5%	7.0%	$100 mm	$126 mm
Invesco/OFI Global Equity	17.5%	7.0%	$100 mm	$126 mm
MSCI ACWI IMI Index	15.0%	6.0%	$86 mm	$108 mm
Active Developed ex US Small Cap	7.5%	3.0%	$43 mm	$54 mm
Active US Small Cap	7.5%	3.0%	$43 mm	$54 mm
	100%	40%	$574 mm	$720 mm

- This structure would result in a target weight of 7% (of total DPFP) to each active global equity manager.

[1] As of 9/30/2020.

[2] Based on total DPFP market value as of 11/20/2020 as estimated by DPFP staff ($1,863,000,000) using stressed private market values.

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Global Equity Structure Review

Sizing of the New Components

- The passive index weight is designed to:
  - Introduce a low cost core.
  - Be large enough to introduce some cost savings, while small enough to not dilute the impact of potential excess returns from the four active global managers that Staff and Meketa have high conviction.
- The active small cap weight is designed to:
  - Replicate similar exposure to small cap in the MSCI ACWI IMI benchmark.
  - Eliminate the underweight to small cap that would likely persist given the investment strategy of the four global equity managers.

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Global Equity Structure Review

Modeling the Prospective Portfolio

- Meketa modeled the potential prospective portfolio and evaluated historical contribution to tracking error.
- We built a risk based model using historical excess returns and their contribution to tracking error (relative to MSCI ACWI IMI index).
- We modeled the new components using existing investable passive products that track MSCI indices (SSgA products used for this example).
- Meketa recommends hiring active managers for both small cap allocations (index products were simply used for modeling purposes).
- We looked at historical excess return correlations from January 2010 to June 2020 (this is the longest common observation period when all the existing global equity strategies were live).
- The outcome is on the following page.

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Global Equity Structure Review

Prospective Portfolio at Equal Market Value Weights

Manager	Portfolio Weights	% Contribution to Portfolio Tracking Error	Total Contribution to Portfolio Tracking Error
Boston Partners Global Equity	17.5%	18.9%	0.3%
Manulife Global Equity	17.5%	27.9%	0.4%
Walter Scott Global Strategy	17.5%	13.6%	0.2%
Invesco/OFI Global Equity	17.5%	24.4%	0.4%
MSCI ACWI IMI Index	15.0%	0.2%	0.0%
MSCI EAFE Small Cap Index	7.5%	5.0%	0.1%
MSCI USA Small Cap Index	7.5%	10.0%	0.1%
			1.5%

Findings

- It was encouraging to see the data support our understanding that no single manager significantly contributed more tracking error contribution than the others.
- Manulife has had the highest tracking error contribution (likely a function of value bias in a decade that has favored growth investing).
- OFI/Invesco has had the second highest tracking error contribution (likely a function of its investment style and the pattern of its excess returns).

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Global Equity Structure Review

Equal "Risk Contribution[1]"

- Next we sought out to build a portfolio in which each of the four active global managers contributed roughly equal contribution to tracking error.
- The outcome is below:

Manager	Portfolio Weights	% Contribution to Portfolio Tracking Error	Total Contribution to Portfolio Tracking Error
Boston Partners Global Equity	18.8%	20.9%	0.30%
Manulife Global Equity	14.0%	21.6%	0.31%
Walter Scott Global Strategy	21.0%	19.8%	0.29%
Invesco/OFI Global Equity	16.0%	22.1%	0.32%
MSCI ACWI IMI Index	15.0%	0.2%	0.00%
MSCI EAFE Small Cap Index	7.5%	5.4%	0.08%
MSCI USA Small Cap Index	7.5%	9.9%	0.14%
			1.4%

Findings

- The net result is marginally larger allocations to Walter Scott and Boston Partners, and smaller allocations to Manulife and OFI/Invesco.
- Generally, the portfolio weights (across the four active global equity managers) are not significantly different from the static equal weight approach.

[1] The optimization kept the weight constant for the proposed new index and two small cap allocations. It solved for quasi-equal tracking error contribution across the four active global equity managers.

Caveats

- It is important to acknowledge that all the data is backward looking.
- The output of any optimization is only as valid as the accuracy of the inputs used.
- Relying too much on the hard data will lead to the best portfolio historically, but no guarantees on success prospectively.
- Meketa and Staff conducted multiple calls to evaluate the model and implications for the future.
- First, we acknowledged that the two approaches (equal market value weightings vs. equal risk weightings) result in rather similar suggested structures.
- Next, we recognized that seeking to continually build and monitor a portfolio in which four active global equity managers contribute equal tracking error risk lends its self to some permanent ongoing modeling complexities (e.g. how often do you rerun the historical analysis? How often do you adjust the risk weight targets? How often do you rebalance?).

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Global Equity Structure Review

Summary

- Ultimately, we used the quantitative data to guide a qualitative opinion.
- We recommend introducing a passive component using an MSCI ACWI IMI index at 15% (of global equity exposure).
- We recommend active manager searches for dedicated small cap exposure (both US and developed non-US) in the future when additional assets are distributed from private markets into public equity.
- Jointly Staff and Meketa believe keeping the four active managers at equal exposure (based on market value), with rebalancing no less frequent than annually, is the best path forward.

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C13

Topic: **Third Quarter 2020 Investment Performance Analysis and Second Quarter 2020 Private Markets & Real Assets Review**

Portions of the discussion under this topic may be closed to the public under the terms of Section 551.072 of the Texas Government Code.

Attendees: Leandro Festino, Managing Principal - Meketa Investment Group
Aaron Lally, Principal - Meketa Investment Group
Sidney Kawanguzi, Associate – Meketa Investment Group

Discussion: Meketa and Investment Staff will review investment performance.

Regular Board Meeting – Thursday, December 10, 2020

MEKETA INVESTMENT GROUP

Dallas Police & Fire Pension System

September 30, 2020

Fund Evaluation Report

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Agenda

1. Executive Summary as of September 30, 2020
2. Performance Update as of September 30, 2020

Executive Summary

As of September 30, 2020

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Executive Summary

DPFP 3Q20 Flash Summary

Category	Results	Notes
Total Fund Performance Return	Negative	-2.1%
Performance vs. Policy Index	Underperformed	-2.1% vs. +5.4%
Performance vs. Peers[1]	Underperformed	-2.1% vs. +5.0% median (99th percentile in peer group)
Asset Allocation vs. Targets	Detractive	Overweight Real Estate and underweight Global Equity hurt
Safety Reserve Exposure	Sufficient	$282 million (approximately 15%)
Active Management	Mixed	6/11 public managers beat benchmarks but private equity detracted 6% from top line DPFP return.
DPFP Public Markets vs. 60/40[2]	Underperformed	+4.9% vs. +6.0%
DPFP Public Markets vs. Peers	Underperformed	+4.9% vs. +5.0% median (52nd percentile in peer group)
Compliance with Targets	Yes	

[1] InvestorForce Public DB $1-5 billion net
[2] Performance of Total Fund excluding private market investments relative to a 60% MSCI ACWI IMI Net/40% Barclays Global Aggregate Index.

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Executive Summary

DPFP Trailing One-Year Flash Summary

Category	Results	Notes
Total Fund Performance Return	Negative	-1.5%
Performance vs. Policy Index	Underperformed	-1.5% vs. +7.4%
Performance vs. Peers[1]	Underperformed	-1.5% vs. +6.0% median (99th percentile in peer group)
Asset Allocation vs. Targets	Detractive	Overweight Real Estate, overweight Infrastructure and underweight Global Equity hurt
Active Management	Mixed	5/10 public managers beat benchmarks
DPFP Public Markets vs. 60/40[2]	Underperformed	+7.3% vs. +8.8%
DPFP Public Markets vs. Peers	Outperformed	+7.3% vs. +6.0% median (36th percentile in peer group)

[1] InvestorForce Public DB $1-5 billion net.

[2] Performance of Total Fund excluding private market investments relative to a 60% MSCI ACWI IMI Net/40% Barclays Global Aggregate Index.

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Executive Summary

DPFP Trailing Three-Year Flash Summary

Category	Results	Notes
Total Fund Performance Return	Positive	+2.3%
Performance vs. Policy Index	Underperformed	+2.3% vs. +4.9%
Performance vs. Peers[1]	Underperformed	+2.3% vs. +5.4% median (99th percentile in peer group)
Active Management	Helped	Helped in 3 of 5 public asset classes; Global Equity, Bank Loans and Short-term core bonds
DPFP Public Markets vs. 60/40[2]	Underperformed	+5.4% vs. +5.9%
DPFP Public Markets vs. Peers	Matched Peers	+5.4% vs. +5.4% median (51st percentile in peer group)

[1] InvestorForce Public DB $1-5 billion net

[2] Performance of Total Fund excluding private market investments relative to a 60% MSCI ACWI IMI Net/40% Barclays Global Aggregate Index.

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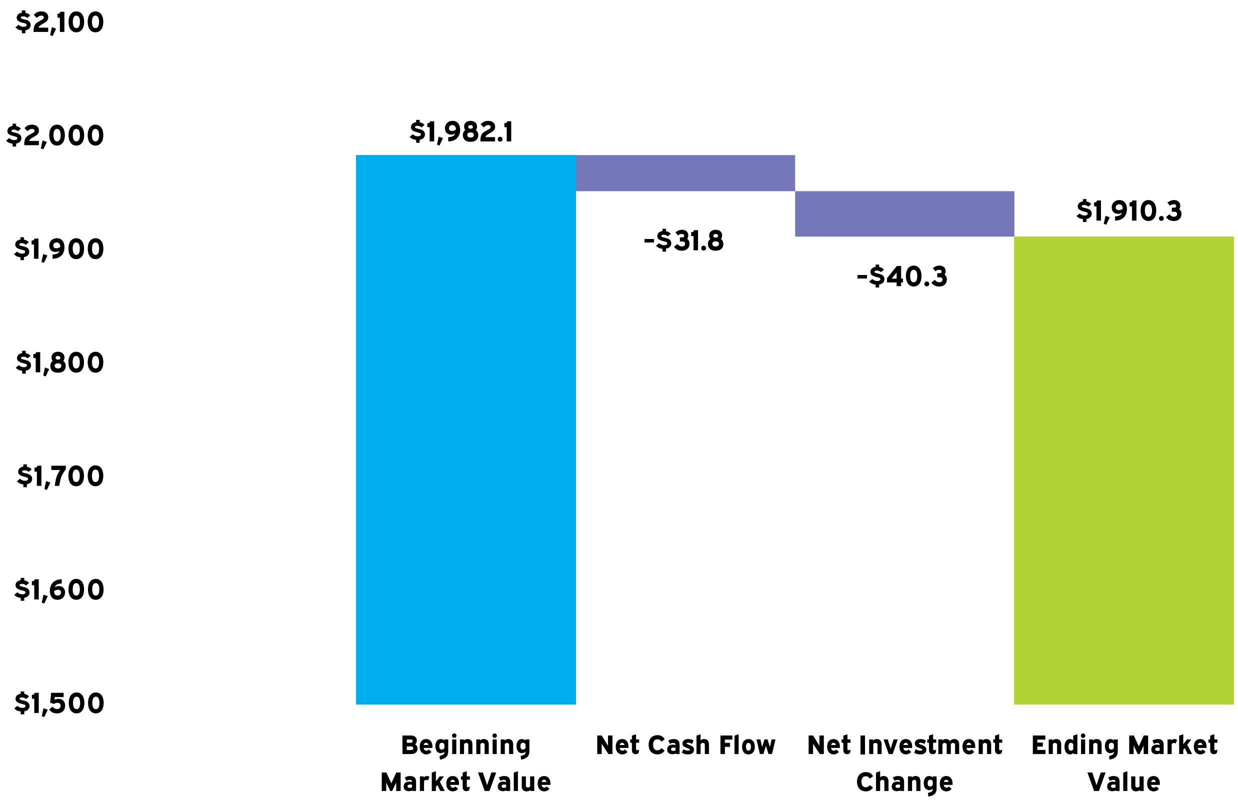
Executive Summary

Quarterly Change in Market Value



- Total market value decreased due to withdrawals for benefits and negative investment performance.

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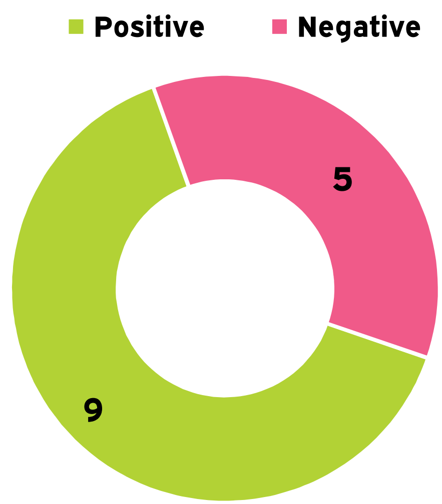
Executive Summary

Quarterly Absolute Performance

Asset Classes Dollar Gain/ Loss[1] Top Three and Bottom Three	Asset Class Absolute Performance



- In absolute terms, Global Equity appreciated the most, gaining approximately $39.6 million in market value.
- Private Equity depreciated the most, losing approximately $85.3 million in value due to updated valuation from Huff Energy Fund.

[1] Estimated Gain/ Loss calculated by multiplying beginning market value by quarterly performance.

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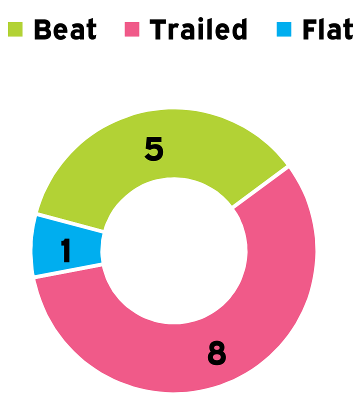
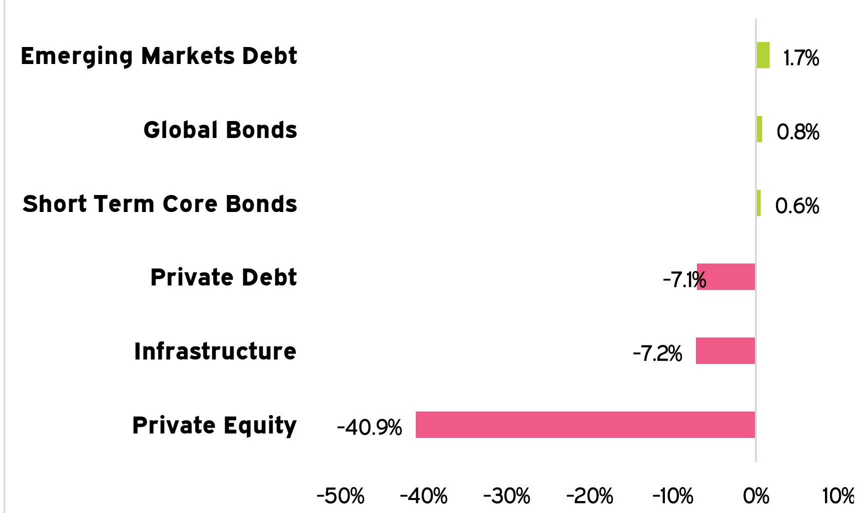
Quarterly Relative Performance

Asset Classes vs Benchmarks	Asset Classes vs Benchmarks Top Three and Bottom Three





- Emerging Markets Debt, Global Bonds and ST Core bonds had the best relative performance for the quarter.
- Over the quarter, Private Equity, Infrastructure and Private Debt had the worst relative performance.
- Five of fourteen asset classes delivered positive relative performance versus respective benchmarks.

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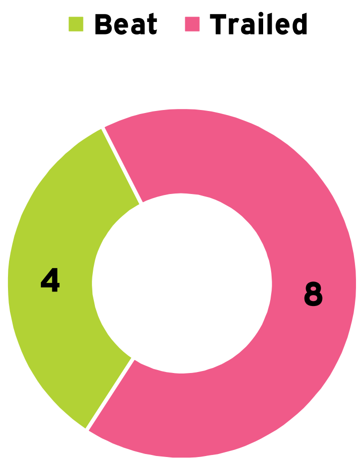
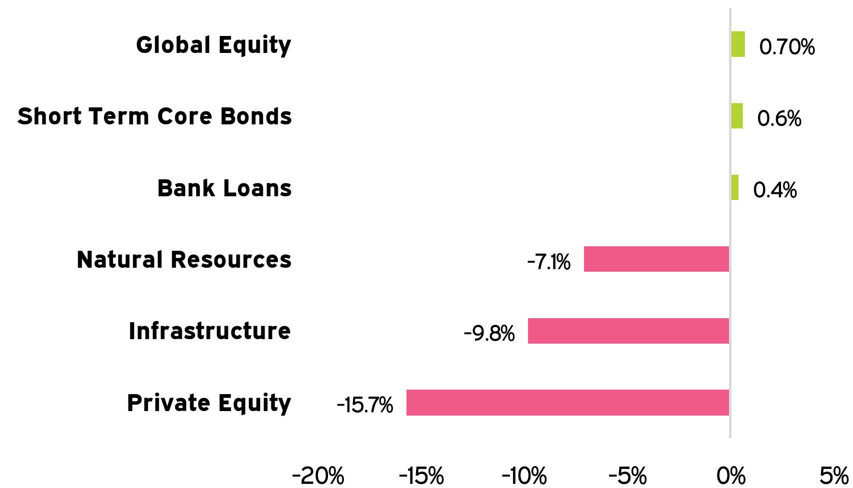
Executive Summary

Trailing 3 Year Relative Performance

Asset Classes vs Benchmarks[1]	Asset Classes vs Benchmarks Top Three and Bottom Three





- 4 of the 12 asset classes with trailing three-year return history delivered positive relative performance versus respective benchmarks.
- Over the trailing three-year period, the best relative performance came from Global Equity, Bank Loans and Short Term Core Bonds.
- Private Equity, Infrastructure and Natural Resources had the worst relative performance over the trailing three-year period.

[1] Analysis excludes cash and asset classes with a performance history of less than three years.

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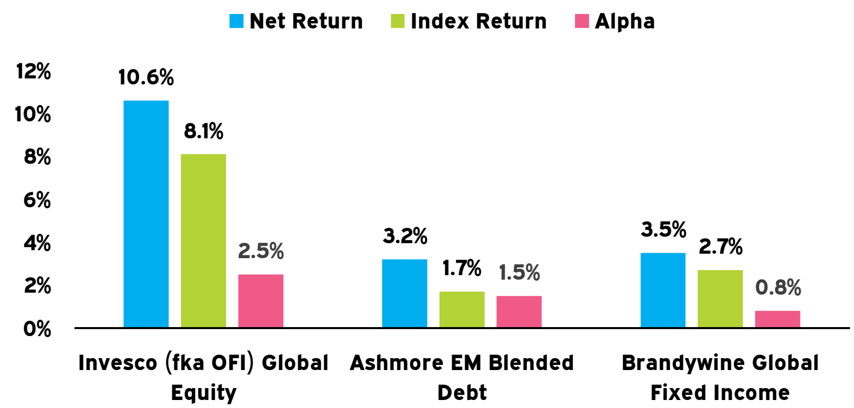
Executive Summary

Public Manager Alpha

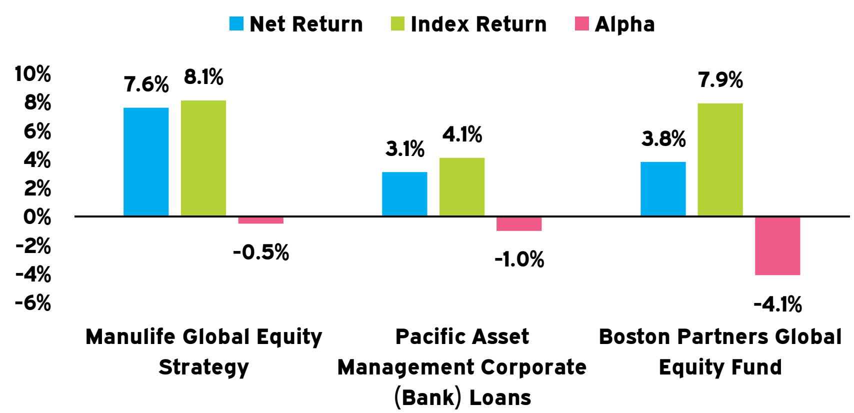
Top Three Outperformers in Quarter



$240 million

Combined exposure

Bottom Three Underperformers in Quarter



$337 million

Combined exposure

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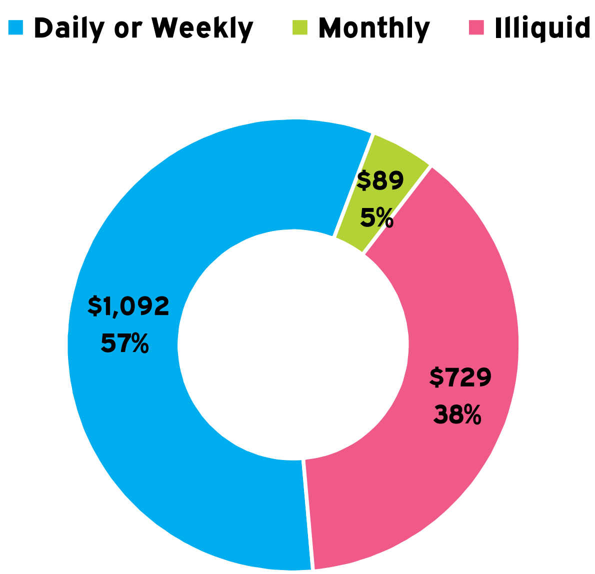
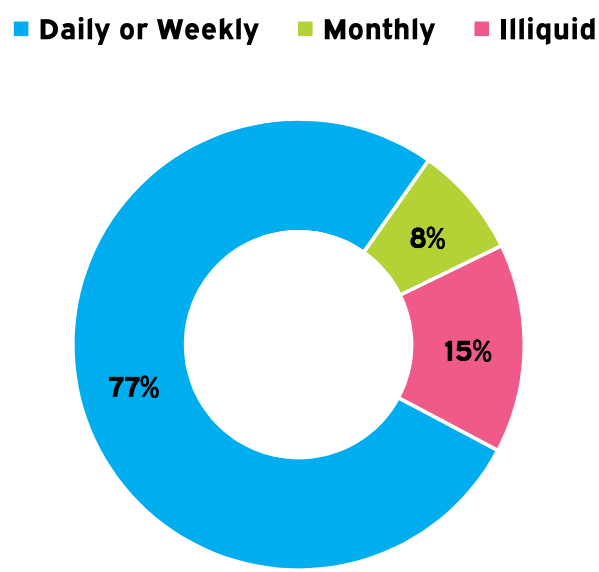
Executive Summary

Liquidity Exposure
As of September 30, 2020

Exposure ($ mm)



Targets



- Approximately 38% of the System's assets are illiquid versus 15% of the target allocation.

