AGENDA

DALLAS POLICE & FIRE PENSION SYSTEM

Date: October 4, 2019

The regular meeting of the Dallas Police and Fire Pension System Board of Trustees will be held at **8:30 a.m. on Thursday, October 10, 2019, in the Second Floor Board Room at 4100 Harry Hines Boulevard, Dallas, Texas.** Items of the following agenda will be presented to the Board:

A. MOMENT OF SILENCE

B. CONSENT AGENDA

1. Approval of Minutes

Regular meeting of September 12, 2019

2. Approval of Refunds of Contributions for the Month of September 2019

3. **Approval of Activity in the Deferred Retirement Option Plan (DROP) for October 2019**

4. **Approval of Survivor Benefits**

5. **Approval of Service Retirements**

6. **Approval of Alternate Payee Benefits**

7. **Approval of Payment of DROP Revocation Contributions**

C. DISCUSSION AND POSSIBLE ACTION REGARDING ITEMS FOR INDIVIDUAL CONSIDERATION

1. **January 1, 2019 Actuarial Valuation**

2. **Initial reading and discussion of the 2020 Budget**

3. **Monthly Contribution Report**

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

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

5. **Appointment of Professional Services Committee Member**

6. **Report on Professional Services Committee**

7. **Chairman's Discussion Item**

   Member Complaint

8. **Senate Bill 322 Investment Practices and Performance Evaluations**

9. **Portfolio Update**

10. **Report on Investment Advisory Committee**

11. **Public Equity Portfolio Review**

12. **Private Asset Cash Flow Projection Update**

    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.

13. **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.

14. 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, including claims against City of Dallas regarding unpaid contributions under USERRA, consideration of legal options regarding DPFP's interests in funds managed by Lone Star Investment Advisors 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.

D. BRIEFING ITEMS

1. Reports and concerns of active members and pensioners of the Dallas Police and Fire Pension System

2. Executive Director's report

a. Associations' newsletters
- NCPERS Monitor (September 2019)

b. Open Records

c. Dallas Citizens Council Presentation

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
H. C. Prewitt	Retired	Fire	Sep. 2, 2019
Robert W. Coker	Retired	Police	Sep. 8, 2019
James A. Scott, Jr.	Retired	Fire	Sep. 8, 2019
John G. Hughes	Retired	Fire	Sep. 10, 2019
Larry L. Haygood	Retired	Fire	Sep. 11, 2019
Kevin G. Bailey	Retired	Police	Sep. 12, 2019
S. J. Mewbourn	Retired	Fire	Sep. 15, 2019
K. E. Whitsell	Retired	Fire	Sep. 18, 2019
Richard D. Alford	Retired	Police	Sep. 21, 2019
James H. McDonald	Retired	Police	Sep. 21, 2019
Daniel L. Johnson	Retired	Police	Sep. 27, 2019
J. D. Dike	Retired	Fire	Sep. 28, 2019

Regular Board Meeting – Thursday, October 10, 2019

Dallas Police and Fire Pension System
Thursday, September 12, 2019
8:30 a.m.
4100 Harry Hines Blvd., Suite 100
Second Floor Board Room
Dallas, TX

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

ROLL CALL

Board Members

Present at 8:32 a.m.	William F. Quinn, Nicholas A. Merrick, Joseph P. Schutz, Robert B. French, Ray Nixon, Susan M. Byrne, Tina Hernandez Patterson, Robert C. Walters, Armando Garza, Kneeland Youngblood (by phone)
Absent:	Gilbert A. Garcia
Staff	Kelly Gottschalk, Josh Mond, Kent Custer, Brenda Barnes, John Holt, Damion Hervey, Cynthia Thomas, Aimee Crew, Trish Wiley, Ann Mathews, Ryan Wagner, Greg Irlbeck, Michael Yan, Milissa Romero
Others	Sheri Kowalski, Kenneth Latz, Andrew Kramer, Elizabeth Reich, David Harper, Jason Jordan, Bohdy Hedgcock, Leandro Festino, Sandy Alexander, Kenneth Sprecher, David Dunnahoo, John G. Myers, Tom Moore, Janis Elliston, David Elliston, Jose Deleon, Jerry M. Rhodes, Rick Salinas, Frank Ruspoli, Carolyn Freeman, James Freeman, Brian Williams, Stanley Allport, Harold Holland

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The meeting was called to order at 8:32 a.m.

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A. TRUSTEES

Welcome Non-member Trustees

The Chairman welcomed the Non-members Trustees, Robert French, Gilbert Garcia, and Tina Hernandez Patterson, that were certified and deemed elected by the Board at the August Board meeting and will serve from September 1, 2019 until August 31, 2022.

No motion was made.

Regular Board Meeting
Thursday, September 12, 2019

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B. MOMENT OF SILENCE

The Board observed a moment of silence in memory of retired police officers Edgar L. Smith, William Bricker, Julian B. Allen, James D. Collett, William B. Frazier, James R. Leavelle, and retired firefighters Roy W. Williams, Rodney R. Gant, J. C. Minter, Neal Hunter.

No motion was made.

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C. CONSENT AGENDA

1. **Approval of Minutes**

   Regular meeting of August 8, 2019

2. **Approval of Refunds of Contributions for the Month of August 2019**

3. **Approval of Activity in the Deferred Retirement Option Plan (DROP) for September 2019**

4. **Approval of Estate Settlements**

5. **Approval of Survivor Benefits**

6. **Approval of Service Retirements**

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

After discussion, Mr. Garza made a motion to approve the minutes of the meeting of August 8, 2019. Mr. Walters seconded the motion, which was unanimously approved by the Board.

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

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Regular Board Meeting
Thursday, September 12, 2019

D. DISCUSSION AND POSSIBLE ACTION REGARDING ITEMS FOR INDIVIDUAL CONSIDERATION

1. City Budget Overview

Elizabeth Reich, City of Dallas CFO, provided an overview of the City of Dallas 2019-2020 Recommended Budget and an overview of the new Meet and Confer Agreement.

No motion was made.

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2. Treatment of Final Month Payment for DROP Participants

a. Possible Overpayment to DROP Participants subject to 10-year Limitation
b. DROP Policy Amendment

a. In the month DROP participants retire, staff has been paying a full monthly benefit to all DROP members. Staff believes the payment in the retirement month for members who have reached the 10-year limitation in DROP should be pro-rated to include only those days in which the member was retired.

b. Staff presented an amendment to the DROP Policy to provide for clarity of the treatment of the payment of the monthly benefit in the month of retirement for DROP participants.

After discussion, Mr. Merrick made a motion to authorize the Executive Director to collect, commencing October 31, 2019, all overpayments to retirees having reached the 10-year limitation in DROP who were overpaid in their first month of retirement with a collection period over 3 to 12 months with such collection policy to be implemented in the Executive Director's discretion. Mr. Walters seconded the motion, which was unanimously approved by the Board.

After discussion, Mr. Garza made a motion to approve the DROP Policy as amended. Ms. Hernandez Patterson seconded the motion, which was unanimously approved by the Board.

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Regular Board Meeting
Thursday, September 12, 2019

3. 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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4. Rebalancing Report

In accordance with Investment Policy section 6.C.7, staff reported on recent rebalancing recommendations and activity.

No motion was made.

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5. Private Equity and Debt Portfolio Review

Staff provided an overview of DPFP investments in private equity and private debt.

No motion was made.

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6. Second Quarter 2019 Investment Performance Analysis and First Quarter 2019 Private Markets & Real Assets Review

Leandro Festino, Managing Principal - Meketa Investment Group and Investment Staff reviewed investment performance.

No motion was made.

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7. Chairman's Discussion Items

Recap of the meeting with the City of Dallas Mayor

The Chairman briefed the Board on the meeting with the City of Dallas Mayor.

No motion was made.

Regular Board Meeting
Thursday, September 12, 2019

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8. Audit Status

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

No motion was made.

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9. Monthly Contribution Report

Staff presented the Monthly Contribution Report.

No motion was made.

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10. Board approval of Trustee education and travel

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

No discussion was held, and no motion was made regarding Trustee education and travel. There was no future investment-related travel.

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11. Board Members' reports on meetings, seminars and/or conferences attended

Mr. Garza reported on the following seminar that he attended:

TEXPERS Basic Trustee Training

No motion was made.

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12. Clarion – Possible sale of The Tribute

The Board went into closed session executive session –Real Estate at 11:43 a.m.

The meeting was reopened at 11:54 a.m.

Regular Board Meeting
Thursday, September 12, 2019

12. Clarion – Possible sale of The Tribute (continued)

Bohdy Hedgcock, Senior Vice President, Clarion discussed the proposed sale of DPFP's interest in The Tribute, a master planned community development in The Colony, TX.

After discussion, Ms. Hernandez Patterson made a motion to approve the sale of DPFP's interest in The Tribute, subject to the final approval of the Executive Director. Mr. Walters seconded the motion, which was unanimously approved by the Board.

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13. Lone Star Investment Advisors Update

The Board went into closed session executive session – Legal at 9:33 a.m.

The meeting was reopened at 10:32 a.m.

No motion was made.

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14. 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, including DPFP et al. v. Alexander, consideration of legal options regarding DPFP's interests in Lone Star Funds, changes to Texas Open Meetings Act 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 session executive session – Legal at 9:33 a.m.

The meeting was reopened at 10:32 a.m.

No motion was made.

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Regular Board Meeting
Thursday, September 12, 2019

D. BRIEFING ITEMS

1. Reports and concerns of active members and pensioners of the Dallas Police and Fire Pension System

The Board received member's comments during the open forum.

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2. Executive Director's report

a. Associations' newsletters
- NCPERS Monitor (August 2019)

b. Open Records

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. Nixon and a second by Ms. Hernandez Patterson, the meeting was adjourned at 11:55 a.m.

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William F. Quinn
Chairman

ATTEST:

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Kelly Gottschalk
Secretary

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C1

Topic: **January 1, 2019 Actuarial Valuation**

Attendees: Jeff Williams, Vice President and Consulting Actuary, Segal Consulting
Caitlin Grice, Consulting Actuary, Segal Consulting

Discussion: Jeff Williams and Caitlin Grice of Segal Consulting, DPFP's actuarial firm, will be present to discuss results of the January 1, 2019 actuarial valuation report, including the GASB No. 67 actuarial valuation.

Staff Recommendation: **Approve** issuance of the January 1, 2019 actuarial valuation report, subject to final review by the auditors (BDO) and review and approval by the Executive Director.

ANNUAL VALUATION SUMMARY AS OF JANUARY 1, 2019

Board of Trustees Meeting

October 10, 2019

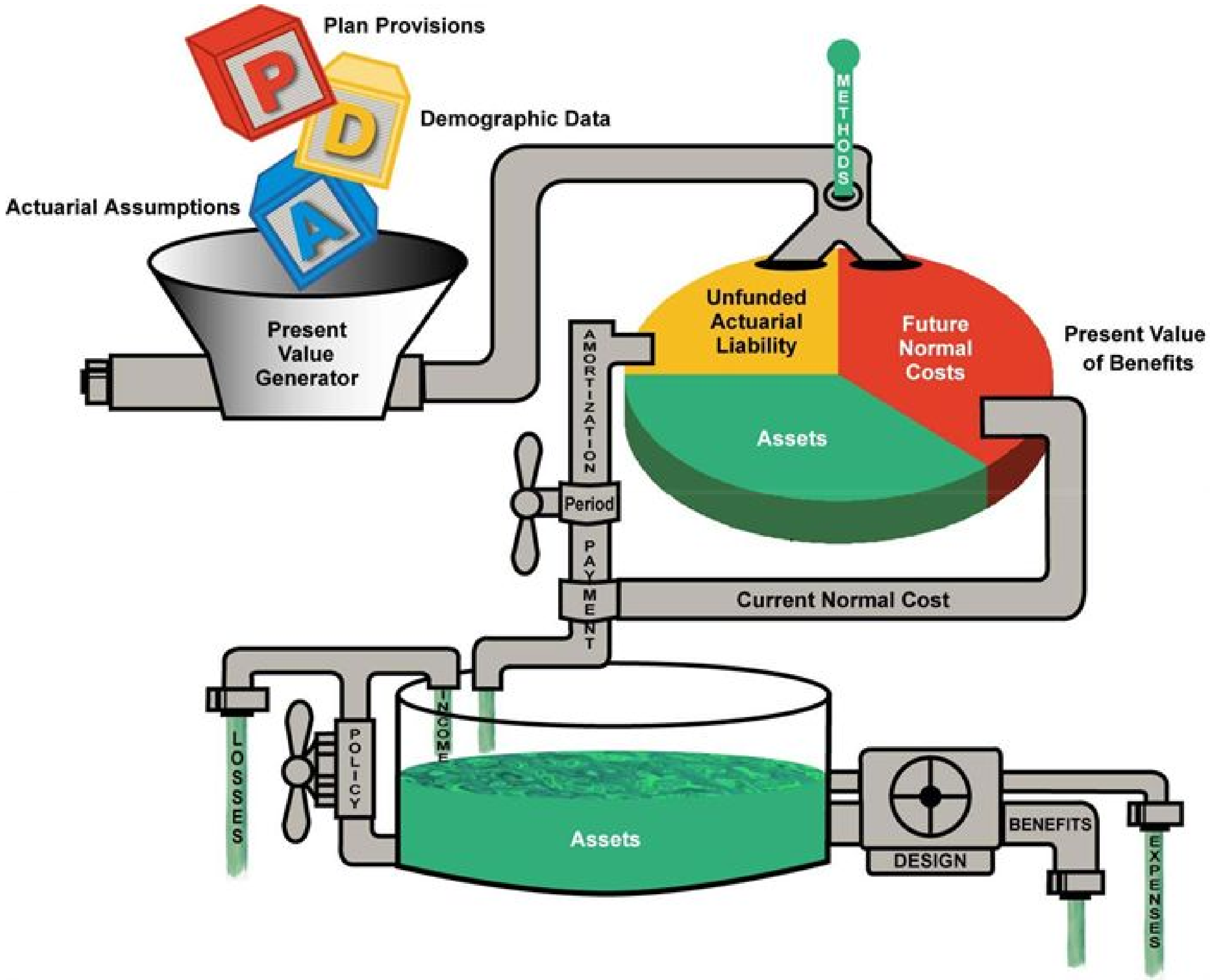
Dallas Police and Fire Pension System

Segal Consulting

Agenda

1. Portrait of a Pension Valuation
2. Summary of January 1, 2019 Actuarial Valuation Results
3. Summary of Data
4. Historical Results
5. Solvency Projection
6. Risk
7. Importance of Accurate Payroll Projections
8. GASB Accounting Disclosures
9. Supplemental Plan Results

Portrait of a Pension Valuation



COMBINED PLAN RESULTS

Summary of 2019 Actuarial Valuation Results

- City's Actuarially Determined Contribution (ADC) is based on a 30-year amortization of the System's unfunded actuarial accrued liability, in accordance with Texas Code Section 802.101
  - Actual City contributions expected to be less than the ADC
  - Unfunded liability is projected to be paid off in **38** years, based on City's Hiring Plan payroll projections (down from **45** years in the 2018 valuation)
- City's ADC for 2019 is $152.1 million (41.88% of computation pay)
  - Decrease from $157.1 million (45.40% of pay) in 2018, primarily due to demographic experience gains and assumption changes, partially offset by investment losses
  - Actual City contribution for 2018 was $149.4 million, or 95.1% of the 2018 ADC; contributions were expected to be $151.9 million ($5.344 million for 26 pay periods, plus $13 million)
  - City contributions for 2019 are expected to be $157.8 million ($5.571 million for 26 pay periods, plus $13 million). If this amount is contributed, it will be 103.7% of the 30-year ADC.

Summary of 2019 Actuarial Valuation Results

- The funded ratio changes from 2018 to 2019:
  - Increased from 47.74% to 48.10% on an actuarial basis
  - Decreased from 46.68% to 45.43% on a market basis
- Actuarial value of assets increased from $2.15 billion to $2.16 billion; market value of assets decreased from $2.10 billion to $2.04 billion
  - Assumed rate of return is 7.25%
  - Market return was 2.09%
  - Actuarial return was 5.48%
  - Actuarial value is 105.88% of market value; there were $120 million in unrecognized market value losses as of the valuation date
- The following assumption changes are included in this valuation:
  - Salary scale assumption updated to reflect 2016 Meet and Confer Agreement, as amended in 2018
  - Ad-hoc COLA now assumed to begin Oct. 1, 2050; last year it was assumed to begin Oct. 1, 2053

Summary of 2019 Actuarial Valuation Results

- Reconciliation of the City's ADC (30-year amortization), shown below:
  - 2018 ADC **$157.1M**, or **45.40%** of pay
  - 2019 ADC, prior to any changes **$159.7M,** or **43.26%** of pay
  - 2019 ADC, after assumption changes **$152.1M**, or **41.88%** of pay

Note: Total computation pay, or valuation pay, shown in the valuation report is the active members' actual payroll for the preceding year, increased by the salary scale applicable for each member to account for their anticipated salary increases in the upcoming year.

Summary of 2019 Actuarial Valuation Results

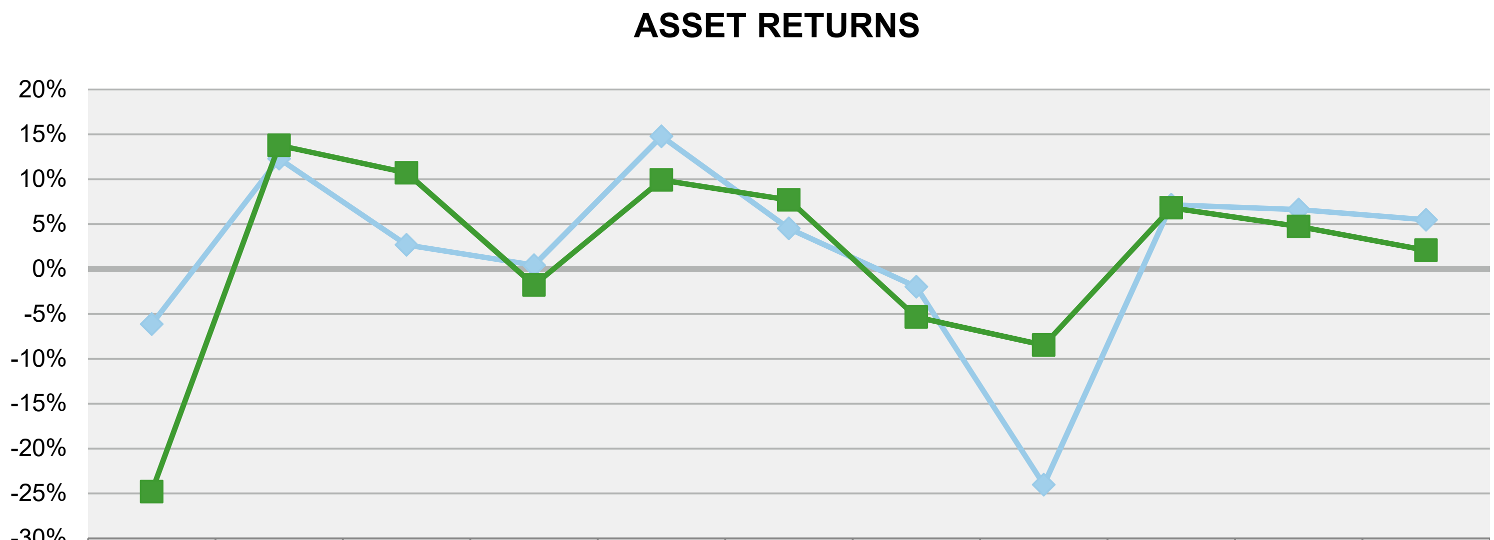
	As of 1/1/2019	As of 1/1/2018
Total Normal Cost, Including Administrative Expenses	$60,600,247	$61,892,453
Expected Member Contributions	-49,020,851	-46,714,953
Employer Normal Cost	$11,579,396	$15,177,500
Total Normal Cost as a % of Computation Pay	16.69%	17.89%
Employer Normal Cost as a % of Computation Pay	3.19%	4.39%
Actuarial Accrued Liability	$4,494,822,504	$4,505,437,185
Actuarial Value of Assets	-2,161,899,662	-2,151,039,343
Unfunded Liability	$2,332,922,842	$2,354,397,842
Funded Ratio	48.10%	47.74%
Computation Payroll	$363,117,415	$346,036,690
Actuarially Determined Employer Contribution, in dollars	**$152,084,297**	**$157,100,128**
Actuarially Determined Employer Contribution, as a percentage of computation pay	**41.88%**	**45.40%**
100% Projected Funded Status Year, based on City's Hiring Plan Payroll	**2057**	**2063**

Summary of Data

	Year Ended December 31,		
	2018	2017	Change
Active Members			
Number	5,012	4,952	+60 members
Average Age	40.1	40.6	-0.5 years
Average Service	12.8	13.4	-0.6 years
Average Computation Pay	$72,450	$69,878	+3.7%
Number in DROP	483	626	-143 members
Total DROP Accounts	$192.4M	$241.4M	-$49.0M
Retirees and Beneficiaries			
Number[1]	4,895	4,748	+147 members
Average Monthly Payment[2]	$4,217	$4,171	+1.1%
Terminated Vested Members			
Number	230	226	+4 members

[1]Includes beneficiaries with DROP accounts only
[2]Includes benefit supplement, excludes annuitization of DROP balances

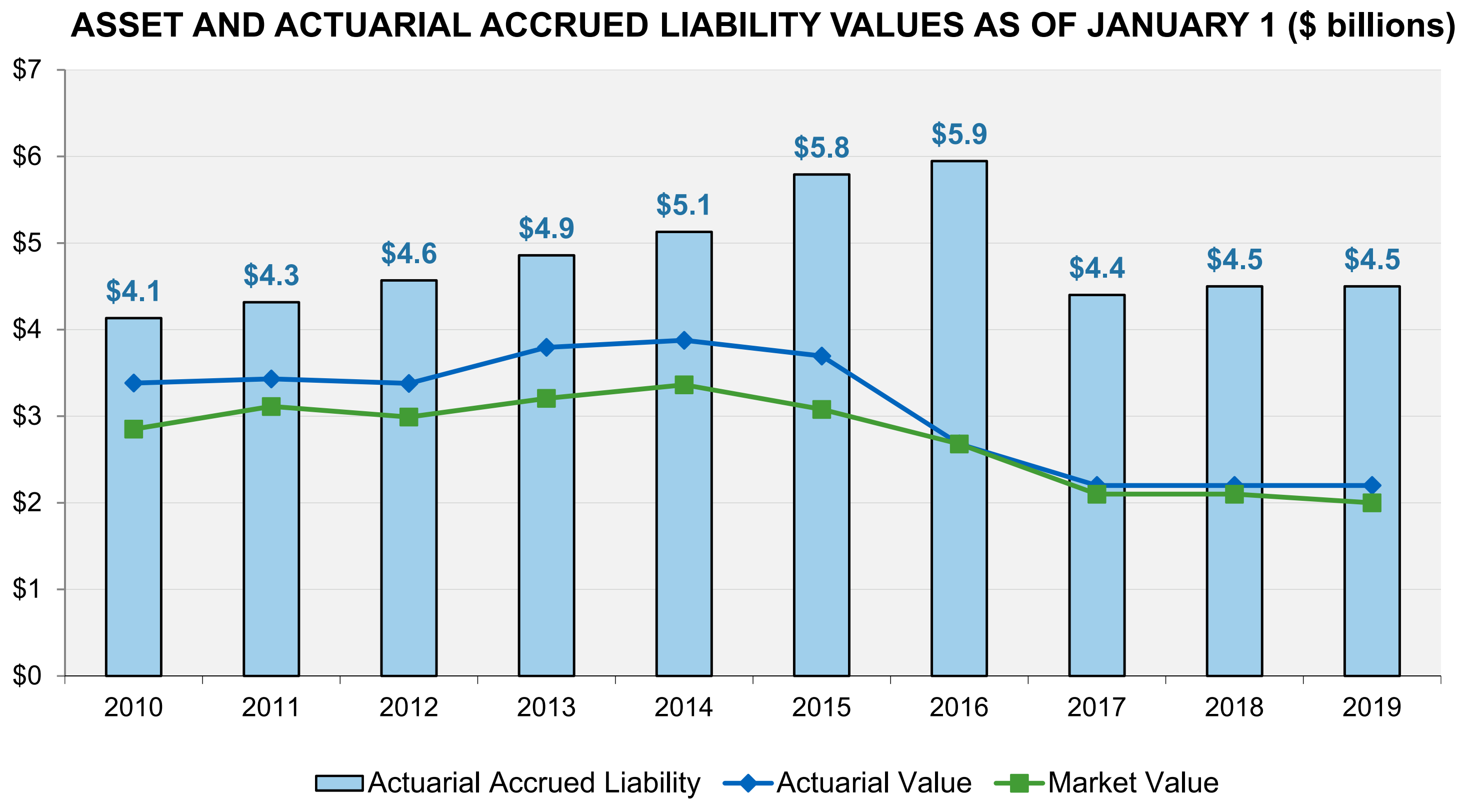
Historical Results



	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Actuarial Value	(6.14%)	12.29%	2.69%	0.43%	14.79%	4.52%	(1.98%)	(24.03%)	7.16%	6.63%	5.48%
Market Value	(24.80%)	13.78%	10.72%	(1.78%)	9.92%	7.70%	(5.35%)	(8.47%)	6.82%	4.74%	2.09%

Note: The actuarial returns for 2012 and 2015 include the effects of changes in asset method.
The returns for 2014 and 2015 include significant write-downs of the Plan's assets.

Historical Results

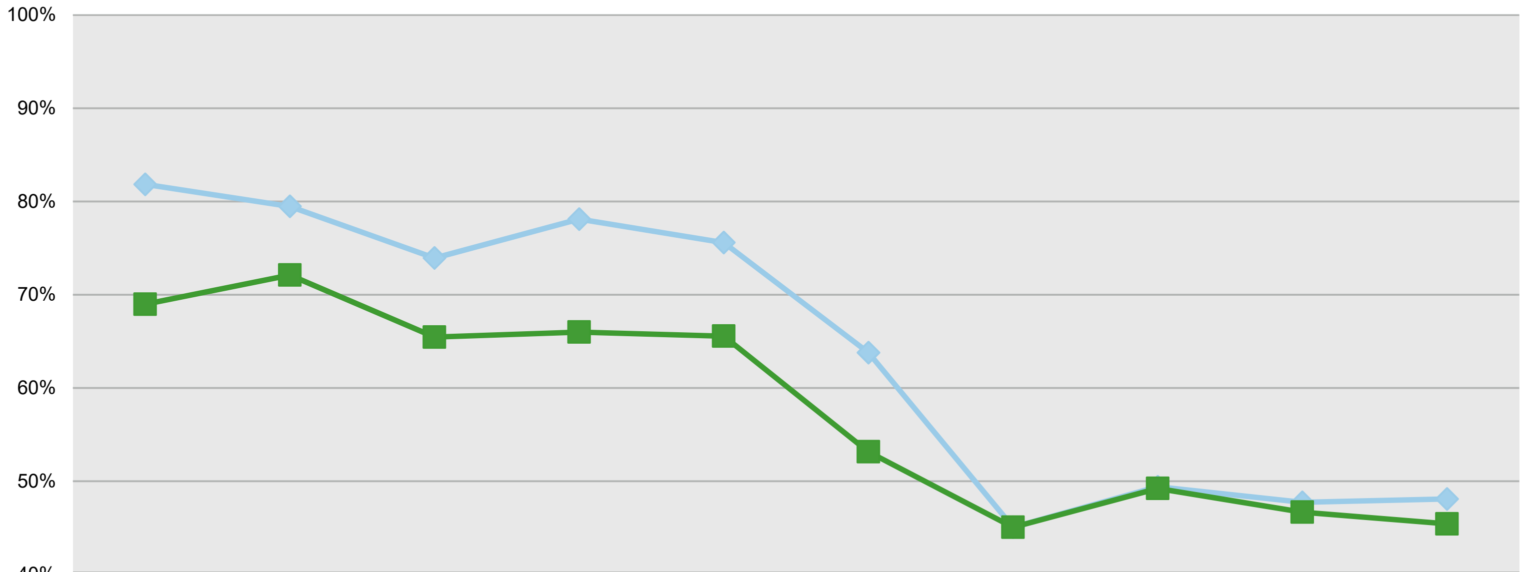


Notes: The significant increase in liability in 2015 is due to the change in discount rate, from 8.50% to 7.25%.
The liability decrease in 2017 is attributable to the plan changes implemented following the adoption of HB 3158.

As mentioned previously, the decline in assets from January 1, 2014 through January 1, 2016 is primarily the result of write-downs. The actuarial value of assets was set equal to market value as of January 1, 2016. The decline during 2016 reflects the unusually large number of DROP payments made in that year.

Historical Results

FUNDED PERCENTAGE AS OF JANUARY 1



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
AVA Basis	81.8%	79.5%	73.9%	78.1%	75.6%	63.8%	45.1%	49.4%	47.7%	48.1%
MVA Basis	69.0%	72.1%	65.5%	66.0%	65.6%	53.2%	45.1%	49.2%	46.7%	45.4%

Risk

Investment Risk

- The System's assets are expected to earn less than the assumed rate over the next few years as the investment portfolio is rebalanced.
- Beyond that, the System could be at risk of not meeting its funding goals if the asset returns are below the assumed long-term rate.
- Benefit payments are higher than contribution income; for 2018, benefits were $98.4 million more than contributions received. The System is reliant on investment income to cover the difference.

Longevity and Demographic Risk

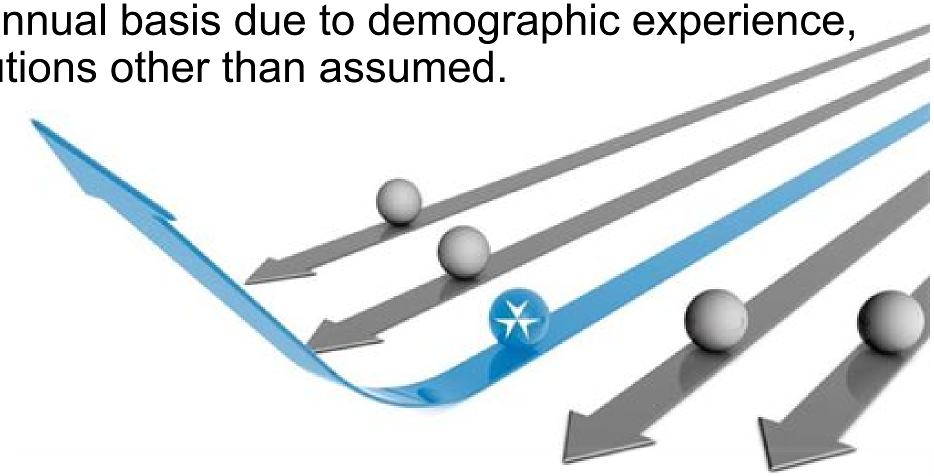
- If members live longer than expected, the benefit payouts will be higher than currently assumed, which will draw down the System's assets.
- The plan's costs are also reliant on turnover and retirement patterns.

Contribution Risk

- Plan contribution rates are set by statute, but the dollars of contributions depend on the computation payroll to which the rates are applied.
- The following slides describe the importance of accurate payroll projections on the System's ability to improve its funding status.

The Importance of Accurate Payroll Projections

- Segal Consulting (“Segal”) strongly recommends an actuarial funding method that targets 100% funding of the actuarial accrued liability.
- Payments should be enough to cover normal cost, interest on the unfunded actuarial accrued liability and, ultimately, the principal balance.
- The funding policy adopted by the State in HB 3158 meets this standard, **if** the City’s Hiring Plan payroll projections come to fruition.
- Assuming the City’s Hiring Plan payroll projection is met, the expected full-funding date is 2057, six years earlier than the expected full-funding date from the 2018 valuation.
  - Full-funding date may vary on an annual basis due to demographic experience, economic experience, and contributions other than assumed.



The Importance of Accurate Payroll Projections, contd.

- Through the first three years of the policy (2017 - 2019), valuation payroll based on participant data is cumulatively $52.4 million less than the City's projections.
- City's long-term contribution rate is scheduled to be 34.50% of computation pay
  - Through 2024 there is a floor on the City's contribution levels
  - Beginning in 2025, City expected to contribute based solely on pay
  - City's plan reflects significant growth in payroll over 20 years, from $372 million in 2017 to $684 million in 2037 (average annual growth of 3.1%)
  - Differences between actual payroll and City's Hiring Plan payroll will have an impact on when the System is projected to become fully funded
  - If payroll growth is more modest, or if there is adverse experience in the System that leads to losses, the period required to achieve 100% funding could be significantly longer.
  - **If the City's Hiring Plan projections are not met and instead the current valuation payroll of $363.1 million increases by the assumed payroll growth of 2.75% each year ongoing, and if City and member contributions are based on this projected payroll beginning in 2025, the System is projected to be only 30% funded in 2057, rather than 100%.**

City's Hiring Plan Payroll vs. Projected Valuation Payroll

Year	City's Hiring Plan Payroll	Projected Valuation Payroll[1]	$ Difference
2017	$372,000,000	$357,414,472	-$14,585,528
2018	364,000,000	346,036,690	-17,963,310
2019	383,000,000	363,117,415	-19,882,585
2020	396,000,000	373,103,144	-22,896,856
2021	408,000,000	383,363,480	-24,636,520
2022	422,000,000	393,905,976	-28,094,024
2023	438,000,000	404,738,390	-33,261,610
2024	454,000,000	415,868,696	-38,131,304
2025	471,000,000	427,305,085	-43,694,915
2026	488,000,000	439,055,975	-48,944,025
2027	507,000,000	451,130,014	-55,869,986
2028	525,000,000	463,536,090	-61,463,910
2029	545,000,000	476,283,332	-68,716,668
2030	565,000,000	489,381,124	-75,618,876
2031	581,000,000	502,839,105	-78,160,895
2032	597,000,000	516,667,180	-80,332,820
2033	614,000,000	530,875,528	-83,124,472
2034	631,000,000	545,474,605	-85,525,395
2035	648,000,000	560,475,156	-87,524,844
2036	666,000,000	575,888,223	-90,111,777
2037	684,000,000	591,725,149	-92,274,851
			-$1,150,815,169

[1] Valuation payroll is the active members' actual payroll for the preceding year, increased by the salary scale applicable for each member to account for their anticipated salary increases in the upcoming year.

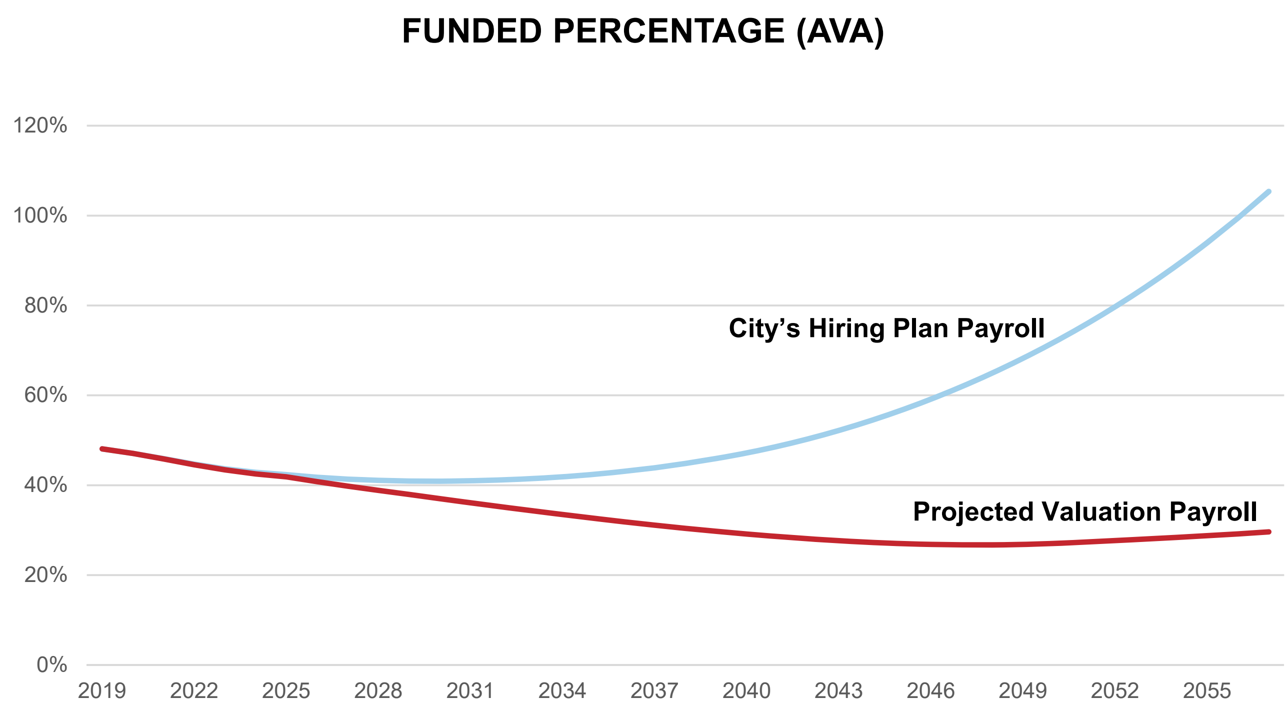
Assumptions:

- Valuation payroll projected at 2.75% per year
- Beginning in 2025, the statutory contributions cease and City contributions equal 34.5% of actual computation pay
- Member contributions: 13.5% of computation pay

Findings:

- Total City and Member contributions between 2025 and 2037, based on the City's Hiring Plan payroll projections: **$3.611 Billion**
- Total City and Member contributions between 2025 and 2037, based on projected valuation payroll: **$3.154 Billion**
- Difference in total contributions based on these two projections, just for the period of 2025 through 2037: **$457 Million**
- The **$457 Million** gap is down from **$523 Million** last year, because the 2019 projected valuation payroll is about 2% higher than was expected in the 2018 valuation.

Funded Percentage Projection



The projection above anticipates that all actuarial assumptions are met in the future and all contributions are made as expected. Projections are based on the City's Hiring Plan payroll projections through 2037 for the "City's Hiring Plan Payroll" projection. The "Projected Valuation Payroll" uses the actual January 1, 2019 payroll projected forward each year at the 2.75% growth assumption.

Based on the City's Hiring Plan payroll projections, 100% funding is projected by January 1, 2057. Based on the projected valuation payroll, the funded percent is projected to be 30% on January 1, 2057.

GASB 67 Accounting Disclosures – Net Pension Liability

- The Pension System is required to provide disclosures under GASB Statement 67. The components of the net pension liability are as follows:

	Year Ended December 31, 2018	Year Ended December 31, 2017
Total Pension Liability	$4.50 billion	$4.50 billion
Plan Fiduciary Net Position	$2.04 billion	$2.10 billion
City's Net Pension Liability	$2.46 billion	$2.40 billion
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	45.36%	46.77%

- Total Pension Liability as of December 31, 2018 includes the DROP revocations between September 1, 2017 and February 28, 2018.
- In the event that a pension plan has a projected insolvency date, GASB requires that the unfunded benefits be discounted using a 20-year, tax-exempt general obligation bonds rate rather than the Plan's funding rate.
- Based on HB 3158 contribution requirements and the City's Hiring Plan (90% of which was used for projecting computation pay for GASB purposes), City and member contributions are projected be able to pay the benefits of current members. Therefore, GASB liabilities as of both December 31, 2018 and December 31, 2017 are determined using the valuation discount rate of 7.25%.

SUPPLEMENTAL PLAN RESULTS

Supplemental Plan Results

- City of Dallas contributes to the Supplemental Plan each year based on the normal cost (net of member contributions) and a ten-year amortization of the unfunded actuarial accrued liability
- Same assumption changes implemented for the Combined Pension Plan apply to the Supplemental Plan, with the exception of administrative expenses
- Total recommended contribution for the Supplemental Plan decreased from $2.41 million in 2018 to $1.97 million in 2019
  - City's portion decreased from $2.27 million to $1.88 million
- Supplemental Plan net assets increased from $17.8 million to $18.3 million
- Funded ratio increased from 51.5% to 57.6%
- Number of active members decreased from 44 to 39
- Number of annuitants decreased from 140 to 138
- GASB net pension liability (NPL) is determined using the valuation discount rate of 7.25%
- NPL decreased from $15.9 million last year to $13.5 million

Caveats

- This presentation is intended for the use of the Board of Trustees for the Dallas Police and Fire Pension System, and is a supplement to Segal Consulting's full valuation reports for the System as of January 1, 2019.
- Please refer to the full valuation reports for a description of assumptions and plan provisions reflected in the results shown in this presentation. The reports also include more comprehensive information regarding the System's membership, assets, and experience during the most recent plan year.
- Projections, by their nature, are not a guarantee of future results. They are intended to serve as estimates of future financial outcomes that are based on assumptions about future experience and the information available to us at the time the modeling is undertaken and completed. The projected future results included in this presentation show how the System would be affected if specific investment return, salary, mortality, turnover, disability and retirement assumptions are met. Actual results may differ due to such variables as demographic experience, the economy, contribution patterns, stock market performance and the regulatory environment.
- The calculations included in this presentation were completed under the supervision of Jeffrey S. Williams, FCA, ASA, MAAA, EA, and Deborah K. Brigham, FCA, ASA, MAAA, EA.

Questions?

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Segal Consulting

Dallas Police and Fire Pension System

Actuarial Valuation and Review as of January 1, 2019

Segal Consulting
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October 4, 2019

Board of Trustees
Dallas Police and Fire Pension System
4100 Harry Hines Blvd., Suite 100
Dallas, TX 75219-3207

Dear Board Members:

We are pleased to submit this Actuarial Valuation and Review as of January 1, 2019. It summarizes the actuarial data used in the valuation, analyzes the preceding year's experience, and establishes the actuarially determined funding requirements for fiscal 2019; actual funding is determined by State law.

This report was prepared in accordance with generally accepted actuarial principles and practices at the request of the Board to assist in administering the Pension System. The census information on which our calculations were based was prepared by the System's IT Department, under the supervision of John Holt, and the financial information was provided by the System's Finance Department. That assistance is gratefully acknowledged.

The actuarial calculations were directed under our supervision. We are members of the American Academy of Actuaries and we meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of our knowledge, the information supplied in this actuarial valuation is complete and accurate. Further, in our opinion, the assumptions as approved by the Board are reasonably related to the experience of and the expectations for the System.

We look forward to reviewing this report at your next meeting and to answering any questions.

Sincerely,

Segal Consulting, a Member of The Segal Group, Inc.

By: Jeffrey S. Williams

Jeffrey S. Williams, FCA, ASA, MAAA, EA
Vice President and Consulting Actuary

Deborah K. Brigham

Deborah K. Brigham, FCA, ASA, MAAA, EA
Senior Vice President and Consulting Actuary

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Dallas Police and Fire Pension System Actuarial Valuation and Review as of January 1, 2019

Segal Consulting

Section 1: Actuarial Valuation Summary

Purpose and Basis

This report was prepared by Segal Consulting to present a valuation of the Plan as of January 1, 2019. The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits and to provide information for required disclosures under Governmental Accounting Standards Board (GASB) Statement No. 67. The measurements shown in this actuarial valuation may not be applicable for other purposes. In particular, the measures herein are not necessarily appropriate for assessing the sufficiency of Plan assets to cover the estimated cost of settling the Plan's benefit obligations. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements; and changes in plan provisions or applicable law.

The contribution requirements presented in this report are based on:

- The benefit provisions of the Pension Plan, as administered by the Board;
- The characteristics of covered active members, inactive vested members, inactive members due a refund of contributions, and retired members and beneficiaries as of December 31, 2018, provided by the System's IT Department;
- The assets of the Plan as of December 31, 2018, provided by the System's Finance Department;
- Economic assumptions regarding future salary increases and investment earnings;
- Other actuarial assumptions regarding employee terminations, retirement, death, etc. and
- The requirements of House Bill 3158 (HB 3158), signed into law by the Governor of Texas on May 31, 2017.

The majority of the assumptions and methods used to value the Plan were set by the Board based on recommendations made by Segal Consulting following a five-year experience study for the period ended December 31, 2014. Additional assumption changes were made as part of the plan changes effective September 1, 2017. The salary scale assumption was updated in this valuation to reflect the 2016 Meet and Confer Agreement, as amended in 2018. In addition, the COLA assumption is updated annually. Assumptions are reviewed and updated annually as needed.

Certain disclosure information required by GASB Statement No. 68 as of September 30, 2019 for the City is provided in a separate report.

Significant Issues

1. Segal Consulting ("Segal") strongly recommends an actuarial funding method that targets 100% funding of the actuarial accrued liability. Generally, this implies payments that are ultimately at least enough to cover normal cost, interest on the unfunded actuarial accrued liability and the principal balance. The funding policy adopted by the State in HB 3158 meets this standard, if future payroll matches the City's Hiring Plan payroll projection. Assuming the City's Hiring Plan payroll projection materializes, the expected full-funding date is 2057 (last year's projected date was 2063). The City's Hiring Plan payroll projection is shown in Exhibit I of Section 4 of the report. From 2017 through 2019, valuation payroll based on participant data is projected to be cumulatively $52.4 million less than the City's projection, or 4.69% lower. Member contributions are projected to be approximately $6.2 million less than they would have been during this time had the City's Hiring Plan payroll projections materialized. This is an area of concern that needs to be carefully monitored.
2. Actual contributions made by the City during the plan year ending December 31, 2018 were $149.4 million, or 95.07% of the actuarially determined contribution. In 2017, actual contributions were $126.3 million, or 74.80% of the prior year actuarially determined contribution.
3. The total contributions made during the plan year ending December 31, 2018 were insufficient to reduce the unfunded actuarial accrued liability. While the unfunded actuarial accrued liability is lower than in the prior valuation, the decrease is due to experience gains and assumption changes as described below. The Board was advised previously that, because the funding policy contributions result in a long effective amortization period, it could be 20 years before the unfunded liability starts to decline.
4. The funded ratio (the ratio of the actuarial value of assets to actuarial accrued liability) is 48.10%, compared to the prior year funded ratio of 47.74%. This ratio is one measure of funding status, and its history is a measure of funding progress. Using the market value of assets, the funded ratio is 45.43%, compared to 46.68% as of the prior valuation date.
5. The projected year of full funding is 2057, but this may vary on an annual basis due to actuarial experience and contributions other than assumed. Through 2024 there is a floor on the City's contribution levels, which is expected to override the long-term contribution rate of 34.50% of computation pay. Beginning in 2025, when the City is expected to contribute based solely on computation pay, differences between actual payroll and the City's Hiring Plan payroll will have an impact on when the System is projected to become fully funded. The City's plan reflects significant growth in payroll over 20 years, from $372 million in 2017 to $684 million in 2037. The average annual growth in the City's Hiring Plan payroll projections is 3.09%, compared to the valuation assumption of 2.75%. If payroll growth is more modest, or if there is adverse actuarial experience, the period required to achieve 100% funding could be significantly longer.
6. If the City's Hiring Plan projections are not met and instead the current valuation payroll of $363.1 million increases by the assumed payroll growth of 2.75% each year, and City and member contributions are based on this projected payroll beginning in 2025, the System is projected to be only 30% funded in 2057, rather than 100% funded.

7. Although it is important for the System to meet its 7.25% rate of return assumption on an annual basis, the assets currently cover a relatively low percentage of the liabilities and investment returns alone cannot close the funding gap. It is therefore vital that the City's payroll projections are accurate, or that the long-term level of contributions is at least 34.50% of those payroll projections, for the System to achieve full funding.
8. Texas Code Section 802.101 requires the actuarial valuations of public retirement systems to include a recommended contribution rate based on an amortization period that does not exceed 30 years. The City's actuarially determined contribution (ADC) for the 2019 plan year, based on a 30-year amortization of the unfunded actuarial accrued liability, is $152.1 million, a decrease of $5.0 million from last year. The City's ADC as a percentage of payroll decreased from 45.40% of computation pay to 41.88% of computation pay. This decrease is the result of demographic experience gains and assumption changes, offset by an investment experience loss.
9. The System's normal cost plus expenses is 16.69% of computation pay. Members contribute 13.50% of computation pay, and the City contributes the balance. All remaining City contributions are used to pay down the actuarial accrued liability.
10. There was a net experience gain for the year of $22.0 million, or 0.49% of the actuarial accrued liability. This gain was primarily due to fewer retirements than expected, partially offset by an investment loss. The magnitude of the gain as a percentage of total plan liability is not considered significant for actuarial purposes.
11. The rate of return on the market value of assets was 2.09% for the 2018 plan year. This return was on target with short-term expectations as the System continues to rebalance its investment portfolio. As shown in Exhibit E of Section 3, the System reduced the percentage of the invested portfolio exposed to real assets from 40% to 35% and liquidated all alternative investments over the last year. The reduction of the invested portfolio exposure to real assets and alternative investments led to an increase in the fixed income exposure of over 50%, from 16% to 26% of holdings.
12. The return on the actuarial value of assets was 5.48% for 2018. This resulted in an actuarial loss when measured against the assumed rate of return of 7.25%. This actuarial investment loss increased the actuarially determined contribution by $2.3 million. Given the low fixed income interest rate environment, target asset allocation and expectations of future investment returns for various classes, we advise the Board to continue to monitor actual and anticipated investment returns relative to their assumed long-term rate of return on investments of 7.25%.
13. The actuarial value of assets is 105.88% of the market value of assets. The investment experience in the past three years has only been partially recognized in the actuarial value of assets. As the deferred loss is recognized in future years, the System's actuarially determined contribution is likely to increase unless the loss is offset by future experience. The recognition of the market losses of $120.0 million will also have an impact on the future funded ratio. If the deferred losses were recognized immediately in the actuarial value of assets, the actuarially determined contribution would increase from 41.88% to about 43.87% of computation pay.