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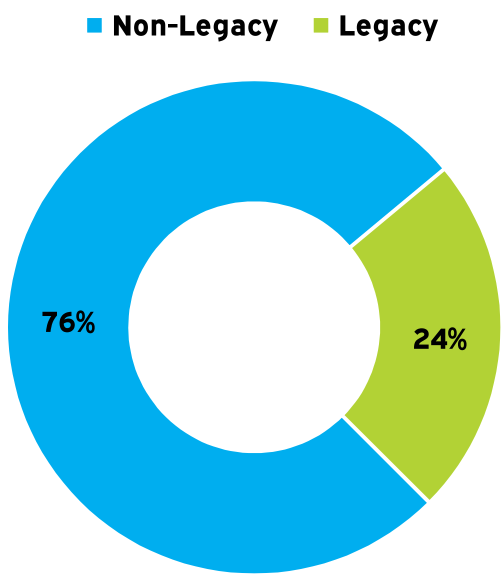
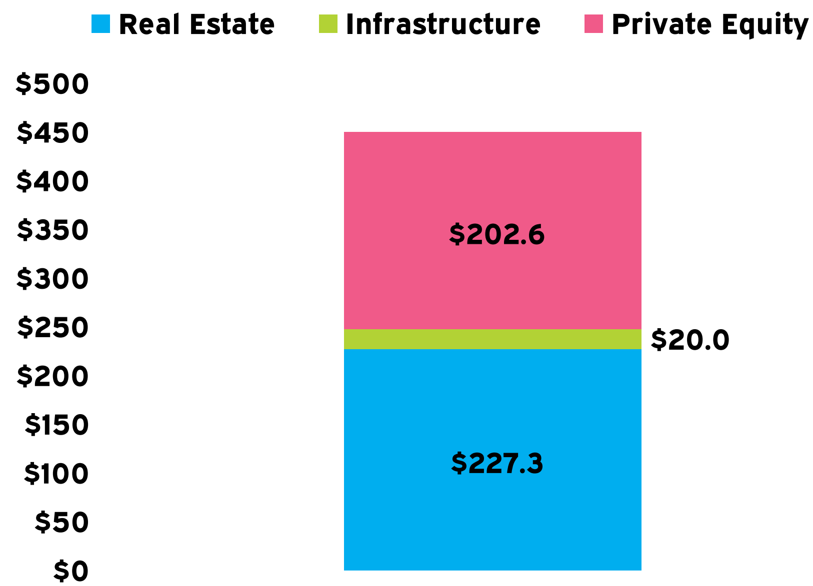
Executive Summary

Legacy Assets





$450 million

Net Asset Value of Legacy Assets

Performance Update
As of September 30, 2020

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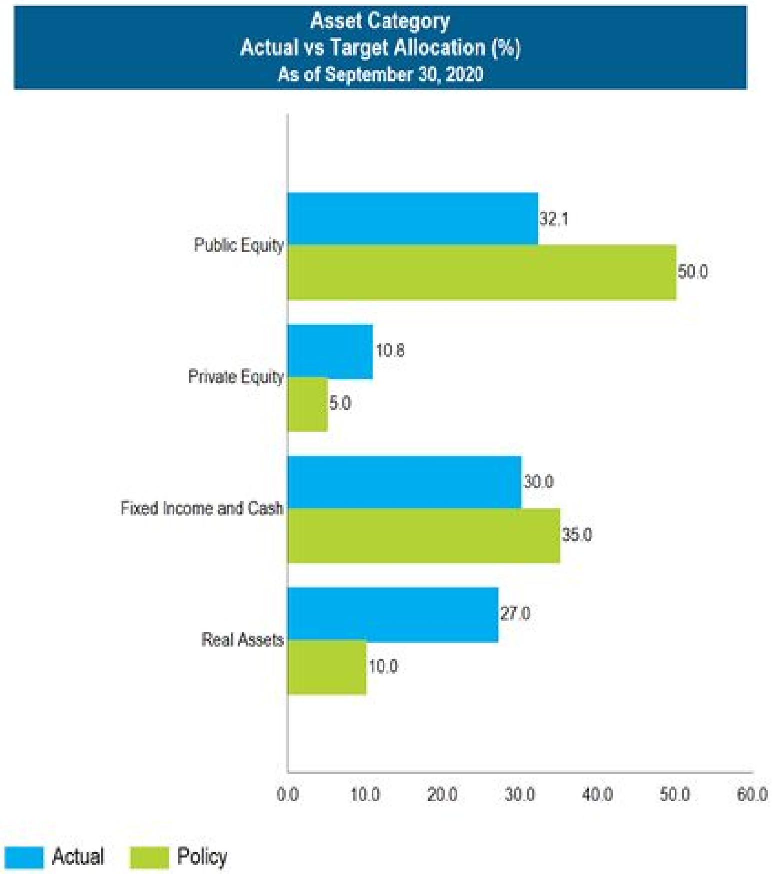
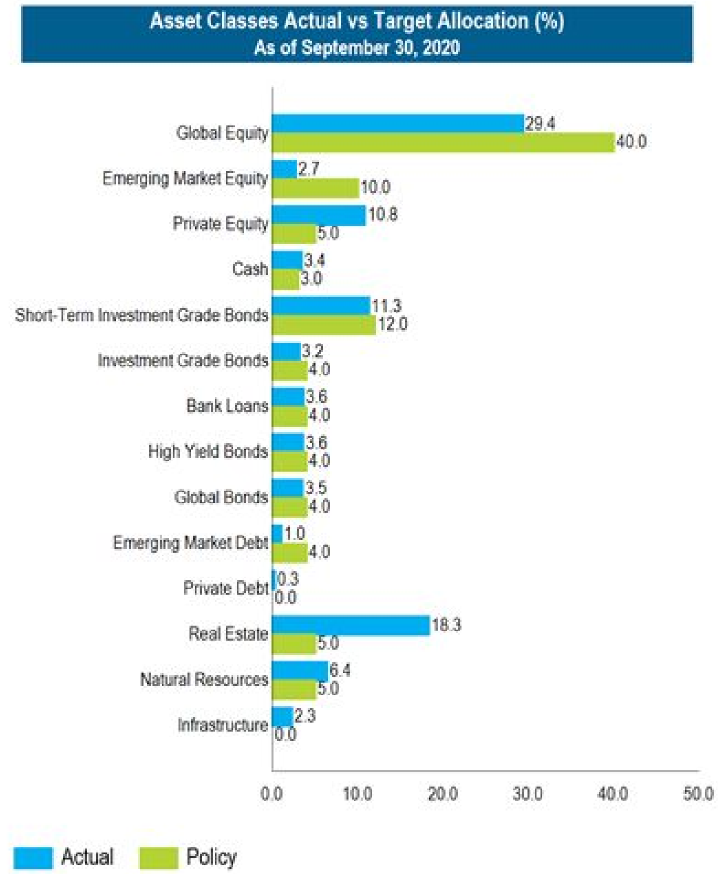
Dallas Police & Fire Pension System

DPFP | As of September 30, 2020





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Dallas Police & Fire Pension System

DPFP | As of September 30, 2020

Allocation vs. Targets and Policy	Current Balance	Current Allocation	Policy	Policy Range	Within IPS Range?
Equity	**$613,314,748**	**43%**	**50%**		
Global Equity	$560,988,036	29%	40%	22% - 48%	Yes
Emerging Market Equity	$52,326,712	3%	10%	3% - 12%	Yes
Private Equity	$207,225,665	11%	5%		
Fixed Income and Cash	**$573,590,117**	**30%**	**35%**		
Cash	$65,752,500	3%	3%	0% - 5%	Yes
Short-Term Investment Grade Bonds	$215,896,198	11%	12%	5% - 15%	Yes
Investment Grade Bonds	$60,694,315	3%	4%	2% - 6%	Yes
Global Bonds	$67,406,055	4%	4%	2% - 6%	Yes
Bank Loans	$69,468,651	4%	4%	2% - 6%	Yes
High Yield Bonds	$68,900,964	4%	4%	2% - 6%	Yes
Emerging Market Debt	$19,668,653	1%	4%	0% - 6%	Yes
Private Debt	$5,802,781	0%	0%		
Real Assets	**$516,204,941**	**27%**	**10%**		
Real Estate	$349,757,274	18%	5%		
Natural Resources	$122,979,243	6%	5%		
Infrastructure	$43,468,424	2%	0%		
Total	**$1,910,335,470**	**100%**	**100%**		

As of 9/30/2020 the Safety Reserve exposure was approximately $281.6 million (15%).
Rebalancing ranges are not established for illiquid assets (Private Equity, Private Debt, Natural Resources, Infrastructure and Real Estate)

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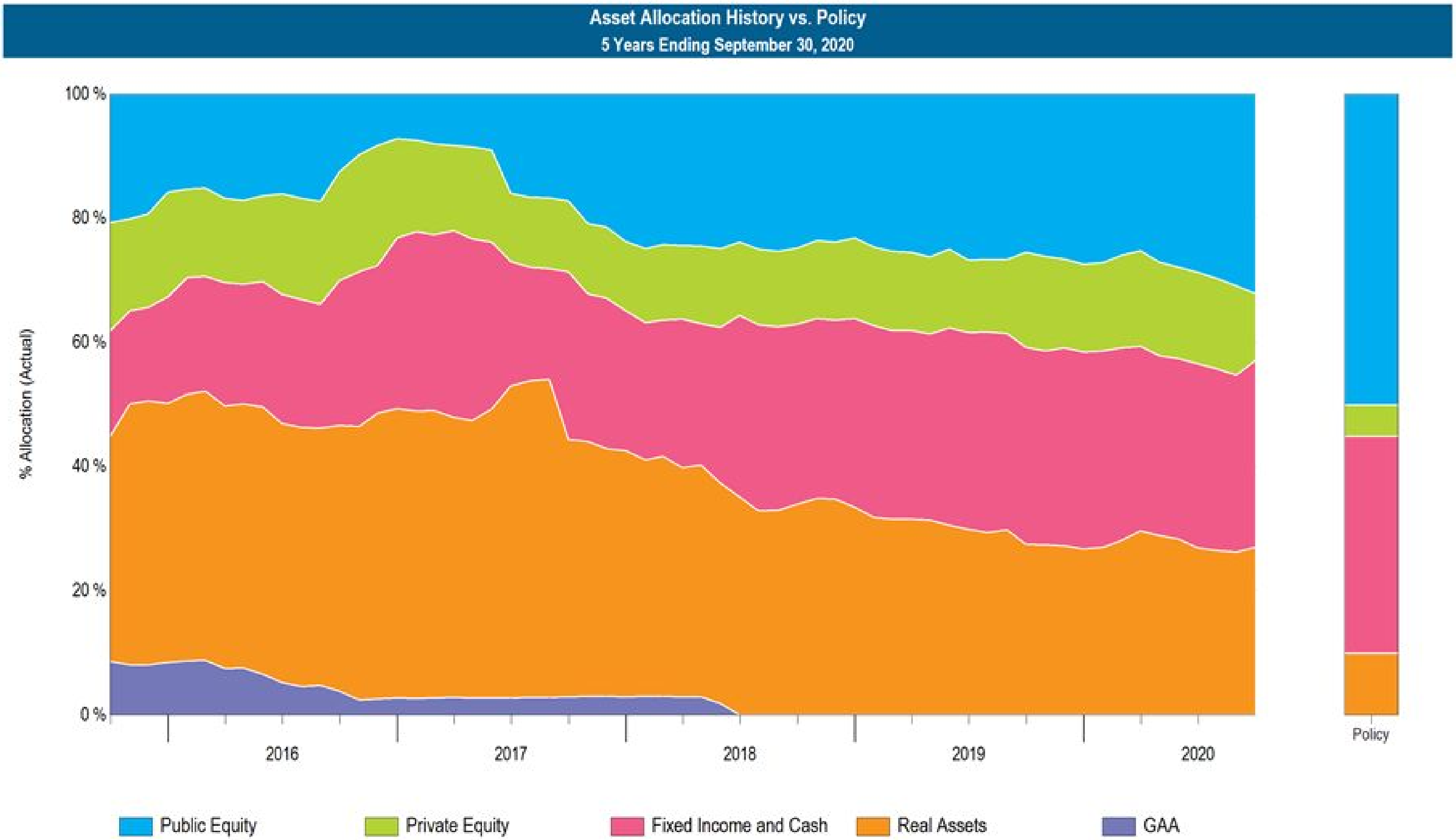
Dallas Police & Fire Pension System

DPFP | As of September 30, 2020



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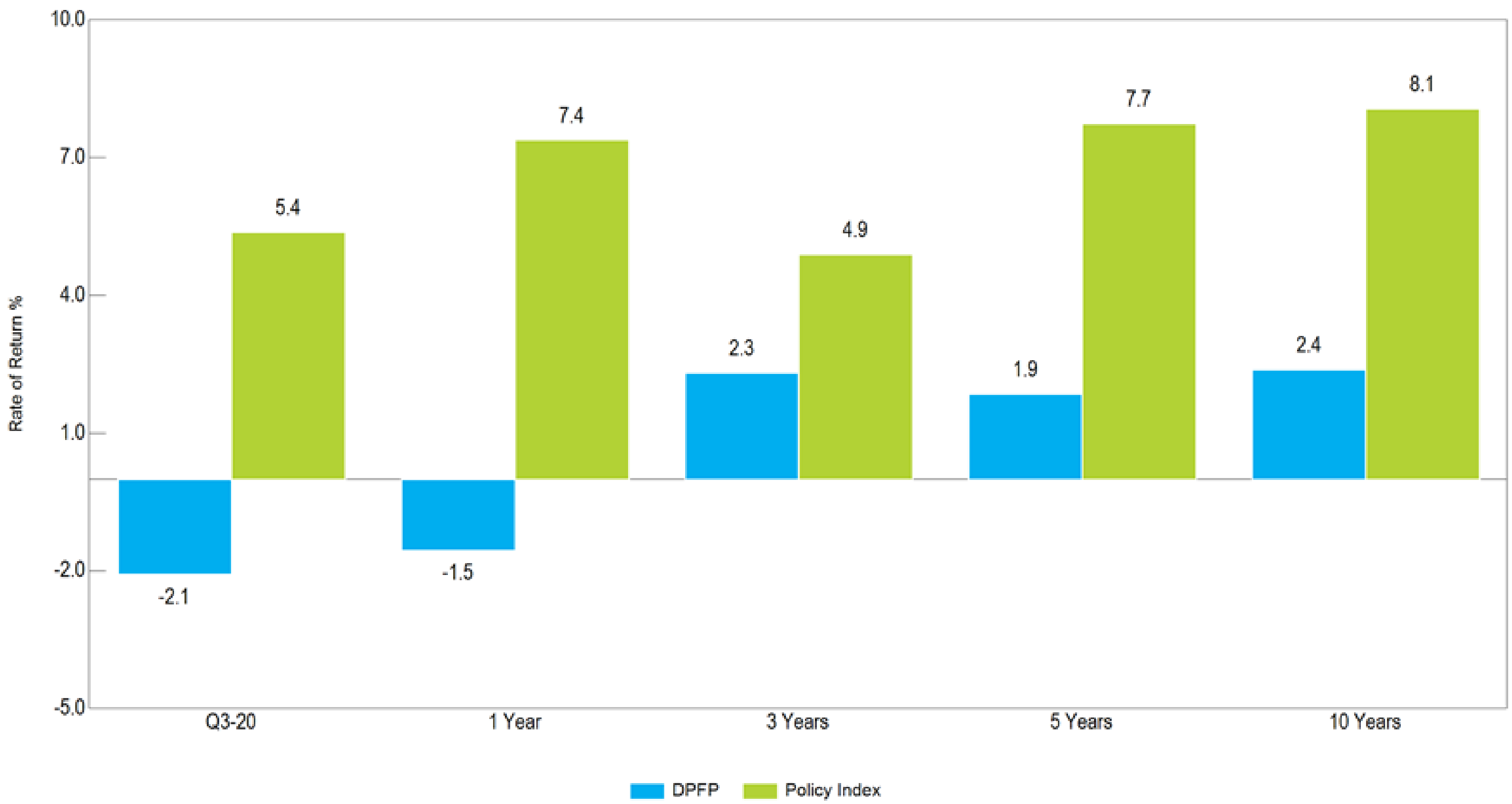
Dallas Police & Fire Pension System

DPFP | As of September 30, 2020

Net Return Summary
Ending September 30, 2020



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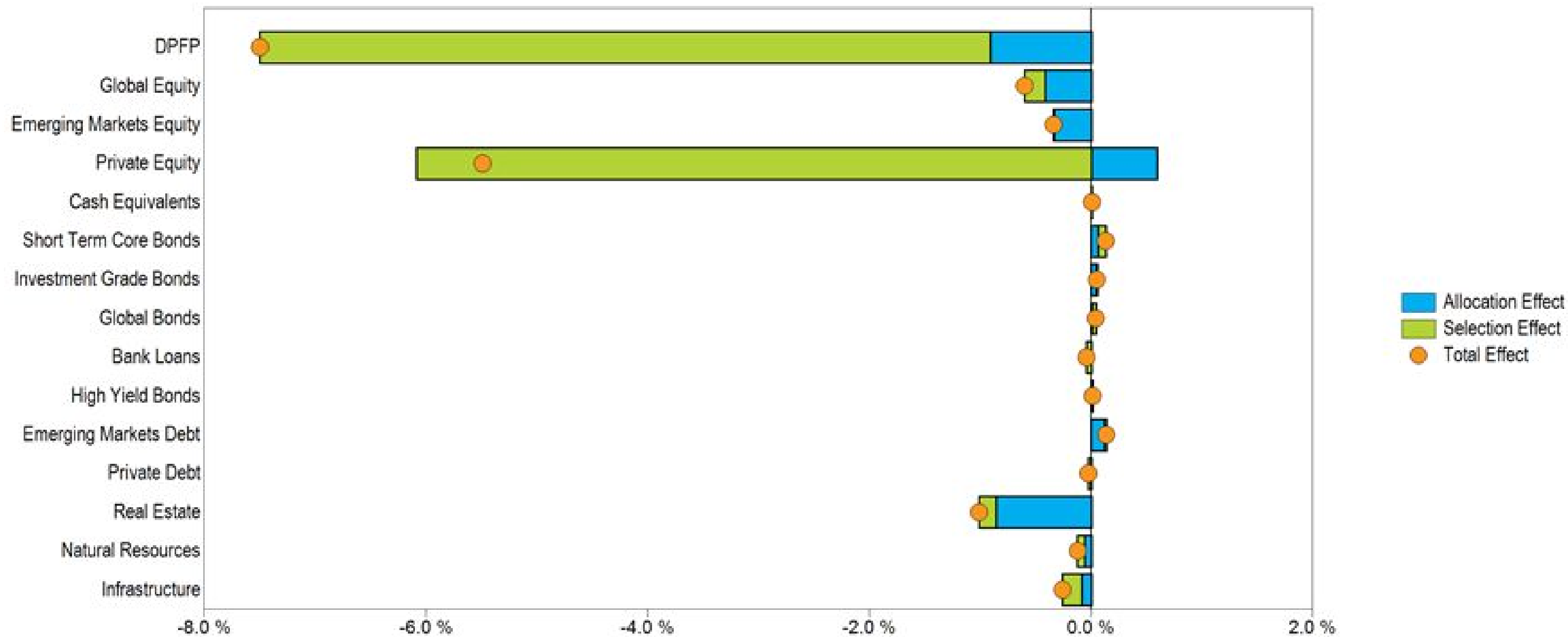
Dallas Police & Fire Pension System

DPFP | As of September 30, 2020

Attribution Effects vs. Policy Benchmark
3 Months Ending September 30, 2020



Attribution Summary
3 Months Ending September 30, 2020

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Total Effects
Total	**-2.1%**	**5.4%**	**-7.5%**	**-6.6%**	**-0.9%**	**-7.5%**

The performance calculation methodology in attribution tables is different from the standard time weighted returns (geometric linkage of monthly returns) found throughout the rest of the report. In attribution tables, the average weight of each asset class (over the specified time period) is multiplied by the time period performance of that asset class and summed. Values may not sum due to rounding.

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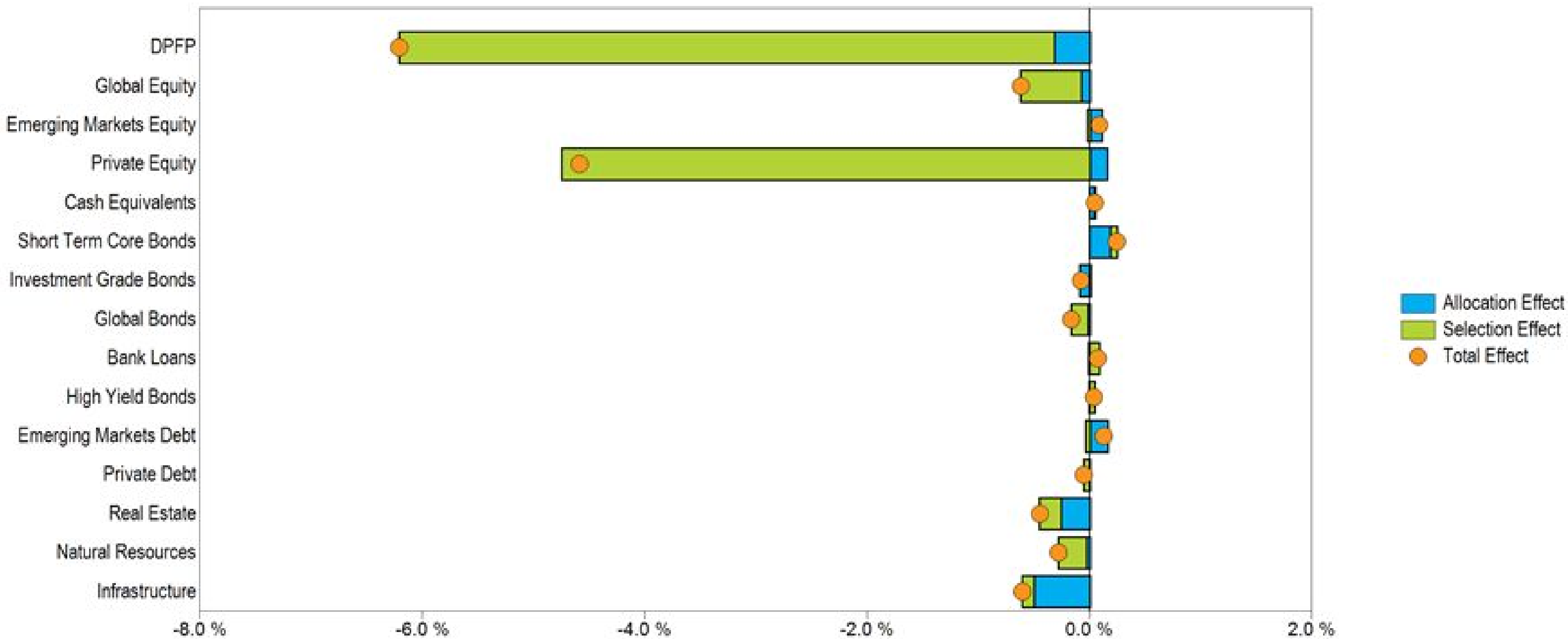
Dallas Police & Fire Pension System

DPFP | As of September 30, 2020

Attribution Effects vs. Policy Benchmark
Year to Date Ending September 30, 2020



Attribution Summary
Year to Date Ending September 30, 2020

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Total Effects
Total	**-3.8%**	**2.4%**	**-6.2%**	**-5.9%**	**-0.3%**	**-6.2%**

The performance calculation methodology in attribution tables is different from the standard time weighted returns (geometric linkage of monthly returns) found throughout the rest of the report. In attribution tables, the average weight of each asset class (over the specified time period) is multiplied by the time period performance of that asset class and summed. Values may not sum due to rounding.

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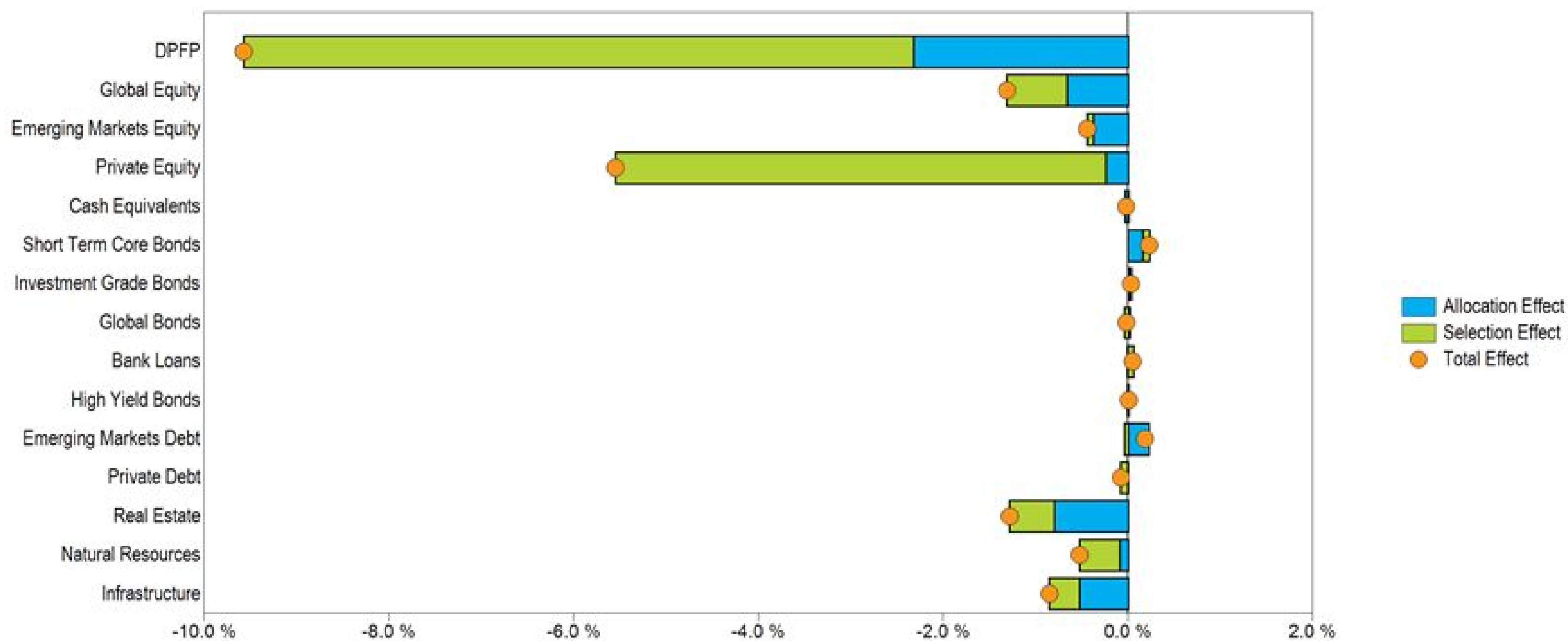
Dallas Police & Fire Pension System

DPFP | As of September 30, 2020

Attribution Effects vs. Policy Benchmark
1 Year Ending September 30, 2020



Attribution Summary
1 Year Ending September 30, 2020

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Total Effects
Total	**-1.6%**	**8.0%**	**-9.6%**	**-7.2%**	**-2.3%**	**-9.6%**

The performance calculation methodology in attribution tables is different from the standard time weighted returns (geometric linkage of monthly returns) found throughout the rest of the report. In attribution tables, the average weight of each asset class (over the specified time period) is multiplied by the time period performance of that asset class and summed. Values may not sum due to rounding.