14. The following actuarial assumptions were changed with this 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; last year, the COLA was assumed to begin October 1, 2053.

    As a result of these assumption changes, the actuarially determined contribution decreased by $7.6 million.
15. Since the actuarial valuation results are dependent on a given set of assumptions, there is a risk that emerging results may differ significantly as actual experience proves to be different from the assumptions. We have not been engaged to perform a detailed analysis of the potential range of the impact of risk relative to the System's future financial condition, but have included a brief discussion of some risks that may affect the System in Section 2. A more detailed assessment of the risks would provide the Board with a better understanding of the inherent risks. This could be important because retired participants account for a substantial portion of the System's liabilities, leaving limited options for reducing costs in the event of adverse experience, and actual payroll has been less than the City's Hiring Plan payroll projections to date, which may result in additional funding challenges in the future.
16. This report constitutes an actuarial valuation for the purpose of determining the actuarially determined contribution (ADC) under the System's funding policy. The information contained in Section 5 provides the accounting information for Governmental Accounting Standards Board (GASB) Statement No. 67, for inclusion in the plan and employer's financial statements as of December 31, 2018. The Net Pension Liability (NPL) and Pension Expense under GASB Statement No. 68, for inclusion in the plan and employer's financial statements as of September 30, 2019, will be provided separately.
17. The Net Pension Liability (NPL) is equal to the difference between the Total Pension Liability (TPL) and the Plan's fiduciary net position (equal to the market value of assets). The NPL as of December 31, 2018 is $2.5 billion, an increase from $2.4 billion as of December 31, 2018.
18. This actuarial report as of January 1, 2019 is based on financial and demographic data as of December 31, 2018. Changes subsequent to that date are not reflected and will affect future actuarial costs of the plan.

Summary of Key Valuation Results

		2019	2018
Contributions for plan year beginning January 1, adjusted for timing:	• Total actuarially determined contribution (City and member)	$202,851,063	$205,478,870
	• Expected member contributions	50,766,766	48,378,742
	• City's actuarially determined contribution (ADC)	152,084,297	157,100,128
	• City's ADC as a percent of computation pay	41.88%	45.40%
	• Actual City contributions	--	$149,356,565
	• Amortization period for determination of ADC	30 years	30 years
Actuarial accrued liability for plan year beginning January 1:	• Retired members and beneficiaries	$3,098,053,613	$2,989,814,931
	• Inactive vested participants	30,007,756	27,386,552
	• Active participants	1,365,339,051	1,487,227,604
	• Inactive participants due a refund of employee contributions	1,422,084	1,008,098
	• Total	4,494,822,504	4,505,437,185
	• Employer normal cost including administrative expenses	11,579,396	15,177,500
Assets for plan year beginning January 1:	• Market value of assets (MVA)	$2,041,914,130	$2,103,345,471
	• Actuarial value of assets (AVA)	2,161,899,662	2,151,039,343
	• Actuarial value of assets as a percentage of market value of assets	105.88%	102.27%
Funded status for plan year beginning January 1:	• Unfunded actuarial accrued liability on market value of assets	$2,452,908,374	$2,402,091,714
	• Funded percentage on MVA basis	45.43%	46.68%
	• Unfunded actuarial accrued liability on actuarial value of assets	$2,332,922,842	$2,354,397,842
	• Funded percentage on AVA basis	48.10%	47.74%
	• Projected year of full funding based on City's Hiring Plan payroll projections	2057	2063
Key assumptions:	• Net investment return	7.25%	7.25%
	• Inflation rate/payroll increase	2.75%	2.75%
GASB information	• Discount rate	7.25%	7.25%
	• Total pension liability	$4,501,670,375	$4,497,347,017
	• Plan fiduciary net position	2,041,914,130	2,103,345,471
	• Net pension liability	2,459,756,245	2,394,001,546
	• Plan fiduciary net position as a percentage of total pension liability	45.36%	46.77%
Demographic data for plan year beginning January 1	• Number of retired members and beneficiaries	4,849	4,748
	• Number of inactive vested members	230	226
	• Number of active members	5,012	4,952
	• Number of inactive participants entitled to a refund of employee contributions	431	399
	• Total computation pay[1]	$363,117,415	$346,036,690
	• Average computation pay	72,450	69,878

[1]Total computation pay, or valuation pay, is the active members' actual payroll for the preceding year, increased by the salary scale applicable for each member to account for their anticipated salary increases in the upcoming year.

Important Information About Actuarial Valuations

An actuarial valuation is a budgeting tool with respect to the financing of future projected obligations of a pension plan. It is an estimated forecast – the actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.

In order to prepare a valuation, Segal Consulting ("Segal") relies on a number of input items. These include:

Plan of benefits	Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. Even where they appear precise, outside factors may change how they operate. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan summary included in our report to confirm that Segal has correctly interpreted the plan of benefits.
Participant data	An actuarial valuation for a plan is based on data provided to the actuary by the System. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. It is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
Assets	The valuation is based on the market value of assets as of the valuation date, as provided by the System. The System uses an "actuarial value of assets" that differs from market value to gradually reflect year-to-year changes in the market value of assets in determining the contribution requirements.
Actuarial assumptions	In preparing an actuarial valuation, Segal projects the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. This projection requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of each participant for each year. In addition, the benefits projected to be paid for each of those events in each future year reflect actuarial assumptions as to salary increases and cost-of-living adjustments. The projected benefits are then discounted to a present value, based on the assumed rate of return that is expected to be achieved on the plan's assets. There is a reasonable range for each assumption used in the projection and the results may vary materially based on which assumptions are selected. It is important for any user of an actuarial valuation to understand this concept. Actuarial assumptions are periodically reviewed to ensure that future valuations reflect emerging plan experience. While future changes in actuarial assumptions may have a significant impact on the reported results, which does not mean that the previous assumptions were unreasonable.

The user of Segal's actuarial valuation (or other actuarial calculations) should keep the following in mind:

- The actuarial valuation is prepared at the request of the Board. Segal is not responsible for the use or misuse of its report, particularly by any other party.
- An actuarial valuation is a measurement of the plan's assets and liabilities at a specific date. Accordingly, except where otherwise noted, Segal did not perform an analysis of the potential range of future financial measures. The actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.
- Actuarial results in this report are not rounded, but that does not imply precision.
- If the Board is aware of any event or trend that was not considered in this valuation that may materially change the results of the valuation, Segal should be advised, so that we can evaluate it.
- Segal does not provide investment, legal, accounting, or tax advice. Segal's valuation is based on our understanding of applicable guidance in these areas and of the plan's provisions, but they may be subject to alternative interpretations. The Board should look to their other advisors for expertise in these areas.

As Segal Consulting has no discretionary authority with respect to the management or assets of the System, it is not a fiduciary in its capacity as actuaries and consultants with respect to the System.

Section 2: Actuarial Valuation Results

Member Data

The Actuarial Valuation and Review considers the number and demographic characteristics of covered members, including active members, inactive vested members, retired members and beneficiaries. This section presents a summary of significant statistical data on these member groups.

The average number of active employees in the most recent three years is about 8% less than the average for the preceding seven years, and the number of retirees and beneficiaries has climbed by nearly 15% in the last three years.

More detailed information for this valuation year and the preceding valuation can be found in *Section 3, Exhibits A, B,* and *C.*

MEMBER POPULATION: 2009 – 2018

Year Ended December 31	Active Members	Inactive Vested Members[1]	Retired Members and Beneficiaries	Total Non-Actives	Ratio of Non-Actives to Actives
2009	5,476	144	3,450	3,594	0.66
2010	5,482	135	3,535	3,670	0.67
2011	5,376	128	3,669	3,797	0.71
2012	5,400	96	3,783	3,879	0.72
2013	5,397	122	3,890	4,012	0.74
2014	5,487	157	4,069	4,226	0.77
2015	5,415	200	4,230	4,430	0.82
2016	5,104	215	4,456	4,671	0.92
2017	4,952	226	4,748	4,974	1.00
2018	5,012	230	4,849	5,079	1.01

[1]Excludes non-vested terminated members due a refund of employee contributions

Active Members

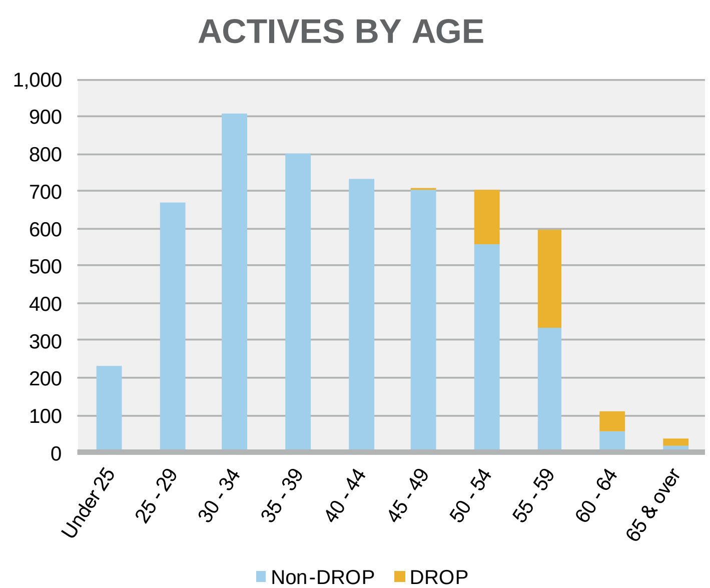
Plan costs are affected by the age, years of service and covered compensation of active members. In this year's valuation, there were 5,012 active members with an average age of 40.1, average years of service of 12.8 years and average computation pay of $72,450. The 4,952 active members in the prior valuation had an average age of 40.6, average service of 13.4 years and average computation pay of $69,878.

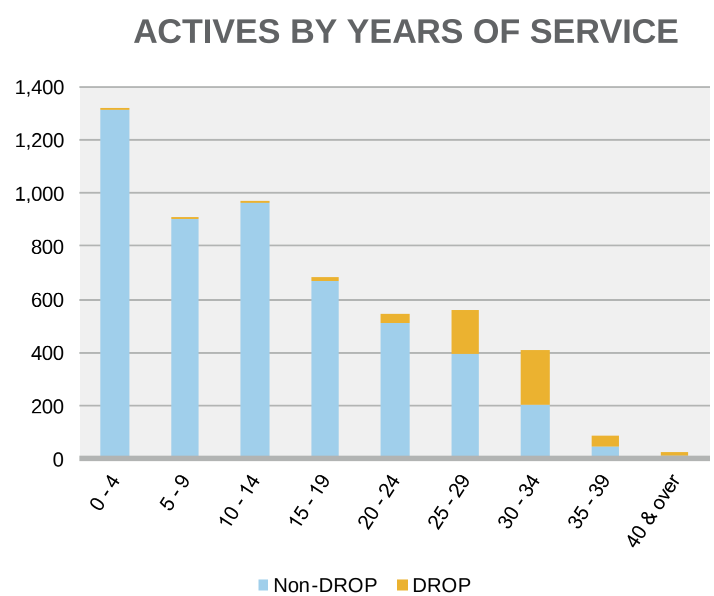
The number of Firefighters increased from 1,884 to 1,996 as of December 31, 2018. The average age of this group is 39.5, the average years of service is 11.9, and the average computation pay is $71,424. Last year these averages were 40.5, 13.0 and $70,049, respectively.

The number of Police Officers decreased from 3,068 to 3,016 as of December 31, 2018. The average age of this group is 40.5, the average years of service is 13.3, and the average computation pay is $73,128. Last year these averages were 40.7, 13.6 and $69,773, respectively.

The number of active participants participating in DROP decreased from 626 at the end of 2017 to 483 at the end of 2018.

Distribution of Active Participants as of December 31, 2018





Inactive Members

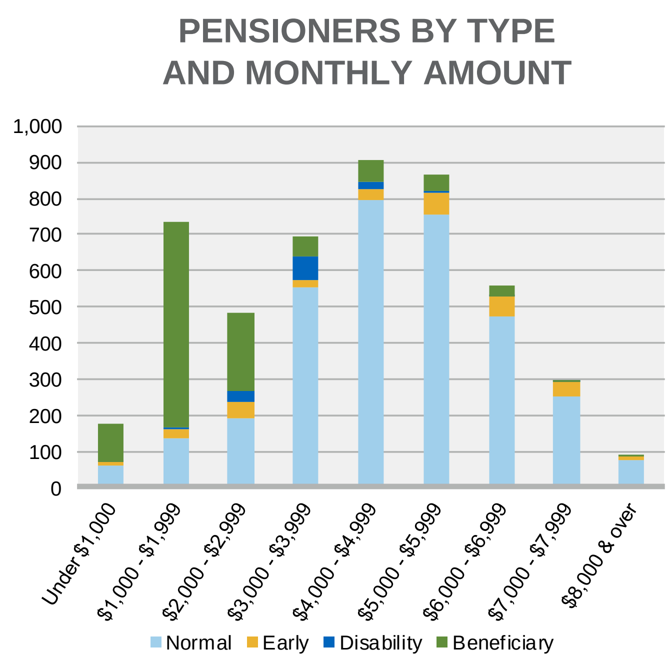
In this year's valuation, there were 230 members with a vested right to a deferred or immediate vested benefit. In addition, there were 431 members entitled to a return of their member contributions.

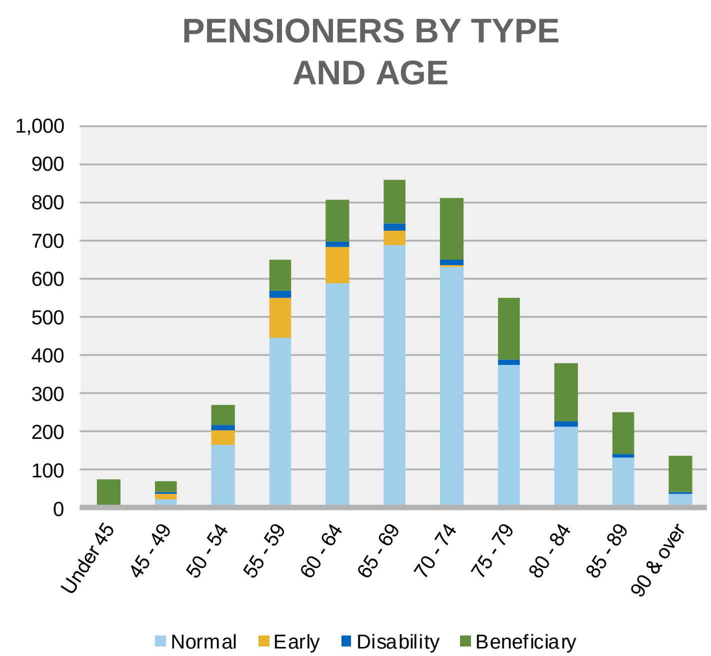
Retired Members and Beneficiaries

As of December 31, 2018, 3,717 retired members and 1,132 beneficiaries were receiving total monthly benefits of $20,449,452. For comparison, in the previous valuation, there were 3,598 retired members and 1,108 beneficiaries receiving monthly benefits of $19,629,490. These amounts do not include 70 beneficiaries with annuitized DROP accounts only and no lifetime annuity; there were 50 last year.

As of December 31, 2018, the average monthly benefit for retired members is $4,217, compared to $4,171 in the previous valuation. The average age for retired members is 68.4 in the current valuation, compared with 67.7 in the prior valuation.

Distribution of Pensioners as of December 31, 2018





Historical Plan Population

The chart below demonstrates the progression of the active population over the last ten years. The chart also shows the growth among the retired population over the same time period.

MEMBER DATA STATISTICS: 2009 – 2018

	Active Participants			Retired Members and Beneficiaries		
Year Ended December 31	Count	Average Age	Average Service	Count	Average Age[1]	Average Monthly Amount[2]
2009	5,476	40.9	14.3	3,450	--	$3,137
2010	5,482	41.1	14.4	3,535	--	3,251
2011	5,376	41.3	14.5	3,669	--	3,380
2012	5,400	41.3	14.5	3,783	--	3,429
2013	5,397	41.3	14.4	3,890	--	3,543
2014	5,487	41.2	14.2	4,069	68.8	3,699
2015	5,415	41.4	14.3	4,182	69.0	3,826
2016	5,104	41.4	13.0	4,414	68.7	4,102
2017	4,952	40.6	13.4	4,706	67.7	4,171
2018	5,012	40.1	12.8	4,849	68.4	4,217

[1] Information for December 31, 2013 and earlier is not available.
[2] Average benefits for December 31, 2013 and earlier include terminated vested members; average benefits for December 31, 2014 and later include the benefit supplement.

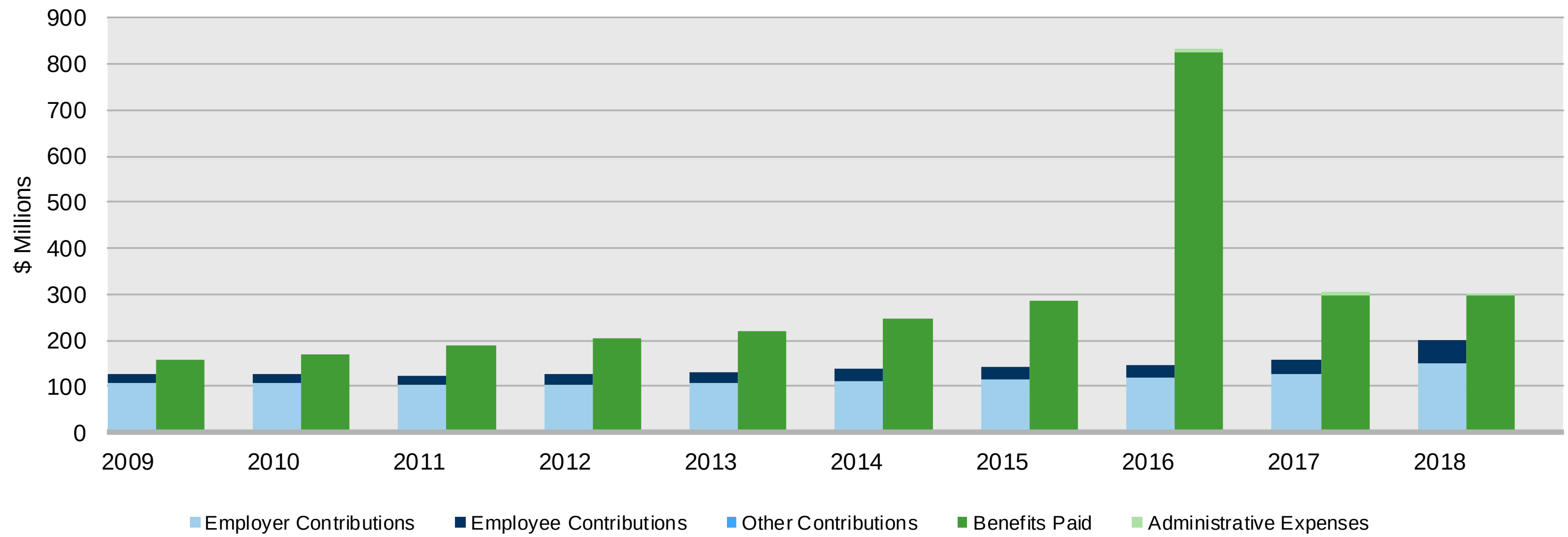
Financial Information

Retirement plan funding anticipates that, over the long term, both contributions (less administrative expenses) and investment earnings (less investment fees) will be needed to cover benefit payments. Retirement plan assets change as a result of the net impact of these income and expense components.

Benefit payments in 2016 totaled $825.1 million, of which $606.3 million were DROP lump-sum payments. This was a one-time event, as members reacted to pending changes in the plan provisions. DROP balances have been annuitized, resulting in more stable projected benefit payment levels in the future.

Additional financial information, including a summary of transactions for the valuation year, is presented in *Section 3, Exhibits D, E* and *F*.

COMPARISON OF CONTRIBUTIONS MADE WITH BENEFITS AND EXPENSES PAID FOR YEARS ENDED DECEMBER 31, 2009 – 2018



It is desirable to have level and predictable plan costs from one year to the next. For this reason, the Board has approved an asset valuation method that gradually adjusts to market value. Under this valuation method, the full value of market fluctuations is not recognized in a single year and, as a result, the asset value and the plan costs are more stable. The amount of the adjustment to recognize market value is treated as income, which may be positive or negative. Realized and unrealized gains and losses are treated equally and, therefore, the sale of assets has no immediate effect on the actuarial value. The actuarial value of assets was reset to market value as of December 31, 2015, with future gains and losses after that date amortized on a straight-line basis over five years.

DETERMINATION OF ACTUARIAL VALUE OF ASSETS FOR YEAR ENDED DECEMBER 31, 2018

		Original Amount[1]	Percent Deferred	Unrecognized Amount[2]	
1.	Market value of assets, December 31, 2018				$2,041,914,130
2.	Calculation of unrecognized return				
	(a) Year ended December 31, 2018	-$105,891,055	80%	-$84,712,844	
	(b) Year ended December 31, 2017	-52,151,589	60	-31,290,954	
	(c) Year ended December 31, 2016	-9,954,337	40	-3,981,734	
	(d) Total unrecognized return				-119,985,532
3.	Preliminary actuarial value: **(1) - (2d)**				$2,161,899,662
4.	Adjustment to be within 20% corridor				0
5.	Final actuarial value of assets as of December 31, 2018: **(3) + (4)**				2,161,899,662
6.	Actuarial value as a percentage of market value: **(5) ÷ (1)**				105.9%
7.	Amount deferred for future recognition[3]: **(1) - (5)**				-$119,985,532

[1]Total return minus expected return on a market value basis

[2]Recognition at 20% per year over five years

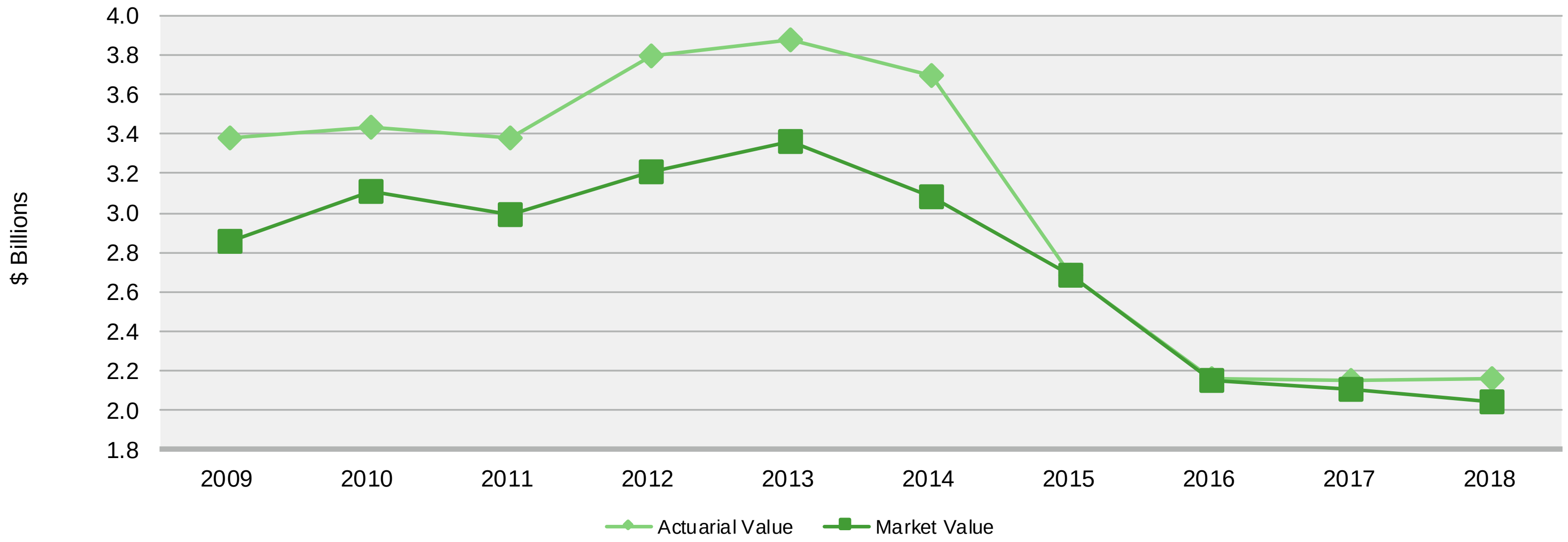
[3]Deferred return as of December 31, 2018 recognized in each of the next four years:

(a) Amount recognized on December 31, 2019	-$33,599,396
(b) Amount recognized on December 31, 2020	-33,599,396
(c) Amount recognized on December 31, 2021	-31,608,529
(d) Amount recognized on December 31, 2022	-21,178,211

Both the actuarial value and market value of assets are representations of the Plan's financial status. As investment gains and losses are gradually taken into account, the actuarial value of assets tracks the market value of assets. The actuarial asset value is significant because the Plan's liabilities are compared to these assets to determine what portion, if any, remains unfunded. Amortization of the unfunded actuarial accrued liability is an important element in determining the contribution requirement.