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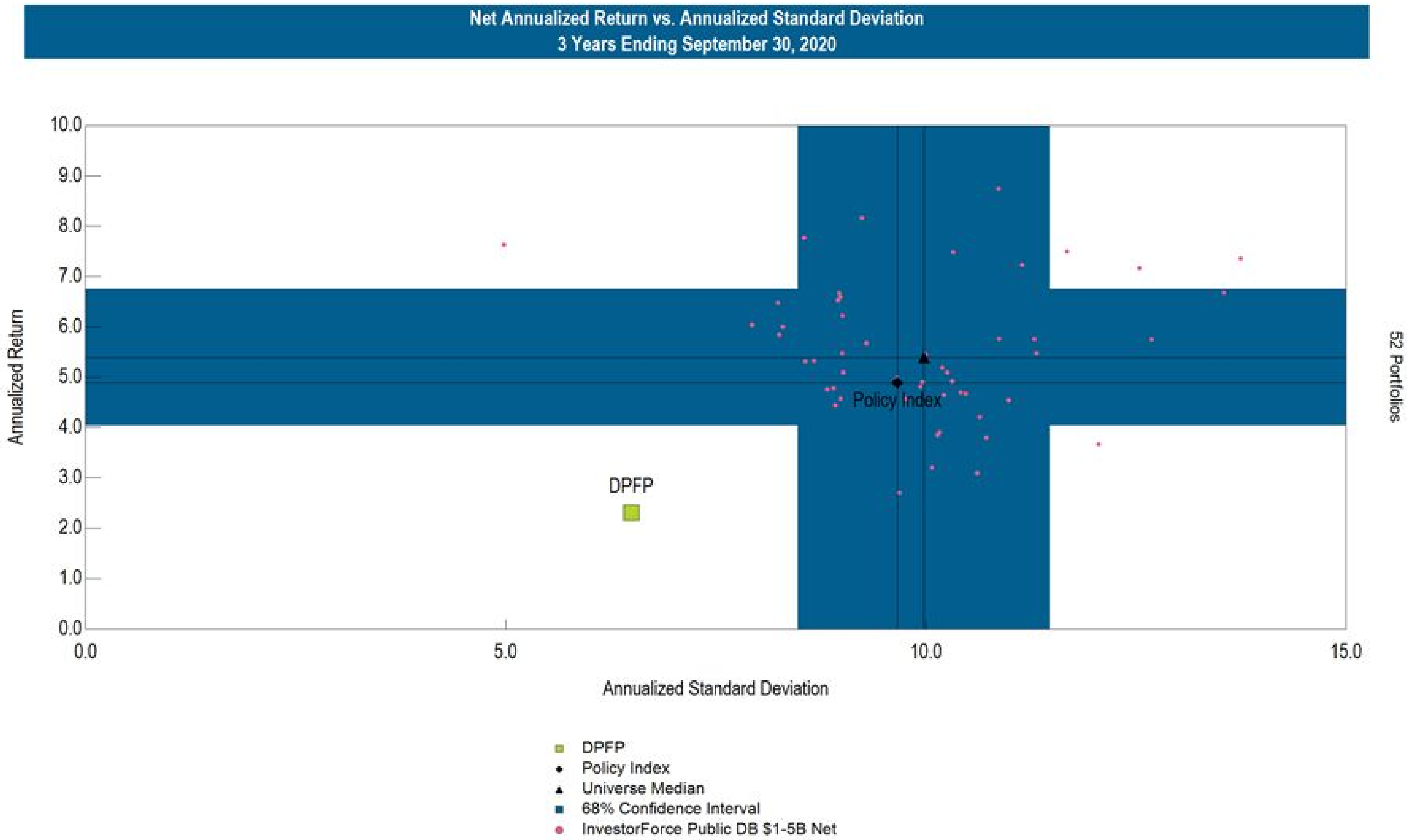
Dallas Police & Fire Pension System

DPFP | As of September 30, 2020



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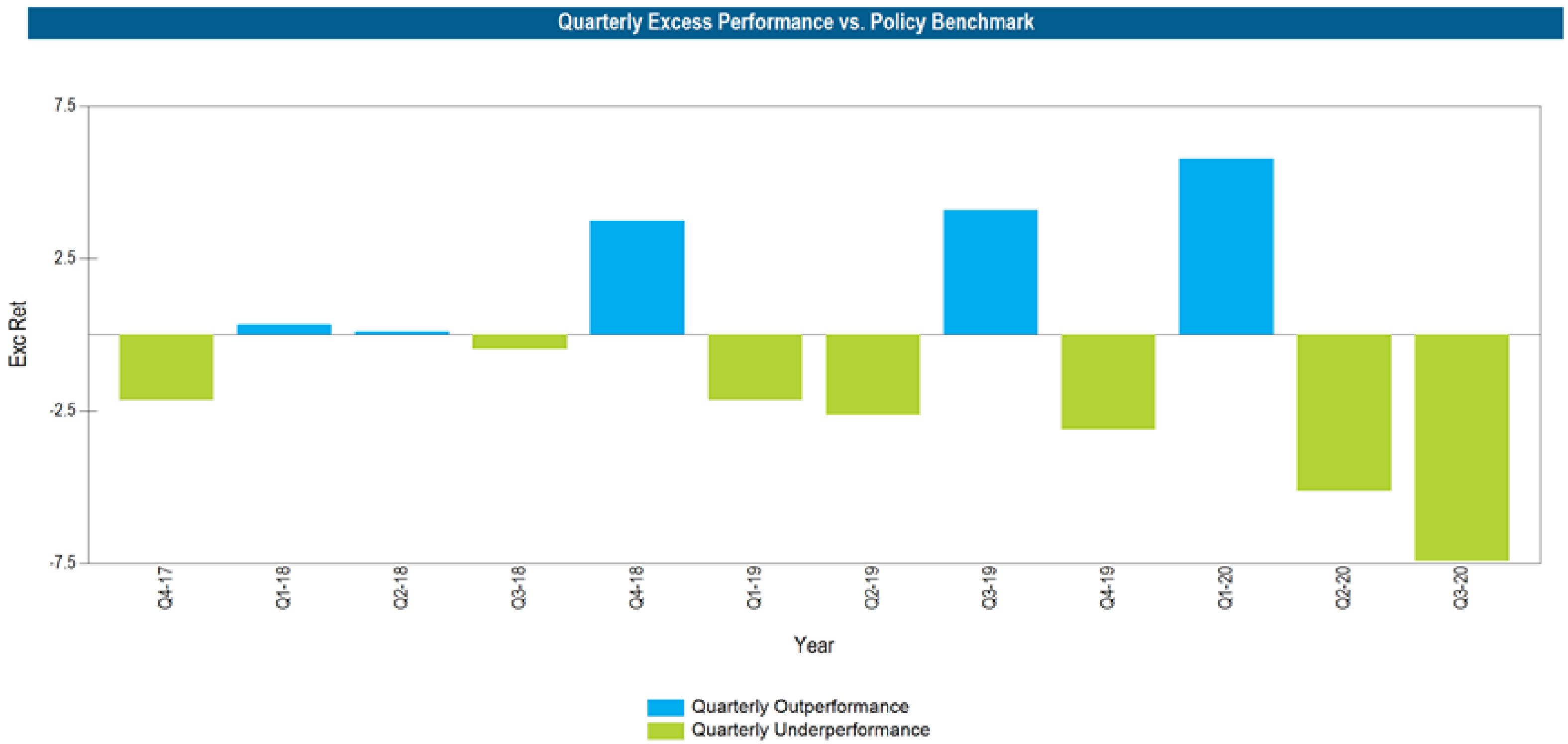
Dallas Police & Fire Pension System

DPFP | As of September 30, 2020



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Dallas Police & Fire Pension System

DPFP | As of September 30, 2020

Total Fund Correlation Matrix
1 Year Ending September 30, 2020

	DPFP	Policy Index	60% MSCI ACWI/40% Barclays Global Agg
DPFP	1.00	--	--
Policy Index	0.83	1.00	--
60% MSCI ACWI/40% Barclays Global Agg	0.87	0.99	1.00

Total Fund Correlation Matrix
3 Years Ending September 30, 2020

	DPFP	Policy Index	60% MSCI ACWI/40% Barclays Global Agg
DPFP	1.00	--	--
Policy Index	0.79	1.00	--
60% MSCI ACWI/40% Barclays Global Agg	0.79	0.99	1.00

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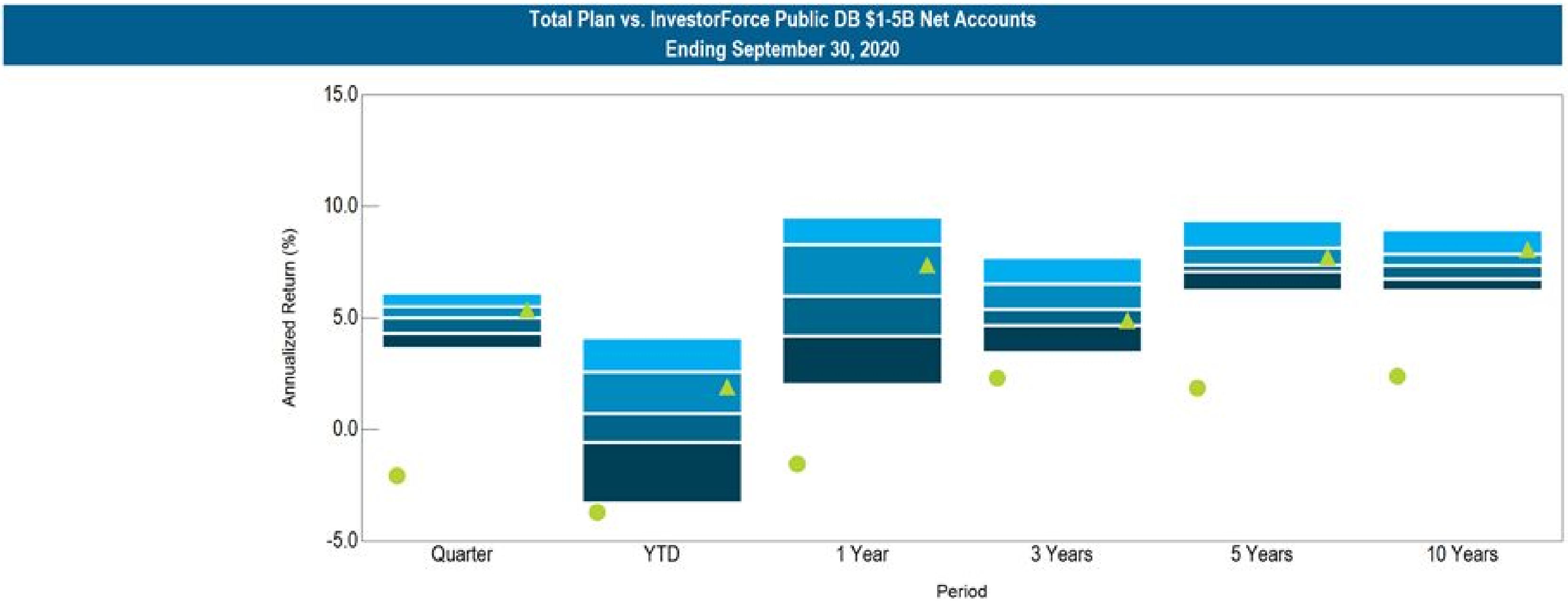
Dallas Police & Fire Pension System

DPFP | As of September 30, 2020



Return (Rank)	Quarter		YTD		1 Year		3 Years		5 Years		10 Years	
5th Percentile	6.1		4.1		9.5		7.7		9.4		8.9	
25th Percentile	5.5		2.6		8.3		6.5		8.1		7.9	
Median	5.0		0.7		6.0		5.4		7.4		7.4	
75th Percentile	4.3		-0.6		4.2		4.7		7.1		6.8	
95th Percentile	3.6		-3.3		2.0		3.5		6.2		6.2	
# of Portfolios	52		52		52		52		51		47	
DPFP	-2.1	(99)	-3.7	(99)	-1.5	(99)	2.3	(99)	1.9	(99)	2.4	(99)
Policy Index	5.4	(31)	1.9	(37)	7.4	(35)	4.9	(65)	7.7	(38)	8.1	(17)

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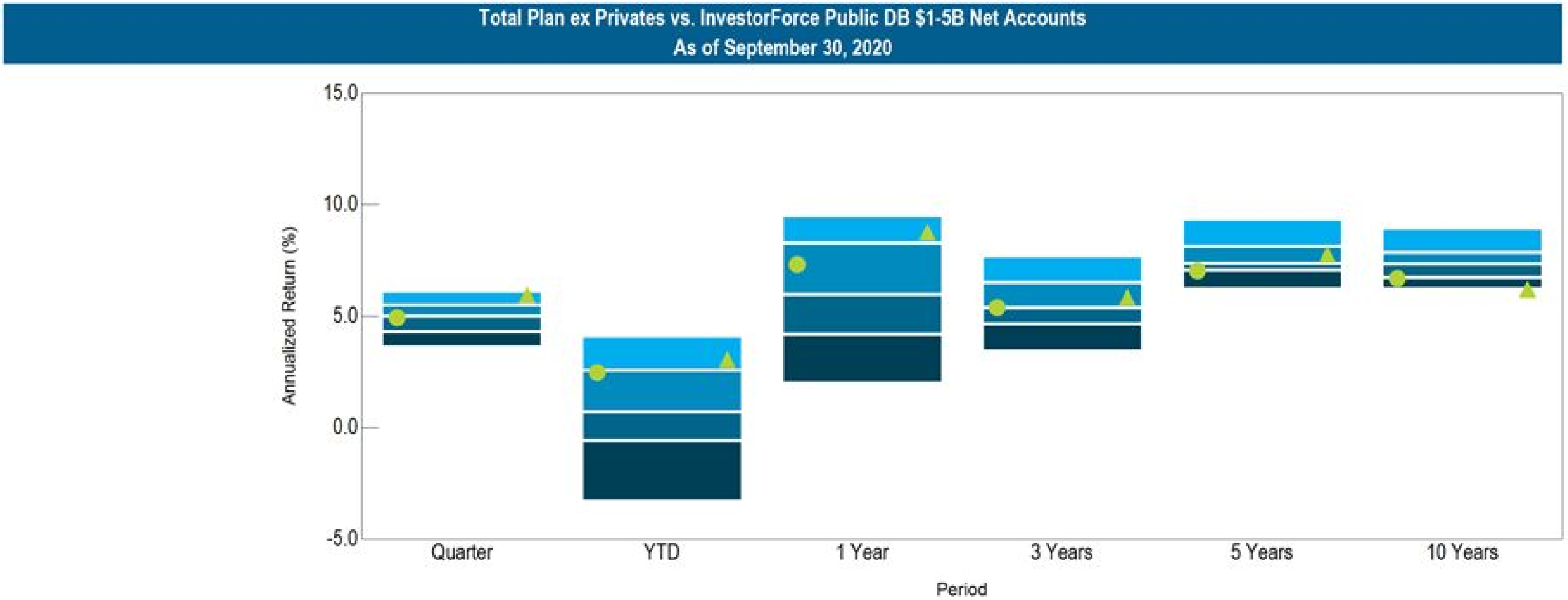
Dallas Police & Fire Pension System

DPFP | As of September 30, 2020



	Return (Rank)											
5th Percentile	6.1		4.1		9.5		7.7		9.4		8.9	
25th Percentile	5.5		2.6		8.3		6.5		8.1		7.9	
Median	5.0		0.7		6.0		5.4		7.4		7.4	
75th Percentile	4.3		-0.6		4.2		4.7		7.1		6.8	
95th Percentile	3.6		-3.3		2.0		3.5		6.2		6.2	
# of Portfolios	52		52		52		52		51		47	
Total Fund ex Privates	4.9	(52)	2.5	(32)	7.3	(36)	5.4	(51)	7.0	(76)	6.7	(84)
60% MSCI ACWI IMI Net/40% Barclays Global	6.0	(9)	3.0	(21)	8.8	(15)	5.9	(36)	7.8	(37)	6.2	(96)

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Dallas Police & Fire Pension System

DPFP | As of September 30, 2020

Asset Class Performance Summary (Net)

	Market Value ($)	% of Portfolio	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
DPFP	**1,910,335,470**	**100.0**	**-2.1**	**-3.7**	**-1.5**	**2.3**	**1.9**	**2.4**	**5.6**	**Jun-96**
Policy Index			*5.4*	*1.9*	*7.4*	*4.9*	*7.7*	*8.1*	*--*	*Jun-96*
Allocation Index			*4.6*	*2.2*	*5.7*	*5.2*	*7.7*	*7.3*	*7.2*	*Jun-96*
Total Fund Ex Private Markets			*4.9*	*2.5*	*7.3*	*5.4*	*7.0*	*6.7*	*5.5*	*Jun-96*
60% MSCI ACWI IMI Net/40% Barclays Global Aggregate Index			*6.0*	*3.0*	*8.8*	*5.9*	*7.8*	*6.2*	*6.1*	*Jun-96*
Global Equity	**560,988,036**	**29.4**	**7.6**	**-0.3**	**8.4**	**7.2**	**10.7**	**9.5**	**6.5**	**Jul-06**
MSCI ACWI IMI Net USD			*8.1*	*0.5*	*9.6*	*6.5*	*10.0*	*8.5*	*6.2*	*Jul-06*
Emerging Markets Equity	**52,326,712**	**2.7**	**9.5**	**-1.6**	**8.3**	**--**	**--**	**--**	**1.5**	**Jan-18**
MSCI Emerging Market IMI Net			*9.8*	*-1.3*	*10.1*	*2.0*	*8.4*	*2.3*	*-0.5*	*Jan-18*
Private Equity	**207,225,665**	**10.8**	**-29.3**	**-29.1**	**-30.0**	**-4.4**	**-9.1**	**-4.8**	**-1.5**	**Oct-05**
Cambridge Associates US All PE (1 Qtr Lag)			*11.6*	*4.2*	*5.5*	*11.3*	*10.7*	*13.2*	*12.3*	*Oct-05*
Cash Equivalents	**65,752,500**	**3.4**	**0.0**	**0.5**	**1.0**	**1.7**	**1.4**	**--**	**1.4**	**Apr-15**
91 Day T-Bills			*0.0*	*0.4*	*0.8*	*1.6*	*1.1*	*0.6*	*1.0*	*Apr-15*
Short Term Core Bonds	**215,896,198**	**11.3**	**0.7**	**4.1**	**4.7**	**3.3**	**--**	**--**	**3.2**	**Jun-17**
BBgBarc US Treasury 1-3 Yr TR			*0.1*	*3.1*	*3.6*	*2.7*	*1.8*	*1.3*	*2.5*	*Jun-17*
Investment Grade Bonds	**60,694,315**	**3.2**	**0.8**	**7.2**	**7.2**	**--**	**--**	**--**	**7.2**	**Oct-19**
BBgBarc US Aggregate TR			*0.6*	*6.8*	*7.0*	*5.2*	*4.2*	*3.6*	*7.0*	*Oct-19*
Global Bonds	**67,406,055**	**3.5**	**3.5**	**1.0**	**5.1**	**2.0**	**3.9**	**--**	**2.9**	**Dec-10**
BBgBarc Global Aggregate TR			*2.7*	*5.7*	*6.2*	*4.1*	*3.9*	*2.4*	*2.6*	*Dec-10*
Bank Loans	**69,468,651**	**3.6**	**3.1**	**1.6**	**2.6**	**3.6**	**4.5**	**--**	**3.9**	**Jan-14**
Credit Suisse Leveraged Loan			*4.1*	*-0.8*	*0.8*	*3.2*	*4.0*	*--*	*3.5*	*Jan-14*
High Yield Bonds	**68,900,964**	**3.6**	**4.6**	**0.7**	**3.3**	**2.1**	**5.8**	**--**	**5.7**	**Dec-10**
BBgBarc Global High Yield TR			*4.3*	*-0.6*	*2.9*	*2.7*	*6.1*	*5.9*	*5.9*	*Dec-10*
Emerging Markets Debt	**19,668,653**	**1.0**	**3.2**	**-7.2**	**-4.2**	**-1.0**	**4.8**	**--**	**2.7**	**Dec-10**
50% JPM EMBI/50% JPM GBI-EM			*1.5*	*-3.4*	*0.0*	*1.9*	*5.6*	*--*	*3.2*	*Dec-10*
Private Debt	**5,802,781**	**0.3**	**-2.3**	**-14.4**	**-14.3**	**-0.9**	**--**	**--**	**-4.8**	**Jan-16**
Barclays Global High Yield +2%			*4.8*	*0.9*	*5.0*	*4.7*	*8.2*	*--*	*8.7*	*Jan-16*

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Dallas Police & Fire Pension System

DPFP | As of September 30, 2020

Asset Class Performance Summary (Net)

	Market Value ($)	% of Portfolio	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
Real Estate	**349,757,274**	**18.3**	**-1.8**	**0.1**	**0.0**	**2.6**	**-2.3**	**-3.4**	**3.6**	**Mar-85**
NCREIF Property (1-quarter lagged)			*-1.0*	*1.3*	*2.7*	*5.4*	*6.8*	*9.7*	*7.9*	*Mar-85*
Natural Resources	**122,979,243**	**6.4**	**-0.4**	**-1.3**	**-3.1**	**-1.7**	**-1.2**	**--**	**3.3**	**Dec-10**
NCREIF Farmland Total Return Index 1Q Lag			*0.6*	*2.9*	*3.9*	*5.4*	*6.4*	*10.9*	*11.0*	*Dec-10*
Infrastructure	**43,468,424**	**2.3**	**-5.6**	**-20.4**	**-22.7**	**-11.2**	**2.6**	**--**	**2.7**	**Jul-12**
S&P Global Infrastructure TR USD			*1.6*	*-18.1*	*-13.9*	*-1.4*	*4.5*	*5.5*	*5.6*	*Jul-12*

[1] Please see the Appendix for composition of the Custom Benchmarks. [2] As of 9/30/2020, the Safety Reserve exposure was approximately $281.2 million (15%).
[3] All private market data is one quarter lagged, unless otherwise noted. [4] Lone Star Funds 12/31/2019 valuation used.

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Dallas Police & Fire Pension System

DPFP | As of September 30, 2020

Trailing Net Performance

	Market Value ($)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
DPFP	**1,910,335,470**	**100.0**	**--**	**-2.1**	**-3.7**	**-1.5**	**2.3**	**1.9**	**2.4**	**5.6**	**Jun-96**
Policy Index				*5.4*	*1.9*	*7.4*	*4.9*	*7.7*	*8.1*	*--*	*Jun-96*
Allocation Index				*4.6*	*2.2*	*5.7*	*5.2*	*7.7*	*7.3*	*7.2*	*Jun-96*
Total Fund Ex Private Markets				*4.9*	*2.5*	*7.3*	*5.4*	*7.0*	*6.7*	*5.5*	*Jun-96*
60% MSCI ACWI IMI Net/40% Barclays Global Aggregate Index				*6.0*	*3.0*	*8.8*	*5.9*	*7.8*	*6.2*	*6.1*	*Jun-96*
InvestorForce Public DB $1-5B Net Rank				*99*	*99*	*99*	*99*	*99*	*99*	*88*	*Jun-96*
Total Equity	**820,540,413**	**43.0**	**43.0**	**-4.8**	**-8.9**	**-4.2**	**3.9**	**1.9**	**--**	**4.1**	**Dec-10**
MSCI ACWI IMI Net USD				*8.1*	*0.5*	*9.6*	*6.5*	*10.0*	*8.5*	*7.7*	*Dec-10*
Public Equity	**613,314,748**	**32.1**	**74.7**	**7.7**	**0.3**	**9.2**	**7.1**	**10.7**	**9.5**	**6.5**	**Jul-06**
MSCI ACWI IMI Net USD				*8.1*	*0.5*	*9.6*	*6.5*	*10.0*	*8.5*	*6.2*	*Jul-06*
eV All Global Equity Net Rank				*49*	*51*	*51*	*46*	*38*	*38*	*41*	*Jul-06*
Global Equity	**560,988,036**	**29.4**	**91.5**	**7.6**	**-0.3**	**8.4**	**7.2**	**10.7**	**9.5**	**6.5**	**Jul-06**
MSCI ACWI IMI Net USD				*8.1*	*0.5*	*9.6*	*6.5*	*10.0*	*8.5*	*6.2*	*Jul-06*
eV All Global Equity Net Rank				*50*	*53*	*52*	*45*	*37*	*38*	*41*	*Jul-06*
Boston Partners Global Equity Fund	131,366,922	6.9	23.4	3.8	-13.3	-7.2	-1.4	--	--	-0.2	Jul-17
MSCI World Net				*7.9*	*1.7*	*10.4*	*7.7*	*10.5*	*9.4*	*8.7*	*Jul-17*
MSCI World Value				*3.9*	*-14.6*	*-8.4*	*-1.0*	*5.0*	*6.0*	*0.4*	*Jul-17*
eV Global Large Cap Value Eq Net Rank				*56*	*50*	*62*	*48*	*--*	*--*	*65*	*Jul-17*
Manulife Global Equity Strategy	136,903,094	7.2	24.4	7.6	-3.1	3.7	5.8	--	--	6.0	Jul-17
MSCI ACWI Net				*8.1*	*1.4*	*10.4*	*7.1*	*10.3*	*8.5*	*8.2*	*Jul-17*
MSCI ACWI Value NR USD				*4.0*	*-14.5*	*-8.0*	*-1.2*	*5.0*	*5.2*	*0.2*	*Jul-17*
eV Global Large Cap Value Eq Net Rank				*5*	*10*	*10*	*8*	*--*	*--*	*12*	*Jul-17*

[1] All Private Equity market values are one quarter lagged unless otherwise noted.

[2] 60% MSCI ACWI IMI Net/40% Barclays Global Aggregate Index composed of 60% MSCI ACWI (Net)/ 40% Barclays Global Aggregate in periods before 2/1/1997.

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	Market Value ($)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
Invesco (fka OFI) Global Equity	152,875,765	8.0	27.3	10.6	9.9	23.7	10.6	13.1	11.2	7.2	Oct-07
MSCI ACWI Net				*8.1*	*1.4*	*10.4*	*7.1*	*10.3*	*8.5*	*4.6*	*Oct-07*
MSCI ACWI Growth				*12.0*	*18.1*	*30.2*	*15.4*	*15.4*	*11.7*	*7.3*	*Oct-07*
eV Global Large Cap Growth Eq Net Rank				*56*	*68*	*52*	*92*	*83*	*85*	*55*	*Oct-07*
Walter Scott Global Equity Fund	139,842,253	7.3	24.9	8.0	5.1	13.8	13.1	13.7	10.8	10.2	Dec-09
MSCI ACWI Net				*8.1*	*1.4*	*10.4*	*7.1*	*10.3*	*8.5*	*8.4*	*Dec-09*
MSCI ACWI Growth				*12.0*	*18.1*	*30.2*	*15.4*	*15.4*	*11.7*	*11.5*	*Dec-09*
eV Global Large Cap Growth Eq Net Rank				*93*	*92*	*93*	*78*	*76*	*88*	*88*	*Dec-09*
Emerging Markets Equity	**52,326,712**	**2.7**	**8.5**	**9.5**	**-1.6**	**8.3**	**--**	**--**	**--**	**1.5**	**Jan-18**
MSCI Emerging Market IMI Net				*9.8*	*-1.3*	*10.1*	*2.0*	*8.4*	*2.3*	*-0.5*	*Jan-18*
eV Emg Mkts Equity Net Rank				*53*	*52*	*59*	*--*	*--*	*--*	*28*	*Jan-18*
RBC Emerging Markets Equity	52,326,712	2.7	100.0	9.5	-1.6	8.3	--	--	--	1.5	Jan-18
MSCI Emerging Market IMI Net				*9.8*	*-1.3*	*10.1*	*2.0*	*8.4*	*2.3*	*-0.5*	*Jan-18*
eV Emg Mkts Equity Net Rank				*53*	*52*	*59*	*--*	*--*	*--*	*28*	*Jan-18*
Private Equity	**207,225,665**	**10.8**	**25.3**	**-29.3**	**-29.1**	**-30.0**	**-4.4**	**-9.1**	**-4.8**	**-1.5**	**Oct-05**
Cambridge Associates US All PE (1 Qtr Lag)				*11.6*	*4.2*	*5.5*	*11.3*	*10.7*	*13.2*	*12.3*	*Oct-05*

[1] All Private Equity market values are one quarter lagged unless otherwise noted.

[2] Lone Star Funds 12/31/2019 valuation used.

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Dallas Police & Fire Pension System

DPFP | As of September 30, 2020

	Market Value ($)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
Total Fixed Income and Cash	**573,590,117**	**30.0**	**30.0**	**1.9**	**2.3**	**3.6**	**2.9**	**4.0**	**4.8**	**5.1**	**Jul-06**
BBgBarc Multiverse TR				*2.7*	*5.3*	*6.0*	*4.0*	*4.1*	*2.5*	*4.0*	*Jul-06*
eV All Global Fixed Inc Net Rank				*84*	*58*	*65*	*73*	*70*	*32*	*47*	*Jul-06*
Cash Equivalents	**65,752,500**	**3.4**	**11.5**	**0.0**	**0.5**	**1.0**	**1.7**	**1.4**	**--**	**1.4**	**Apr-15**
91 Day T-Bills				*0.0*	*0.4*	*0.8*	*1.6*	*1.1*	*0.6*	*1.0*	*Apr-15*
Public Fixed Income	**502,034,836**	**26.3**	**87.5**	**2.1**	**2.9**	**4.3**	**3.2**	**5.7**	**--**	**5.1**	**Dec-10**
BBgBarc Multiverse TR				*2.7*	*5.3*	*6.0*	*4.0*	*4.1*	*2.5*	*2.7*	*Dec-10*
eV All Global Fixed Inc Net Rank				*79*	*53*	*58*	*67*	*26*	*--*	*28*	*Dec-10*
Short Term Core Bonds	**215,896,198**	**11.3**	**43.0**	**0.7**	**4.1**	**4.7**	**3.3**	**--**	**--**	**3.2**	**Jun-17**
BBgBarc US Treasury 1-3 Yr TR				*0.1*	*3.1*	*3.6*	*2.7*	*1.8*	*1.3*	*2.5*	*Jun-17*
IR&M 1-3 Year Strategy	215,896,198	11.3	100.0	0.7	4.1	4.7	3.3	--	--	3.2	Jul-17
BBgBarc US Govt/Credit 1-3 Yr. TR				*0.2*	*3.1*	*3.7*	*2.8*	*2.1*	*1.6*	*2.7*	*Jul-17*
eV US Short Duration Fixed Inc Net Rank				*34*	*18*	*17*	*25*	*--*	*--*	*29*	*Jul-17*
Investment Grade Bonds	**60,694,315**	**3.2**	**12.1**	**0.8**	**7.2**	**7.2**	**--**	**--**	**--**	**7.2**	**Oct-19**
BBgBarc US Aggregate TR				*0.6*	*6.8*	*7.0*	*5.2*	*4.2*	*3.6*	*7.0*	*Oct-19*
Longfellow Core Fixed Income	60,694,315	3.2	100.0	0.6	--	--	--	--	--	0.6	Jul-20
BBgBarc US Aggregate TR				*0.6*	*6.8*	*7.0*	*5.2*	*4.2*	*3.6*	*0.6*	*Jul-20*
BBgBarc US Aggregate TR				*0.6*	*6.8*	*7.0*	*5.2*	*4.2*	*3.6*	*0.6*	*Jul-20*
eV US Core Fixed Inc Net Rank				*88*	*--*	*--*	*--*	*--*	*--*	*88*	*Jul-20*

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Dallas Police & Fire Pension System

DPFP | As of September 30, 2020

	Market Value ($)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
Global Bonds	**67,406,055**	**3.5**	**13.4**	**3.5**	**1.0**	**5.1**	**2.0**	**3.9**	**--**	**2.9**	**Dec-10**
BBgBarc Global Aggregate TR				*2.7*	*5.7*	*6.2*	*4.1*	*3.9*	*2.4*	*2.6*	*Dec-10*
eV All Global Fixed Inc Net Rank				*45*	*70*	*49*	*84*	*72*	*--*	*66*	*Dec-10*
Brandywine Global Fixed Income	67,406,055	3.5	100.0	3.5	1.0	5.1	2.0	4.1	3.4	4.6	Oct-04
BBgBarc Global Aggregate TR				*2.7*	*5.7*	*6.2*	*4.1*	*3.9*	*2.4*	*3.7*	*Oct-04*
eV All Global Fixed Inc Net Rank				*45*	*70*	*49*	*84*	*66*	*57*	*56*	*Oct-04*
Bank Loans	**69,468,651**	**3.6**	**13.8**	**3.1**	**1.6**	**2.6**	**3.6**	**4.5**	**--**	**3.9**	**Jan-14**
Credit Suisse Leveraged Loan				*4.1*	*-0.8*	*0.8*	*3.2*	*4.0*	*--*	*3.5*	*Jan-14*
eV US Float-Rate Bank Loan Fixed Inc Net Rank				*83*	*2*	*3*	*6*	*4*	*--*	*7*	*Jan-14*
Pacific Asset Management Corporate (Bank) Loans	69,218,374	3.6	99.6	3.1	-0.3	1.2	3.4	--	--	3.4	Aug-17
Credit Suisse Leveraged Loan				*4.1*	*-0.8*	*0.8*	*3.2*	*4.0*	*--*	*3.1*	*Aug-17*
eV US Float-Rate Bank Loan Fixed Inc Net Rank				*80*	*19*	*26*	*9*	*--*	*--*	*15*	*Aug-17*
Loomis Sayles Senior Rate and Fixed Income	250,277	0.0	0.4								
High Yield Bonds	**68,900,964**	**3.6**	**13.7**	**4.6**	**0.7**	**3.3**	**2.1**	**5.8**	**--**	**5.7**	**Dec-10**
BBgBarc Global High Yield TR				*4.3*	*-0.6*	*2.9*	*2.7*	*6.1*	*5.9*	*5.9*	*Dec-10*
eV Global High Yield Fixed Inc Net Rank				*31*	*33*	*29*	*85*	*48*	*--*	*56*	*Dec-10*
Loomis Sayles High Yield Fund	68,900,964	3.6	100.0	4.6	0.6	3.1	2.1	6.0	6.3	8.7	Oct-98
BBgBarc Global High Yield TR				*4.3*	*-0.6*	*2.9*	*2.7*	*6.1*	*5.9*	*7.9*	*Oct-98*
BBgBarc US High Yield 2% Issuer Cap TR				*4.6*	*0.6*	*3.2*	*4.2*	*6.8*	*6.5*	*6.8*	*Oct-98*
eV Global High Yield Fixed Inc Net Rank				*31*	*34*	*33*	*85*	*42*	*14*	*--*	*Oct-98*

[1] The Loomis Sayles Senior Rate and Fixed Income market value represents a residual balance.

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Dallas Police & Fire Pension System

DPFP | As of September 30, 2020

	Market Value ($)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
Emerging Markets Debt	**19,668,653**	**1.0**	**3.9**	**3.2**	**-7.2**	**-4.2**	**-1.0**	**4.8**	**--**	**2.7**	**Dec-10**
50% JPM EMBI/50% JPM GBI-EM				*1.5*	*-3.4*	*0.0*	*1.9*	*5.6*	*--*	*3.2*	*Dec-10*
eV All Emg Mkts Fixed Inc Net Rank				*20*	*89*	*97*	*89*	*73*	*--*	*63*	*Dec-10*
Ashmore EM Blended Debt	19,668,653	1.0	100.0	3.2	-7.2	-4.2	--	--	--	-0.6	Dec-17
Ashmore Blended Debt Benchmark				*1.7*	*-2.7*	*0.3*	*1.8*	*4.9*	*2.8*	*1.9*	*Dec-17*
eV All Emg Mkts Fixed Inc Net Rank				*20*	*89*	*97*	*--*	*--*	*--*	*85*	*Dec-17*
Private Debt	**5,802,781**	**0.3**	**1.0**	**-2.3**	**-14.4**	**-14.3**	**-0.9**	**--**	**--**	**-4.8**	**Jan-16**
Barclays Global High Yield +2%				*4.8*	*0.9*	*5.0*	*4.7*	*8.2*	*--*	*8.7*	*Jan-16*
Total Real Assets	**516,204,941**	**27.0**	**27.0**	**-1.8**	**-2.2**	**-3.0**	**0.0**	**-0.4**	**--**	**-1.9**	**Dec-10**
Total Real Assets Policy Index				*-0.2*	*2.1*	*3.3*	*5.4*	*6.6*	*10.3*	*10.3*	*Dec-10*
Real Estate	**349,757,274**	**18.3**	**67.8**	**-1.8**	**0.1**	**0.0**	**2.6**	**-2.3**	**-3.4**	**3.6**	**Mar-85**
NCREIF Property (1-quarter lagged)				*-1.0*	*1.3*	*2.7*	*5.4*	*6.8*	*9.7*	*7.9*	*Mar-85*
Natural Resources	**122,979,243**	**6.4**	**23.8**	**-0.4**	**-1.3**	**-3.1**	**-1.7**	**-1.2**	**--**	**3.3**	**Dec-10**
NCREIF Farmland Total Return Index 1Q Lag				*0.6*	*2.9*	*3.9*	*5.4*	*6.4*	*10.9*	*11.0*	*Dec-10*
Infrastructure	**43,468,424**	**2.3**	**8.4**	**-5.6**	**-20.4**	**-22.7**	**-11.2**	**2.6**	**--**	**2.7**	**Jul-12**
S&P Global Infrastructure TR USD				*1.6*	*-18.1*	*-13.9*	*-1.4*	*4.5*	*5.5*	*5.6*	*Jul-12*

[1] All Private Market market values are one quarter lagged unless otherwise noted.

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WE HAVE PREPARED THIS REPORT (THIS "REPORT") FOR THE SOLE BENEFIT OF THE INTENDED RECIPIENT (THE "RECIPIENT").

SIGNIFICANT EVENTS MAY OCCUR (OR HAVE OCCURRED) AFTER THE DATE OF THIS REPORT AND THAT IT IS NOT OUR FUNCTION OR RESPONSIBILITY TO UPDATE THIS REPORT. ANY OPINIONS OR RECOMMENDATIONS PRESENTED HEREIN REPRESENT OUR GOOD FAITH VIEWS AS OF THE DATE OF THIS REPORT AND ARE SUBJECT TO CHANGE AT ANY TIME. ALL INVESTMENTS INVOLVE RISK. THERE CAN BE NO GUARANTEE THAT THE STRATEGIES, TACTICS, AND METHODS DISCUSSED HERE WILL BE SUCCESSFUL.

INFORMATION USED TO PREPARE THIS REPORT WAS OBTAINED FROM INVESTMENT MANAGERS, CUSTODIANS, AND OTHER EXTERNAL SOURCES. WHILE WE HAVE EXERCISED REASONABLE CARE IN PREPARING THIS REPORT, WE CANNOT GUARANTEE THE ACCURACY OF ALL SOURCE INFORMATION CONTAINED HEREIN.

CERTAIN INFORMATION CONTAINED IN THIS REPORT MAY CONSTITUTE "FORWARD - LOOKING STATEMENTS," WHICH CAN BE IDENTIFIED BY THE USE OF TERMINOLOGY SUCH AS "MAY," "WILL," "SHOULD," "EXPECT," "AIM", "ANTICIPATE," "TARGET," "PROJECT," "ESTIMATE," "INTEND," "CONTINUE" OR "BELIEVE," OR THE NEGATIVES THEREOF OR OTHER VARIATIONS THEREON OR COMPARABLE TERMINOLOGY. ANY FORWARD-LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION ARE BASED UPON CURRENT ASSUMPTIONS. CHANGES TO ANY ASSUMPTIONS MAY HAVE A MATERIAL IMPACT ON FORWARD - LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS. ACTUAL RESULTS MAY THEREFORE BE MATERIALLY DIFFERENT FROM ANY FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION.

PERFORMANCE DATA CONTAINED HEREIN REPRESENT PAST PERFORMANCE. PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS.

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Dallas Police & Fire Pension System

As of June 30, 2020

Private Markets Review

BOSTON CHICAGO LONDON MIAMI NEW YORK PORTLAND SAN DIEGO MEKETA.COM

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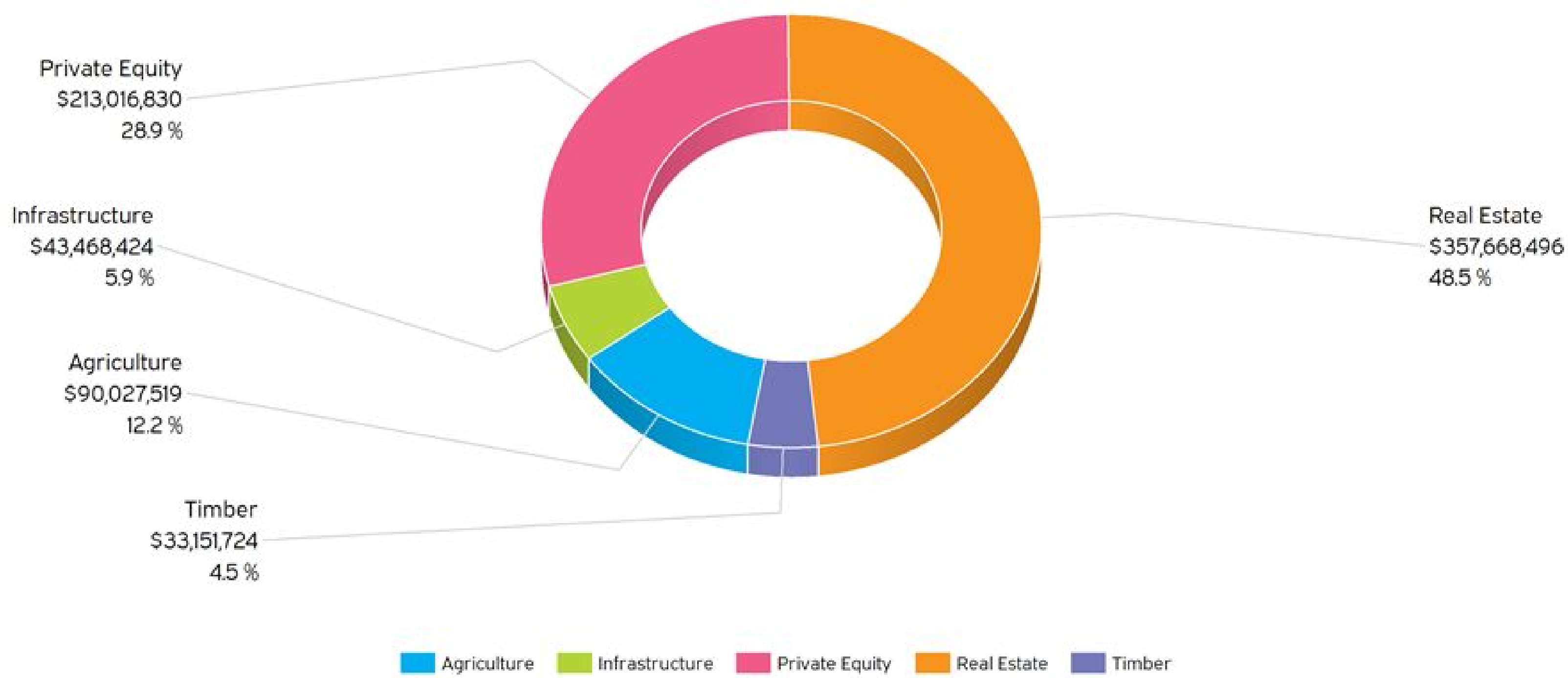
Dallas Police & Fire Pension System

Private Markets Review | As of June 30, 2020

Private Market Investments as of June 30, 2020
Market Value Allocation by Asset Class



1. Private Equity is composed of Private Equity and Private Debt

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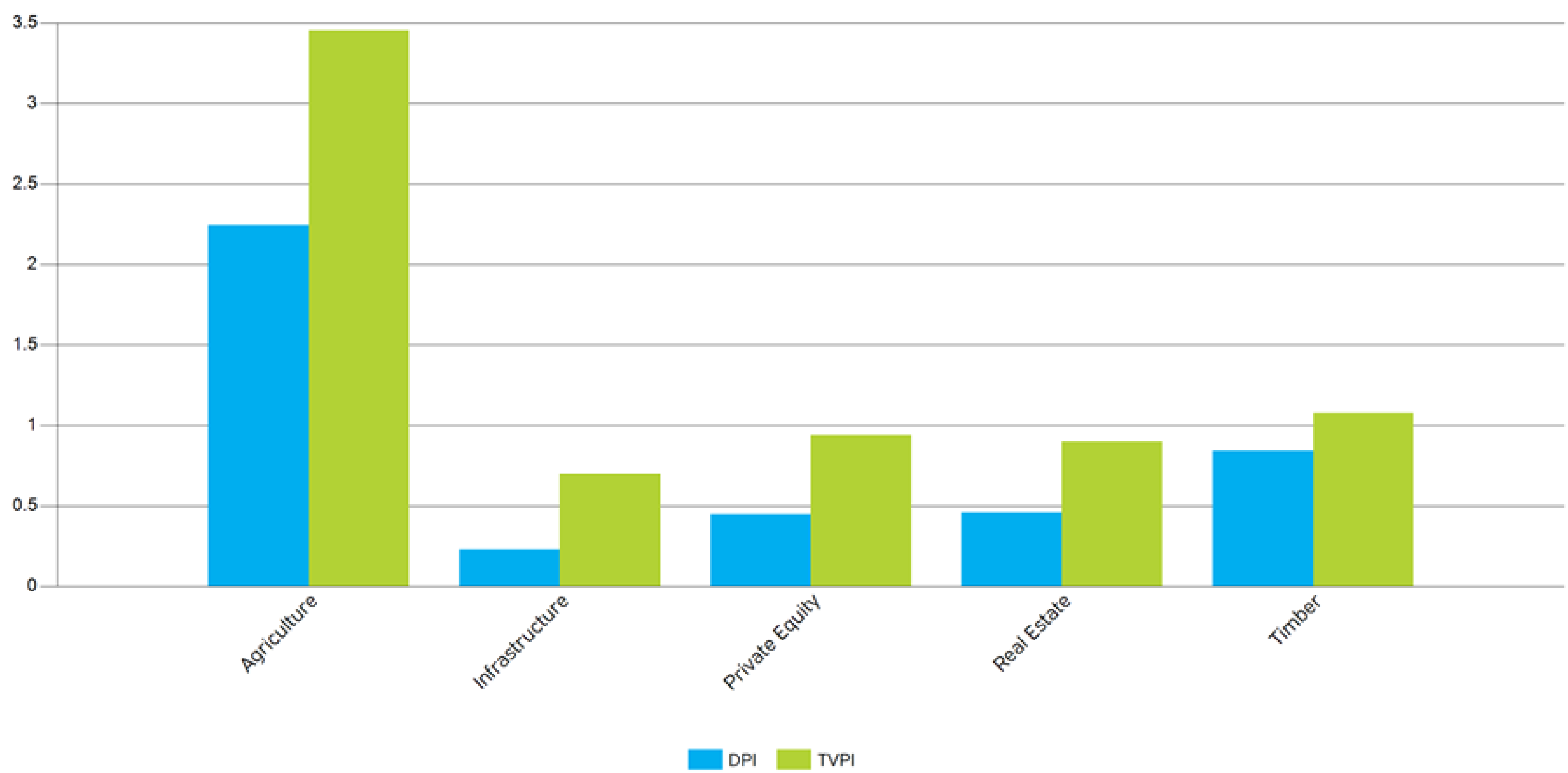
Private Markets Review | As of June 30, 2020

Private Market Investments as of June 30, 2020
DPI and TVPI by Asset Class



1. Private Equity is composed of Private Equity and Private Debt
2. Private markets performance reflected is composed of active investments only

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Private Markets Review | As of June 30, 2020

Private Market Investments Overview											
Active Funds	Commitments		Distributions & Valuations				Performance				
Asset Class	Commitment ($)	Paid In Capital ($)	Distributions ($)	Valuation ($)	Total Value ($)	Gain/Loss ($)	Call Ratio	DPI	TVPI	IRR (%)
Total Agriculture	74,420,001	74,420,001	167,092,840	90,027,519	257,120,359	182,700,358	1.00	2.25	3.45	14.81
Total Infrastructure	97,000,000	93,204,236	21,669,031	43,468,424	65,137,455	-28,066,781	0.96	0.23	0.70	-6.28
Total Private Equity	414,034,369	444,693,348	193,999,479	213,016,830	407,016,308	-37,677,040	1.07	0.44	0.92	-1.51
Total Real Estate	823,273,809	812,626,568	369,733,024	357,668,496	727,401,520	-85,225,049	0.99	0.45	0.90	-1.57
Total Timber	142,011,534	142,011,534	119,330,209	33,151,724	152,481,933	10,470,399	1.00	0.84	1.07	1.31
Total	**1,550,739,713**	**1,566,955,687**	**871,824,582**	**737,332,992**	**1,609,157,575**	**42,201,888**	**1.01**	**0.56**	**1.03**	**0.42**

1. Private Equity is composed of Private Equity and Private Debt
2. Private markets performance reflected is composed of active investments only
3. Commitment value is equal to paid in capital for direct investments made outside of a traditional limited partnership fund structure.

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Dallas Police & Fire Pension System

Active Funds with Unfunded Commitments Overview | As of June 30, 2020

Active Funds with Unfunded Commitments				
Active Funds		Commitments		
Investment Name	Vintage Year	Commitment ($)	Paid In Capital ($)	Unfunded Commitment ($)
Infrastructure				
TRG AIRRO	2008	37,000,000	37,400,186	2,927,246
TRG AIRRO II	2013	10,000,000	7,219,074	2,368,615
JPM Maritime Fund, LP	2009	50,000,000	48,584,975	1,365,941
Total Infrastructure		**97,000,000**	**93,204,236**	**6,661,802**
Private Equity				
Huff Energy Fund LP	2006	100,000,000	99,008,618	119,979
Industry Ventures Partnership IV	2016	5,000,000	3,487,842	1,305,000
Lone Star Growth Capital	2006	16,000,000	26,560,000	2,240,000
Riverstone Credit Partners LP	2016	10,000,000	12,242,390	520,641
Yellowstone Capital	2008	5,283,254	5,112,307	170,947
Total Private Equity		**136,283,254**	**146,411,157**	**4,356,567**
Real Estate				
Hearthstone MS II Homebuilding Investors	1999	10,000,000	7,973,058	1,008,131
Hearthstone MS III Homebuilding Investors	2003	10,000,000	1,221,446	1,997,675
Total Real Estate		**20,000,000**	**9,194,504**	**3,005,806**
Total		**253,283,254**	**248,809,896**	**14,024,175**

1. Private markets performance reflected is composed of active investments only
2. The funds and figures above represent investments with unfunded capital commitments
3. Lone Star valuations as of 12/31/19 according to valuation by Conway Mackenzie. Valuation for LSGC is derived from LSGC 12/31/19 audited financials.