The decline in asset values from 2013 to 2015 was primarily the result of significant write-downs in the System's asset holdings. The decline from 2015 to 2016 reflects the unusually large number of DROP payments made in 2016.

ACTUARIAL VALUE OF ASSETS VS. MARKET VALUE OF ASSETS AS OF DECEMBER 31, 2009 – 2018



Actuarial Experience

To calculate any actuarially determined contribution, assumptions are made about future events that affect the amount and timing of benefits to be paid and assets to be accumulated. Each year actual experience is measured against the assumptions. If overall experience is more favorable than anticipated (an actuarial gain), any contribution requirement will decrease from the previous year. On the other hand, any contribution requirement will increase if overall actuarial experience is less favorable than expected (an actuarial loss).

Taking account of experience gains or losses in one year without making a change in assumptions reflects the belief that the single years' experience was a short-term development and that, over the long term, experience will return to the original assumptions. For contribution requirements to remain stable, assumptions should approximate experience.

If assumptions are changed, the contribution requirement is adjusted to take into account a change in experience anticipated for all future years.

The total gain is $22,048,914, which includes $37,057,201 from investment losses and $59,106,115 in gains from all other sources. The net experience variation from individual sources other than investments was 1.3% of the actuarial accrued liability. A discussion of the major components of the actuarial experience is on the following pages.

ACTUARIAL EXPERIENCE FOR YEAR ENDED DECEMBER 31, 2018

1	Net loss from investments[1]	-$37,057,201
2	Net gain from administrative expenses	2,732,565
3	Net gain from other experience	56,373,550
4	Net experience gain: **1 + 2 + 3**	$22,048,914

[1]Details on next page.

Investment Experience

A major component of projected asset growth is the assumed rate of return. The assumed return should represent the expected long-term rate of return, based on the Plan's investment policy. The rate of return on the market value of assets was 2.09% for the year ended December 31, 2018.

For valuation purposes, the assumed rate of return on the actuarial value of assets is 7.25%. The actual rate of return on an actuarial basis for the 2018 plan year was 5.48%. Since the actual return for the year was less than the assumed return, the Plan experienced an actuarial loss during the year ended December 31, 2018 with regard to its investments.

INVESTMENT EXPERIENCE

		Year Ended December 31, 2018		Year Ended December 31, 2017	
		Market Value	Actuarial Value	Market Value	Actuarial Value
1	Net investment income	$42,822,297	$115,113,957	$98,457,176	$138,187,578
2	Average value of assets	2,051,218,652	2,098,912,524	2,077,362,278	2,085,325,748
3	Rate of return: **1 ÷ 2**	2.09%	5.48%	4.74%	6.63%
4	Assumed rate of return	7.25%	7.25%	7.25%	7.25%
5	Expected investment income: **2 x 4**	148,713,352	152,171,158	150,608,765	151,186,117
6	Actuarial gain/(loss): **1 – 5**	-$105,891,055	-$37,057,201	-$52,151,589	-$12,998,539

Because actuarial planning is long term, it is useful to see how the assumed investment rate of return has followed actual experience over time. The chart below shows the rate of return on an actuarial basis compared to the actual market value investment return for the last 11 years, including averages over select time periods.

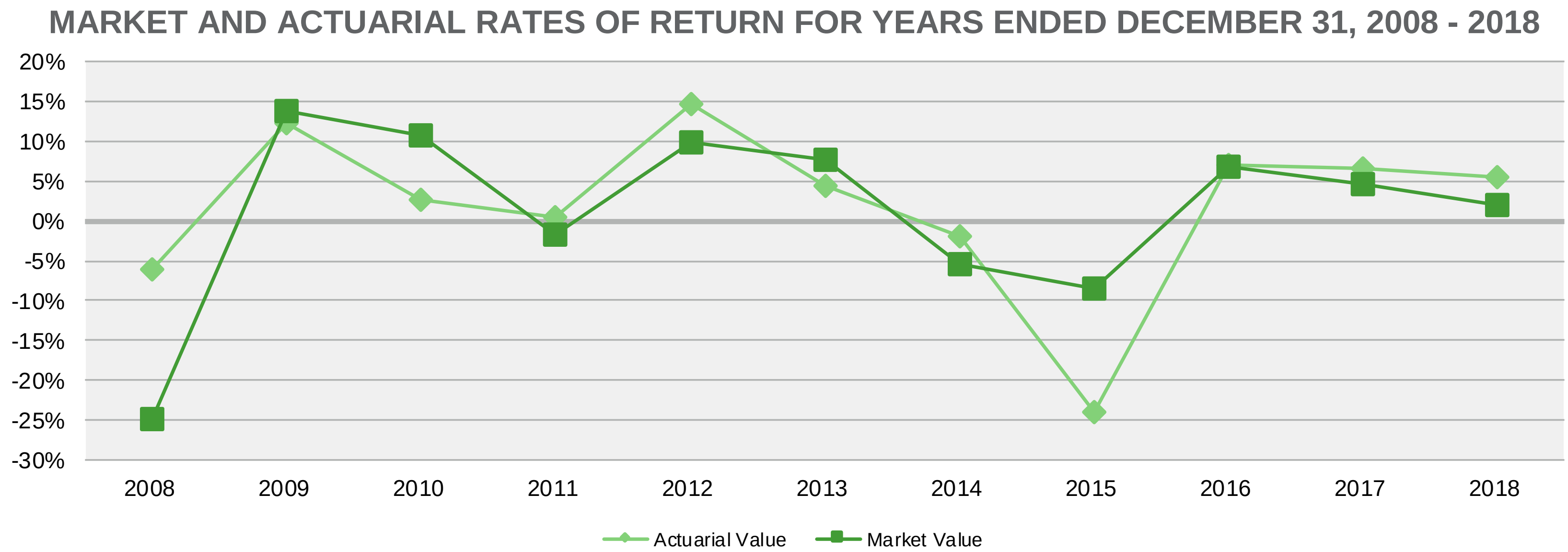
INVESTMENT RETURN – ACTUARIAL VALUE VS. MARKET VALUE: 2008 - 2018

	Actuarial Value Investment Return		Market Value Investment Return	
Year Ended December 31	Amount[1]	Percent	Amount[2]	Percent
2008	-$199,538,242	-6.14%	-$838,497,127	-24.80%
2009	371,704,709	12.29	347,054,071	13.78
2010	90,332,398	2.69	303,461,949	10.72
2011	14,561,313	0.43	-54,844,275	-1.78
2012	493,841,725	14.79	292,719,981	9.92
2013	169,425,156	4.52	243,514,011	7.70
2014	-75,632,075	-1.98	-176,940,296	-5.35
2015	-1,406,733,309	-24.03	-254,829,470	-8.47
2016	167,318,581	7.16	159,355,111	6.82
2017	138,187,578	6.63	98,457,176	4.74
2018	115,113,957	5.48	42,822,297	2.09
Total	-$121,418,209		$162,273,428	
Most recent five-year average return		-7.60%		-1.03%
Most recent ten-year average return		0.27%		3.66%
Most recent 11-year average return		-0.38%		0.53%

Note: Each year's yield is weighted by the average asset value in that year.

[1]Includes a change in asset method for plan years 2012 and 2015.
[2]Return for years 2014 and 2015 includes significant write-downs for Plan's assets.

As described earlier in this section, the actuarial asset valuation method gradually recognizes fluctuations in the market value rate of return. The goal of this is to stabilize the actuarial rate of return and to produce more level pension plan costs.



Administrative Expenses

Administrative expenses for the year ended December 31, 2018 totaled $5,861,410, compared to the assumption of $8,500,000. This resulted in a gain of $2,732,565 for the year, when adjusted for timing. Because it is expected that these expenses will increase, we have maintained the assumption of $8,500,000 for the current year.

Other Experience

There are other differences between the expected and the actual experience that appear when the new valuation is compared with the projections from the previous valuation. These include:

- the extent of turnover among participants,
- retirement experience (earlier or later than projected),
- mortality (more or fewer deaths than projected),
- the number of disability retirements (more or fewer than projected), and
- salary increases (greater or smaller than projected).

The net gain from this other experience for the year ended December 31, 2018 amounted to $56,373,550 which is 1.2% of the actuarial accrued liability.

Changes in the Actuarial Accrued Liability

The actuarial accrued liability as of January 1, 2019 is $4,494,822,504, a decrease of $10,614,681, or 0.2%, from the actuarial accrued liability as of the prior valuation date. The liability is expected to grow each year with normal cost and interest, and to decline due to benefit payments made. Additional fluctuations can occur due to actual experience that differs from expected (as discussed in the previous subsection). It also includes the impact of actuarial assumption and plan provision changes, if any.

Actuarial Assumptions

- The assumption changes reflected in this report are:
  - The salary scale assumption was updated to reflect the 2016 Meet and Confer Agreement, as amended in 2018.
  - The COLA is assumed to begin October 1, 2050 based on the year the System is projected to be 70% funded on a market value basis; last year's assumption was that the COLA would begin October 1, 2053.
- These changes decreased the actuarial accrued liability by 0.89% and decreased the normal cost by 11.95%.
- Details on actuarial assumptions and methods are in *Section 4, Exhibit I*.

Plan Provisions

- There were no changes in plan provisions since the prior valuation.
- A summary of plan provisions is in *Section 4, Exhibit II*.

Development of Unfunded Actuarial Accrued Liability

DEVELOPMENT FOR YEAR ENDED DECEMBER 31, 2018

1	Unfunded actuarial accrued liability at beginning of year		$2,354,397,842
2	Normal cost at beginning of year, including administrative expenses		61,892,453
3	Total contributions		-198,688,827
4	Interest		
	• For whole year on 1 + 2	$175,181,046	
	• For half year on 3	-7,118,165	
	Total interest		168,062,881
5	Expected unfunded actuarial accrued liability		$2,385,664,349
6	Changes due to:		
	• Net experience gain	-$22,048,914	
	• Assumptions	-30,692,593	
	Total changes		-52,741,507
7	Unfunded actuarial accrued liability at end of year		$2,332,922,842

Actuarially Determined Contribution

The actuarially determined contribution is equal to the employer normal cost payment and a payment on the unfunded actuarial accrued liability. As of January 1, 2019, the actuarially determined contribution is $152,084,297, or 41.88% of computation pay.

Texas Code Section 802.101 requires the actuarial valuations of public retirement systems to include a recommended contribution rate based on an amortization period that does not exceed 30 years. On this basis, the actuarially determined employer contribution is 41.88% of computation pay. Under the provisions of HB 3158, the City contributes mandated biweekly amounts through 2024 (but no less than 34.50% of computation pay), plus $13 million per year. Beginning January 1, 2025, the City will contribute 34.50% of computation pay. The effective amortization period, based on the City's Hiring Plan payroll projections, is 38 years.

The contribution requirement as of January 1, 2019 are based on the data previously described, the actuarial assumptions and Plan provisions described in *Section 4*, including all changes affecting future costs adopted at the time of the actuarial valuation, actuarial gains and losses, and changes in the actuarial assumptions.

ACTUARIALLY DETERMINED CONTRIBUTION FOR YEAR BEGINNING JANUARY 1

		2019		2018	
		Amount	% of Total Computation Pay	Amount	% of Total Computation Pay
1.	Total normal cost	$52,392,570	14.43%	$53,684,776	15.52%
2.	Administrative expenses	8,207,677	2.26%	8,207,677	2.37%
3.	Expected member contributions	-49,020,851	-13.50%	-46,714,953	-13.50%
4.	Employer normal cost: (1) + (2) + (3)	$11,579,396	3.19%	$15,177,500	4.39%
5.	Actuarial accrued liability	$4,494,822,504		$4,505,437,185	
6.	Actuarial value of assets	2,161,899,662		2,151,039,343	
7.	Unfunded actuarial accrued liability: (5) - (6)	$2,332,922,842		$2,354,397,842	
8.	Payment on unfunded actuarial accrued liability, 30-year amortization	135,274,585	37.25%	136,519,813	39.45%
9.	Adjustment for timing[1]	5,230,316	1.44%	5,402,815	1.56%
10.	Actuarial determined employer contribution: (4) + (8) + (9)	$152,084,297	41.88%	$157,100,128	45.40%
11.	Total computation pay[2]	$363,117,415		$346,036,690	

[1]Actuarially determined contributions are assumed to be paid at the middle of every year.

[2]Total computation pay, or valuation pay, is the active members' actual payroll for the preceding year, increased by the salary scale applicable for each member to account for their anticipated salary increases in the upcoming year.

Reconciliation of Actuarially Determined Contribution

The chart below details the changes in the actuarially determined contribution from the prior valuation to the current year's valuation.

RECONCILIATION OF ACTUARIALLY DETERMINED CONTRIBUTION FROM JANUARY 1, 2018 TO JANUARY 1, 2019

	Amount
Actuarially Determined Contribution as of January 1, 2018	$157,100,128
• Effect of expected change in amortization payment due to payroll growth	3,888,007
• Effect of maintaining 30-year amortization period	-2,414,823
• Effect of investment loss	2,263,153
• Effect of other gains and losses on accrued liability	-3,609,721
• Effect of changes in actuarial assumptions	-7,626,915
• Effect of contributions less than actuarially determined contribution	426,902
• Net effect of other changes, including composition and number of participants	2,057,566
Total change	-$5,015,831
Actuarially Determined Contribution as of January 1, 2019	$152,084,297

History of Employer Contributions

A history of the most recent years of contributions is shown below.

HISTORY OF EMPLOYER CONTRIBUTIONS: 2016 – 2019

Fiscal Year Ended December 31	Actuarially Determined Employer Contribution (ADEC)		Actual Employer Contribution		Percent Contributed
	Amount	Percentage of Covered Compensation	Amount	Percentage of Covered Compensation	
2016	$261,859,079	71.70%	$119,423,106	32.70%	45.61%
2017	168,865,484	47.25%	126,318,005	35.34%	74.80%
2018	157,100,128	45.40%	149,356,565	43.16%	95.07%
2019	152,084,297	41.88%	N/A	N/A	N/A

Risk

Since the actuarial valuation results are dependent on a given set of assumptions and data as of a specific date, there is a risk that emerging results may differ significantly as actual experience differs from the assumptions.

This report does not contain a detailed analysis of the potential range of future measurements, but does include a brief discussion of some risks that may affect the System. Upon request, a more detailed assessment of the risks can be provided to enable a better understanding of the risks inherent in the Plan. This assessment may include scenario testing, sensitivity testing, stress testing and stochastic modeling.

- **Investment Risk** (the risk that returns will be different than expected)

  The System has experienced some of the challenges associated with investment risk, and has had to write down the value of its assets significantly in recent years. Recognized market returns have been well below the long-term assumption as the System rebalances the investment portfolio, and are expected to continue to be below average in the short-term.

  The market value rate of return over the last ten years has ranged from a low of -8.47% to a high of 13.78%.

- **Contribution Risk** (the risk that actual contributions will be different than expected)

  Plan contributions are set by statute. Periodic projections are prepared by the actuary to determine if expected statutory contributions are sufficient to fund the System and ensure the payment of promised benefits.

  Although State law establishes minimums on the City contributions through 2024, the contribution is scheduled to be a flat 34.50% of computation pay beginning in 2025. If the payroll growth matches the City's Hiring Plan projections, and if all other assumptions are met, the System is projected to be fully funded by 2057. The City's plan reflects significant growth in payroll over 20 years, from $372 million in 2017 to $684 million in 2037. The annual average growth in the City Hiring Plan is 3.09%, compared to the valuation assumption of 2.75%. If payroll growth is more modest, or if there is adverse experience in the System that leads to losses, the period required to achieve 100% funding could be significantly longer.

  Through the first three years of the policy (2017 through 2019), valuation payroll based on participant data is cumulatively $52.4 million less than the City's projections. If the City's Hiring Plan projections are not met and instead the current valuation payroll of $363 million increases by the assumed payroll growth of 2.75% each year, and City and member contributions are based on this projected payroll beginning in 2025, the System is projected to be only 30% funded in 2057, rather than 100% funded.

- **Longevity Risk** (the risk that mortality experience will be different than expected)

  The actuarial valuation includes an expectation of future improvement in life expectancy. Emerging plan experience that does not match these expectations will result in either an increase or decrease in the actuarially determined contribution.

- **Demographic Risk** (the risk that participant experience will be different than assumed)

  Examples of this risk include:

  - Actual retirements occurring earlier or later than assumed. The value of retirement plan benefits is sensitive to the rate of benefit accruals and any early retirement subsidies that apply.
  - More or less active participant turnover than assumed.

- **Actual Experience** Over the Last Ten years and Implications for the Future

  Past experience can help demonstrate the sensitivity of key results to the Plan's actual experience. Over the past ten years:

  - The annual market value investment experience has ranged from a loss of $473 million (including write-downs) to a gain of $133 million. If all investment returns were equal to the assumed rates of return over the last ten years, the market value of assets as of the current valuation date would be approximately $4.2 billion as opposed to the actual value of $2.0 billion.
  - The funded percentage on the actuarial value of assets has ranged from a low of 45.1% to a high of 81.9% since 2010.

- **Maturity Measures**

  As pension plans mature, the cash needed to fulfill benefit obligations will increase over time. Therefore, cash flow projections and analysis should be performed to assure that the Plan's asset allocation is aligned to meet emerging pension liabilities.

  Currently the Plan has a non-active to active participant ratio of 1.01. For the prior year, benefits paid were $98.4 million more than contributions received. As the Plan matures, more cash will be needed from the investment portfolio to meet benefit payments.

GFOA Solvency Test

The Actuarial Accrued Liability represents the present value of benefits earned, calculated using the plan's actuarial cost method. The Actuarial Value of Assets reflects the financial resources available to liquidate the liability. The portion of the liability covered by assets reflects the extent to which accumulated plan assets are sufficient to pay future benefits, and is shown for liabilities associated with employee contributions, pensioner liabilities, and other liabilities.

The Government Finance Officers Association (GFOA) recommends that the funding policy aim to achieve a funded ratio of 100 percent. As noted previously, the funding policy adopted by the State in HB 3158 meets this standard, with full funding projected in 2057, if the City's Hiring Plan payroll projections come to fruition. City and member contributions, as well as investment returns, will be necessary to increase the assets sufficiently to cover the System's liabilities.

GFOA SOLVENCY TEST AS OF DECEMBER 31

	2019	2018
Actuarial accrued liability (AAL)		
• Active member contributions	$292,370,335	$280,965,388
• Retirees and beneficiaries	3,098,053,613	2,989,814,931
• Active and inactive members (employer-financed)	1,104,398,556	1,234,656,866
Total	$4,494,822,504	$4,505,437,185
Actuarial value of assets	$2,161,899,662	$2,151,039,343
Cumulative portion of AAL covered		
• Active member contributions	100.00%	100.00%
• Retirees and beneficiaries	60.35%	62.55%
• Active and inactive members (employer-financed)	0.00%	0.00%

Actuarial Balance Sheet

An overview of the Plan's funding is given by an Actuarial Balance Sheet. In this approach, first the amount and timing of all future payments that will be made by the Plan for current participants is determined. Then these payments are discounted at the valuation interest rate to the date of the valuation, thereby determining the present value, referred to as the "liability" of the Plan.

Second, this liability is compared to the assets. The "assets" for this purpose include the net amount of assets already accumulated by the Plan, the present value of future member contributions, the present value of future employer normal cost contributions, and the present value of future employer amortization payments for the unfunded actuarial accrued liability.

ACTUARIAL BALANCE SHEET

	Year Ended	
	December 31, 2018	December 31, 2017
Liabilities		
• Present value of benefits for retired members and beneficiaries (non-DROP)	$2,269,533,590	$2,180,228,938
• Present value of benefits for retired members and beneficiaries (DROP)	828,520,023	809,585,993
• Present value of benefits for inactive vested members	31,429,840	28,394,650
• Present value of benefits for active members	1,805,794,095	1,972,348,070
Total liabilities	**$4,935,277,548**	**$4,990,557,651**
Assets		
• Total valuation value of assets	$2,161,899,662	$2,151,039,343
• Present value of future contributions by members	408,403,137	416,859,565
• Present value of future employer contributions for:		
» Entry age cost	32,051,907	68,260,901
» Unfunded actuarial accrued liability	2,332,922,842	2,354,397,842
Total of current and future assets	**$4,935,277,548**	**$4,990,557,651**

Section 3: Supplemental Information

EXHIBIT A – TABLE OF PLAN COVERAGE

Category	Year Ended December 31		Change From Prior Year
	2018	2017	
Active members in valuation:			
• Number	5,012	4,952	1.2%
• Average age	40.1	40.6	-0.5
• Average years of service	12.8	13.4	-0.6
• Total computation pay	$363,117,415	$346,036,690	4.9%
• Average computation pay	72,450	69,878	3.7%
• Accumulated contribution balances	292,370,335	280,965,388	4.1%
• Total active vested members	3,677	3,757	-2.1%
Active members (excluding DROP):			
• Number	4,529	4,326	4.7%
• Average age	38.3	38.3	0.0
• Average years of service	10.9	11.0	-0.1
• Total computation pay	$319,183,812	$292,533,861	9.1%
• Average computation pay	70,476	67,622	4.2%
Active members in valuation (DROP only):			
• Number	483	626	-22.8%
• Average age	56.8	56.1	0.7
• Average years of service	30.1	29.7	0.4
• Total computation pay	$43,933,603	$53,502,829	-17.9%
• Average computation pay	90,960	85,468	6.4%
• DROP account balances	192,374,548	241,364,638	-20.3%
Inactive vested members:			
• Number	230	226	1.8%
• Average age	40.6	39.8	0.8
• Average monthly benefit	$1,247	$1,164	7.1%
Terminated members due a refund of contributions:			
• Number	431	399	8.0%
• Accumulated contribution balance	$1,422,084	$1,008,098	41.1%

Retired members:			
• Number in pay status	3,583	3,455	3.7%
• Average age	67.2	67.1	0.1
• Average monthly benefit	$4,862	$4,831	0.6%
Disabled members:			
• Number in pay status	134	143	-6.3%
• Average age	67.6	66.8	0.8
• Average monthly benefit	$3,591	$3,570	0.6%
Beneficiaries:			
• Number in pay status	1,132	1,108	2.2%
• Average age	72.4	72.5	-0.1
• Average monthly benefit	$2,250	$2,191	2.7%
Beneficiaries with DROP only:			
• Number	70	50	40.0%

EXHIBIT B-1 – TOTAL MEMBERS IN ACTIVE SERVICE AS OF DECEMBER 31, 2018 BY AGE, YEARS OF SERVICE, AND AVERAGE COVERED COMPENSATION

		Years of Service								
Age	**Total**	**0 - 4**	**5 - 9**	**10 - 14**	**15 - 19**	**20 - 24**	**25 - 29**	**30 - 34**	**35 - 39**	**40 & over**
Under 25	230	230	- -	- -	- -	- -	- -	- -	- -	- -
	$50,956	$50,956	- -	- -	- -	- -	- -	- -	- -	- -
25 - 29	670	561	108	1	- -	- -	- -	- -	- -	- -
	54,727	52,852	$64,356	$66,475	- -	- -	- -	- -	- -	- -
30 - 34	908	342	392	174	- -	- -	- -	- -	- -	- -
	62,055	53,645	66,002	69,692	- -	- -	- -	- -	- -	- -
35 - 39	802	125	239	371	67	- -	- -	- -	- -	- -
	68,136	54,472	65,497	71,936	$82,001	- -	- -	- -	- -	- -
40 - 44	735	36	100	245	286	68	- -	- -	- -	- -
	77,953	55,716	65,145	72,709	86,746	$90,466	- -	- -	- -	- -
45 - 49	703	15	37	106	221	248	76	- -	- -	- -
	86,022	74,013	65,094	72,444	85,983	93,285	$93,930	- -	- -	- -
50 - 54	556	3	13	42	68	154	215	61	- -	- -
	88,731	57,163	68,899	74,374	85,401	90,059	92,560	$91,254	- -	- -
55 - 59	332	4	8	20	25	34	87	126	28	- -
	89,834	63,908	76,032	78,315	86,503	90,463	90,701	92,585	$92,847	- -
60 - 64	58	- -	2	4	3	5	13	14	13	4
	88,138	- -	78,116	68,886	86,126	96,387	84,987	91,082	90,564	$95,651
65 - 69	14	- -	2	1	- -	- -	1	2	2	6
	89,899	- -	76,675	83,701	- -	- -	73,376	86,684	103,066	94,776
70 & over	4	- -	- -	- -	- -	- -	1	- -	- -	3
	110,318	- -	- -	- -	- -	- -	100,123	- -	- -	113,716
Total	5,012	1,316	901	964	670	509	393	203	43	13
	$72,450	$53,244	$65,720	$72,016	$85,872	$91,775	$92,134	$92,023	$92,632	$99,416