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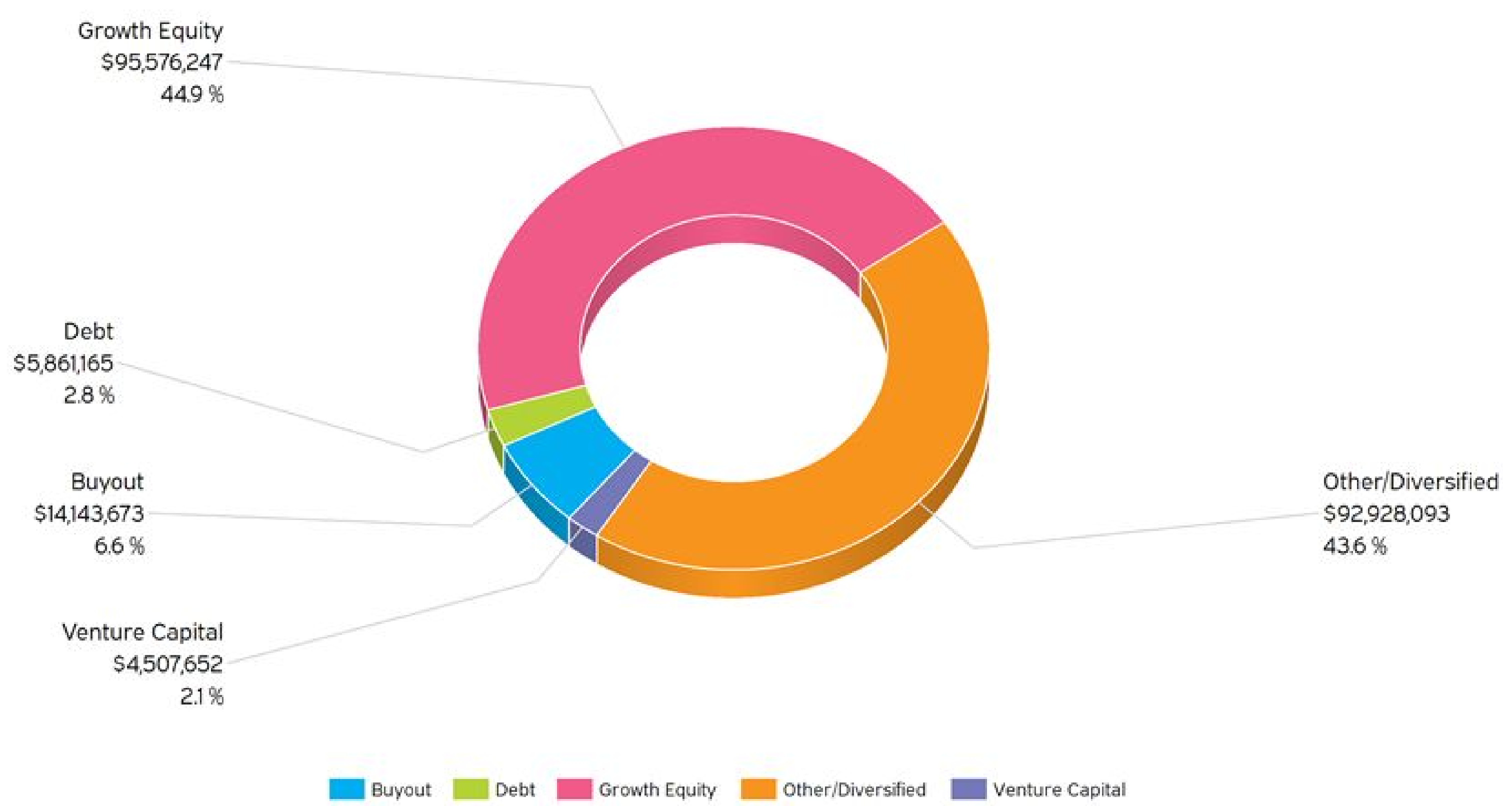
Dallas Police & Fire Pension System

Private Equity and Debt | As of June 30, 2020

Private Equity and Debt Investments as of June 30, 2020
Market Value Allocation by Strategy



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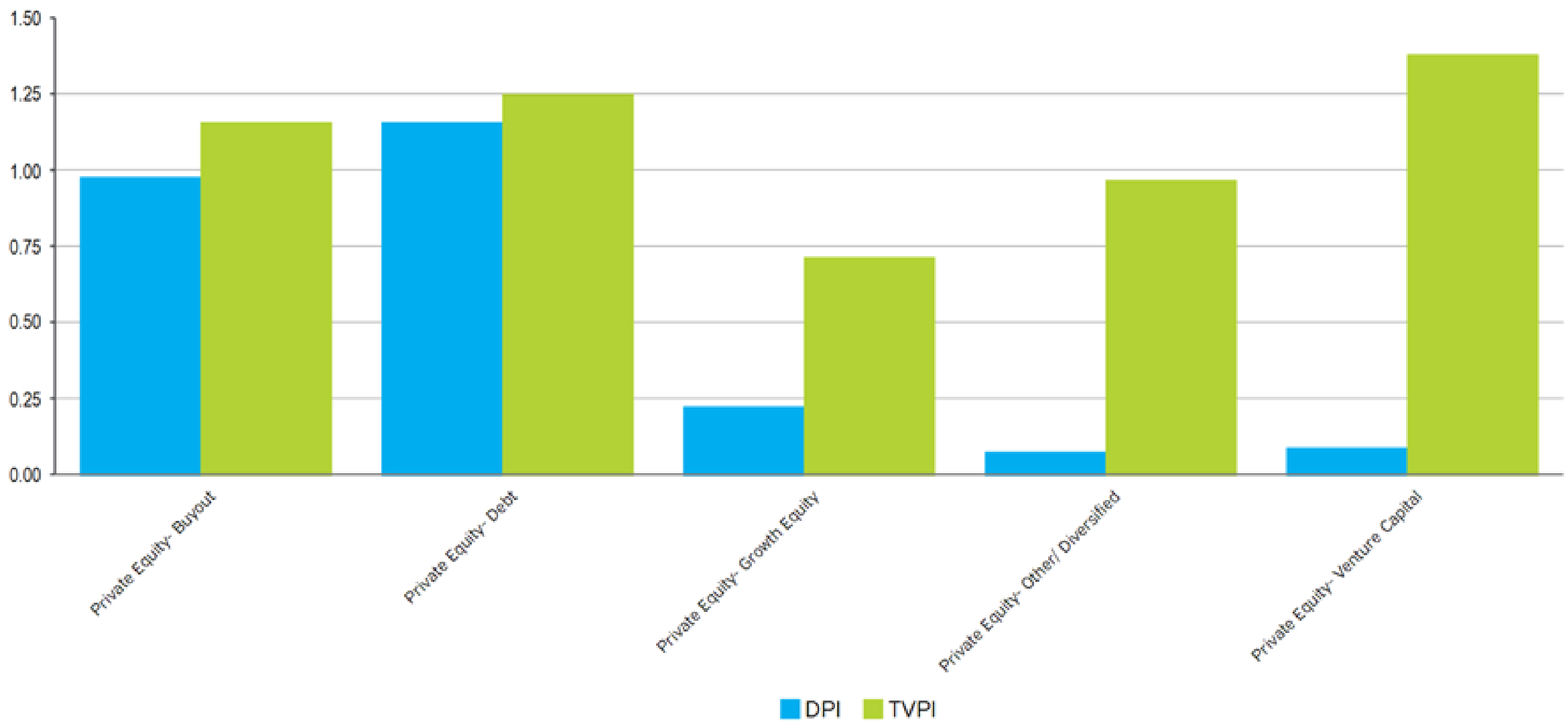
Dallas Police & Fire Pension System

Private Equity and Debt | As of June 30, 2020

Private Equity and Debt Investments as of June 30, 2020
DPI and TVPI by Strategy



1. Private markets performance reflected is composed of active investments only

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Dallas Police & Fire Pension System

Private Equity and Debt | As of June 30, 2020

Private Equity and Debt Investments Overview												
Active Funds		Commitments		Distributions & Valuations				Performance				
Investment Name	Vintage Year	Commitment ($)	Paid In Capital ($)	Distributions ($)	Valuation ($)	Total Value ($)	Gain/Loss ($)	Call Ratio	DPI	TVPI	IRR (%)
Buyout											
Huff Alternative Fund	2000	66,795,718	78,833,017	75,678,933	14,143,673	89,822,606	10,989,589	1.18	0.96	1.14	1.59
Total Buyout		**66,795,718**	**78,833,017**	**75,678,933**	**14,143,673**	**89,822,606**	**10,989,589**	**1.18**	**0.96**	**1.14**	**1.59**
Debt											
Highland Crusader Fund	2003	50,955,397	50,955,397	63,561,006	1,146,138	64,707,144	13,751,747	1.00	1.25	1.27	4.18
Riverstone Credit Partners LP	2016	10,000,000	12,242,390	8,458,920	4,715,027	13,173,947	931,557	1.22	0.69	1.08	4.34
Total Debt		**60,955,397**	**63,197,787**	**72,019,926**	**5,861,165**	**77,881,091**	**14,683,304**	**1.04**	**1.14**	**1.23**	**4.19**
Growth Equity											
Hudson Clean Energy	2009	25,000,000	24,994,470	4,732,352	1,953,452	6,685,804	-18,308,666	1.00	0.19	0.27	-19.06
Lone Star CRA	2008	50,000,000	58,298,834	12,928,698	78,230,000	91,158,698	32,859,864	1.17	0.22	1.56	11.93
Lone Star Growth Capital	2006	16,000,000	26,560,000	12,800,000	9,995,307	22,795,307	-3,764,693	1.66	0.48	0.86	-5.27
Lone Star Opportunities V	2012	75,000,000	75,000,000	531,444	3,839,000	4,370,444	-70,629,556	1.00	0.01	0.06	-58.85
North Texas Opportunity Fund	2000	10,000,000	10,000,000	9,127,239	1,558,488	10,685,727	685,727	1.00	0.91	1.07	0.74
Total Growth Equity		**176,000,000**	**194,853,304**	**40,119,733**	**95,576,247**	**135,695,980**	**-59,157,324**	**1.11**	**0.21**	**0.70**	**-9.72**
Other/Diversified											
Huff Energy Fund LP	2006	100,000,000	99,008,618	4,477,394	92,928,093	97,405,487	-1,603,131	0.99	0.05	0.98	-0.16
Yellowstone Capital	2008	5,283,254	5,112,307	1,458,572	0	1,458,572	-3,653,735	0.97	0.29	0.29	-32.45
Total Other/Diversified		**105,283,254**	**104,120,925**	**5,935,966**	**92,928,093**	**98,864,059**	**-5,256,866**	**0.99**	**0.06**	**0.95**	**-0.52**
Venture Capital											
Industry Ventures Partnership IV	2016	5,000,000	3,487,842	244,921	4,507,652	4,752,573	1,264,731	0.70	0.07	1.36	13.24
Total Venture Capital		**5,000,000**	**3,487,842**	**244,921**	**4,507,652**	**4,752,573**	**1,264,731**	**0.70**	**0.07**	**1.36**	**13.24**
Unclassified											
Miscellaneous Private Equity Expenses	2016		200,473								
Total Unclassified			**200,473**								
Total		**414,034,369**	**444,693,348**	**193,999,479**	**213,016,830**	**407,016,308**	**-37,677,040**	**1.07**	**0.44**	**0.92**	**-1.51**

1. Private Markets performance reflected is composed of active investments only.
2. North Texas Opportunity Fund valuation represents 3/31/20 NAV.
3. Lone Star valuations as of 12/31/19 according to valuation by Conway Mackenzie. Valuation for LSGC is derived from LSGC 12/31/19 audited financials.

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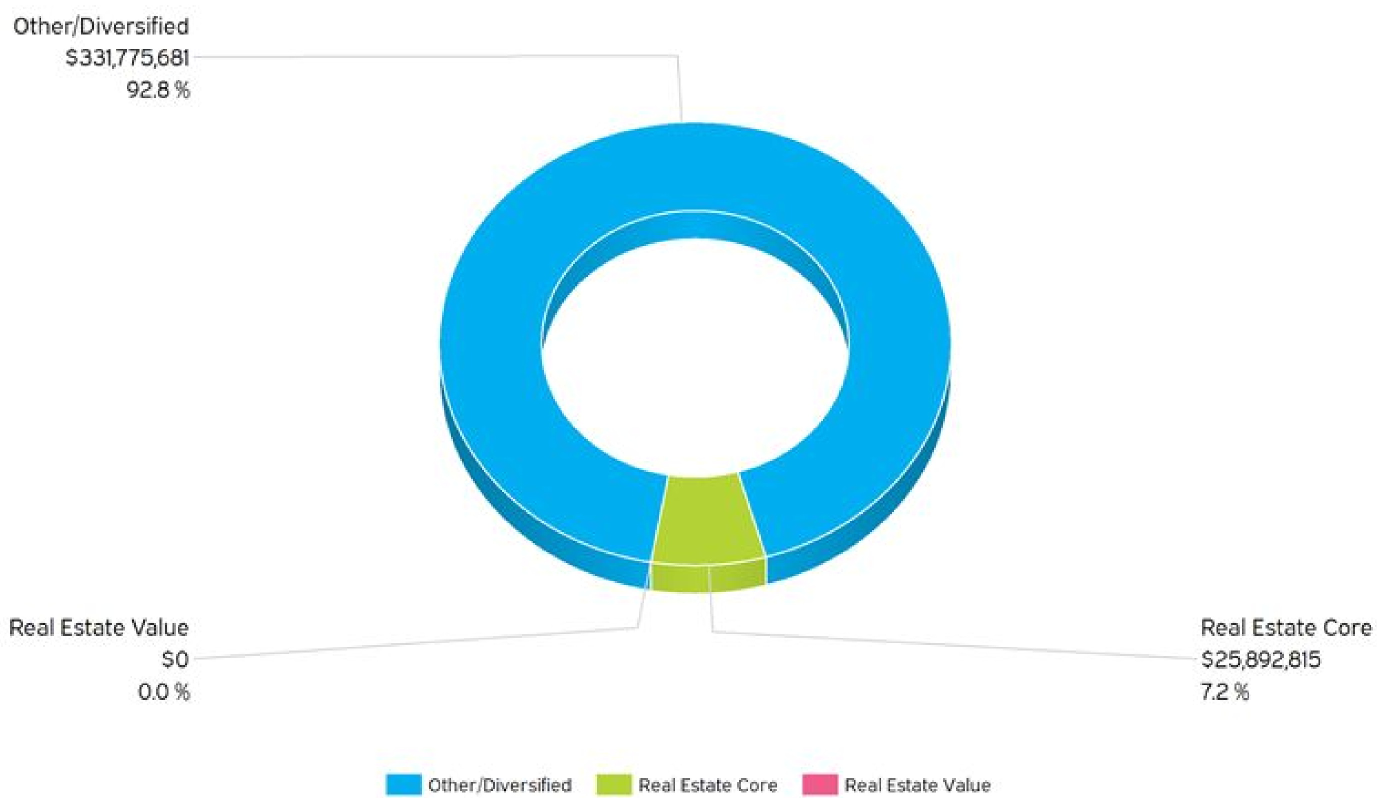
Dallas Police & Fire Pension System

Real Estate | As of June 30, 2020

Real Estate Investments as of June 30, 2020
Market Value Allocation by Strategy



1. Other/Diversified is composed of direct real estate investments made by the fund

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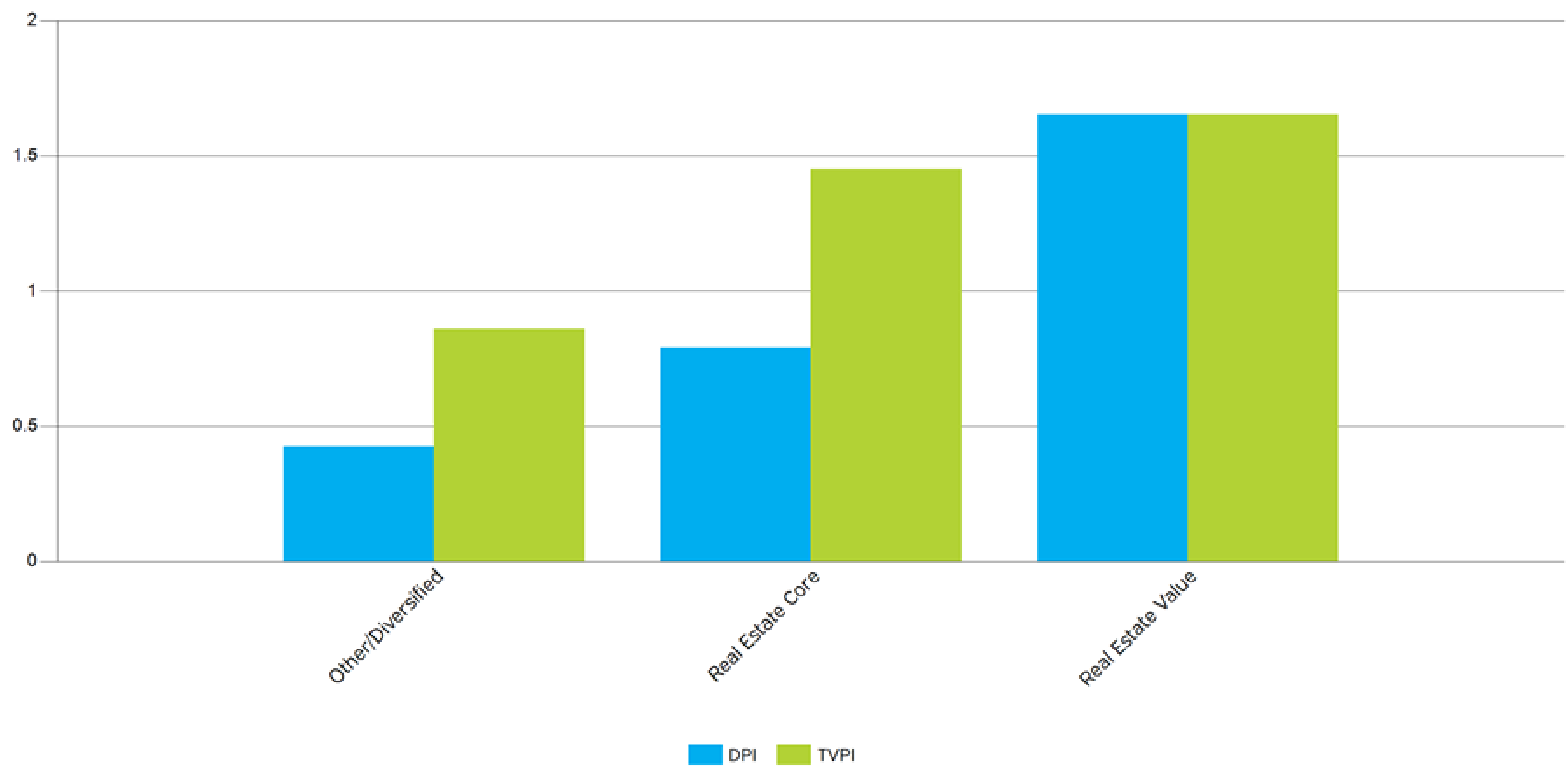
Dallas Police & Fire Pension System

Real Estate | As of June 30, 2020

Real Estate Investments as of June 30, 2020
DPI and TVPI by Strategy



1. Other/Diversified is composed of direct real estate investments made by the fund
2. Private markets performance reflected is composed of active investments only

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Dallas Police & Fire Pension System

Real Estate | As of June 30, 2020

Real Estate Investments Overview											
Active Funds	Commitments		Valuations				Performance				
Investment Name	Commitment ($)	Paid In Capital ($)	Distributions ($)	Valuation ($)	Total Value ($)	Gain/Loss ($)	Call Ratio	DPI	TVPI	IRR (%)
Total Other/Diversified	763,806,736	763,806,736	322,672,447	331,775,681	654,448,128	-109,358,608	1.00	0.42	0.86	-2.13
Real Estate Core										
Total Real Estate Core	39,467,073	39,467,073	31,173,535	25,892,815	57,066,350	17,599,277	1.00	0.79	1.45	5.24
Real Estate Value										
Total Real Estate Value	20,000,000	9,194,504	15,206,576	0	15,206,576	6,012,072	0.46	1.65	1.65	25.93
Total	**823,273,809**	**812,626,568**	**369,733,024**	**357,668,496**	**727,401,520**	**-85,225,049**	**0.99**	**0.45**	**0.90**	**-1.57**

1. Private markets performance reflected is composed of active investments only.
2. Commitment value is equal to paid in capital for direct investments made outside of a traditional limited partnership fund structure.

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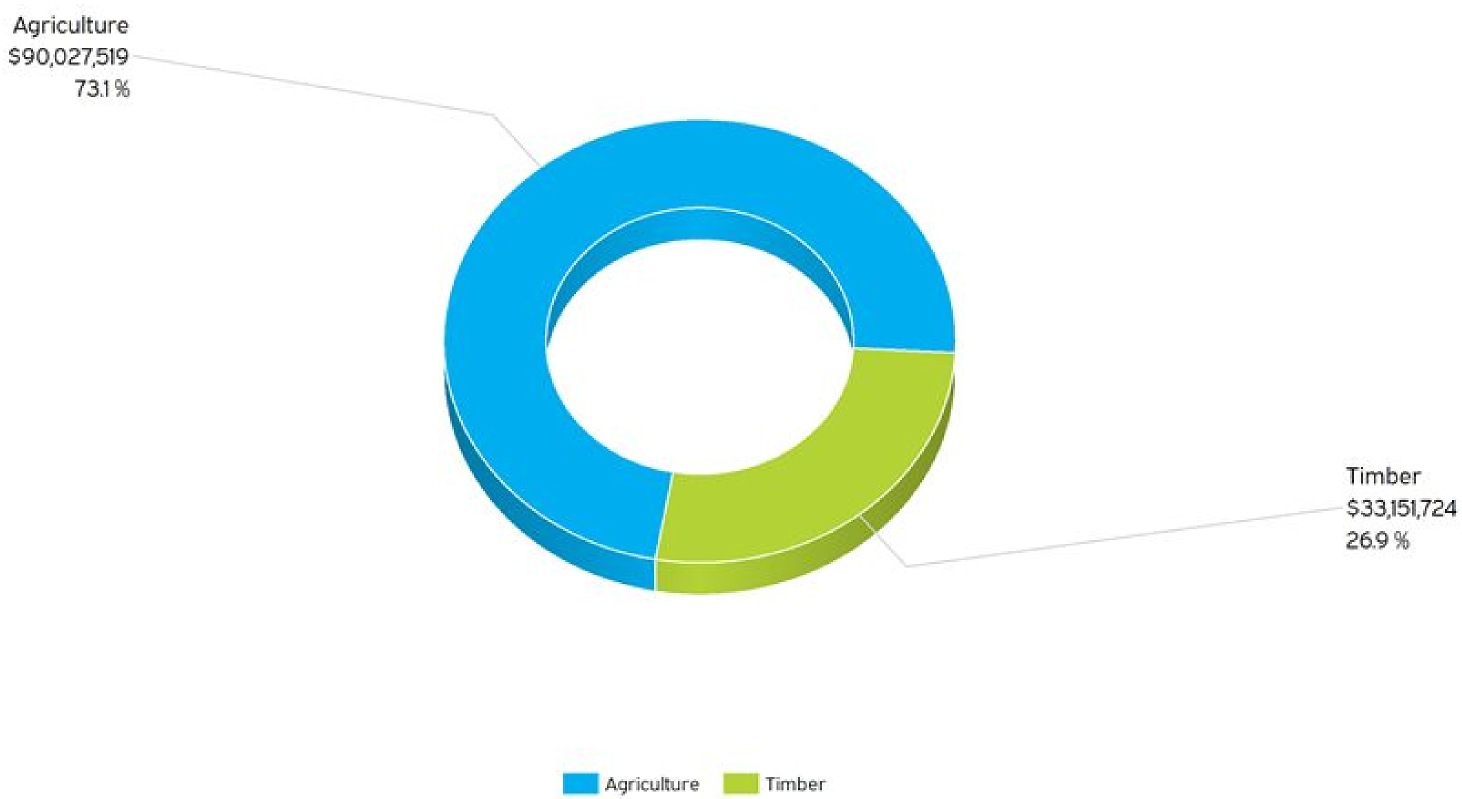
Dallas Police & Fire Pension System

Natural Resources | As of June 30, 2020

Natural Resources Investments as of June 30, 2020
Market Value Allocation by Asset Class



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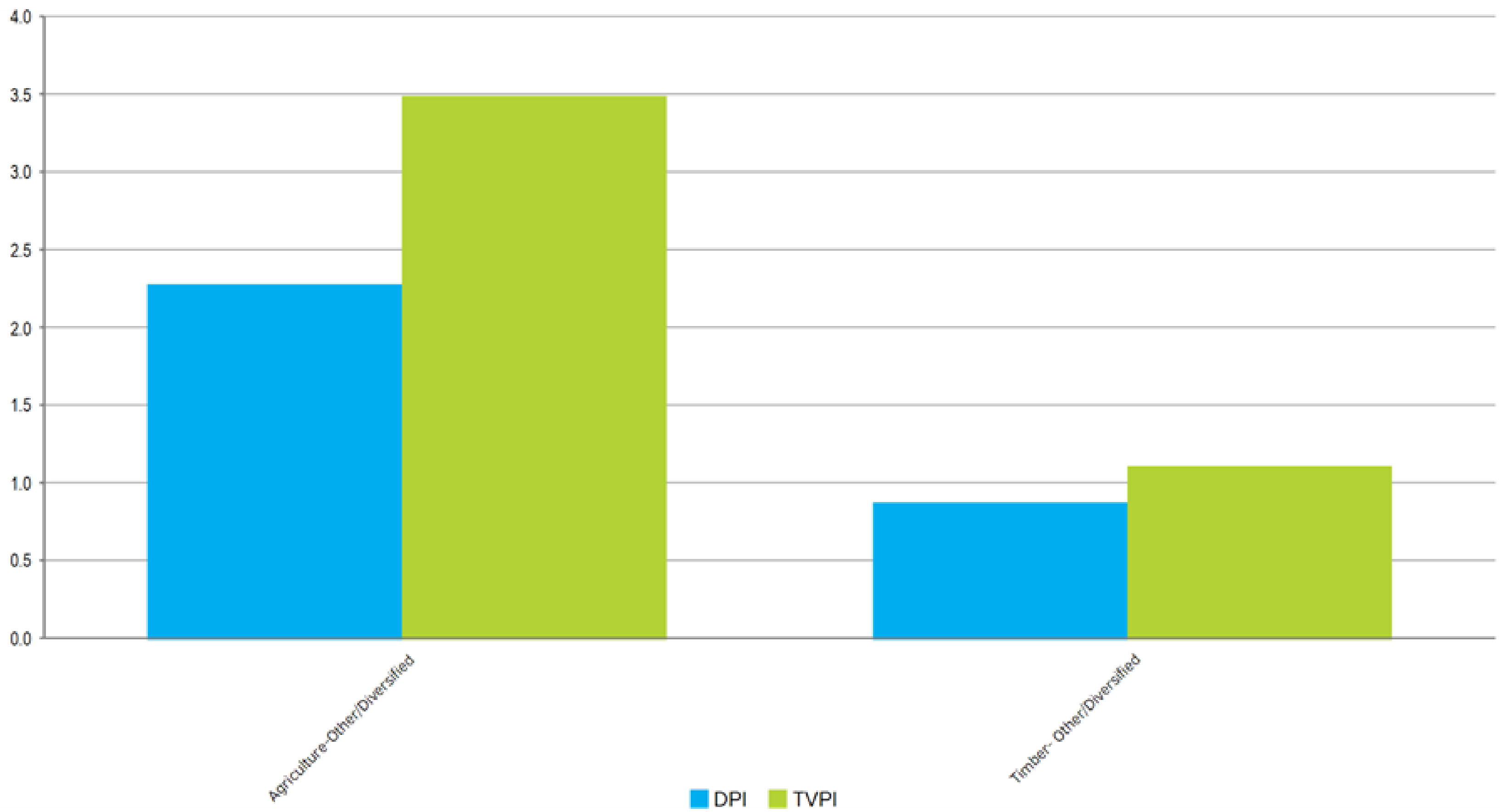
Dallas Police & Fire Pension System

Natural Resources | As of June 30, 2020

Natural Resource Investments as of June 30, 2020
DPI and TVPI by Strategy



1. Agriculture 'Other/Diversified' is composed of permanent and row crops exposure.
2.Timber 'Other/Diversified' is composed of domestic and global timber exposure.
3. Private markets performance reflected is composed of active investments only

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Dallas Police & Fire Pension System

Natural Resources | As of June 30, 2020

Natural Resource Investments Overview												
Active Funds		Commitments		Valuations				Performance				
Investment Name	Vintage Year	Commitment ($)	Paid In Capital ($)	Distributions ($)	Valuation ($)	Total Value ($)	Unrealized Gain/Loss ($)	Call Ratio	DPI	TVPI	IRR (%)
Agriculture											
Hancock Agricultural	1998	74,420,001	74,420,001	167,092,840	90,027,519	257,120,359	182,700,358	1.00	2.25	3.45	14.81
Total Agriculture		**74,420,001**	**74,420,001**	**167,092,840**	**90,027,519**	**257,120,359**	**182,700,358**	**1.00**	**2.25**	**3.45**	**14.81**
Timber											
BTG Pactual	2006	82,361,838	82,361,838	18,300,000	24,376,700	42,676,700	-39,685,137	1.00	0.22	0.52	-8.93
Forest Investment Associates	1992	59,649,696	59,649,696	101,030,209	8,775,024	109,805,233	50,155,537	1.00	1.69	1.84	7.70
Total Timber		**142,011,534**	**142,011,534**	**119,330,209**	**33,151,724**	**152,481,933**	**10,470,400**	**1.00**	**0.84**	**1.08**	**1.31**
Total		**216,431,535**	**216,431,535**	**286,423,049**	**123,179,243**	**409,602,292**	**193,170,758**	**1.00**	**1.33**	**1.90**	**8.72**

1. Private markets performance reflected is composed of active investments only
2. Commitment value is equal to paid in capital for direct investments made outside of a traditional limited partnership fund structure.

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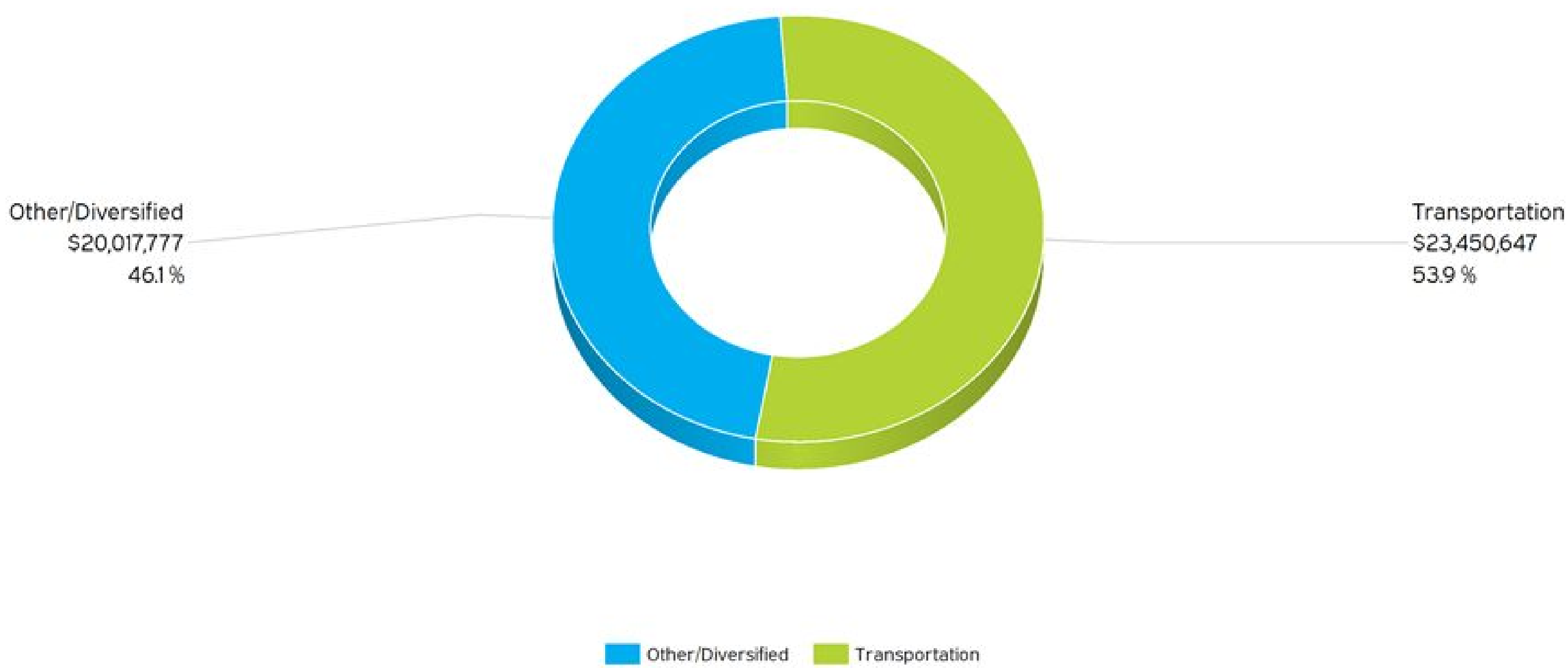
Dallas Police & Fire Pension System

Infrastructure | As of June 30, 2020

Infrastructure Investments as of June 30, 2020
Market Value Allocation by Strategy



1.'Other/Diversified' is composed of various operating and developing infrastructure project exposure

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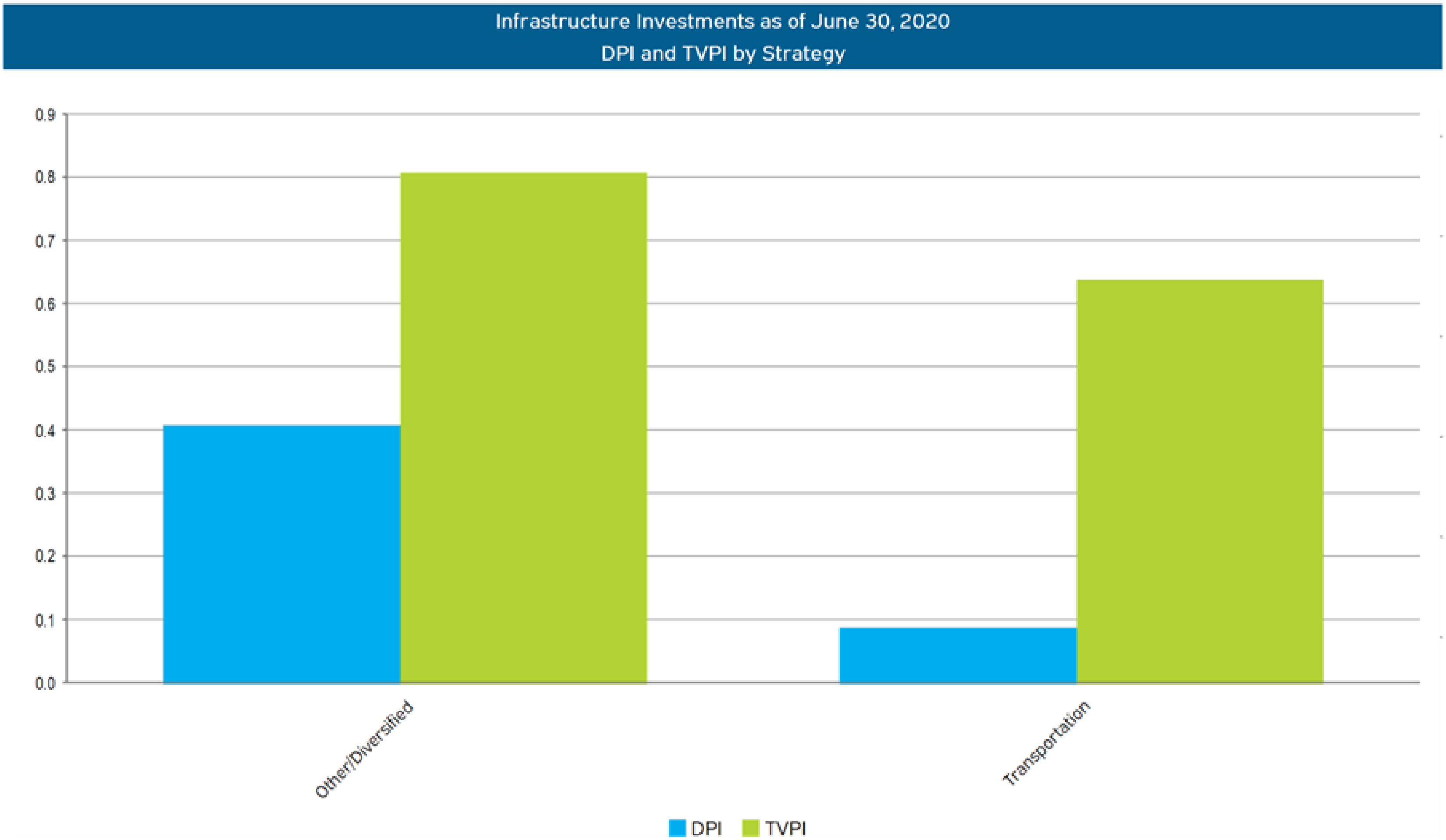
Dallas Police & Fire Pension System

Infrastructure | As of June 30, 2020



1. Other/Diversified' is composed of various operating and developing infrastructure project exposure
2. Private markets performance reflected is composed of active investments only

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Dallas Police & Fire Pension System

Infrastructure | As of June 30, 2020

Infrastructure Investments Overview

Active Funds		Commitments		Distributions & Valuations				Performance			
Investment Name	Vintage Year	Commitment ($)	Paid In Capital ($)	Distributions ($)	Valuation ($)	Total Value ($)	Gain/Loss ($)	Call Ratio	DPI	TVPI	IRR (%)
Infrastructure											
TRG AIRRO	2008	37,000,000	37,400,186	17,873,234	16,584,240	34,457,474	-2,942,712	1.01	0.48	0.92	-1.25
TRG AIRRO II	2013	10,000,000	7,219,074	58,731	3,433,537	3,492,268	-3,726,806	0.72	0.01	0.48	-10.93
JPM Maritime Fund, LP	2009	50,000,000	48,584,975	3,737,066	23,450,647	27,187,713	-21,397,263	0.97	0.08	0.56	-10.72
Total Infrastructure		**97,000,000**	**93,204,236**	**21,669,031**	**43,468,424**	**65,137,455**	**-28,066,781**	**0.96**	**0.23**	**0.70**	**-6.28**

1. Private markets performance reflected is composed of active investments only

Private Markets Review
List of Completed Funds

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Dallas Police & Fire Pension System

Private Markets Review | As of June 30, 2020

Total Real Assets Program

Completed Funds	Vintage Year	Commitment Amount	Paid in Capital	Capital to be Funded	Addtnl Fees	Cummulative Distributions	Valuation	Total Value	Gain/Loss	DPI Ratio	TVPI Ratio	IRR
AEW Creative Holdings	2007	13,035,849	13,035,849	0	0	0	0	0	-13,035,849	0.00	0.00	N/A
Barings Lake Luciana	2006	95,025,191	95,025,191	0	0	17,872,293	0	17,872,293	-77,152,898	0.19	0.19	-19.89%
Barings Lake P&F Real Estate	2010	18,112,486	18,112,486	0	0	4,227,991	0	4,227,991	-13,884,495	0.23	0.23	-15.79%
BTG U.S. Timberland	2007	22,230,000	22,230,000	0	0	33,065,920	0	33,065,920	10,835,920	1.49	1.49	4.82%
CDK Multifamily I	2014	10,559,876	10,617,376	0	0	10,025,434	0	10,025,434	-591,942	0.94	0.94	-1.99%
Clarion 1210 South Lamar	2014	10,500,000	10,201,489	0	0	13,214,065	0	13,214,065	3,012,576	1.30	1.30	12.85%
Clarion 4100 Harry Hines Land	2006	3,088,810	3,092,788	0	0	3,641,946	0	3,641,946	549,158	1.18	1.18	1.69%
Clarion Beat Lofts	2005	8,729,783	8,730,183	0	0	1,137,817	0	1,137,817	-7,592,366	0.13	0.13	-30.76%
Clarion Bryan Street Lofts	2005	5,112,048	5,112,048	0	0	4,163,659	0	4,163,659	-948,389	0.81	0.81	-2.23%
Clarion Four Leaf	2005	16,892,767	16,892,767	0	0	3,733,148	0	3,733,148	-13,159,619	0.22	0.22	-39.69%
Clarion The Tribute	2007	29,929,676	29,929,676	0	0	47,138,778	0	47,138,778	17,209,102	1.57	1.57	4.84%
Hearthstone Dry Creek	2005	52,303,043	52,303,043	0	0	8,973,059	0	8,973,059	-43,329,984	0.17	0.17	-38.78%
Hearthstone Nampa	2006	11,666,284	11,666,284	0	0	2,562,654	0	2,562,654	-9,103,630	0.22	0.22	-31.90%
JP Morgan Infrastructure Investments Fund	2007	37,000,000	37,000,000	0	-5,658	44,302,131	0	44,302,131	7,307,789	1.20	1.20	2.48%
L&B Realty Advsiors Beach Walk	2006	33,013,796	33,013,796	0	0	36,752,690	0	36,752,690	3,738,894	1.11	1.11	2.19%
L&B Realty Advisors KO Olina	2008	28,609,658	28,609,658	0	0	30,529,136	0	30,529,136	1,919,478	1.07	1.07	1.11%
L&B Realty Advisors West Bay Villas	2007	8,712,411	8,712,411	0	0	3,785,480	0	3,785,480	-4,926,931	0.43	0.43	-8.29%
LBJ Infrastructure Group Holdings, LLC (LBJ)	2009	50,000,000	44,346,229	0	0	77,892,000	0	77,892,000	33,545,771	1.76	1.76	12.77%
Lone Star Fund III (U.S.), L.P.	2000	20,000,000	19,827,576	0	0	40,701,250	0	40,701,250	20,873,674	2.05	2.05	31.88%
Lone Star Fund IV (U.S.), L.P.	2001	20,000,000	19,045,866	0	0	43,898,442	0	43,898,442	24,852,576	2.30	2.30	30.15%
Lone Star Fund V (U.S.), L.P.	2005	22,500,000	22,275,229	0	0	20,605,895	0	20,605,895	-1,669,334	0.93	0.93	-1.41%
Lone Star Fund VI (U.S.), L.P.	2008	25,000,000	20,034,018	0	0	31,712,968	0	31,712,968	11,678,950	1.58	1.58	21.76%
Lone Star Real Estate Fund (U.S.), L.P.	2008	25,000,000	20,743,769	0	0	25,403,707	0	25,403,707	4,659,938	1.22	1.22	5.15%
Lone Star Real Estate Fund II	2011	25,000,000	22,169,907	0	0	32,789,371	0	32,789,371	10,619,464	1.48	1.48	24.73%
Lone Star Real Estate Fund III	2014	25,000,000	23,490,784	0	0	26,638,028	0	26,638,028	3,147,244	1.13	1.13	8.20%
M&G Real Estate Debt Fund II	2013	29,808,841	21,523,663	0	0	17,088,107	0	17,088,107	-4,435,556	0.79	0.79	-15.04%
NTE 3a-3b	2012	50,000,000	23,794,565	0	0	28,186,978	0	28,186,978	4,392,413	1.18	1.18	16.03%
NTE Mobility Partners Holding, LLC (NTE)	2009	50,000,000	43,397,054	0	0	105,890,000	0	105,890,000	62,492,946	2.44	2.44	19.33%
Olympus II-Hyphen Solutions	2007	836,511	836,511	0	0	1,418,149	0	1,418,149	581,638	1.70	1.70	5.96%
P&F Housing IV	2006	134,015,889	134,015,889	0	0	83,179,802	0	83,179,802	-50,836,087	0.62	0.62	-8.44%
RREEF North American Infrastructure Fund	2007	50,000,000	50,000,000	0	846,289	55,238,755	0	55,238,755	4,392,466	1.09	1.09	12.59%
Sungate	2005	6,481,568	6,481,568	0	0	308,624	0	308,624	-6,172,944	0.05	0.05	-22.30%
Tucson Loan	2014	4,500,000	4,500,000	0	0	5,082,785	0	5,082,785	582,785	1.13	1.13	5.75%
Total Completed Funds		**942,664,487**	**880,767,673**	**0**	**840,631**	**861,161,062**	**0**	**861,161,062**	**-20,447,242**	**0.98**	**0.98**	

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Dallas Police & Fire Pension System

Private Markets Review | As of June 30, 2020

Private Equity & Debt Funds

Completed Funds	Vintage Year	Commitment Amount	Paid in Capital	Capital to be Funded	Addtnl Fees	Cummulative Distributions	Valuation	Total Value	Gain/Loss	DPI Ratio	TVPI Ratio	IRR
Ashmore Global Special Situations Fund IV	2007	70,000,000	70,012,300	0	0	39,652,711	0	39,652,711	-30,359,589	0.57	0.57	-10.12%
BankCap Partners Fund I	2007	20,000,000	20,000,000	0	0	24,960,986	0	24,960,986	4,960,986	1.25	1.25	2.58%
BankCap Partners Opportunity Fund, LP	2013	20,000,000	19,587,052	0	0	18,266,454	0	18,266,454	-1,320,598	0.93	0.93	-5.69%
CDK Southern Cross	2008	1,535,316	1,535,316	0	0	0	0	0	-1,535,316	0.00	0.00	-20.08%
Highland Credit Ops	2006	35,348,165	35,348,165	0	0	29,994,190	0	29,994,190	-5,353,975	0.85	0.85	-2.06%
HM Capital Sector Performance Fund	2008	47,300,000	44,354,248	0	1,933,378	39,792,545	0	39,792,545	-6,495,081	0.86	0.86	-4.01%
Huff Alternative Income Fund	1994	40,000,000	40,000,000	0	2,018,676	66,940,198	0	66,940,198	24,921,522	1.59	1.59	17.82%
Kainos Capital Partners, L.P.	2013	35,000,000	30,316,015	0	0	43,263,688	0	43,263,688	12,947,673	1.43	1.43	24.76%
Levine Leichtman Capital Partners IV	2008	50,000,000	38,009,085	0	0	78,916,788	0	78,916,788	40,907,703	2.08	2.08	20.12%
Levine Leichtman Capital Partners V, L.P.	2013	25,000,000	19,181,272	0	-4,405	24,506,336	0	24,506,336	5,329,469	1.28	1.28	15.26%
Levine Leichtman Deep Value Fund	2006	75,000,000	75,000,000	0	11,025,662	88,688,224	0	88,688,224	2,662,562	1.03	1.03	0.73%
Levin Leichtman Private Capital Solutions II, L.P.	2012	25,000,000	17,961,807	0	-175	18,691,764	0	18,691,764	730,132	1.04	1.04	1.30%
Lone Star Fund IX (U.S.), L.P.	2014	35,000,000	24,241,467	0	0	23,459,730	0	23,459,730	-781,737	0.97	0.97	-3.28%
Lone Star Fund VII (U.S.), L.P.	2011	25,000,000	23,469,024	0	0	41,624,566	0	41,624,566	18,155,542	1.77	1.77	47.54%
Lone Star Fund VIII (U.S.), L.P.	2013	25,000,000	22,564,537	0	0	28,017,551	0	28,017,551	5,453,014	1.24	1.24	16.26%
Merit Energy Partners E-I	2004	7,018,930	7,031,052	0	-1,741	14,975,776	0	14,975,776	7,946,465	2.13	2.13	14.48%
Merit Energy Partners F-I	2005	8,748,346	8,749,275	0	0	3,801,206	0	3,801,206	-4,948,069	0.43	0.43	-17.19%
Merit Energy Partners G, LP	2008	39,200,000	39,320,050	0	0	26,756,651	0	26,756,651	-12,563,399	0.68	0.68	-9.96%
Merit Energy Partners H, LP	2010	10,000,000	10,033,415	0	0	6,870,451	0	6,870,451	-3,162,964	0.68	0.68	-13.78%
Oaktree Fund IV	2001	50,000,000	50,000,000	0	0	82,516,590	0	82,516,590	32,516,590	1.65	1.65	28.36%
Oaktree Loan Fund 2X	2007	60,000,000	60,004,628	0	0	65,066,951	0	65,066,951	5,062,323	1.08	1.08	2.24%
Oaktree Power Fund III	2011	30,000,000	16,167,147	0	0	23,839,959	0	23,839,959	7,672,812	1.47	1.47	12.35%
Pharos Capital Co-Investment, LLC	2007	20,000,000	20,000,000	0	0	10,019,157	0	10,019,157	-9,980,843	0.50	0.50	-9.92%
Pharos Capital Co-Investment, LP	2008	40,000,000	40,000,000	0	0	67,459,271	0	67,459,271	27,459,271	1.69	1.69	8.42%
Pharos Capital Partners IIA, L.P.	2005	20,000,000	20,080,306	0	0	17,715,199	0	17,715,199	-2,365,107	0.88	0.88	-2.39%
Pharos Capital Partners III, LP	2012	50,000,000	28,397,038	0	-54,286	20,196,932	0	20,196,932	-8,145,820	0.71	0.71	-19.95%
Total Completed Funds		**864,150,757**	**781,363,199**	**0**	**14,917,109**	**905,993,874**	**0**	**905,993,874**	**109,713,566**	**1.14**	**1.14**	

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Disclaimer

WE HAVE PREPARED THIS REPORT (THIS "REPORT") FOR THE SOLE BENEFIT OF THE INTENDED RECIPIENT (THE "RECIPIENT").

SIGNIFICANT EVENTS MAY OCCUR (OR HAVE OCCURRED) AFTER THE DATE OF THIS REPORT AND THAT IT IS NOT OUR FUNCTION OR RESPONSIBILITY TO UPDATE THIS REPORT. ANY OPINIONS OR RECOMMENDATIONS PRESENTED HEREIN REPRESENT OUR GOOD FAITH VIEWS AS OF THE DATE OF THIS REPORT AND ARE SUBJECT TO CHANGE AT ANY TIME. ALL INVESTMENTS INVOLVE RISK. THERE CAN BE NO GUARANTEE THAT THE STRATEGIES, TACTICS, AND METHODS DISCUSSED HERE WILL BE SUCCESSFUL.

INFORMATION USED TO PREPARE THIS REPORT WAS OBTAINED FROM INVESTMENT MANAGERS, CUSTODIANS, AND OTHER EXTERNAL SOURCES. WHILE WE HAVE EXERCISED REASONABLE CARE IN PREPARING THIS REPORT, WE CANNOT GUARANTEE THE ACCURACY OF ALL SOURCE INFORMATION CONTAINED HEREIN.

CERTAIN INFORMATION CONTAINED IN THIS REPORT MAY CONSTITUTE "FORWARD - LOOKING STATEMENTS," WHICH CAN BE IDENTIFIED BY THE USE OF TERMINOLOGY SUCH AS "MAY," "WILL," "SHOULD," "EXPECT," "AIM", "ANTICIPATE," "TARGET," "PROJECT," "ESTIMATE," "INTEND," "CONTINUE" OR "BELIEVE," OR THE NEGATIVES THEREOF OR OTHER VARIATIONS THEREON OR COMPARABLE TERMINOLOGY. ANY FORWARD-LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION ARE BASED UPON CURRENT ASSUMPTIONS. CHANGES TO ANY ASSUMPTIONS MAY HAVE A MATERIAL IMPACT ON FORWARD - LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS. ACTUAL RESULTS MAY THEREFORE BE MATERIALLY DIFFERENT FROM ANY FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION.

PERFORMANCE DATA CONTAINED HEREIN REPRESENT PAST PERFORMANCE. PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS.

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C14

Topic: **Hearthstone Spring Valley Sale**

Portions of the discussion under this topic may be closed to the public under the terms of Section 551.072 of the Texas Government Code.

Attendees: Bryce Brunsting, SVP & COO – Hearthstone
Todd Rosa, Vice President – Hearthstone

Discussion: In 2015, Hearthstone was engaged to take over investment management of several DPFP land holdings. The two remaining assets in this portfolio, Spring Valley and Harris Creek, are in the Boise, Idaho area and have been marketed since 2017. Spring Valley consists of approximately 6,000 acres located in Eagle, Idaho planned for over 7,000 residential lots. Harris Creek consists of over 9,000 acres of raw land in the foothills of Boise County. Hearthstone will discuss the marketing process to date for each property and provide a recommended course of action.

Staff Recommendation: Approve the sale of Spring Valley and Harris Creek.