EXHIBIT B-2 – POLICE MEMBERS IN ACTIVE SERVICE AS OF DECEMBER 31, 2018 BY AGE, YEARS OF SERVICE, AND AVERAGE COVERED COMPENSATION

		Years of Service								
Age	Total	0-4	5-9	10-14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 & over
Under 25	138	138	- -	- -	- -	- -	- -	- -	- -	- -
	$52,143	$52,143	- -	- -	- -	- -	- -	- -	- -	- -
25 - 29	389	306	83	- -	- -	- -	- -	- -	- -	- -
	55,797	53,510	$64,230	- -	- -	- -	- -	- -	- -	- -
30 - 34	503	144	243	116	- -	- -	- -	- -	- -	- -
	63,215	55,326	64,975	$69,322	- -	- -	- -	- -	- -	- -
35 - 39	467	50	120	246	51	- -	- -	- -	- -	- -
	69,231	55,970	64,694	71,644	$81,270	- -	- -	- -	- -	- -
40 - 44	433	21	56	146	167	43	- -	- -	- -	- -
	76,575	56,466	64,217	71,820	84,061	$89,566	- -	- -	- -	- -
45 - 49	469	12	33	79	130	165	50	- -	- -	- -
	84,444	77,289	65,063	72,559	84,138	92,440	$92,136	- -	- -	- -
50 - 54	392	1	13	30	39	101	179	29	- -	- -
	88,276	63,563	68,899	73,260	85,729	89,659	91,964	$89,196	- -	- -
55 - 59	187	- -	4	13	19	22	57	60	12	- -
	89,792	- -	73,630	75,057	85,313	93,730	91,105	92,145	$93,020	- -
60 - 64	30	- -	1	3	3	3	9	7	4	- -
	87,419	- -	84,081	71,403	86,126	90,367	85,922	91,626	95,028	- -
65 - 69	6	- -	1	1	- -	- -	- -	- -	1	3
	88,005	- -	81,411	83,701	- -	- -	- -	- -	88,359	$91,519
70 & over	2	- -	- -	- -	- -	- -	1	- -	- -	1
	109,420	- -	- -	- -	- -	- -	100,123	- -	- -	118,718
Total	3,016	672	554	634	409	334	296	96	17	4
	$73,128	$54,333	$64,950	$71,538	$83,970	$91,295	$91,672	$91,216	$93,219	$98,319

EXHIBIT B-3 – FIRE MEMBERS IN ACTIVE SERVICE AS OF DECEMBER 31, 2018 BY AGE, YEARS OF SERVICE, AND AVERAGE COVERED COMPENSATION

		Years of Service								
Age	Total	0-4	5-9	10-14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 & over
Under 25	92	92	- -	- -	- -	- -	- -	- -	- -	- -
	$49,176	$49,176	- -	- -	- -	- -	- -	- -	- -	- -
25 - 29	281	255	25	1	- -	- -	- -	- -	- -	- -
	53,245	52,063	$64,775	$66,475	- -	- -	- -	- -	- -	- -
30 - 34	405	198	149	58	- -	- -	- -	- -	- -	- -
	60,614	52,423	67,678	70,430	- -	- -	- -	- -	- -	- -
35 - 39	335	75	119	125	16	- -	- -	- -	- -	- -
	66,609	53,474	66,307	72,510	$84,329	- -	- -	- -	- -	- -
40 - 44	302	15	44	99	119	25	- -	- -	- -	- -
	79,928	54,666	66,325	74,021	90,516	$92,014	- -	- -	- -	- -
45 - 49	234	3	4	27	91	83	26	- -	- -	- -
	89,185	60,911	65,343	72,106	88,618	94,967	$97,380	- -	- -	- -
50 - 54	164	2	- -	12	29	53	36	32	- -	- -
	89,816	53,963	- -	77,159	84,960	90,821	95,525	$93,119	- -	- -
55 - 59	145	4	4	7	6	12	30	66	16	- -
	89,888	63,908	78,434	84,365	90,274	84,473	89,933	92,986	$92,717	- -
60 - 64	28	- -	1	1	- -	2	4	7	9	4
	88,909	- -	72,150	61,331	- -	105,417	82,884	90,538	88,581	$95,651
65 - 69	8	- -	1	- -	- -	- -	1	2	1	3
	91,319	- -	71,938	- -	- -	- -	73,376	86,683	117,773	98,033
70 & over	2	- -	- -	- -	- -	- -	- -	- -	- -	2
	111,215	- -	- -	- -	- -	- -	- -	- -	- -	111,215
Total	1,996	644	347	330	261	175	97	107	26	9
	$71,424	$52,107	$66,949	$72,933	$88,852	$92,689	$93,543	$92,748	$92,249	$99,904

EXHIBIT C – RECONCILIATION OF MEMBER DATA

	Active Members	Inactive Vested Members[1]	Disableds	Retired Members	Beneficiaries[2]	Total
Number as of January 1, 2018	**4,952**	**226**	**143**	**3,455**	**1,108**	**9,884**
• New members	410	N/A	N/A	N/A	N/A	410
• Terminations – with vested rights	-38	38	0	0	0	0
• Terminations – without vested rights	-37	N/A	N/A	N/A	N/A	-37
• Retirements	-187	-6	N/A	193	N/A	0
• New disabilities	0	0	0	N/A	N/A	0
• Return to work	12	-2	0	0	N/A	10
• Deceased	-12	0	-9	-65	-45	-131
• New beneficiaries	0	0	0	0	75	75
• Lump sum payouts[3]	-88	-26	0	0	0	-114
• Certain period expired	N/A	N/A	0	0	-6	-6
Number as of January 1, 2019	**5,012**	**230**	**134**	**3,583**	**1,132**	**10,091**

[1] Excludes terminated members due a refund of contributions.
[2] Excludes beneficiaries with a DROP only
[3] Members who terminated and requested a refund of member contributions.

EXHIBIT D – SUMMARY STATEMENT OF INCOME AND EXPENSES ON A MARKET VALUE BASIS

		Year Ended December 31, 2018		Year Ended December 31, 2017
Net assets at market value at the beginning of the year[1]		$2,103,345,471		$2,149,836,260
Contribution income:				
• Employer contributions	$149,356,565		$126,318,005	
• Member contributions	49,332,262		32,977,425	
• Less administrative expenses	-5,861,410		-8,089,584	
Net contribution income		*$192,827,417*		*$151,205,846*
Investment income:				
• Interest, dividends and other income	$45,250,992		$33,099,632	
• Recognition of capital appreciation	5,588,891		74,836,102	
• Less interest expense	0		-1,279,517	
• Adjustment to beginning of year value[2]	0		825,543	
• Less investment fees	-8,017,586		-9,024,584	
Net investment income		*$42,822,297*		*$98,457,176*
Total income available for benefits		**$235,649,714**		**$249,663,022**
Less benefit payments:				
• Benefit payments	-$294,447,006		-$292,576,281	
• Refunds	-2,634,049		-3,577,530	
Net benefit payments		*-$297,081,055*		*-$296,153,811*
Change in market value of assets		**-$61,431,341**		**-$46,490,789**
Net assets at market value at the end of the year		**$2,041,914,130**		**$2,103,345,471**

[1] Based on preliminary unaudited assets
[2] Adjustment from draft financials used in the prior valuation to the final audited statements

EXHIBIT E – SUMMARY STATEMENT OF PLAN ASSETS

	December 31, 2018		December 31, 2017	
Cash equivalents and prepaid expenses		$50,053,963		$118,022,612
Invested securities lending collateral		20,376,453		12,050,625
Capital assets		12,377,791		12,608,396
Total accounts receivable		42,282,571		34,359,460
Investments:				
• Real assets	$695,162,373		$794,476,173	
• Equity securities	432,055,193		466,132,328	
• Fixed income securities	511,184,404		325,258,334	
• Private equity	310,090,215		220,240,515	
• Alternative investments	0		143,709,605	
• Other	40,680,894		24,064,096	
Total investments at market value		$1,989,173,079		$1,973,881,051
Total assets		$2,114,263,857		$2,150,922,144
Total liabilities		-72,349,727		-47,576,673
Net assets at market value		**$2,041,914,130**		**$2,103,345,471**
Net assets at actuarial value		**$2,161,899,662**		**$2,151,039,343**

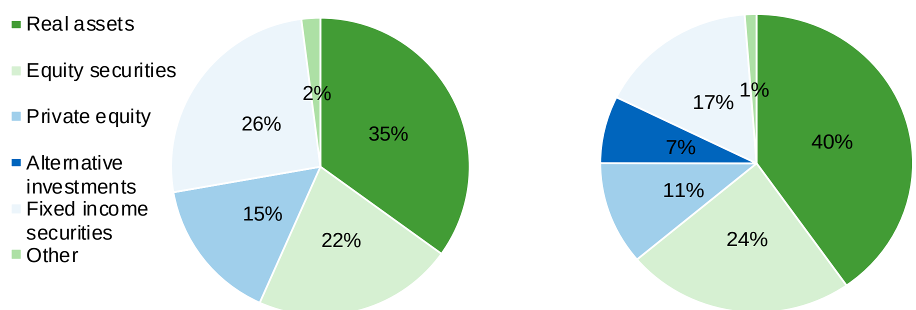


EXHIBIT F – DEVELOPMENT OF THE FUND THROUGH DECEMBER 31, 2018

Year Ended December 31	Employer Contributions	Member Contributions	Net Investment Return[1]	Admin. Expenses[2]	Benefit Payments	Market Value of Assets at Year-End	Actuarial Value of Assets at Year-End	Actuarial Value as a Percent of Market Value
2009	$107,699,648	$19,584,241	$347,054,071	$0	$155,747,987	$2,851,645,944	$3,382,907,776	118.6%
2010	108,060,956	19,790,189	303,461,949	0	170,272,496	3,112,686,542	3,430,818,823	110.2%
2011	102,437,115	19,493,460	-54,844,275	0	188,829,489	2,990,943,353	3,378,481,222	113.0%
2012	103,310,264	22,490,884	292,719,981	0	203,099,511	3,206,364,971	3,795,024,584	118.4%
2013	105,711,435	26,044,579	243,514,011	0	218,884,493	3,362,750,503	3,877,321,261	115.3%
2014	109,791,512	28,969,429	-176,940,296	0	245,176,251	3,079,394,897	3,695,273,876	120.0%
2015	114,885,723	25,676,327	-254,829,470	0	285,003,174	2,680,124,303	2,680,124,303	100.0%
2016[3]	119,423,106	25,518,317	159,355,111	9,492,445	825,092,132	2,149,836,260	2,157,799,730	100.4%
2017	126,318,005	32,977,425	98,457,176	8,089,584	296,153,811	2,103,345,471	2,151,039,343	102.3%
2018	149,356,565	49,332,262	42,822,297	5,861,410	297,081,055	2,041,914,130	2,161,899,662	105.9%

[1]On a market basis, net of investment fees

[2]Administrative expenses were subtracted from net investment return prior to the 2016 valuation

[3]Unaudited assets were used for the January 1, 2017 actuarial valuation. When the audited financial statements were completed, there were updates to the employer contributions and investment return amounts, resulting in a revision to the market value of assets. Thus, the amounts shown above as of December 31, 2016 differ from the System's and City's Comprehensive Annual Financial Reports. The difference are immaterial to the System's actuarial results.

EXHIBIT G – DEFINITION OF PENSION TERMS

The following list defines certain technical terms for the convenience of the reader:

Actuarial Accrued Liability for Actives:	The equivalent of the accumulated normal costs allocated to the years before the valuation date.
Actuarial Accrued Liability for Pensioners and Beneficiaries:	The single-sum value of lifetime benefits to existing pensioners and beneficiaries. This sum takes account of life expectancies appropriate to the ages of the annuitants and the interest that the sum is expected to earn before it is entirely paid out in benefits.
Actuarial Cost Method:	A procedure allocating the Actuarial Present Value of Future Benefits to various time periods; a method used to determine the Normal Cost and the Actuarial Accrued Liability that are used to determine the actuarially determined contribution.
Actuarial Gain or Loss:	A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions, during the period between two Actuarial Valuation dates. Through the actuarial assumptions, rates of decrements, rates of salary increases, and rates of fund earnings have been forecasted. To the extent that actual experience differs from that assumed, Actuarial Accrued Liabilities emerge which may be the same as forecasted, or may be larger or smaller than projected. Actuarial gains are due to favorable experience, e.g., assets earn more than projected, salary increases are less than assumed, members retire later than assumed, etc. Favorable experience means actual results produce actuarial liabilities not as large as projected by the actuarial assumptions. On the other hand, actuarial losses are the result of unfavorable experience, i.e., actual results yield in actuarial liabilities that are larger than projected. Actuarial gains will shorten the time required for funding of the actuarial balance sheet deficiency while actuarial losses will lengthen the funding period.
Actuarially Equivalent:	Of equal actuarial present value, determined as of a given date and based on a given set of Actuarial Assumptions.
Actuarial Present Value (APV):	The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions. Each such amount or series of amounts is: Adjusted for the probable financial effect of certain intervening events (such as changes in compensation levels, marital status, etc.) Multiplied by the probability of the occurrence of an event (such as survival, death, disability, withdrawal, etc.) on which the payment is conditioned, and Discounted according to an assumed rate (or rates) of return to reflect the time value of money.

Actuarial Present Value of Future Plan Benefits:	The Actuarial Present Value of benefit amounts expected to be paid at various future times under a particular set of Actuarial Assumptions, taking into account such items as the effect of advancement in age, anticipated future compensation, and future service credits. The Actuarial Present Value of Future Plan Benefits includes the liabilities for active members, retired members, beneficiaries receiving benefits, and inactive members entitled to either a refund or a future retirement benefit. Expressed another way, it is the value that would have to be invested on the valuation date so that the amount invested plus investment earnings would provide sufficient assets to pay all projected benefits and expenses when due.
Actuarial Valuation:	The determination, as of a valuation date, of the Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets, and related Actuarial Present Values for a plan. An Actuarial Valuation for a governmental retirement system typically also includes calculations of items needed for compliance with GASB, such as the Actuarially Determined Contribution (ADC) and the Net Pension Liability (NPL).
Actuarial Value of Assets (AVA):	The value of the Fund's assets as of a given date, used by the actuary for valuation purposes. This may be the market or fair value of plan assets, but commonly plans use a smoothed value in order to reduce the year-to-year volatility of calculated results, such as the funded ratio and the ADC.
Actuarially Determined:	Values that have been determined utilizing the principles of actuarial science. An actuarially determined value is derived by application of the appropriate actuarial assumptions to specified values determined by provisions of the law.
Actuarially Determined Contribution (ADC):	The employer's periodic required contributions, expressed as a dollar amount or a percentage of covered plan compensation, determined under the Plan's funding policy. The ADC consists of the Employer Normal Cost and the Amortization Payment.
Amortization Method:	A method for determining the Amortization Payment. The most common methods used are level dollar and level percentage of payroll. Under the Level Dollar method, the Amortization Payment is one of a stream of payments, all equal, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the Amortization Payment is one of a stream of increasing payments, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the stream of payments increases at the assumed rate at which total covered payroll of all active members will increase.
Amortization Payment:	The portion of the pension plan contribution, or ADC, that is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability.

Assumptions or Actuarial Assumptions:	The estimates upon which the cost of the Fund is calculated, including: Investment return - the rate of investment yield that the Fund will earn over the long-term future; Mortality rates - the death rates of employees and pensioners; life expectancy is based on these rates; Retirement rates - the rate or probability of retirement at a given age or service; Disability rates – the probability of disability retirement at a given age; Withdrawal rates - the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement; Salary increase rates - the rates of salary increase due to inflation and productivity growth.
Closed Amortization Period:	A specific number of years that is counted down by one each year, and therefore declines to zero with the passage of time. For example, if the amortization period is initially set at 30 years, it is 29 years at the end of one year, 28 years at the end of two years, etc. See Open Amortization Period.
Decrements:	Those causes/events due to which a member's status (active-inactive-retiree-beneficiary) changes, that is: death, retirement, disability, or withdrawal.
Defined Benefit Plan:	A retirement plan in which benefits are defined by a formula applied to the member's compensation and/or years of service.
Defined Contribution Plan:	A retirement plan, such as a 401(k) plan, a 403(b) plan, or a 457 plan, in which the contributions to the plan are assigned to an account for each member, the plan's earnings are allocated to each account, and each member's benefits are a direct function of the account balance.
Employer Normal Cost:	The portion of the Normal Cost to be paid by the employer. This is equal to the Normal Cost less expected member contributions.
Experience Study:	A periodic review and analysis of the actual experience of the Fund that may lead to a revision of one or more actuarial assumptions. Actual rates of decrement and salary increases are compared to the actuarially assumed values and modified as deemed appropriate by the Actuary.
Funded Ratio:	The ratio of the actuarial value of assets (AVA) to the actuarial accrued liability (AAL). Plans sometimes calculate a market funded ratio, using the market value of assets (MVA), rather than the AVA.

GASB 67 and GASB 68:	Governmental Accounting Standards Board (GASB) Statements No. 67 and No. 68. These are the governmental accounting standards that set the accounting rules for public retirement systems and the employers that sponsor or contribute to them. Statement No. 68 sets the accounting rules for the employers that sponsor or contribute to public retirement systems, while Statement No. 67 sets the rules for the systems themselves.
Investment Return:	The rate of earnings of the Fund from its investments, including interest, dividends and capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one year to the next.
Net Pension Liability (NPL):	The Net Pension Liability is equal to the Total Pension Liability minus the Plan Fiduciary Net Position.
Normal Cost:	That portion of the Actuarial Present Value of pension plan benefits and expenses allocated to a valuation year by the Actuarial Cost Method. Any payment in respect of an Unfunded Actuarial Accrued Liability is not part of Normal Cost (see Amortization Payment). For pension plan benefits that are provided in part by employee contributions, Normal Cost refers to the total of employee contributions and employer Normal Cost unless otherwise specifically stated.
Open Amortization Period:	An open amortization period is one which is used to determine the Amortization Payment but which does not change over time. If the initial period is set as 30 years, the same 30-year period is used in determining the Amortization Period each year. In theory, if an Open Amortization Period with level percentage of payroll is used to amortize the Unfunded Actuarial Accrued Liability, the UAAL will never decrease, but will become smaller each year, in relation to covered payroll, if the actuarial assumptions are realized.
Plan Fiduciary Net Position:	Market value of assets.
Total Pension Liability (TPL):	The actuarial accrued liability under the entry age normal cost method and based on the blended discount rate as described in GASB 67 and 68.
Unfunded Actuarial Accrued Liability:	The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. This value may be negative, in which case it may be expressed as a negative Unfunded Actuarial Accrued Liability, also called the Funding Surplus.
Valuation Date or Actuarial Valuation Date:	The date as of which the value of assets is determined and as of which the Actuarial Present Value of Future Plan Benefits is determined. The expected benefits to be paid in the future are discounted to this date.

Section 4: Actuarial Valuation Basis

EXHIBIT I – ACTUARIAL ASSUMPTIONS AND ACTUARIAL COST METHOD

Rationale for Assumptions:

The information and analysis used by the Board in selecting each assumption that has a significant effect on this actuarial valuation is shown in the Experience Study Report for the five-year period ended December 31, 2014, with subsequent changes related to the plan changes and modifications based on the 2016 Meet and Confer Agreement, as amended in 2018.

Net Investment Return:

7.25%

The net investment return assumption was chosen by the System's Board of Trustees, with input from the actuary. This assumption is a long-term estimate derived from historical data, current and recent market expectations, and professional judgment. As part of the analysis, a building block approach was used that reflects inflation expectations and anticipated risk premiums for each of the portfolio's asset classes, as well as the System's target asset allocation.

Salary Scale:

	Rate (%)					
Years of Service	Officers & Officer Trainees	Corporals, Drivers & Senior Officers	Sergeants, Lieutenants, Captains & Majors	Deputy Chiefs	Assistant Chiefs	Chiefs
1	0.00	0.00	5.00	5.00	5.00	5.00
2	0.00	2.75	5.00	5.00	5.00	5.00
3	2.75	5.00	5.00	5.00	5.00	5.00
4-6	5.00	5.00	5.00	5.00	5.00	5.00
7	5.00	5.00	5.00	2.00	5.00	5.00
8	2.00	5.00	2.00	2.00	5.00	5.00
9-11	2.00	2.00	2.00	2.00	5.00	5.00
12-14	2.00	2.00	2.00	2.00	2.00	5.00
15+	2.00	2.00	2.00	2.00	2.00	2.00

Rates above include allowance for inflation of 2.75% per year.

The salary scale assumption is 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, 2014 and the 2016 Meet and Confer Agreement, as amended in 2018.

	Between October 1, 2018 and September 30, 2019, members received or are scheduled to receive two step raises based on their anniversary date. Members with anniversary dates between October 1 and December 31 had their two step raises accounted for in the valuation payroll. Members with anniversary dates between January 1 and September 30 are assumed to receive two step raises in 2019.
Payroll Growth:	2.75%, used to amortize the unfunded actuarial accrued liability as a level percentage of payroll.
Cost-of-Living Adjustments:	
Prior to October 1, 2050	0.00%
Beginning October 1, 2050	2.00%, on original benefit
	The assumption for the year the COLA begins will be updated on an annual basis and set equal to the year the System is projected to be 70% funded on a market value basis after the COLA is reflected.
Funding Projections:	
Payroll Growth	For purposes of projecting the System's funded status to project when the System will reach 70% funded on a market value basis (and therefore meet COLA requirements), City contributions beginning January 1, 2025 are assumed to be 34.50% of the City's Hiring Plan projections. Beginning in 2038, after the end of the City's Hiring Plan projection, payroll is assumed to increase by 2.75%.

City's Hiring Plan Payroll Projection (in millions)			
Year	**Payroll**	**Year**	**Payroll**
2017	$372	2028	$525
2018	364	2029	545
2019	383	2030	565
2020	396	2031	581
2021	408	2032	597
2022	422	2033	614
2023	438	2034	631
2024	454	2035	648
2025	471	2036	666
2026	488	2037	684
2027	507		

Market Value Asset Returns	5.25% in 2019, 5.75% in 2020, 6.25% in 2021, 6.75% in 2022 and 7.25% annually thereafter

Administrative Expenses:	$8,500,000 per year, payable monthly (equivalent to $8,207,677 at the beginning of the year) or 1% of computation pay, if greater
Mortality Rates:	
Pre-retirement	RP-2014 Employee Mortality Table, set back two years for males, projected generationally using Scale MP-2015
Healthy annuitants	RP-2014 Blue Collar Healthy Annuitant Mortality Table, set forward two years for females, projected generationally using Scale MP-2015
Disabled annuitants	RP-2014 Disabled Retiree Mortality Table, set back three years for males and females, projected generationally using Scale MP-2015
	The tables above, with adjustments as shown, reasonably reflect the mortality experience of the System as of the measurement date. The mortality tables were then generationally projected using Scale MP-2015 to anticipate future mortality improvement.