Regular Board Meeting – Thursday, December 10, 2020

Residential Portfolio Review

Spring Valley and Harris Creek

HEARTHSTONE
America's Preeminent Investor in Residential Development

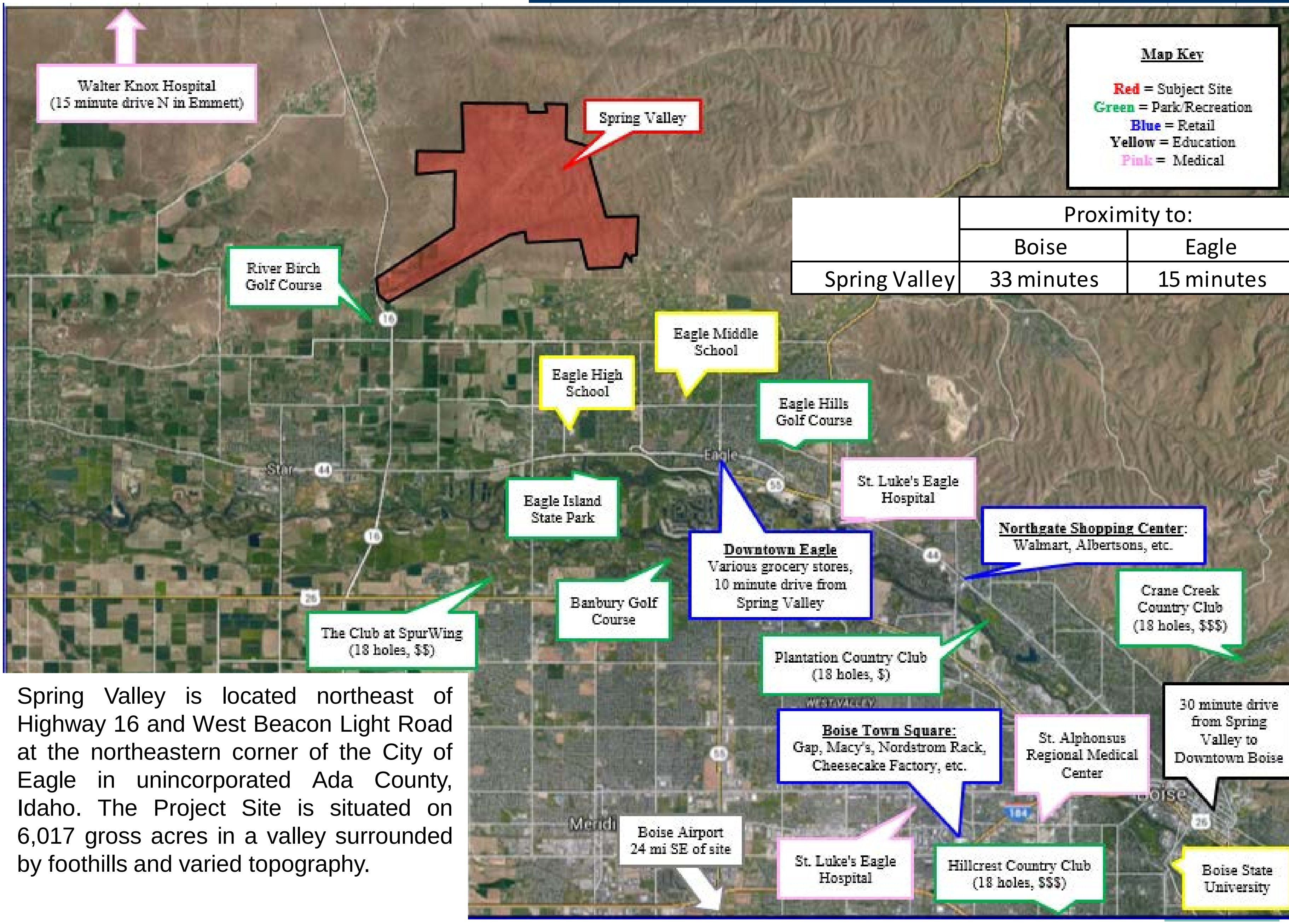
DPFPS Board Presentation – Open Session
December 10, 2020

The conclusions and recommendations contained in this Residential Portfolio Review are derived from forecasts and projections based on Hearthstone's assumptions and beliefs and on information currently available to Hearthstone. Such forecasts and projections are subject to risks and uncertainties which could cause actual results to differ materially from those anticipated. Consequently, nothing contained in this Review should be construed or implied as a representation, warranty, or guarantee that the conclusions and recommendations contained herein will ever be realized or achieved. Nothing in this Review shall be deemed to impart legal, engineering, geologic, or environmental expertise nor should this Review be considered or referred to as an appraisal.

Timeline of Engagement and Tasks

- Hearthstone was appointed Investment Manager in February 2015 of four real estate assets in Idaho (Spring Valley, Harris Creek, Dry Creek, and Nampa) and one real estate asset in Colorado (Sandstone Ranch).
- Hearthstone presented a Strategic Review with initial findings and recommendations to the DPFPS Board in August 2015.
- Nampa sold in December 2015; Dry Creek sold in September 2016; and Sandstone Ranch sold in January 2018.
- Hearthstone prepared Spring Valley's Asset Disposition Analysis in June 2017.
- The marketing of Harris Creek and Spring Valley began in April 2017 and August 2017, respectively. Spring Valley and Harris Creek are now contracted to be sold. Approval to conclude the sale of these assets is now being sought from the DPFPS Board.

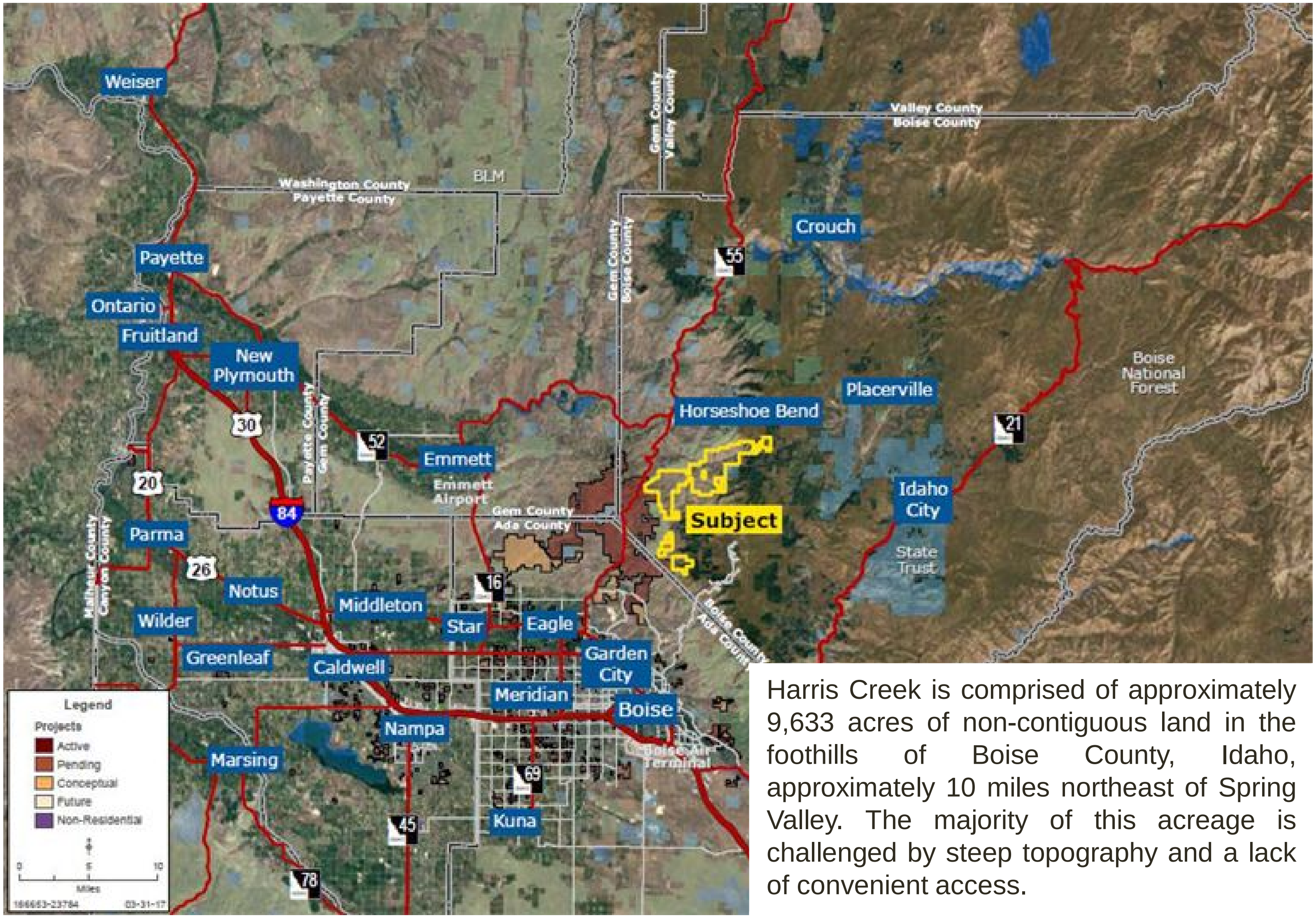
Spring Valley – Location Map



	Proximity to:	
	Boise	Eagle
Spring Valley	33 minutes	15 minutes

Spring Valley is located northeast of Highway 16 and West Beacon Light Road at the northeastern corner of the City of Eagle in unincorporated Ada County, Idaho. The Project Site is situated on 6,017 gross acres in a valley surrounded by foothills and varied topography.

Harris Creek – Location Map



Harris Creek is comprised of approximately 9,633 acres of non-contiguous land in the foothills of Boise County, Idaho, approximately 10 miles northeast of Spring Valley. The majority of this acreage is challenged by steep topography and a lack of convenient access.

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C15

Topic: **Lone Star Investment Advisors Update**

Portions of the discussion under this topic may be closed to the public under the terms of Section 551.071 of the Texas Government Code.

Discussion: Investment Staff will update the Board on recent performance, operational, and administrative developments with respect to DPFP investments in funds managed by Lone Star Investment Advisors.

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C16

Topic: **Legal issues - In accordance with Section 551.071 of the Texas Government Code, the Board will meet in executive session to seek and receive the advice of its attorneys about pending or contemplated litigation or any other legal matter in which the duty of the attorneys to DPFP and the Board under the Texas Disciplinary Rules of Professional Conduct clearly conflicts with Texas Open Meeting laws.**

Discussion: Counsel will brief the Board on these issues.

Regular Board Meeting – Thursday, December 10, 2020

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C17

Topic: **Closed Session - Board serving as Medical Committee**

Discussion of the following will be closed to the public under the terms of Section 551.078 of the Texas Government Code:

a. Application for death benefits for disabled child
b. Disability application 2020-2
c. Disability application 2020-3

Discussion: Staff will present an application of a survivor benefits for a disabled child in accordance with Section 6.06(n) of Article 6243a-1 and two disability retirement applications in accordance with Section 6.03 of Article 6243a-1 for consideration by the Board.

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C18

Topic: **Executive Director Performance Evaluation**

Portions of the discussion under this topic may be closed to the public under the terms of Section 551.074 of the Texas Government Code.

Discussion: The Board will meet with the Executive Director to review performance and provide recommendations concerning yearly objectives, goals, and performance.

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #D1

Topic: **Public Comment**

Discussion: Comments from the public will be received by the Board.

Regular Board Meeting – Thursday, December 10, 2020

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #D2

Topic: **Executive Director's report**

a. Associations' newsletters
- NCPERS Monitor (December 2020)
- NCPERS PERSist (Fall 2020)
- TEXPERS Pension Observer
  http://online.anyflip.com/mxfu/alie/mobile/index.html

b. Open Records

c. Operational Response to COVID-19

Discussion: The Executive Director will brief the Board regarding the above information.

THE NCPERS

MONITOR

The Latest in Legislative News

November 2020

In This Issue

Biden Plan Identifies Range of Retirement Priorities for New Administration

Photo illustration © 2020, adobestock.com

President-elect Joe Biden has pledged to address retirement issues when he takes office in 2021, including strengthening Social Security and equalizing savings incentives that currently favor higher-income households.

A cornerstone principle of the Biden plan for older Americans is that workers deserve a dignified retirement. The plan contains several key provisions related to retirement security. Among them, it would ensure low- and middle-income workers get equitable tax breaks when they put money away for retirement. It would eliminate Social Security penalties for teachers and other public-sector workers. It would boost auto-IRA programs like those modeled on NCPERS' SecureChoice model. And it would identify ways to help distressed private and public pension plans.

How the Biden plan plays out will depend to an extent on the Senate, where two undecided seats will determine control of the chamber. Republicans are currently poised to have a 50-48 advantage when the Senate convenes in January. Democrats would have to win both runoff races for the Senate in Georgia on January 5 to seize the majority, with Vice President-elect Kamala Harris serving as the tiebreaker.

CONTINUED ON PAGE 6

Is The Election Over, Yet?

By Tony Roda

Photo illustration © 2020, istock.com

Everyone knows that the Associated Press and other major news outlets, including Fox, have called the presidential race for former Vice President, now President-elect Joe Biden, who is expected to have an Electoral College total of 306, pending recounts. That would be two more electoral votes than President Trump received in 2016.

Everyone also knows that President Trump has not conceded the race and is pursuing legal challenges to the vote counts in several states. While it is not expected that these legal challenges will be successful, the litigation already has been enough to cause a major slowdown in the traditional federal funding for the transition. This has all the hallmarks of the last tense transition between defeated President Herbert Hoover and Franklin Delano Roosevelt, where it was reported that on Inauguration Day the two men sat side-by-side in an open horse drawn carriage, shared a blanket, but shared no words.

All of this will end. States have until December 8 to certify their elections. The electors of the Electoral College meet on December 14. Inauguration Day is January 20.

The ratio of the U.S. Senate for the next Congress currently stands at a Republican majority of 50-48. The final two Senate races are both in Georgia, with incumbents David Perdue and Kelly Loeffler facing Democratic challengers Jon Ossoff and Raphael Warnock, respectively, in run-off elections on January 5. These races will determine the Senate majority for the upcoming 117th Congress.

The U.S. House will remain in Democratic control in the next Congress, but with a diminished majority. From the current numbers we expect the House margin to be 226-209 or 225-210 in favor of the Democrats.

Members of Congress who are important to the public pension community met with mixed results in the elections. Rep. Dan Lipinski (D-IL) lost his primary earlier in the year. Rep. Lipinski is the author of H.R. 4897, which would double the tax exclusion amount under the Healthcare for Local Public Servants Act (HELPS). Rep. Kendra Horn (D-OK), who lost in the general election, is the lead Democratic cosponsor of H.R. 6436, which would remove the direct payment requirement from HELPS.

CONTINUED ON PAGE 7

NCPERS Executive Directors Corner

Enacting Bipartisan Retirement Reform Package Could Help Us Move Past Acrimony

Photo illustration © 2020, shutterstock.com

The 116th Congress began its lame duck session on November 12. Time is short, but there is an opportunity right now to do something positive for retirement security by adopting a package of changes crafted by Republicans and Democrats working together.

The big opportunity is to swiftly enact HR 8696, introduced by House Ways and Means Committee leaders. The bipartisan package of retirement reforms is formally known as the Securing a Strong Retirement Act of 2020, or, less formally, Secure 2.0. Its passage would be a strong showing of cooperation, and a fitting way to defuse some of the tension arising from an extraordinarily acrimonious 2020 presidential election.

> *The big opportunity is to swiftly enact HR 8696, introduced by House Ways and Means Committee leaders.*

The bill was introduced October 27 by House Ways and Means Committee Chairman Richard E. Neal (D-Mass.) and the ranking Republican, Rep. Kevin Brady (D-Texas.) It would build on the SECURE Act, which was signed into law in December 2019 and was aimed primary at defined contribution plans and IRAs.

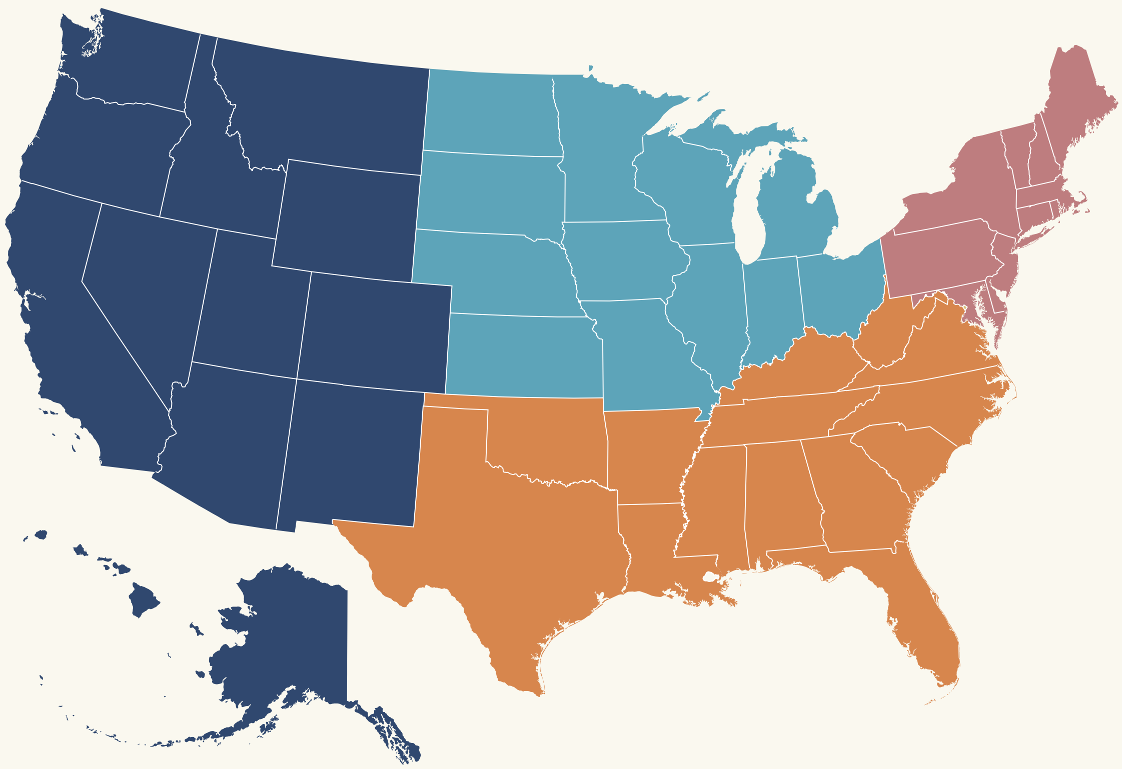
HR 8696 would seek to strengthen retirement security through a mix of new and reintroduced proposals.

For example, we know that one of the most effective ways to help people save is through automatic withdrawals at work. HR 8696 would automatically enroll workers in their workplace 401(k), 403(b) and SIMPLE plans as soon as they becomes eligible. While employees would always have the right to opt out, enrollment would generally become the default setting, rather putting the onus on employees to affirmatively sign up. The contribution rate would be increased each year following enrollment by one percentage point until it is capped at 10%.

CONTINUED ON PAGE 6

NCPERS Around the Regions

This month, we will highlight Pennsylvania, Illinois, Texas and California.



EAST: Pennsylvania

Rep. Brett Miller, a three-term Republican and pension reform advocate, defeated his Democratic challenger in Pennsylvania's 41st House District, garnering nearly 66% of the vote in the suburban Lancaster district versus his opponent's 34%.

The race had pitted Miller, who worked in public education for 26 years before running for office, against Michele Wherely, a human resources professional who advocated hiking the minimum wage to $15 an hour. Wherely lost to Miller in 2018 by a much narrower margin of 7 percentage points.

Miller has focused his energies in the General Assembly on education issues and on reforming the pension systems for state workers and public school employees. Together, the State Employees' Retirement System and the Public School Employees' Retirement System—or SERS and PSERS—manage more than $85 billion.

Democratic State Treasurer Joe Torsella has reported that the two funds have less than 60 cents for every dollar owed to retirees. Miller has worked with Torsella to address the $70 billion in unfunded liabilities, calling for the state to consolidate investment operations and stress-test investment annually.

Miller has said he intends to reintroduce legislation requiring the state pension systems to report fees, so taxpayers know how much is being paid to money managers and whether the investments are profitable.

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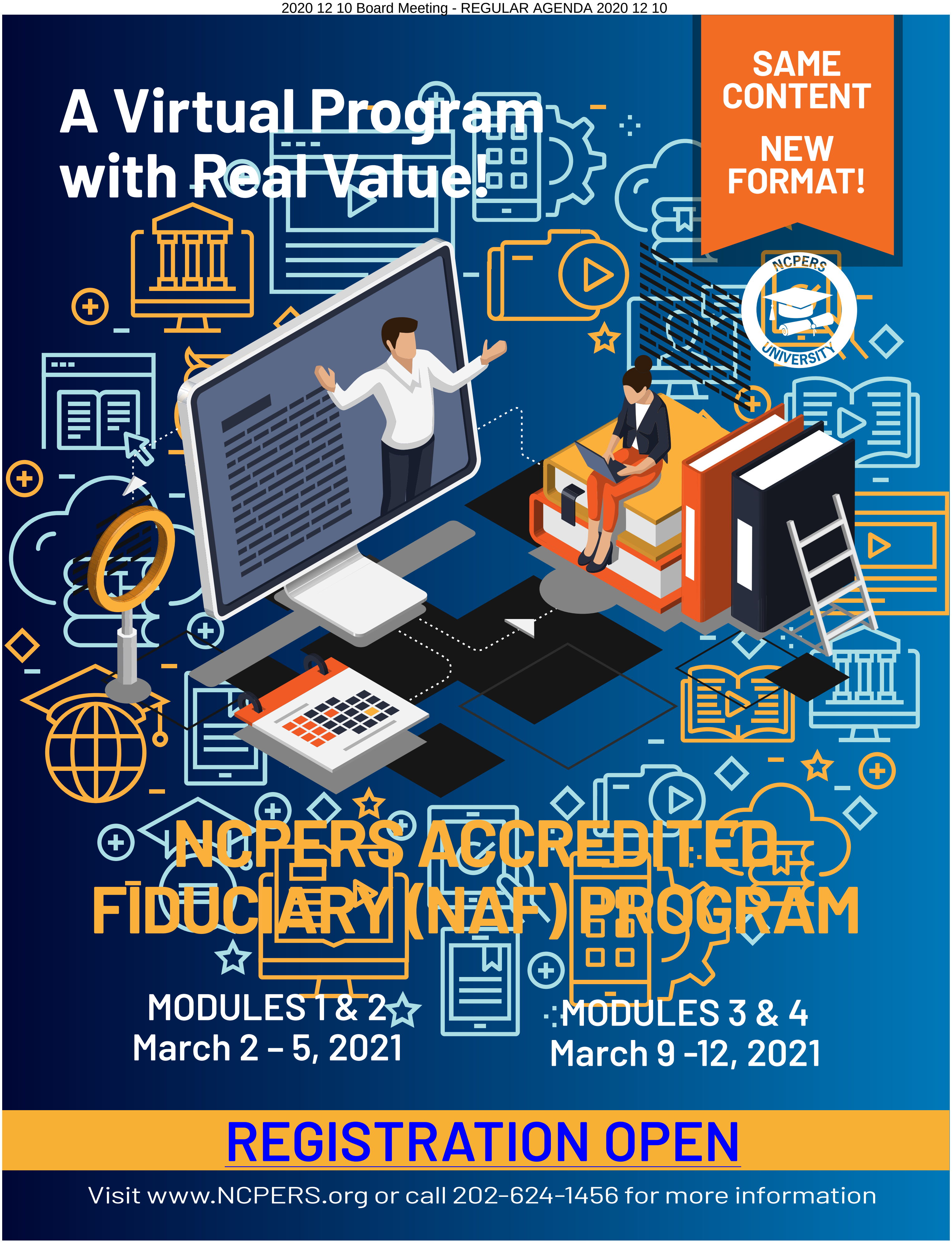
A Virtual Program with Real Value!
SAME CONTENT
NEW FORMAT!
NCPERS UNIVERSITY
NCPERS ACCREDITED FIDUCIARY (NAF) PROGRAM
MODULES 1 & 2
March 2 – 5, 2021
MODULES 3 & 4
March 9 -12, 2021
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Visit www.NCPERS.org or call 202-624-1456 for more information

BIDEN PLAN CONTINUED FROM PAGE 1

Regarding equitable savings incentives, the plan addresses the fact that current vehicles for retirement savings aren't equally valuable to all. Defined contribution plans such as 401(k) plans provide tax breaks that are proportional to one's tax bracket. This gives the wealthy, who are already in the best position to save, increased incentives to do so, while working class and middle class Americans continue to struggle to prepare for retirement.

One way to do that is by using flat-tax credits for each dollar saved, compared with the current system of giving a disproportionately larger tax break to higher-income workers, *MarketWatch* reported.

With respect to Social Security, the plan notes that current rules penalize teachers and other public sector workers who either switch jobs or who have earned retirement benefits from various sources. The Biden plan would eliminate these penalties by ensuring that teachers not eligible for Social Security would begin receiving benefits sooner, rather than the current ten-year period for many teachers. The Biden plan will also get rid of the benefit cuts for workers and surviving beneficiaries who happen to be covered by both Social Security and another pension. "These workers deserve the benefits they earned," the plan says.

Biden has also suggested there be a minimum Social Security benefit, where all beneficiaries who have worked 30 years, get no less than 125% of the federal poverty level.

Biden also pledges support for providing access to auto-IRAs to employees who do not have the benefit of a retirement plan at work—essentially, throwing his weight behind the Secure Choice that NCPERS has advanced and advocated since 2011. Additionally, the platform asserts his intention to "shore up public and private pensions and help to ensure workers keep their earned benefits by passing legislation that provides a path towards helping distressed plans." And it would allow unpaid family caregivers to make "catch-up" contributions to retirement accounts, even if they're not earning income in the formal labor market. ◆

EXECUTIVE DIRECTORS CORNER CONTINUED FROM PAGE 3

The bill would expand the Saver's Credit by increasing the income limit to $40,000 for single filers, $60,000 for heads of household, and $80,000 for joint filers. The Saver's Credit would give eligible filers at tax credit of 50% of their contributions to an IRA or defined contribution plan, up to $1,500 per person.