Mortality and Disability Rates Before Retirement:

	Rate (%)			
	Mortality[1]		Disability[2]	
Age	Male	Female	Male	Female
20	0.03	0.02	0.010	0.010
25	0.05	0.02	0.015	0.015
30	0.04	0.02	0.020	0.020
35	0.05	0.03	0.025	0.025
40	0.06	0.04	0.030	0.030
45	0.08	0.07	0.035	0.035
50	0.14	0.11	0.040	0.040
55	0.23	0.17	--	--
60	0.38	0.24	--	--
65	1.26	1.05	--	--
70	1.97	1.70	--	--
75	3.15	2.81	--	--
80	5.19	4.71	--	--

[1]Rates shown do not include generational projection; rates beginning at age 65 are for healthy annuitants
[2]100% of disabilities are assumed to be service-related

Withdrawal Rates Before Retirement:

Years of Service	Rate (%) Police	Rate (%) Fire
0	14.00	5.50
1	6.00	4.50
2	5.50	4.00
3	5.00	3.50
4	4.50	3.00
5	4.00	1.50

Years of Service	Rate (%) Police	Rate (%) Fire
6	3.50	1.00
7	3.00	0.75
8	2.50	0.50
9	2.00	0.50
10-37	1.00	0.50
38 & over	0.00	0.00

Retirement Rates:

DROP Active Members

Police Age	Police Rate (%)
Under 50	1.00
50-52	3.00
53-54	7.00
55	15.00
56-57	20.00
58-64	25.00
65-66	50.00
67	100.00

Fire Age	Fire Rate (%)
Under 50	0.75
50-54	2.50
55-58	12.00
59-64	25.00
65-66	30.00
67	100.00

Non-DROP Active Members

Members hired prior to March 1, 2011 with less than 20 years of service as of September 1, 2017		Members hired prior to March 1, 2011 with at least 20 years of service as of September 1, 2017		Members hired on or after March 1, 2011	
Age	**Rate (%)**	**Age**	**Rate (%)**	**Age**	**Rate (%)**
Under 50	0	Under 50	1	Under 50	1
50	10	50	20	50	5
51	5	51	10	51	5
52	5	52	10	52	5
53	5	53	10	53	5
54	5	54	20	54	10
55	15	55	40	55	20
56	10	56	50	56	30
57	5	57	50	57	40
58	60	58	60	58	50
59	50	59	60	59	50
60	50	60	60	60	50
61	50	61	60	61	50
62 & over	100	62 & over	100	62 & over	100

100% retirement rate once benefit multiplier hits 90% maximum.

Weighted Average Retirement Age: Age 56, determined as follows: The weighted average retirement age for each participant is calculated as the sum of the product of each potential current or future retirement age times the probability of surviving from current age to that age and then retiring at that age, assuming no other decrements. The overall weighted retirement age is the average of the individual retirement ages based on all the active participants included in the January 1, 2019 actuarial valuation.

Retirement Rates for Inactive Vested Participants: Terminated vested members who terminated prior to September 1, 2017 are assumed to retire at age 50

Terminated vested members who terminated on or after September 1, 2017 are assumed to retire at age 58

DROP Utilization:	No members are assumed to elect to enter the DROP
Interest on DROP Accounts:	3.00% on account balances as of September 1, 2017, payable upon retirement 0.0% on account balances accrued after September 1, 2017
DROP Payment Period:	Based on expected lifetime as of the later of September 1, 2017 or retirement date. Expected lifetime determined based on an 85% male/15% female blend of the current healthy annuitant mortality tables.
DROP Annuitization Interest:	3.00%. Based on United States Department of Commerce Daily Treasury Yield Curve Rates for durations between 5 and 30 years.
Actuarial Equivalence:	Actuarial equivalence for optional forms of benefit payments are based on an 85% male/15% female blend of the current healthy annuitant mortality tables, along with an interest rate of 7.25%
Unknown Data for Participants:	Same age and service as those exhibited by members with similar known characteristics. If not specified, members are assumed to be male.
Family Composition:	75% of participants are assumed to be married. Females are assumed to be three years younger than males. The youngest child is assumed to be ten years old.
Benefit Election:	Married participants are assumed to receive the Joint and Survivor annuity form of payment and non-married participants are assumed to receive a Life Only annuity.
Actuarial Value of Assets:	Set to market value of assets as of December 31, 2015. Thereafter, market value of assets less unrecognized returns in each of the last five years beginning with 2016. 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.
Actuarial Cost Method:	Entry Age Normal Actuarial Cost Method. Entry Age is the age at the time the member commenced employment. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis, with Normal Cost determined using the plan of benefits applicable to each participant. Actuarial Liability is allocated by salary.
Amortization Methodology:	The actuarially determined contribution is calculated using a 30-year amortization of unfunded actuarially accrued liability.
Justification for Changes in Actuarial Assumptions:	The following assumptions were updated with this valuation: › The salary scale assumption was updated to reflect the 2016 Meet and Confer Agreement, as amended in 2018. › Annual 2.00% COLAs are assumed to be payable beginning October 1, 2050, based on an updated projection of unfunded actuarial accrued liability. In the prior valuation, these COLAs were assumed to begin October 1, 2053.

EXHIBIT II – SUMMARY OF PLAN PROVISIONS

This exhibit summarizes the major provisions of the Plan included in the valuation. It is not intended to be, nor should it be interpreted as, a complete statement of all plan provisions.

MEMBERS WHOSE PARTICIPATION BEGAN BEFORE MARCH 1, 2011

Plan Year:	January 1 through December 31
Plan Status:	Ongoing
Normal Retirement:	
Benefit Earned Prior to September 1, 2017	
Age Requirement	50
Service Requirement	5
Amount	Greater of 3.0% of Average Computation Pay times years of Pension Service (maximum 96.0%) and $2,200 per month. The $2,200 per month minimum benefit is prorated if the Member retires with less than 20 years of service.
Average Computation Pay	36 consecutive months that reflect the highest civil service rank held by a member, plus Educational Incentive Pay, Longevity Pay and City Service Incentive Pay
Benefit Earned Beginning September 1, 2017	
Age Requirement	58
Service Requirement	5
Amount	Greater of 2.5% of Average Computation Pay times years of Pension Service (maximum 90.0%) and $2,200 per month. The $2,200 per month minimum benefit is prorated if the Member retires with less than 20 years of service.
Average Computation Pay	60 consecutive months that reflects the highest civil service rank held by a member, plus Educational Incentive Pay, Longevity Pay and City Service Incentive Pay

20 and Out Reduced Retirement:

If Eligible as of September 1, 2017

Age Requirement	None
Service Requirement	20 years
Amount	20 & Out Multiplier times 36-month (Table 1 Benefit) or 60-month (Table 2 Benefit) Average Computation Pay times years of Pension Service

Benefit Accrued Before September 1, 2017 20 & Out Table 1		Benefit Accrued Beginning September 1, 2017 20 & Out Table 2	
Age	20 & Out Multiplier	Age	20 & Out Multiplier
45 & under	2.00%	53 & under	2.00%
46	2.25%	54	2.10%
47	2.50%	55	2.20%
48	2.75%	56	2.30%
49	2.75%	57	2.40%
50 & above	3.00%	58 & above	2.50%

If Not Eligible as of September 1, 2017

Age Requirement	None
Service Requirement	20 years
Amount	20 & Out Multiplier times 60-month Average Computation Pay times years of Pension Service

20 & Out Table 2	
Age	20 & Out Multiplier
53 & under	2.00%
54	2.10%
55	2.20%
56	2.30%
57	2.40%
58 & above	2.50%

Early Retirement:	
If at least age 45 as of September 1, 2017 and less than age 50	
Age Requirement	45
Service Requirement	5
Amount	Normal pension accrued prior to September 1, 2017 plus the benefit accrued based on the 20 & Out Table 2 for service beginning September 1, 2017, reduced by 2/3 of 1% for each whole month by which the benefit commencement date precedes age 50.
Non-Service Connected Disability:	
Eligibility	Injury or illness (lasting more than 90 days) not related to or incurred while in the performance of the member's job, preventing the member from performing their departmental duties.
Amount	3% of Average Computation Pay for service earned prior to September 1, 2017 and the applicable benefit multiplier from 20 & Out Table 2 times Average Computation Pay for service earned beginning September 1, 2017
Service Connected Disability:	
Eligibility	Injury or illness (lasting more than 90 days) obtained while on duty in the performance of the member's job.
Amount	3% of Average Computation Pay for service earned prior to September 1, 2017 and the applicable benefit multiplier from 20 & Out Table 2 times Average Computation Pay for service earned beginning September 1, 2017; if the member has less than 20 years of service, the benefit will be calculated as if they had 20 years at the time of disability.
Benefit Supplement:	
Age Requirement	55
Service Requirement	20 years, waived if member is receiving a service-connected disability
Amount	3% of the total monthly benefit (including any applicable COLA's) payable to the Member when the Member attains age 55. The benefit supplement shall not be less than $75 per month. Beginning September 1, 2017, only those annuitants already receiving the supplement will be eligible to maintain their current supplement, which will not change ongoing; no additional retirees will be eligible for the supplement.

Termination Benefit:	
With less than five years of pension service	Upon request, the member's contributions will be returned without interest
With at least five years of pension service	The member may either withdraw contributions or leave contributions in the Plan and receive a monthly benefit to commence no earlier than the member's earliest eligibility for retirement benefits. Retirement benefit is equal to the accrued benefit as of the date of termination.
Pre-Retirement Death Benefit:	
While in active service	The greater of 50% of the Member's accrued benefit or a benefit based on 20 years of service. The benefit may not exceed 45% of Average Computation Pay.
After leaving active service, with fewer than five years	A lump sum benefit equal to the return of member contributions without interest
After leaving active service, with at least five years	50% of the Member's accrued benefit, with no early retirement reduction, or a refund of member contributions
Post-Retirement Death Benefit:	50% or 100% of the pension the Member was receiving at the time of their death, depending on the form of joint and survivor annuity chosen; if a life only annuity was chosen, no further benefits will be paid
Qualified Surviving Children Benefit:	50% of the pension the Member was receiving at the time of their death, divided equally among the children, paid until the youngest child is 19 years old or for life if the child becomes handicapped prior to age 23
Minimum Survivor Benefit:	$1,100 per month, not to exceed the actual amount the Member was receiving upon their death. If there are no Qualified Surviving Children, the minimum benefit to a spouse who is a Qualified Survivor shall be $1,200 per month. If the Member had less than 20 years of Pension Service, the minimum benefit will be prorated based on actual years of Pension Service.
Special Survivor Benefit:	
Eligibility	Upon leaving active service or joining DROP: a) the Member was at least 55 years old with at least 20 years of pension service, or b) the sum of the Member's age plus Pension Service was at least 78; **and** Has no Qualified Surviving Children or handicapped children currently eligible for survivor benefits; **and** Whose Qualified Surviving Spouse is at least 55 years old. The Qualified Surviving Spouse does not have to be 55 years old at the time of the Member's death.
Amount	Once all the eligibility conditions are met, the amount the Qualified Surviving Spouse will receive increases from 50% of the Member's pension benefit to a percentage of the Member's pension benefit based on the Member's applicable benefit multiplier times the number of years of Pension Service the Member worked.

Survivor Benefit if No Qualified Surviving Spouse:	A lump sum that is the actuarial equivalent of 120 monthly payments of the greater of: 50% of the Member's pension benefit at the time of their death, or a benefit based on 20 years of the Member's service.
DROP:	
Eligibility	Members in active service who are retirement eligible may elect to enter the Deferred Retirement Option Plan (DROP).
Distribution	The DROP account balance will be paid over the expected future lifetime of annuitants.
Interest	Based on 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.
Cost of Living:	The Board may grant an ad hoc COLA based on the actual market return over the prior five years less 5%, not to exceed 4% of the base benefit, if, after granting a COLA, the funded ratio on a market value of assets basis is no less than 70%.
Member Contributions:	13.5% of computation pay for all members
City Contributions:	The City will contribute 34.5% of computation payroll each year. However, in no case shall the City's total contribution amount be less than: $5,173,000 for the biweekly pay periods beginning with the first biweekly pay period that begins after September 1, 2017 and ends on the last day of the first biweekly pay period that ends after December 31, 2017; $5,344,000 for the following 26 pay periods; $5,571,000 for the following 26 pay periods; $5,724,000 for the following 26 pay periods; $5,882,000 for the following 26 pay periods; $6,043,000 for the following 26 pay periods; $5,812,000 for the following 26 pay periods; and $6,024,000 for the following 26 pay periods. An additional 1/26th of $13 Million will be paid biweekly beginning with the first biweekly pay period that begins after September 1, 2017 and ending with the last biweekly pay period that ends after December 31, 2024.
Optional Forms of Benefits:	Life Only Annuity, 50% or 100% Joint and Survivor Pension
Changes in Plan Provisions:	None

MEMBERS WHOSE PARTICIPATION BEGAN ON OR AFTER MARCH 1, 2011

Normal Retirement:	
Age Requirement	58
Service Requirement	5
Amount	2.5% of Average Computation Pay for each year of Pension Service, maximum 90% The minimum monthly benefit is $110 times the number of years of Pension Service at retirement, but not greater than $2,200.
Average Computation Pay	Average Computation Pay uses the 60 consecutive months that reflects the highest civil service rank held by a member plus Educational Incentive Pay plus Longevity Pay plus City Service Incentive Pay.
Early Retirement:	
Age Requirement	53
Service Requirement	5
Amount	Normal pension accrued, reduced by 2/3 of 1% for each whole month by which the benefit commencement date precedes the normal retirement date.
20 and Out Reduced Retirement:	
Age Requirement	None
Service Requirement	20 years
Amount	20 & Out Multiplier times Average Computation Pay times years of Pension Service

20 & Out Table 2	
Age	**20 & Out Multiplier**
53 & under	2.00%
54	2.10%
55	2.20%
56	2.30%
57	2.40%
58 & above	2.50%

Non-Service Connected Disability:	
Eligibility	Injury or illness (lasting more than 90 days) not related to or incurred while in the performance of the member's job, preventing the member from performing their departmental duties.
Amount	The Member's accrued benefit, but not less than a pro-rated minimum benefit.
Service-Connected Disability:	
Eligibility	Injury or illness (lasting more than 90 days) obtained while on duty in the performance of the member's job.
Amount	The greater of 50% of Average Computation Pay and the Member's accrued benefit.
Termination Benefit:	
With less than five years of service	Upon request, the member's contributions will be returned without interest.
With at least five years of service	The member may either withdraw contributions or leave contributions in the Plan and receive a monthly benefit to commence no earlier than the member's earliest eligibility for retirement benefits. Retirement benefit is equal to the accrued benefit as of the date of termination.
Pre-Retirement Death Benefit:	
While in active service	The greater of 50% of the Member's accrued benefit or a benefit based on 20 years of service. The benefit may not exceed 45% of Average Computation Pay.
After leaving active service, with less than five years	A lump sum benefit equal to the return of member contributions without interest.
After leaving active service, with at least five years	50% of the Member's accrued benefit, with no early retirement reduction, or a refund of member contributions
Post-Retirement Death Benefit:	50% or 100% of the pension the Member was receiving at the time of their death, depending on the form of joint and survivor annuity chosen; if a life only annuity was chosen, no further benefits will be paid
Qualified Surviving Children Benefit:	50% of the pension the Member was receiving at the time of their death, divided equally among the children, paid until the youngest child is 19 years old or for life if the child becomes handicapped prior to age 23
Minimum Survivor Benefit:	$1,100 per month, not to exceed the actual amount the Member was receiving upon their death. If there are no Qualified Surviving Children, the minimum benefit to a spouse who is a Qualified Survivor shall be $1,200 per month. If the Member had less than 20 years of Pension Service, the minimum benefit will be prorated based on actual years of Pension Service.

Special Survivor Benefit:	
Eligibility	Upon leaving active service or joining DROP: a) the Member was at least 55 years old with at least 20 years of pension service, or b) the sum of the Member's age plus Pension Service was at least 78; **and** Has no Qualified Surviving Children or handicapped children currently eligible for survivor benefits; **and** Whose Qualified Surviving Spouse is at least 55 years old. The Qualified Surviving Spouse does not have to be 55 years old at the time of the Member's death.
Amount	Once all the eligibility conditions are met, the amount the Qualified Surviving Spouse will receive increases from 50% of the Member's pension benefit to a percentage of the Member's pension benefit based on 2.5% times the number of years of Pension Service the Member worked.
Survivor Benefit if No Qualified Surviving Spouse:	A lump sum that is the actuarial equivalent of 120 monthly payments of the greater of: 50% of the Member's pension benefit at the time of their death, or a benefit based on 20 years of the Member's service.
DROP:	
Eligibility	Members in active service who are retirement eligible may elect to enter the Deferred Retirement Option Plan (DROP).
Distribution	The DROP account balance will be paid over the expected future lifetime of annuitants.
Interest	Based on 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.
Cost of Living:	The Board may grant an ad hoc COLA based on the actual market return over the prior five years less 5%, not to exceed 4% of the base benefit, if, after granting a COLA, the funded ratio on a market value of assets basis is no less than 70%.
Member Contributions:	13.5% of computation pay for all members
City Contributions:	The City will contribute 34.5% of computation payroll each year. However, in no case shall the City's total contribution amount be less than: $5,173,000 for the biweekly pay periods beginning with the first biweekly pay period that begins after September 1, 2017 and ends on the last day of the first biweekly pay period that ends after December 31, 2017; $5,344,000 for the following 26 pay periods; $5,571,000 for the following 26 pay periods; $5,724,000 for the following 26 pay periods; $5,882,000 for the following 26 pay periods; $6,043,000 for the following 26 pay periods; $5,812,000 for the following 26 pay periods; and $6,024,000 for the following 26 pay periods. An additional 1/26th of $13 million will be paid biweekly beginning with the first biweekly pay period that begins after September 1, 2017 and ending with the last biweekly pay period that ends after December 31, 2024.
Optional Forms of Benefits:	Life Only Annuity, 50% or 100% Joint and Survivor Pension
Changes in Plan Provisions:	None

Section 5: GASB 67 Information

EXHIBIT 1 – NET PENSION LIABILITY

The components of the net pension liability at December 31, 2018 were as follows:

Total pension liability	$4,501,670,375
Plan fiduciary net position	2,041,914,130
Net pension liability	2,459,756,245
Plan fiduciary net position as a percentage of the total pension liability	45.36%

Actuarial assumptions. The total pension liability was determined by an actuarial valuation as of January 1, 2019, using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	2.75%
Real rate of return	4.50%
Investment rate of return	7.25%, net of pension plan investment expense, including inflation

The actuarial assumptions used in the January 1, 2019 valuation were based on the results of an experience study for the period January 1, 2010 to December 31, 2014, plus assumption changes included in the January 1, 2017, 2018 and 2019 valuations. Assumptions are detailed in Section 4, Exhibit I of this report.

The long-term expected rate of return on pension plan 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 and inflation) 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. Best estimates of arithmetic real rates of return for each major asset class included in the pension plan's target asset allocation as of December 31, 2018 are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return[1]
Global Equity	40%	6.40%
Emerging Market Equity	10%	9.47%
Private Equity	5%	10.00%
Short-Term Investment Grade Bonds	12%	1.31%
Investment Grade Bonds	4%	1.89%
High Yield Bonds	4%	4.00%
Bank Loans	4%	3.52%
Global Bonds	4%	1.69%
Emerging Market Debt	4%	4.48%
Real Estate	5%	4.58%
Natural Resources	5%	7.44%
Cash	3%	1.12%
Total	100%	

[1]The real rates of return are net of inflation provided by Segal Marco Advisors, a member of The Segal Group.

Discount rate: The discount rate used to measure the total pension liability was 7.25%. The projection of cash flows used to determine the discount rate assumed City contributions will be made in accordance with the provisions of House Bill 3158, 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 2.75% 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 13.07% 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.

Actuarial cost method: In accordance with GASB 67, the Total Pension Liability for active members is valued as the total present value of benefits once they enter the DROP. For the funding valuation, the liability for these members accumulates from their entry age until they are assumed to leave active service.

Sensitivity of the net pension liability to changes in the discount rate. The following presents the net pension liability, calculated using the discount rate of 7.25%, as well as what the net pension liability would be if it were calculated using a discount rate that is one-percentage-point lower (6.25%) or one-percentage-point higher (8.25%) than the current rate:

	1% Decrease (6.25%)	Current Discount (7.25%)	1% Increase (8.25%)
Net pension liability	$2,953,141,258	$2,459,756,245	$2,046,452,228

EXHIBIT 2 – SCHEDULE OF CHANGES IN NET PENSION LIABILITY

	2018	2017
Total pension liability		
• Service cost	$44,792,454	$148,551,831
• Interest	318,535,923	348,171,140
• Change of benefit terms	16,091,390	-1,167,597,186
• Differences between expected and actual experience	-46,555,548	-134,664,749
• Changes of assumptions	-31,459,806	-2,851,241,104
• Benefit payments, including refunds of employee contributions	-297,081,055	-296,153,811
Net change in total pension liability	**$4,323,358**	**-$3,952,933,879**
Total pension liability – beginning	**4,497,347,017**	**8,450,280,896**
Total pension liability – ending (a)	**$4,501,670,375**	**$4,497,347,017**
Plan fiduciary net position		
• Contributions – employer	$149,356,565	$126,318,005
• Contributions – employee	49,332,262	32,977,425
• Net investment income	42,822,297	98,911,150
• Benefit payments, including refunds of employee contributions	-297,081,055	-296,153,811
• Administrative expense	-5,861,410	-8,089,584
• Interest expense	0	-1,279,517
Net change in plan fiduciary net position	**-$61,431,341**	**-$47,316,332**
Plan fiduciary net position – beginning	**2,103,345,471**	**2,150,661,803**
Plan fiduciary net position – ending (b)	**$2,041,914,130**	**$2,103,345,471**
Net pension liability – ending (a) – (b)	**$2,459,756,245**	**$2,394,001,546**
Plan fiduciary net position as a percentage of the total pension liability	**45.36%**	**46.77%**
Covered employee payroll	**$363,117,415**	**$346,036,690**
Net pension liability as percentage of covered employee payroll	**677.40%**	**691.83%**

Notes to Schedule:

Benefit changes: Plan changes effective September 1, 2017 that were signed into law May 31, 2017 as HB 3158 are reflected for the first time in the December 31, 2017 total pension liability, along with assumption changes that were implemented as part of the plan changes. The provision allowing members who entered DROP before June 1, 2017 to revoke the DROP election during a window from September 1, 2017 through February 28, 2018 is reflected in the December 31, 2018 total pension liability.

Change of Assumptions: The blended discount rate increased from 4.12% to 7.25% as of December 31, 2017. The assumption changes in 2018 include updates to the salary scale to reflect the 2016 Meet and Confer Agreement, as amended in 2018, and a change in the expected COLA date from October 1, 2053 to October 1, 2050.

EXHIBIT 3 – SCHEDULE OF EMPLOYER CONTRIBUTIONS

Year Ended December 31	Actuarially Determined Contribution	Contributions in Relation to the Actuarially Determined Contribution[1]	Contribution Deficiency (Excess)	Covered-Employee Payroll	Contributions as a Percentage of Covered Employee Payroll
2015[2]	--	$114,885,723	--	$383,006,330	30.00%
2016	$261,859,079	119,345,000	$142,514,079	365,210,426	32.68%
2017	168,865,484	126,318,005	42,547,479	357,414,472	35.34%
2018	157,100,128	149,356,565	7,743,563	346,036,690	43.16%

[1]The City's contributions are based on statutory rates set by State law and not on Actuarially Determined Contributions.
[2]The Actuarially Determined Contribution was not directly calculated as a dollar amount by the prior actuary for the year ended 2015.

Notes to Schedule:

Methods and assumptions used to determine contribution rates for the year ended December 31, 2018:

Valuation date	Actuarially determined contribution is calculated using a January 1, 2018 valuation date as of the beginning of the year in which contributions are reported
Actuarial cost method	Entry age
Amortization method	30-year level percent of payroll, using 2.75% annual increases
Remaining amortization period	45 years as of January 1, 2018
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 actuarial value, and is recognized over a five-year period, further adjusted, if necessary, to be within 20% of the market value.
Investment rate of return	7.25%, including inflation, net of pension plan investment expense
Inflation rate	2.75%
Projected salary increases	Inflation plus merit increases, varying by group and service
Retirement rates	Group-specific rates based on age
Cost-of-living adjustments	2.00% simple increases starting October 1, 2053

Mortality:	
Pre-retirement	Sex-distinct RP-2014 Employee Mortality Table, set back two years for males, projected generationally using Scale MP-2015
Healthy annuitant	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
Other information	See Section 4 of the January 1, 2018 actuarial valuation for a full outline of assumptions. See Exhibit 2 of this Section for the history of changes to plan provisions and assumptions over the last two years.
DROP utilization	0% of Police and Fire members are assumed to elect to enter DROP
Interest on DROP Accounts	Beginning September 1, 2017: – 2.75% on annuitant account balances – 2.75% payable upon retirement on active account balances as of September 1, 2017 – 0.00% on active account balances accrued after September 1, 2017 Beginning January 1, 2018: – 3.00% payable upon retirement on active account balances as of September 1, 2017

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DISCUSSION SHEET

ITEM #C2

Topic: **Initial reading and discussion of the 2020 Budget**

Discussion: Attached is the budget proposal for Calendar Year 2020.