The bill would provide 403(b) plans with the option to participate in multiple employer plans, provide relief from the "one bad apple" rule in the event of a participating employer's failure, and permit certain 403(b) plans to invest in collective investment trusts.

Among other changes, the bill would increase the age for required minimum distributions from traditional IRAs and defined contribution plans from 72 to 75; index to inflation the IRA catch-up contribution limit for individuals 50 and older; and allow employers to make matching contributions to a retirement plan for employees making qualified student loan payments.

The International Association of Fire Chiefs urged Congress on November 9 to pass the legislation, HR 8696, saying it would preserve and protect retirement benefits for firefighters and emergency workers.

HR 8696 isn't everything; it's not a dream come true for public pensions. There is a great deal more work to be done in our sphere to elevate the debate over a decent, dignified retirement. We need bold steps to strengthen retirement security, stabilize pension funds that have been harmed by broken promises and economic setbacks, and address a fundamentally flawed system of taxation.

But it is a good, solid start that could set the right tone for future at precisely the time when we need find a way to move forward in a positive, bipartisan manner. ◆

IS THE ELECTION OVER, YET? CONTINUED FROM PAGE 2

The author of H.R. 6436, Rep. Steve Chabot (R-OH), was reelected, as was Rep. Tom Malinowski (D-NJ), NCPERS Legislator of the Year, who introduced H.R. 4527, legislation to allow retired first responders who have reached age 50 to buy into Medicare. Also, Ways and Means Chairman Richard Neal (MA) and Ranking Republican Kevin Brady (TX), the leaders of the effort to reform Social Security's Windfall Elimination Provision (WEP), both easily won reelection.

In addition, two leading critics of public plans, Reps. Devin Nunes (R-CA) and David Schweikert (R-AZ), both Members of the powerful Ways and Means Committee, were reelected.

The good news is that retirement and pension legislation has never been a partisan affair, so either divided party government or single-party government will provide an opportunity for positive legislation in the next Congress. In that regard, H.R. 8696, the Securing a Strong Retirement Act of 2020, was introduced on October 27, by Ways and Means Chairman Neal and Ranking Member Brady. It is the leading retirement measure in the House and will likely set the debate for the next round of federal retirement legislation. It is also one of the future legislative targets for changes to the HELPS provision.

The key sections of the bill that would affect governmental DB or DC retirement plans or are closely related to public plans or workers are as follows:

- Section 104 would allow 403(b) plans to use collective investment trusts;
- Section 105 would increase the age trigger for Required Minimum Distributions (RMDs) to 75 for years 2021 and later;
- Section 108 would increase the catch-up contribution limit to $10k per year for those over age 60 who are participating in an employer-sponsored plan;
- Section 109 would allow unrelated public education employers to participate in multiple employer 403(b) plans;
- Section 116 would allow non-profit volunteer firefighters and EMS personnel who work indirectly for the government through a public safety agency to join state and local governmental pension plans;
- Section 307 would exclude individuals with smaller retirement accounts (all DC plans aggregate $100k or less) from the RMD rules;
- Section 309 would allow 457(b) plan participants more flexibility in changing their contribution rates, i.e., repeal the first-day-of-the-month rule;
- Section 312 would include private sector firefighters in the exclusion from the early withdrawal penalty, which is currently available only to public sector first responders; and
- Section 313 would exclude disability payments to first responders from income.

Please be assured that NCPERS will monitor leadership elections, key committee assignments, and relevant legislation as the 117th Congress and the Biden Administration begin their work next year. ◆

Tony Roda is a partner at the Washington, D.C. law and lobbying firm Williams & Jensen, where he specializes in federal legislative and regulatory issues affecting state and local governmental pension plans. He represents NCPERS and statewide, county, and municipal pension plans in California, Colorado, Georgia, Kentucky, Ohio, Tennessee, and Texas. He has an undergraduate degree in government and politics from the University of Maryland, J.D. from the Catholic University of America, and an LL.M (tax law) from Georgetown University.

AROUND THE REGIONS CONTINUED FROM PAGE 4

MIDWEST:
Illinois

Democratic Governor J.P. Pritzker's bid to shift Illinois to a graduated income tax failed at the polls, with 55% of voters opposing the measure.

The ballot measure would have repealed the state's constitutional requirement that the state's personal income tax is a flat rate across income. Approval would have cleared the way for Illinois to enact legislation for a graduated income tax.

Under the proposed new tax structure, only those making above $250,000 a year would have seen their taxes go up, advocates said in the official pamphlet on the proposed constitutional amendment issued by the Illinois Secretary of State. Opponents countered that the Legislature should not be allowed to raise taxes until spending is reined in.

Of the 43 states that taxed personal income as of 2019, 11, including Illinois, had a flat tax rate. Under the Illinois proposal, tax rates would have ranged from 4.75% to 7.99%.

NCPERS has advocated for states to adopt more progressive tax systems, noting research that show state tax revenues are growing more slowly than the national economy. Progressive tax systems can be beneficial to states such as Illinois that have developed significant gaps between the pension benefits owed to eligible state employees and the amount of funding set aside to make future pension payments.

SOUTH:
Texas

The Killeen City Council on November 10 unanimously approved two related items impacting retirement benefits for city employees.

In the first item, the City Council approved a plan design change that provides a 100% updated service credit for all employees covered under the Texas Municipal retirement System, with no cost of living adjustment. The credit will occur on an annually repeating basis beginning January 1, 2021, and the city's contribution rate will be 14.70%, according to a staff analysis presented at the November 10 meeting.

In the second item, the City Council removed the TMRS's 13.5% statutory maximum contribution rate.

All employees covered under TMRS have their retirement benefits recalculated based on a three-year average of their most recent salary. The updated contribution for 2021 was calculated using assumptions provided by TMRS to determine contribution rates.

Updated service credits are an optional provision of TMRS plans that can provide supplemental dollar credits to increase retirement benefits in certain situations, according to TMRS. Cities determine whether to set the service credits at 50%, 75% or 100% of the reserve balance. They are designed to help an employee's retirement benefit maintain its value and keep pace with increases in salary over the employee's working career, the staff analysis noted.

The City Council, at an October 22 workshop, had considered six alternatives before settling on the approach approved November 10.

WEST:
California

California, which has been in the vanguard in mandating gender diversity on corporate boards, has enacted legislation to require publicly traded corporations headquartered in California to appoint as many as three directors from underrepresented communities. The law, AB 979, describes this category as including people who self-identify as Black, African American, Hispanic, Latino, Asian, Pacific Islander, Native American, Native Hawaiian or Alaska Native, or who self-identifies as gay, lesbian, bisexual or transgender.

Governor Gavin Newsom signed the legislation into law on September 30. It is the first law in the U.S. to set legal requirements for the racial makeup of corporate boards.

"When we talk about racial justice, we talk about power and needing to have seats at the table," the governor said during a press conference.

CONTINUED ON PAGE 9

AROUND THE REGIONS CONTINUED FROM PAGE 8

The new law requires that corporate boards in California include at least one person from "underrepresented communities" by the end of 2021. In 2022, boards with four to nine members would have to have at least two from an underrepresented community, and those with nine or more would require at least three who meet the underrepresentation criteria. Fines for non-compliance range from $100,000 for an initial violation to $300,000 for each subsequent violation.

"The new law represents a big step forward for racial equity," one of the bill's authors Assemblyman Chris Holden, a Democrat from Pasadena, said in a statement. "While some corporations were already leading the way to combat implicit bias, now, all of California's corporate boards will better reflect the diversity of our state."

While the legislation applies to publicly traded companies, California is closely watched as a pacesetter in corporate governance, and requirements that apply to public companies can gradually become seen as best practices for boards of directors and boards of trustees generally.

The gender diversity has faced legal challenges from conservative groups. While the latest legislation did not draw significant opposition, legal challenges could materialize. Sally Pipes, CEO of the Pacific Research Institute for Public Policy, a free-market-oriented think tank, said the initiative amounts to heavy-handed government interference. She warned in an op-ed in the Orange County Register that it may have the unintended consequences by driving firms currently based in California to relocate elsewhere. ◆

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Calendar of Events 2021

February

NCPERS FALL Conference
February 2 -3, 2021
Virtual

March

NCPERS Accredited Fiduciary Program (NAF): Modules 1&2
March 2 – 5, 2021
Virtual

NCPERS Accredited Fiduciary Program (NAF): Modules 3&4
March 9 -12, 2021
Virtual

The Voice for Public Pensions

The Monitor is published by the National Conference on Public Employee Retirement Systems.
Website: www.NCPERS.org • E-mail: legislative@NCPERS.org

PERSist

The Voice for Public Pensions

Fall 2020 | Volume 33 | Number 4

Message from the President

Daniel Fortuna
NCPERS President

I am excited to announce that NCPERS will hold the NCPERS Accredited Fiduciary (NAF) Program virtually in 2021! As NCPERS has adapted to these unprecedented times, we are still working to provide valuable education to our members – even if it's virtually!

NCPERS will host Modules 1 & 2 on March 2 – 5, 2021, and Modules 3 & 4 on March 9 – 12, 2021. The modules are as follows:

Module 1: Governance and the Board's Role- In this module, attendees will learn the role, responsibilities, and accountabilities of their public pension board, as well as the different governance models and principles that exist. How to become a "high-functioning Board" will also be discussed.

Module 2: Investment, Finance, and Accounting- In module 2, attendees will learn the proper administration of their fund's investments, ensuring compliance with investment policies, performance management, and adequate reporting. Attendees will also learn how to access the required information they need to make informed financial decisions.

Module 3: Legal, Risk Management and Communication- In this module, attendees will learn the legal and risk oversight duties of their board and as an individual trustee; the roles of the audit committee; how to respond to the media; and how to take part in effective stakeholder communication.

CONTINUED ON PAGE 6

In This Issue

Take the PERSist Quiz on pages 5, 6 and 7 | **Submit Completed Quiz Here**

Managing Risk with ESG Investing

TAKE THE QUIZ

By: Emily Lawrence and Sharee Zlatkova

Photo Illustration © 2020 istock.com

Insights into the ways companies are responding to this systemic distress highlights the importance of integrating ESG analytics into the investment process for a more holistic view on risks and opportunities. This thesis was borne out this year; according to a study done by Morningstar, 70% of sustainable equity funds ranked in the top halves of their categories and 44% ranked in the best performing quartile.

This was observed across asset classes. For example, the MSCI World Index versus the MSCI World ESG Leaders Index, a global diversified index leveraging ESG risk ratings to provide relatively low tracking error and broad market exposure. This index has thirteen years of live track record, during which it has largely performed in line with the MSCI World. During the first half of the year, this index outperformed its cap-weighted parent by 1.1%, and was particularly strong during the significant volatility of the first quarter. Performance was attributable in large part (84%) to security selection.

CONTINUED ON PAGE 6

Emily Lawrence *is a Sustainable Investing Senior Product Specialist at Northern Trust Asset Management where she is responsible for education and innovation in Northern Trusts' sustainable investing capabilities. In addition to representing the investment platform, Emily collaborates directly with clients to conduct trainings and facilitate discussions on concepts, themes and trends through individual meetings, webinars and thought leadership. In 2017, Emily was appointed to the Principles for Responsible Investment working group focused on Active Ownership and the Sustainable Development Goals and the Climate Action and Resiliency Plan Working Group for the government of Evanston, IL. Emily has over ten years' experience collaborating with clients to support the development of actionable responsible investing strategies. She received her M.Res. in International Conflict Resolution from the Institut Catholique de Paris, and holds an MSc. In European Politics and Governance from the London School of Economics. Additionally, Emily holds a B.A. in French Language and Literature from the University of New Hampshire.*

Sharee Zlatkova *is an Investment Associate on the Sustainable Investing team for Northern Trust Asset Management's Institutional Client Group. She is responsible for servicing clients and partners by providing in-depth information about Northern Trust Asset Management Sustainable Investing philosophy, solutions, and key market trends. Sharee is an active member of NTAM's Sustainable Investing Council and Proxy Voting Committee. She is also a member of the North America Diversity Project External Talent Committee. Prior to her role, Sharee was a Rotational Development Associate and rotated through Quantitative Equity Strategy and Sustainable Investing. Before joining the Rotational Development Program, Sharee was a Client Service Investment Operations Representative for the Investment Manager Liaison Group better known as IMLG. She also started her career at Northern Trust as a Private Equity Fund Administration intern within GFS. Sharee received her Bachelor of Science from Roosevelt University majoring in finance and received her Chinese Language, Culture, and Business certificate from Shanghai University.*

TAKE THE QUIZ

Positive Developments in Litigation Concerning Controlling Stockholder Transactions

By: Ned Weinberger, Rachel Avan, and Mark Richardson

Photo illustration © 2020 shutterstock.com

As the seat of most corporate litigation in the United States, Delaware's Court of Chancery has long been receptive to strong corporate governance claims brought by stockholders. Nevertheless, even with compelling facts, stockholders seeking to generate meaningful litigation outcomes have encountered challenges with some pleading standards of Delaware law. Recent rulings by Delaware courts have clarified the appropriate standard of review governing an area of interest to public pension fund investors: controlling stockholder transactions.

In a seminal decision from 2014, *Kahn v. MFW Worldwide Corp.* ("*MFW*"),[1] the Delaware Supreme Court addressed the standard of review that applies to transactions involving controlling stockholders. The Court held that the lenient business judgment rule ("BJR"), which insulates director and officer conduct from judicial review unless challenged conduct lacks a rational business purpose, applies when two procedural protections are present: (1) the approval of an adequately empowered special committee of independent directors that acts reasonably; and (2) the uncoerced, informed vote of a majority of minority stockholders. While stockholders should be concerned about the availability of BJR deference for transactions involving conflicted controlling stockholders, Delaware courts recently have emphasized that *MFW*'s conditions must be strictly followed to avoid the far more exacting "entire fairness" standard, which requires defendant fiduciaries to prove a transaction is entirely fair as to both process and price.

Over the past 18 months, Delaware courts have rejected *MFW* defenses to claims challenging controller transactions on four separate occasions, with each decision providing a different reason

CONTINUED ON PAGE 7

Ned Weinberger *is a Partner in the Delaware office of Labaton Sucharow LLP and is Chair of the Firm's Corporate Governance and Shareholder Rights Litigation Practice.*

Rachel Avan *is Of Counsel in the New York office of Labaton Sucharow LLP and a member of the Firm's Securities Litigation Practice.*

Mark Richardson *is Of Counsel in the Delaware office of Labaton Sucharow LLP and a member of the Firm's Corporate Governance and Shareholder Rights Litigation Practice.*

Labaton Sucharow LLP *serves as counsel to plaintiffs in the Earthstone Energy, AmTrust Financial Services, Dell Technologies, and HomeFed actions described herein, and Mr. Weinberger and Mr. Richardson have been actively involved in prosecuting those cases.*

NCPERS Custodian Bank

TAKE THE QUIZ

Asset Owners Seek Enhanced Role in Private Equity Investments

By: Megan Gentilesco

Photo Illustration © 2020 istock.com

Asset Owners have become increasingly sophisticated in recent years. As these institutional investors become more fluent in private equity, many are keen to play a greater role in their investments. They are changing the way they work with private equity fund managers and in some cases acting more like asset managers themselves. The drivers of this trend are both long-standing and varied.

Many asset owners wish to enhance transparency and are structuring their investments accordingly. Some are eager to lower costs and avoid the 2% management fee and 20% 'carry' fee structure that is common in the alternative asset space. Others have invested in alternatives for decades and believe they are sufficiently knowledgeable about the asset class's nuances to invest themselves. In certain cases, there may also be a regulatory driver for change. Even without regulatory changes, a select number of large Asset Owners have started to position themselves to manage 3rd party assets, such as for other for non-profits or government entities.

Depending on their level of sophistication, asset owners may choose different paths: some asset owners may seek to limit the number of managers they invest with and have a greater role in decision making and deeper engagement – and increased bargaining power - with their chosen asset managers. Others may wish to co-invest alongside private equity funds – an increasingly popular strategy in the past five years –to reduce fees, improve performance and build stronger asset management and analytical skills internally. In some cases, the most sophisticated asset owners have decided to build internal teams staffed by private equity firm veterans. These teams aim to pursue direct investment opportunities; either on their own, with other large asset owners, or in partnership with asset managers.

Private Equity firms are responding in a variety of ways. Separately-managed accounts – or "funds of one" - have become more common as asset owners and private equity managers build closer relationships. Managers are also providing their investors with increased access to co-investment opportunities. Some managers have become hyper specialised, focusing on niche opportunities

CONTINUED ON PAGE 7

__Megan Gentilesco__ is responsible for BNY Mellon's Private Equity Fund Services offering globally, working with both fund administration and asset owner clients to deliver tailored solutions for their needs as managers of – and investors into – private equity. Working closely with technology and operations colleagues, Megan drives product enhancements and new product developments based on client, market and & business needs. Megan has over 15 years' experience in the Alternative Investment industry, including expertise in private equity, real estate, and hedge fund administration, as well as portfolio administration for asset owners. Prior to joining BNY Mellon in 2016, Megan worked at J.P. Morgan in London and New York as a senior product manager within the Alternative Investment Services group, with particular focus on the accounting and administration of private equity and hybrid credit funds. Megan holds a BS in Applied Economics from Cornell University and an MBA from the London Business School.

TAKE THE QUIZ

Global Securities & Antitrust Class Actions Continue to Near Record Pace in 2020

By: Kevin Doyle

Photo Illustration © 2020 istock.com

INDUSTRY UPDATE: There has been incredible growth in securities and antitrust class action litigations and settlements, particularly as they have unfolded in 2017, 2018, and 2019. The number of new cases and new settlements from traditional securities litigation to antitrust rate rigging, spread inflation and other forms of collusion are at an all-time high and shows no signs of slowing down.

While billions of dollars have already settled in the Foreign Exchange Benchmark Antitrust manipulation case and have distributed in the Petrobras U.S. ADR & ISDAfix settlements, there is still nearly $15 billion currently available to damaged investors, it is crucial to take timely action to establish a claim.

Now, more than ever, it is absolutely vital that every institutional investor make sure that they are not leaving any money on the table.

IMPACT OF COVID-19: Through Q3 2020, there were 312 filings announced, a slight decline when compared to the same time in 2019 (398). This decline could be attributed to the COVID-19 pandemic. Should the industry surpass 400 filings in 2020, it would be for the fourth year in a row (2017: 413, 2018: 420, 2019: 428). Most of the filings in 2020 will be coming from the Health Technology, Electronic Services, and Finance sectors.

Already, there have been five major securities class actions tied to the COVID-19 pandemic. Allegations in these COVID-19-related cases include unfair sales practices (Norwegian Cruise Lines), misleading reports of a possible COVID-19 vaccine (Inovio Pharmaceuticals), privacy and security concerns (Zoom), an IPO offering related to residential real estate in China (Phoenix Tree Holdings), and misrepresenting company operations and COVID-19-related testing (SCWorx Corp.).

2021 & BEYOND: In 2020 and the years to come, we are going to see historical amounts of monies paid out to investors that traded in the domestic and international foreign exchange and derivatives markets, with more expected litigation on the horizon.

As there are such significant sums available to damaged investors, it is crucial to take timely action to establish a claim. A vast majority of international filings require eligible investors to opt-in, which demands an unparalleled understanding of the filing process, and an expert firm to decipher the specifics of each case and the various recovery options available.

For any questions, comments, or to just maximize your recoveries in these multi-billion dollar litigations, contact Battea Customer Service today: +1-203-987-4949 or info@battea.com. ◆

Kevin Doyle, *Senior Vice President, Global Head of Marketing at Battea, is responsible for front line communication, marketing operations, and global marketing campaigns. Mr. Doyle is an expert marketer with nearly 20 years' experience of consistently building results-driven marketing campaigns that greatly increase brand awareness, global footprint and expand market share within the industry.*

PERSist Quiz Legal

Do you know the total settlement fund dollars currently available to eligible institutional investors? (HINT: It's in the BILLIONS!)

❍ A. $1 billion ❍ B. $5 billion ❍ C. $10 billion ❍ D. More than $15 billion

Answer: D

MESSAGE FROM THE PRESIDENT CONTINUED FROM PAGE 1

Module 4: Human Capital- In the final module, attendees will learn the fundamentals of total executive compensation design; how to use compensation strategies and performance management plans to guide behavior and maximize fund performance, and the importance of ongoing development and active succession planning for critical roles within your fund.

All four modules will be in the same videoconferencing format. With three-hour sessions, we can keep the momentum going for trustees who want to continue or begin their NAF training. NAF is open to elected or appointed pension trustees and plan staff with at least five years of pension administration experience and or governance. After completing all four modules, you will demonstrate your knowledge of the content through an online exam.

If you have not begun your NAF training yet, I highly recommend you start working towards your *Accredited Fiduciary* (AF) designation! ◆

ASSET MANAGER CONTINUED FROM PAGE 2

Assessing the drivers, we can group the securities as leaders, average and laggards for environmental, social or governance scoring. Not surprisingly, the leaders minus laggards contributed across each of the pillars; governance leaders contributed the most at nearly 6%. Social leaders outperformed their laggard counterparts by 4.4%, underscoring the adept way leader companies respond proactively to their stakeholders. Security selection was also additive during this period in the emerging markets.

Within the fixed income asset class, similar results were observed across the various markets between the ESG leaders and laggards. Using the MSCI ESG scores for the investment-grade and high-yield constituents, we see consistently stronger performance of the issuers which exhibit more robust ESG profiles.

ESG leaders also traded at tighter spreads during the market stress, despite a loose correlation between ESG profiles and credit ratings. As a risk control asset, these characteristics are important factors for investors looking for consistency in downside mitigation. For more insight into our approach to sustainable fixed income, see the blog *What Happened with ESG and Quality in Bond Market Turmoil*.

Looking Ahead

By evaluating and engaging on issuers' ESG characteristics, investors not only mitigate portfolio risk but also contribute to promoting the health of the market overall. We observe a growing cohort of investors acknowledging the relevance and materiality of ESG characteristics to the investment management process. We anticipate that the events surrounding COVID-19 will act as a catalyst, drawing more investors to adopt this philosophy as a means of promoting long term value creation in their portfolios. ◆

PERSist Quiz — Asset Manager

What percentage of sustainable equity funds ranked in top half of their peer groups?

- ❍ A. 12%
- ❍ B. 44%
- ❍ C. 70%

Answer: C

CORPORATE GOVERNANCE CONTINUED FROM PAGE 3

for defendants' noncompliance with *MFW*'s requirements.

- A controlling stockholder and company management had engaged in substantive economic negotiations before *MFW* protections were implemented.[2]
- A special committee was not independent because its members faced potential liability from a pending derivative claim that would be extinguished by the subject transaction.[3]
- A controlling stockholder coerced the special committee and minority stockholders and made inadequate disclosures rendering the stockholder vote not fully informed.[4]
- A controlling stockholder circumvented the special committee and minority stockholders by negotiating directly with the company's second-largest stockholder to secure its support for the transaction.[5]

As demonstrated by these rulings, MFW does not insulate directors and controlling stockholders from misconduct in connection with conflicted transactions. To the contrary, when strict compliance with MFW is lacking, claims will be subject to the entire fairness standard. ◆

1 88 A.3d 635 (Del. Mar. 14, 2014).
2 *Olenik v. Lodzinski* (*Earthstone Energy, Inc.*), No. 2018-392 (Del. Apr. 5, 2019).
3 *See In re AmTrust Fin. Services, Inc. Stockholder Litig.*, C.A. No. 2018-0396-AGB (Del. Ch. Feb. 26, 2020).
4 *See In re Dell Techs. Inc. Class V Stockholders Litig.*, C.A. No. 2018-0816-JTL (Del. Ch. June 11, 2020).
5 *See In re HomeFed Corp. Stockholder Litig.*, C.A. No. 2019-0592-AGB (Del. Ch. July 13, 2020).

PERSist Quiz — Corporate Governance

What standard of review applies to transactions with controlling stockholders when the dual procedural protections set forth in the *MFW* decision are not met:

- ❍ **A.** The lenient business judgment rule;
- ❍ **B.** The exacting entire fairness doctrine; or
- ❍ **C.** The intermediate enhanced reasonableness review.

Answer: A

CUSTODIAN BANK CONTINUED FROM PAGE 4

that allow asset owners to access markets or strategies that may not otherwise be readily available. The majority of managers are increasing the transparency with which they report to their investors. Investors are using this new information to help them better understand their portfolio through various lenses, including risk, performance and liquidity. As asset owners become more directly involved in their private portfolios they may need to make changes to their existing infrastructure and administrative arrangements related to gathering more information about their investments, including visibility into portfolio company investments, ESG information, and / or more granular accounting information on co-invest and direct holdings. This can require increases to staff numbers, deployment of specialized technology, or the identification of appropriate partners to help with these administrative burdens. The months ahead will be a test for asset owners and asset managers alike. Recent market pressures will undoubtedly change the relationship between asset owners and asset managers. ◆

Disclosure

PERSist Quiz — Custodian Bank

What is driving Asset Owners' demand for greater involvement in their private portfolios?

- ❍ **A.** Wish to enhance transparency
- ❍ **B.** Desire to lower costs
- ❍ **C.** Regulatory drivers
- ❍ **D.** All of the above

Answer: D

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Calendar of Events 2021

February

NCPERS FALL Conference
February 2 -3, 2021
Virtual

March

NCPERS Accredited Fiduciary Program (NAF): Modules 1&2
March 2 – 5, 2021
Virtual

NCPERS Accredited Fiduciary Program (NAF): Modules 3&4
March 9 -12, 2021
Virtual

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