The budget has been prepared in total for both the Combined Pension Plan and the Supplemental Plan. Total expenses are then allocated to the Supplemental Plan based upon the Group Trust allocation reported by JPMorgan.

Significant changes from the prior year budget and/or projected 2019 actual expenses are explained in the comments accompanying the proposed budget.

Staff Recommendation: **Direct** staff to revise the proposed budget based on the direction of the Board and bring the revised proposed budget to the Board at the November 14, 2019 Board meeting for consideration for adoption. **Authorize** forwarding the 2020 proposed budget to the City of Dallas for comment and the posting of the proposed budget to www.dpfp.org for member review prior to the November meeting.

DALLAS POLICE AND FIRE PENSION SYSTEM
PROPOSED BUDGET SUMMARY
FOR THE YEAR 2020
FIRST READING AT THE OCTOBER 10, 2019 BOARD MEETING

				Variances		Variances	
				2020 Prop. Bud. vs	2019 Budget	2020 Prop. Bud. vs	2019 Proj. Act.
Expense Type	**2019 Budget**	**2019 Projected Actual**	**2020 Proposed Budget**	**$**	**%**	**$**	**%**
Administrative Expenses	5,814,377	5,080,180	5,755,981	(58,396)	-1.0%	675,801	13.3%
Investment Expenses	16,851,000	16,321,090	16,385,551	(465,449)	-2.8%	64,461	0.4%
Professional Expenses	2,189,975	1,517,027	2,417,120	227,145	10.4%	900,093	59.3%
Total	$ 24,855,352	$ 22,918,297	$ 24,558,652	$ (296,700)	-1.2%	$ 1,640,355	7.2%

Dallas Police & Fire Pension System
Proposed Operating Budget
Calendar Year 2020

	Description	2019 Budget	2019 Projected Actual*	2020 Proposed Budget	$ Change 2020 Prop. Bud. vs. 2019 Bud.	% Change 2020 Prop. Bud. vs. 2019 Bud.	$ Change 2020 Prop. Bud. vs. 2019 Proj. Actual	% Change 2020 Prop. Bud. vs. 2019 Proj. Actual
Administrative Expenses								
1	Salaries and benefits	3,831,889	3,407,653	3,660,371	(171,518)	(4.5%)	252,718	7.4%
2	Employment Expense	52,275	1,734	27,110	(25,165)	(48.1%)	25,376	1463.4%
3	Memberships and dues	19,182	20,663	19,706	524	2.7%	(957)	(4.6%)
4	Staff meetings	1,000	123	1,000	-	0.0%	877	713.0%
5	Employee service recognition	5,000	2,436	5,000	-	0.0%	2,564	105.3%
6	Member educational programs	2,500	1,500	2,750	250	10.0%	1,250	83.3%
7	Board meetings	7,600	4,872	6,420	(1,180)	(15.5%)	1,548	31.8%
8	Conference registration/materials - Board	14,900	2,565	11,650	(3,250)	(21.8%)	9,085	354.2%
9	Travel - Board	32,620	3,993	21,500	(11,120)	(34.1%)	17,507	438.4%
10	Conference/training registration/materials - Staff	37,500	5,207	43,800	6,300	16.8%	38,593	741.2%
11	Travel - Staff	37,500	15,689	47,500	10,000	26.7%	31,811	202.8%
12	Liability insurance	604,553	515,940	640,571	36,018	6.0%	124,631	24.2%
13	Communications (phone/internet)	55,600	68,243	56,300	700	1.3%	(11,943)	(17.5%)
14	Information technology projects	70,000	82,397	140,000	70,000	100.0%	57,603	69.9%
15	IT subscriptions/services/licenses	147,840	125,623	143,500	(4,340)	(2.9%)	17,877	14.2%
16	IT software/hardware	17,000	14,978	19,500	2,500	14.7%	4,522	30.2%
17	Building expenses	365,339	400,688	405,467	40,128	11.0%	4,779	1.2%
18	Repairs and maintenance	108,249	92,360	97,414	(10,835)	(10.0%)	5,054	5.5%
19	Office supplies	33,100	23,768	32,350	(750)	(2.3%)	8,582	36.1%
20	Leased equipment	23,900	22,914	24,000	100	0.4%	1,086	4.7%
21	Postage	27,000	25,628	28,200	1,200	4.4%	2,572	10.0%
22	Printing	5,110	1,761	14,000	8,890	174.0%	12,239	695.0%
23	Subscriptions	2,140	698	2,125	(15)	(0.7%)	1,427	204.4%
24	Records storage	1,320	1,392	1,400	80	6.1%	8	0.6%
25	Administrative contingency reserve	12,000	519	12,000	-	0.0%	11,481	2212.1%
26	Depreciation Expense	248,260	233,603	240,947	(7,313)	(2.9%)	7,344	3.1%
27	Bank fees	3,000	3,233	3,400	400	13.3%	167	5.2%
Investment Expenses								
28	Investment management fees	14,490,000	14,729,000	14,178,000	(312,000)	(2.2%)	(551,000)	(3.7%)
29	Investment consultant and reporting	430,000	327,605	465,000	35,000	8.1%	137,395	41.9%
30	Bank custodian services	237,000	221,343	222,000	(15,000)	(6.3%)	657	0.3%
31	Other portfolio operating expenses (legal, valuation, tax)	1,694,000	1,043,142	1,520,551	(173,449)	(10.2%)	477,409	45.8%
32	Investment due diligence	48,000	-	48,000	-	0.0%	48,000	100.0%
Professional Services Expenses								
33	Actuarial services	120,000	182,924	261,000	141,000	117.5%	78,076	42.7%
34	Accounting services	59,000	59,000	60,770	1,770	3.0%	1,770	3.0%
35	Independent audit	180,000	165,000	180,000	-	0.0%	15,000	9.1%

Dallas Police & Fire Pension System
Proposed Operating Budget
Calendar Year 2020

	Description	2019 Budget	2019 Projected Actual*	2020 Proposed Budget	$ Change 2020 Prop. Bud. vs. 2019 Bud.	% Change 2020 Prop. Bud. vs. 2019 Bud.	$ Change 2020 Prop. Bud. vs. 2019 Proj. Actual	% Change 2020 Prop. Bud. vs. 2019 Proj. Actual
36	Legal fees	1,300,000	619,295	1,350,000	50,000	3.8%	730,705	118.0%
37	Legislative consultants	159,000	157,210	126,000	(33,000)	(20.8%)	(31,210)	(19.9%)
38	Public relations	-	-	-	-	100.0%	-	100.0%
39	Pension administration software & WMS	273,000	264,977	283,000	10,000	3.7%	18,023	6.8%
40	Business continuity	15,500	17,909	26,600	11,100	71.6%	8,691	48.5%
41	Network security review	15,000	17,018	10,000	(5,000)	(33.3%)	(7,018)	(41.2%)
42	Network security monitoring	-	-	75,000	75,000	100.0%	75,000	100.0%
43	Disability medical evaluations	29,000	2,500	9,500	(19,500)	(67.2%)	7,000	280.0%
44	Elections	15,000	16,452	15,000	-	0.0%	(1,452)	(8.8%)
45	Miscellaneous professional services	24,475	14,742	20,250	(4,225)	(17.3%)	5,508	37.4%
	Total Budget	24,855,352	22,918,297	24,558,652	(296,700)	(1.2%)	1,640,355	7.2%
	Less: Investment management fees	14,490,000	14,729,000	14,178,000	(312,000)	(2.2%)	(551,000)	(3.7%)
	Adjusted Budget Total	10,365,352	8,189,297	10,380,652	15,300	0.1%	2,191,355	26.8%

SUPPLEMENTAL BUDGET

	Total Budget (from above)	24,855,352	22,918,297	24,558,652	(296,700)	-1.2%	1,640,355	7.2%
	Less: Allocation to Supplemental Plan Budget*	193,872	201,681	216,116	22,244	11.5%	14,435	7.2%
	Total Combined Pension Plan Budget	**24,661,480**	**22,716,616**	**24,342,536**	**(318,944)**	**(1.3%)**	**1,625,920**	**7.2%**

** Projected based on preliminary 8/31/19 YTD annualized*
*** Allocation to Supplemental is based on JPM allocation between accounts as of 8/31/19 of .0088%*

0.88% per JPM Unitization report as of 8/31/19

Significant Budget Changes - 2020
Budget Changes (>5% and $10K)

	Item	2019 Budget	2019 Projected Actual**	2020 Proposed Budget	$ Change 2020 Prop. Bud. vs. 2019 Bud.	% Change 2020 Prop. Bud. vs. 2019 Bud.	$ Change 2020 Prop. Bud. vs. 2019 Proj. Act.	% Change 2020 Prop. Bud. vs. 2019 Proj. Act.	Explanation
	INCREASES:								
1	Actuarial services	120,000	182,924	261,000	141,000	117.5%	78,076	42.7%	Increase primarily related to the 5 year experience study to be completed in 2020 ($70k) along with supplemental and specialized work.
2	Network security monitoring	-	-	75,000	75,000	100.0%	75,000	100.0%	New service to detect, analyze and respond to security events 24x7x365 using advanced security events filtration, de-duplication and correlation technologies. Cost will decrease to $50k beginning in the second year.
3	Information technology projects	70,000	82,397	140,000	70,000	100.0%	57,603	69.9%	Four projects planned for the year including firewall and phone system replacement and domain upgrade. All projects under the $50k capitalization level.
4	Legal fees	1,300,000	619,295	1,350,000	50,000	3.8%	730,705	118.0%	Slight increase in budget from 2019. Continued expenses from the Degan, COLA and Actuary cases along with new potential case filings in 2020. Some filings expected in 2019 are rolling into 2020.
5	Building expenses	365,339	400,688	405,467	40,128	11.0%	4,779	1.2%	Increased property taxes for the 3rd and 4th floor expected in 2020. HVAC and leasing expenses not budgeted in 2019, approx. $30k.
6	Liability insurance	604,553	515,940	640,571	36,018	6.0%	124,631	24.2%	Initial renewal inquiries point to an increase in premiums on all policies. The 2019 actual projection vs. 2020 proposed budget variance is related to a one time change in the premium year resulting in only 11 months of expense in 2019. Additionally, 2019 premiums were lower than initially quoted renewals.
7	Investment consultant and reporting	430,000	327,605	465,000	35,000	8.1%	137,395	41.9%	HB322 legislature requires an independent investment review in 2020. The initial quote for this review in $30k. The private market study planned for 2019 was not performed, but has been reforecast for 2020.
8	Business continuity	15,500	17,909	26,600	11,100	71.6%	8,691	48.5%	Includes new item of server replication replacing VMware subscription service - $9,600.
9	Pension administration software & WM	273,000	264,977	283,000	10,000	3.7%	18,023	6.8%	Increased maintenance cost for Pension Gold and Web Member Services portal.
10	Travel - Staff	37,500	15,689	47,500	10,000	26.7%	31,811	202.8%	Returning to a more normal staff training schedule in 2020 which will require some travel. Additionally, some planned cross training will require some travel.
11	Printing	5,110	1,761	14,000	8,890	174.0%	12,239	695.0%	Approximately 2,500 updated member handbooks are forecast for printing in 2020.
12	Conference/training registration/materia	37,500	5,207	43,800	6,300	16.8%	38,593	741.2%	Returning to a more normal staff training schedule in 2020 along with some additional cross training planned.
13	Communications (phone/internet)	55,600	68,243	56,300	700	1.3%	(11,943)	-17.5%	LD contract expired in 2019 which resulted in increased costs. New contract signed and 2020 costs are expected to be lower.
14	Administrative contingency reserve	12,000	519	12,000	-	0.0%	11,481	2212.1%	Contingency reserve.
15	Investment due diligence	48,000	-	48,000	-	0.0%	48,000	100.0%	Forecast for software Evestment and due diligence travel.
16	Independent audit	180,000	165,000	180,000	-	0.0%	15,000	9.1%	Forecast for additional review time for appraisals and tail end funds along with modest price increase.
17	IT subscriptions/services/licenses	147,840	125,623	143,500	(4,340)	-2.9%	17,877	14.2%	YOY budget down slightly. Network security monitoring initiative will require some additional software - $15K. Desktop outsourcing and other subscriptions less than forecast in 2019.
	REDUCTIONS:								
18	Other portfolio operating expenses (legal, valuation, tax)	1,694,000	1,043,142	1,520,551	(173,449)	-10.2%	477,409	45.8%	Some tail end expenses forecast in 2019 were not incurred. 2020 expense forecast increased over actual as more tail end services are expected during the year.

		2019	2019	2020	$ Change	% Change	$ Change	% Change	
	Item	Budget	Projected Actual**	Proposed Budget	2020 Prop. Bud. vs. 2019 Bud.	2020 Prop. Bud. vs. 2019 Bud.	2020 Prop. Bud. vs. 2019 Proj. Act.	2020 Prop. Bud. vs. 2019 Proj. Act.	Explanation
19	Salaries and benefits	3,831,889	3,407,653	3,660,371	(171,518)	-4.5%	252,718	7.4%	Four positions forecasted for 2019 were not filled. Only one position is being forecasted for 2020.
20	Legislative consultants	159,000	157,210	126,000	(33,000)	-20.8%	(31,210)	-19.9%	Legislature not planned to be in session 2020. Cost is lower when legislature is not in session.
21	Employment Expense	52,275	1,734	27,110	(25,165)	-48.1%	25,376	1463.4%	Expenses reduced in 2019 because only one position was filled. Only one position forecast for 2020.
22	Disability medical evaluations	29,000	2,500	9,500	(19,500)	-67.2%	7,000	280.0%	2019 forecast was for 7 new disabilities, 2 special needs children and 3 recalls. One new disability evaluation so far for 2019. Three disability and one child evaluation forecast for 2020.
23	Bank custodian services	237,000	221,343	222,000	(15,000)	-6.3%	657	0.3%	Fewer investment accounts than projected for JPM to manage in 2019 resulted in reduced fees. No significant change for 2020.
24	Travel - Board	32,620	3,993	21,500	(11,120)	-34.1%	17,507	438.4%	Less board travel than expected in 2019. Expected travel in 2020 is projected to be less than in prior years.
25	Repairs and maintenance	108,249	92,360	97,414	(10,835)	-10.0%	5,054	5.5%	Less equipment (Phone, AV, printers, etc.) repairs than forecast in 2019. Slight Increase in 2020 forecast over 2019 projected expenses as more building repairs are expected.

*** Projected based on 8/31/19 Prelim YTD annualized*

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

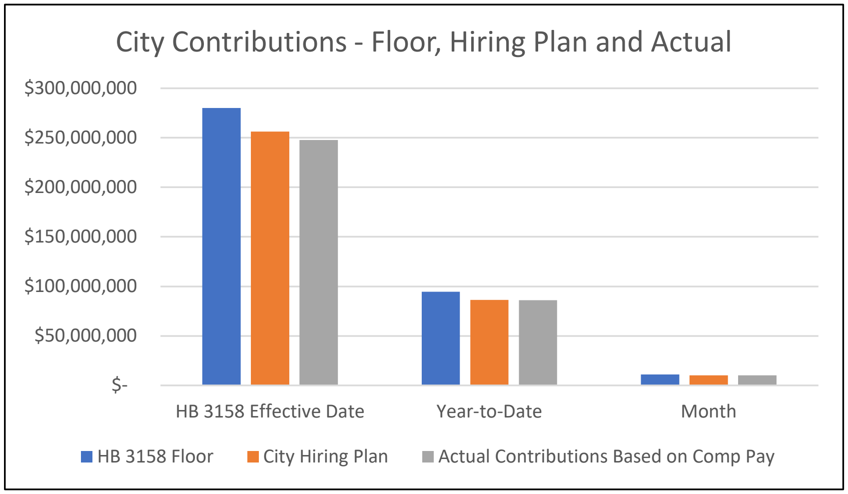
ITEM #C3

Topic: **Monthly Contribution Report**

Discussion: Staff will review the Monthly Contribution Report.

Regular Board Meeting – Thursday, October 10, 2019

Contribution Tracking Summary - October 2019 (August 2019 Data)



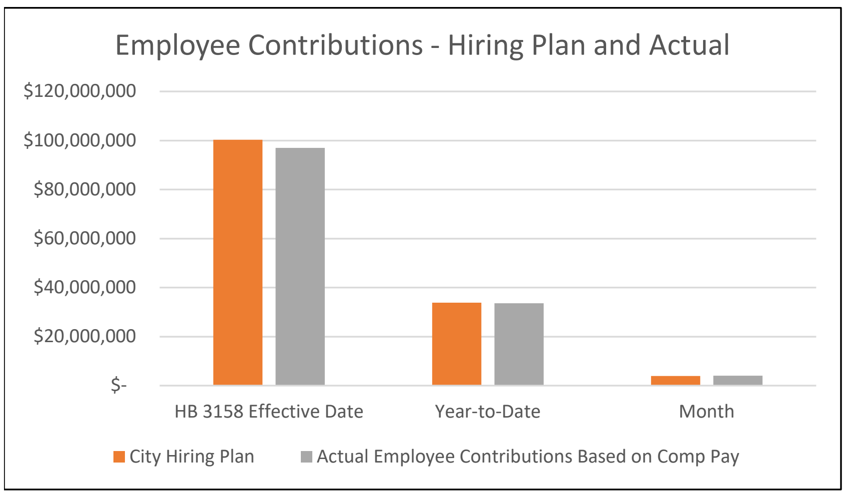
Actual Comp Pay was 97% of the Hiring Plan estimate since the effective date of HB 3158.

In the most recent month Actual Comp Pay was 101% of the Hiring Plan estimate and 92% of the floor amount.

The Hiring Plan Comp Pay estimate increased by 5.22% in 2019.

Through 2024 the HB 3158 Floor is in place so there is no City Contribution shortfall.

Combined actual hiring is below the Hiring Plan estimate by 22 people. Fire is over the estimate by 78 people and Police is under by 100 officers.



Since the effective date of HB 3158 actual employee contributions have been $3.4 million less than the Hiring Plan estimate. Potential earnings loss due to the contribution shortfall is $345k at the Assumed Rate of Return.

Employee contributions exceeded the Hiring Plan estimate.

There is no Floor on employee contributions.

Contribution Summary Data

City Contributions

Aug-19	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	$ 11,142,000	$ 10,164,231	$ 10,288,958	$ 853,042	92%	101%
Year-to-Date		$ 94,707,000	$ 86,395,962	$ 85,906,395	$ 8,800,605	91%	99%
HB 3158 Effective Date		$ 280,208,000	$ 256,401,346	$ 247,787,608	$ 32,420,392	88%	97%

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

Aug-19	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	$ 3,977,308	$ 4,025,621	$ 48,314	$ 3,692,278	101%	109%
Year-to-Date		$ 33,807,115	$ 33,605,335	$ (201,781)	$ 31,384,363	99%	107%
HB 3158 Effective Date		$ 100,330,962	$ 96,959,395	$ (3,371,567)	$ 95,483,159	97%	102%

Potential Earnings Loss from the Shortfall based on Assumed Rate of Return $ (344,654)

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	$ 1,846,139	93%
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 2019-2024 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)	*
**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 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			5,038		
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 - 2019	**Annual Divided by 26 Pay Periods**	**Actual**	**Difference**	**2019 Cumulative Difference**	**Number of Employees - EOM**	**Difference**
January	$ 29,461,538	$ 29,084,185	$ (377,354)	$ (377,354)	4963	(75)
February	$ 29,461,538	$ 29,067,129	$ (394,410)	$ (771,763)	4974	(64)
March	$ 29,461,538	$ 29,092,504	$ (369,035)	$ (1,140,798)	4962	(76)
April	$ 29,461,538	$ 28,974,912	$ (486,626)	$ (1,627,424)	4955	(83)
May	$ 44,192,308	$ 43,987,516	$ (204,791)	$ (1,832,216)	4955	(83)
June	$ 29,461,538	$ 29,322,734	$ (138,804)	$ (1,971,020)	4938	(100)
July	$ 29,461,538	$ 29,651,997	$ 190,458	$ (1,780,561)	5027	(11)
August	$ 29,461,538	$ 29,823,067	$ 361,529	$ (1,419,033)	5016	(22)
September	$ 29,461,538	$ -		$ (1,419,033)		
October	$ 44,192,308	$ -		$ (1,419,033)		
November	$ 29,461,538	$ -		$ (1,419,033)		
December	$ 29,461,538	$ -		$ (1,419,033)		

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C4

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
Regular Board Meeting – October 10, 2019

ATTENDING APPROVED

Conference: **NCPERS Public Safety Conference**
Dates: October 27-30, 2019
Location: New Orleans, LA
Est. Cost: $1,300

Page **1** of **1**

DISCUSSION SHEET

ITEM #C5

Topic: **Appointment of Professional Services Committee Member**

Discussion: The Professional Services Committee is composed of three members including 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 current members of the Committee are Bill Quinn, Joe Schutz and Blaine Dickens

The Chair of the Board has selected Rob French to replace Blaine Dickens on the Committee.

Staff Recommendation: **Confirm** appointment of Rob French as a member of the Professional Services Committee.

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C6

Topic: **Report on Professional Services Committee**

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 met with the actuary, Segal, prior to the October Board meeting.

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 meeting with Segal.

DISCUSSION SHEET

ITEM #C7

Topic: **Chairman's Discussion Items**

Member Complaint

Discussion: The Chairman will brief the Board on the status of these items.

Regular Board Meeting – Thursday, October 10, 2019

DISCUSSION SHEET

ITEM #C8

Topic: **Senate Bill 322 Investment Practices and Performance Evaluations**

Discussion: Senate Bill 322 directs that a public retirement system shall select an independent firm with substantial experience in evaluating institutional investment practices and performance to evaluate the appropriateness, adequacy, and effectiveness of the retirement system's investment practices and performance and to make recommendations for improving the retirement system's investment policies, procedures, and practices.

The bill notes that a retirement system may select a firm regardless of whether the firm has an existing relationship with the retirement system provided the firm does not directly or indirectly manage investments of the retirement system.

The initial report specified by the bill must be submitted to the DPFP Board no later than May 1, 2020.

Staff Recommendation: Staff recommends the Board **hire** Meketa Investment Group to conduct the evaluation required by SB 322 subject to contract approval and execution by the Executive Director.

DALLAS POLICE & FIRE PENSION SYSTEM

Date: October 4, 2019

To: DPFP Board of Trustees

From: DPFP Investment Staff

Subject: Recommendation for Independent Firm to Conduct SB 322 Evaluation

Recommendation

Staff recommends the Board hire the Meketa Investment Group to conduct the evaluation required by SB 322, subject to contract approval and execution by the Executive Director.

Background

Senate Bill 322 was signed into law in June 2019. The bill requires additional disclosures in the annual report relating to commissions and fees as well as the names of investment managers engaged by the system. The bill also requires DPFP to "select an independent firm with substantial experience in evaluating institutional investment practices and performance to evaluate the appropriateness, adequacy, and effectiveness of the retirement system's investment practices and performance and to make recommendations for improving the retirement system's investment policies, procedures, and practices." Requirements for the evaluation and reporting are detailed in the bill, which is attached for reference. Funds with assets exceeding $100 million shall conduct the evaluation once every three years. The initial report specified by the bill must be submitted to the DPFP Board no later than May 1, 2020 and to the Pension Review Board within 31 days of submission to the DPFP Board.

Considerations

In reviewing drafts of the bill during the legislation process, DPFP noted that much of the scope of the evaluation encompassed responsibilities of the investment consultant. DPFP comments were incorporated into final bill language that allows selection of a firm regardless of whether the firm has an existing relationship with the retirement system, provided the firm does not directly or indirectly manage investments of the retirement system.

Staff considered the pros and cons of using Meketa vs. engaging a separate firm and determined that adding another firm now to our already-robust oversight would be counterproductive. While a new firm would add new perspective, the investment program is already subject to extensive evaluation by the Board, the Investment Advisory Committee, and Meketa; all staffed with experienced investment professionals of the highest caliber, who are all new to DPFP within the past two years. Additionally, conducting a search and engaging a separate firm would divert staff time and resources from other critical investment initiatives.

Process

- Staff held discussions with Meketa in late August regarding the SB 322 evaluation and requested a formal proposal.
- Meketa evaluated the bill requirements through early September and requested staff clarification on certain issues primarily related to valuation and the historical scope of the evaluation. Staff provided direction that the evaluation was meant to focus on current and recent practices and was not expected to delve into the history of the DPFP investment program.
- Meketa provided a formal proposal on September 23, 2019, which is attached for reference.

M E K E T A   I N V E S T M E N T   G R O U P

BOSTON MA
CHICAGO IL
MIAMI FL
NEW YORK NY
PORTLAND OR
SAN DIEGO CA
LONDON UK

September 23, 2019

Mr. Kent Custer, CFA
Chief Investment Officer
Dallas Police & Fire Pension System
4100 Harry Hines Boulevard, Suite 100
Dallas, TX 75219

RE: Texas Senate Bill 322 Evaluation Report

Dear Kent:

Thank you for requesting a proposal to deliver an Evaluation Report for the Dallas Police & Fire Pension System pursuant to Section 801.209(a) of Texas Senate Bill 322.

A significant component of our work as consultants is to provide our clients with custom reports. We would be pleased to assist the Pension System with the Senate Bill's requirement and have the experience and knowledge to evaluate the investment practices and performance of the System and to make recommendations for improving the System's investment policies, procedures, and practices.

As stated in Section 802.109, subsection a (1-5), our report would consist of:

- Analysis of the Pension System's Investment Policy Statement
- Review of the Pension System's Asset Allocation
- Review of the appropriateness of the investment fees
- Review of the governance of the process for investment activities
- Review of the manager selection and monitoring process

We anticipate that this Evaluation Report will be conducted over a three (3) month period, beginning on or around November 1, 2019 with a draft delivered to Staff and/or the Board as appropriate and requested, by February 1, 2020 and a final report available prior to the state law deadline of May 2020. For each topic and subtopic in a (1-5), we anticipate our report will follow the template described below.

i. A description of the topic in question;
ii. An analysis of how DPFP tackles the topic, verifying the appropriateness, adequacy and effectiveness practices; and
iii. Recommendation, if any.

If you would like to consider our proposal, we would be happy to discuss an appropriate fee for this one-time comprehensive report. Thank you again for considering us for this assignment. You can always reach me at (760) 795-3450.

Sincerely,

L Festino

Leandro A. Festino, CFA
Managing Principal, Consultant

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S.B. No. 322

AN ACT

relating to the evaluation and reporting of investment practices and performance of certain public retirement systems.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF TEXAS:

SECTION 1. Section 801.209(a), Government Code, is amended to read as follows:

(a) For each public retirement system, the board shall post on the board's Internet website, or on a publicly available website that is linked to the board's website, the most recent data from reports received under Sections 802.101, 802.103, 802.104, 802.105, 802.108, 802.109, 802.2015, and 802.2016.

SECTION 2. Section 802.103, Government Code, is amended by amending Subsection (a) and adding Subsection (e) to read as follows:

(a) The [~~Except as provided by Subsection (c), the~~] governing body of a public retirement system shall publish an annual financial report showing the financial condition of the system as of the last day of the fiscal year covered in the report. The report must include:

(1) the financial statements and schedules examined in the most recent audit performed as required by Section 802.102;

(2) [~~and must include~~] a statement of opinion by the certified public accountant as to whether or not the financial statements and schedules are presented fairly and in accordance with generally accepted accounting principles;

(3) a listing, by asset class, of all direct and indirect commissions and fees paid by the retirement system during the system's previous fiscal year for the sale, purchase, or management of system assets; and

(4) the names of investment managers engaged by the retirement system.

(e) The board may adopt rules necessary to implement this section.

SECTION 3. Subchapter B, Chapter 802, Government Code, is amended by adding Section 802.109 to read as follows:

Sec. 802.109. INVESTMENT PRACTICES AND PERFORMANCE REPORTS. (a) Except as provided by Subsection (e) and subject to Subsections (c) and (k), a public retirement system shall select an independent firm with substantial experience in evaluating institutional investment practices and performance to evaluate the appropriateness, adequacy, and effectiveness of the retirement system's investment practices and performance and to make recommendations for improving the retirement system's investment policies, procedures, and practices. Each evaluation must include:

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

(2) a detailed review of the retirement system's investment asset allocation, including:

(A) the process for determining target allocations;

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

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

(D) future cash flow and liquidity needs;

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

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

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

(b) The governing body of a public retirement system may determine additional specific areas to be evaluated under Subsection (a) and may select particular asset classes on which to focus, but the first evaluation must be a comprehensive analysis of the retirement system's investment program that covers all asset classes.

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

(1) subject to Subdivision (2), may select a firm regardless of whether the firm has an existing relationship with the retirement system; and

(2) may not select a firm that directly or indirectly manages investments of the retirement system.

(d) A public retirement system shall conduct the evaluation described by Subsection (a):

(1) once every three years, if the retirement system has total assets the book value of which, as of the last day of the last fiscal year considered in an evaluation under this section, was at least $100 million; or

(2) once every six years, if the retirement system has total assets the book value of which, as of the last day of the last fiscal year considered in an evaluation under this section, was at least $30 million and less than $100 million.

(e) A public retirement system is not required to conduct the evaluation described by Subsection (a) if the retirement system has total assets the book value of which, as of the last day of the preceding fiscal year, was less than $30 million.

(f) A report of an evaluation under this section must be filed with the governing body of the public retirement system not later than May 1 of each year following the year in which the system is evaluated under Subsection (d).

(g) Not later than the 31st day after the date the governing body of a public retirement system receives a report of an evaluation under this section, the governing body shall submit the report to the board.

(h) A public retirement system shall pay the costs of each evaluation of the system under this section.

(i) The board shall submit an investment performance report to the governor, the lieutenant governor, the speaker of the house of representatives, and the legislative committees having principal jurisdiction over legislation governing public retirement systems in the biennial report required by Section 801.203. The report must compile and summarize the information received under this section by the board during the preceding two fiscal years.

(j) A report of an evaluation by the Teacher Retirement System of Texas and an investment report that includes the Teacher Retirement System of Texas under this section satisfies the requirements of Section 825.512.

(k) The following reports may be used by the applicable public retirement systems to satisfy the requirement for a report of an evaluation under this section:

(1) an investment report under Section 10A, Article 6243g-4, Revised Statutes;

(2) an investment report under Section 2D, Chapter 88 (H.B. 1573), Acts of the 77th Legislature, Regular Session, 2001 (Article 6243h, Vernon's Texas Civil Statutes); and

(3) a report on a review conducted on the retirement system's investments under Section 2B, Article 6243e.2(1), Revised Statutes.

(l) The board may adopt rules necessary to implement this section.

SECTION 4. Notwithstanding Section 802.109(d), Government Code, as added by this Act, a report of the first evaluation of a public retirement system, as required by Section 802.109, Government Code, as added by this Act, must be filed with the governing body of the system not later than May 1, 2020.

SECTION 5. The State Pension Review Board is required to implement a provision of this Act only if the legislature appropriates money specifically for that purpose. If the legislature does not appropriate money specifically for that purpose, the State Pension Review Board may, but is not required to, implement a provision of this Act using other appropriations available for that purpose.

SECTION 6. This Act takes effect immediately if it receives a vote of two-thirds of all the members elected to each house, as provided by Section 39, Article III, Texas Constitution. If this Act does not receive the vote necessary for immediate effect, this Act takes effect September 1, 2019.

______________________________ President of the Senate

______________________________ Speaker of the House

I hereby certify that S.B. No. 322 passed the Senate on April 17, 2019, by the following vote: Yeas 31, Nays 0; and that the Senate concurred in House amendment on May 24, 2019, by the following vote: Yeas 31, Nays 0.

______________________________ Secretary of the Senate

I hereby certify that S.B. No. 322 passed the House, with amendment, on May 22, 2019, by the following vote: Yeas 144, Nays 0, two present not voting.

______________________________ Chief Clerk of the House

Approved:

______________________________ Date

____
Governor

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C9

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, October 10, 2019

DALLAS POLICE & FIRE PENSION SYSTEM

Portfolio Update

October 10, 2019

Asset Allocation

DPFP Asset Allocation	% weight				$ millions		
	10/2/19	Target	Variance		10/2/19	Target	Variance
Equity	**40.2%**	**55.0%**	**-14.8%**		**823**	**1,126**	**-303**
Global Equity	22.5%	40.0%	-17.5%		461	819	-358
Emerging Markets	2.4%	10.0%	-7.6%		48	205	-157
Private Equity*	15.3%	5.0%	10.3%		314	102	211
Fixed Income	**31.7%**	**35.0%**	**-3.3%**		**649**	**717**	**-68**
Safety Reserve - Cash	4.3%	3.0%	1.3%		89	61	27
Safety Reserve - ST IG Bonds	12.8%	12.0%	0.8%		262	246	16
Investment Grade Bonds	1.8%	4.0%	-2.2%		37	82	-45
Global Bonds	3.3%	4.0%	-0.7%		67	82	-15
High Yield Bonds	4.1%	4.0%	0.1%		83	82	2
Bank Loans	3.9%	4.0%	-0.1%		80	82	-2
Emerging Mkt Debt	1.0%	4.0%	-3.0%		21	82	-61
Private Debt*	0.5%	0.0%	0.5%		10	0	10
Real Assets*	**28.1%**	**10.0%**	**18.1%**		**576**	**205**	**371**
Real Estate*	18.8%	5.0%	13.8%		386	102	283
Natural Resources*	6.6%	5.0%	1.6%		134	102	32
Infrastructure*	2.7%	0.0%	2.7%		56	0	56
Total	**100.0%**	**100.0%**	**0.0%**		**2,047**	**2,047**	**0**
Safety Reserve	17.1%	15.0%	2.1%		351	307	44
*Private Market Assets	43.9%	15.0%	28.9%		899	307	592

Source: JP Morgan Custodial Data, Staff Estimates and Calculations

DALLAS POLICE & FIRE PENSION SYSTEM

2019 Investment Review Calendar*

1Q19 ✓	• Real Estate Reviews: Vista 7, King's Harbor, & Museum Tower • Real Estate Presentations: Clarion, AEW • Global Equity Structure Review (Staff/Meketa)
2Q19 ✓	• Staff Timber Portfolio Review (FIA & BTG) • Natural Resources: Hancock Presentation • Real Estate: Hearthstone Presentation
July ✓	• Infrastructure: Staff review of AIRRO and JPM Maritime
Sept. ✓	• Private Equity: Staff review of Private Equity and Debt
October	• Global Equity Manager Reviews
November	• Fixed Income Manager Reviews

*Future presentation schedule is subject to change.

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C10

Topic: **Report on Investment Advisory Committee**

Discussion: The Investment Advisory Committee met on September 23, 2019. The Committee Chair and Investment Staff will comment on Committee observations and advice.

Regular Board Meeting – Thursday, October 10, 2019

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C11

Topic: **Public Equity Portfolio Review**

Discussion: Staff will provide an overview of DPFP public equity investments.

Regular Board Meeting – Thursday, October 10, 2019

DALLAS POLICE & FIRE PENSION SYSTEM

Public Equity Portfolio Review

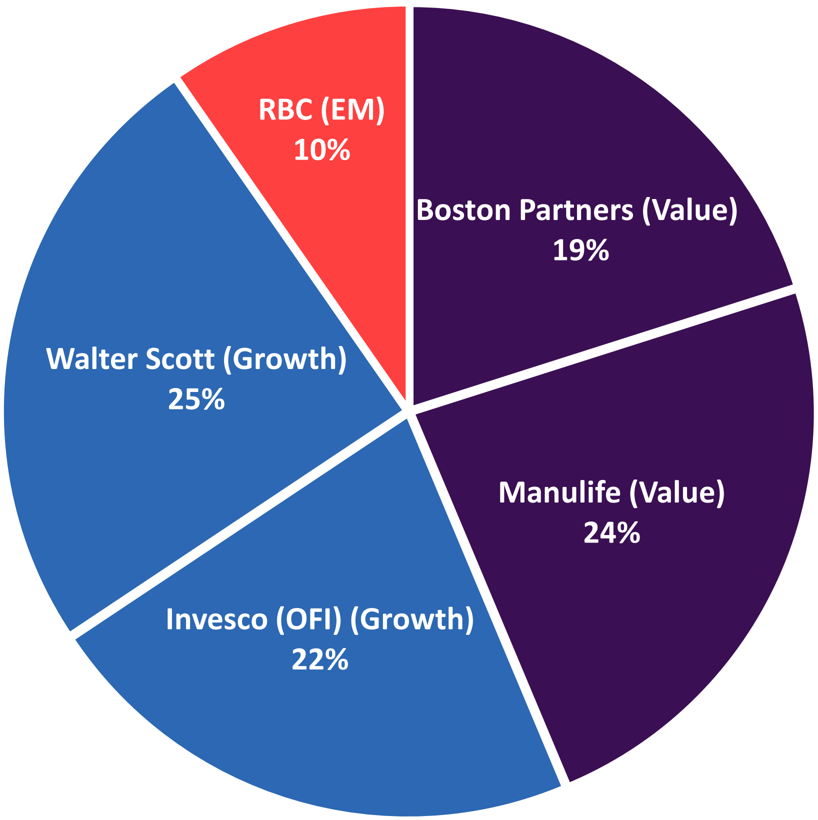
October 10, 2019

Public Equity Structure Overview

- Four equal- weighted Global Equity managers
  - One dedicated EM equity manager

Public Equity Composition

As of 06/30/2019



Global Equity re-balanced to equal-weight on 08-27-2019

Portfolio Performance (net)

as of 6/30/19	QTD	YTD	1 Yr	3 Yr	5 Yr	10 Yr	SI 07/06
Public Equity	3.7%	17.8%	7.4%	13.0%	7.7%	11.3%	6.5%
MSCI ACWI IMI Net	3.4%	16.1%	4.6%	11.4%	6.0%	10.3%	6.0%
Excess Return	*0.3%*	*1.7%*	*2.8%*	*1.6%*	*1.7%*	*1.0%*	*0.5%*

as of 6/30/19	QTD	YTD	1 Yr	3 Yr	5 Yr	10 Yr	SI 07/06
Global Equity	3.8%	18.3%	7.2%	13.3%	7.8%	11.4%	6.5%
MSCI ACWI IMI Net	3.4%	16.1%	4.6%	11.4%	6.0%	10.3%	6.0%
Excess Return	*0.4%*	*2.2%*	*2.6%*	*1.9%*	*1.8%*	*1.1%*	*0.5%*

- Current Global Equity structure implemented in July 2017
- Emerging Markets manager (RBC) implemented in January 2018
- RBC is included in Public Equity, excluded from Global Equity

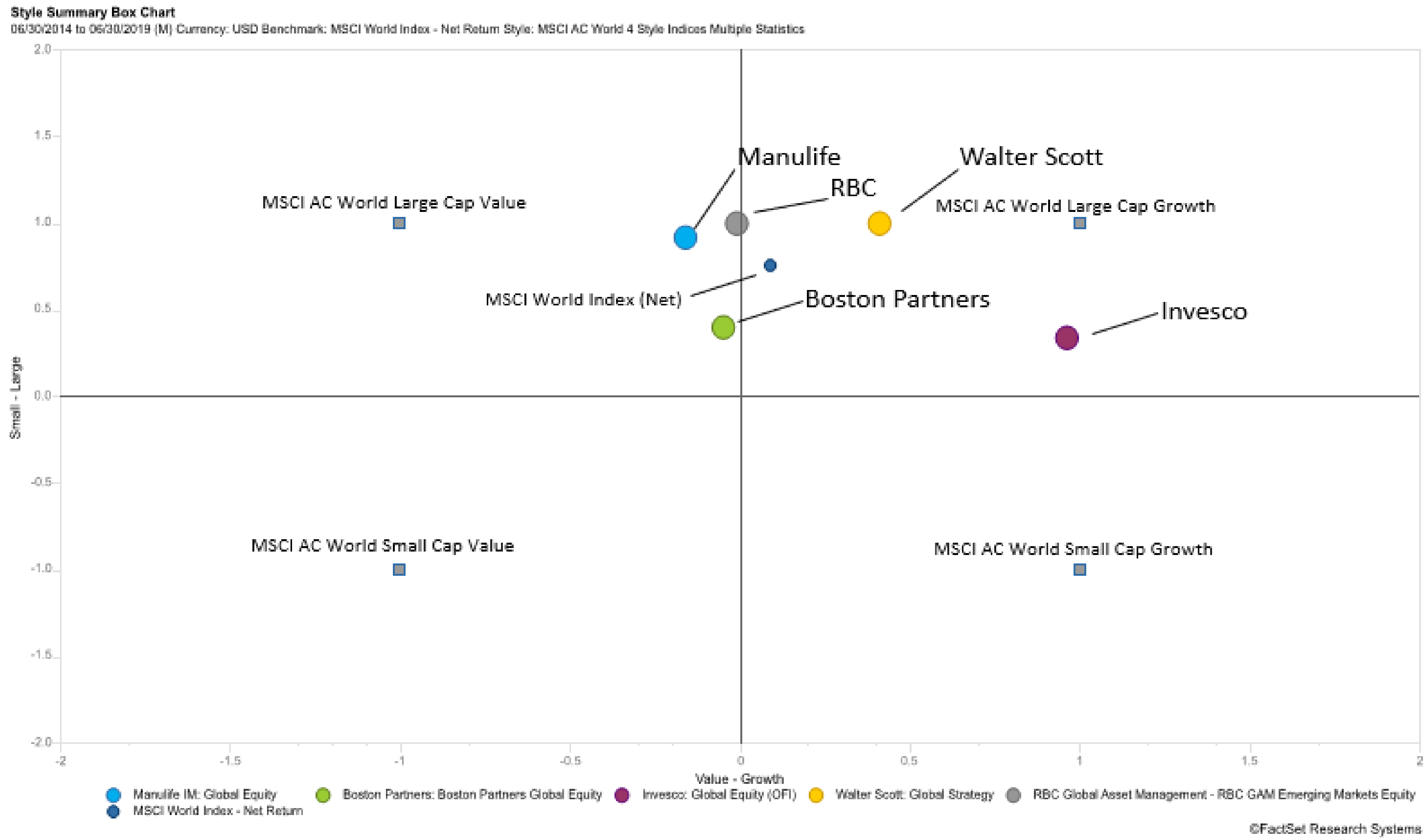
Excess Return Correlations (net)

*Dates: June 2016 - June 2019

	Public Equity	Boston Partners	Manulife	Invesco/OFI	Walter Scott	RBC
Public Equity	1.00	0.26	0.36	0.34	0.39	0.15
Boston Partners	0.26	1.00	0.25	0.12	-0.35	-0.43
Manulife	0.36	0.25	1.00	-0.18	0.21	-0.11
Invesco/OFI	0.34	0.12	-0.18	1.00	-0.17	-0.28
Walter Scott	0.39	-0.35	0.21	-0.17	1.00	0.31
RBC	0.15	-0.43	-0.11	-0.28	0.31	1.00

- All correlations are vs. MSCI ACWI IMI
- Average excess return correlation of just the four Global Equity managers is 0.12

Portfolio Style Map



DALLAS POLICE & FIRE PENSION SYSTEM

3-Yr Risk Statistics

3 years ending 6/30/19	Beta	Tracking Error	Down Mkt Capture
Public Equity	1.01	1.93%	101%
Global Equity	1.03	2.00%	102%
Boston Partners Global Equity	0.99	2.16%	105%
Manulife Global Equity	0.91	3.44%	92%
Invesco (fka OFI) Global Equity	1.22	3.87%	110%
Walter Scott Global Equity	0.95	3.37%	89%
RBC Emerging Markets Equity	0.84	8.16%	82%

- Public Equity and Global Equity vs. MSCI ACWI IMI Net
  - Managers vs. respective manager benchmarks

Portfolio Characteristics

As of 06/30/2019

	Boston Partners	Manulife	Invesco (OFI)	Walter Scott	MSCI ACWI	RBC EM	MSCI EM
Number of Holdings	114	59	82	53	2,847	50	1,193
Weighted Avg. Market Cap. ($B)	113.5	177.8	114.2	137.4	147.7	58.6	81.7
Median Market Cap. ($B)	28	44	26.9	70.2	9.4	11.5	5.6
Price To Earnings	15.3	17.3	22.4	25.7	17.6	17.2	14.1
Price To Book	2.2	2.6	4.4	5.3	2.9	3	2.4
Price To Sales	1.1	1.6	1.9	3.6	1.5	1.8	1.2
Return on Equity	17.9%	20.1%	18.2%	30.3%	20.0%	19.4%	17.0%
Yield	2.5%	2.8%	1.6%	1.7%	2.5%	2.4%	2.8%
Large Cap	75.6%	81.7%	79.3%	95.3%	81.7%	76.6%	76.9%
Mid Cap	13.7%	10.8%	12.2%	2.7%	15.1%	16.8%	18.1%
Small Cap	10.7%	7.5%	8.5%	2.0%	3.2%	6.6%	5.0%

Boston Partners *Global Equity*

Market Value *(06-30-2019)*:	$105,610,084	Inception Date:	June 2017
Investment Structure:	Separate Account	Style:	Value

Strategy/Portfolio Summary

- *Philosophy*: portfolios with three characteristics: low relative valuation, strong business fundamentals, and business momentum outperform over time
  - Highly flexible all-cap portfolio, diversified across market capitalization, region, and industry sector
  - Fundamental, bottom-up approach that analyzes stocks on relative valuation, strong balance sheet fundamentals, and positive fundamentals momentum
  - Provides exposure to more mid-cap and small-cap stocks
  - Top ten holdings typically represent about 20% of portfolio
  - 70-140 positions

Process Summary

- Systematic, repeatable method of originating, researching, and selecting
- Quantitative screen on valuation, momentum, fundamentals followed by fundamental research
- Sell Discipline: appreciation to price target, weakening fundamentals, or reversal of momentum

Boston Partners Performance (net)

as of 6/30/19	QTD	YTD	1 Yr	3 Yr	5 Yr	10 Yr	SI 7/2017
Boston Partners	2.0%	11.3%	-0.9%	--	--	--	3.2%
MSCI World Net	4.0%	17.0%	6.3%	11.8%	6.6%	10.7%	8.7%
Excess Return	*-2.0%*	*-5.7%*	*-7.2%*	*--*	*--*	*--*	*-5.5%*

- Performance is driven largely by stock selection, with sector and country allocation having little impact
- Disappointing relative and absolute underperformance over time is driven by value headwinds as growth has outperformed value for the last several years.
- Recent relative performance has been on a steady decline since March 2018 (-10% cumulative), driven by both value headwinds and stock selection.
- Lagged in 2Q19, hurt by overweight allocation to Energy and Healthcare and stock selection in Consumer Staples and Communication.
- Current positioning is overweight Europe vs. North America and Materials vs. Technology.
- Boston Partners is maintaining investment discipline and process through market volatility.

Manulife Investment Management *Global Equity*

Market Value *(06-30-2019)*:	$123,964,112	Inception Date:	June 2017
Investment Structure:	Separate Account	Style	Value

Strategy/Portfolio Summary

- *Philosophy*: long-term orientation and focus on fundamentals, quality, and valuation will drive risk-adjusted outperformance with downside market protection
  - Fundamental approach primarily in large cap companies
  - Investment focus on strong franchise, management team, balance sheet, valuation discount, declining capital intensity
  - Quality defined by high ROI, sustainable cash flow, reasonable leverage
  - Active ownership after investment (proxy voting, engagement on ESG concerns, ongoing monitoring and follow-up company meetings)
  - Concentrated portfolio of 40-80 names
  - Typically provides downside protection

Process Summary

- Idea generation from informal ideas generated by research and formal screens
- Sell discipline - reaches fair value, deteriorating fundamentals, more attractive opportunity
- ESG risk analysis a part of investment risk management process

Manulife Performance (net)

as of 6/30/19	QTD	YTD	1 Yr	3 Yr	5 Yr	10 Yr	SI 07/2017
Manulife	4.5%	19.8%	12.0%	--	--	--	7.0%
MSCI ACWI Net	3.6%	16.2%	5.7%	11.6%	6.2%	10.1%	8.2%
Excess Return	*0.9%*	*3.6%*	*6.3%*	*--*	*--*	*--*	*-1.2%*

- Manulife has some significant sector allocation variances (overweight Consumer Staples, Industrials, Materials) vs. benchmark, but performance is driven primarily by stock selection.
- Portfolio has a defensive stance arising from the quality orientation focused on companies that have low debt, high profitability, and lower multiples vs. index.
- YTD performance has been helped by the market preference for quality and safety.
- Overweight to Consumer Staples contributed to performance, as did stock selection in Communications and Financials.
- Maintaining current defensive value stance going forward, believing in good remaining upside potential
- Slight (~2%) tilt to U.S. equities at quarter end, but overweight exposure to international markets through global companies since U.S. markets trade at a 15-year peak relative multiple to international markets.

DALLAS POLICE & FIRE PENSION SYSTEM

Invesco (formerly OFI) *Global Equity*

Market Value *(06-30-2019)*:	$115,475,442	Inception Date:	October 2007
Investment Structure:	Separate Account	Style:	Growth

Strategy/Portfolio Summary

- *Philosophy:* growth is driven by long-term structural trends in investment themes, buys should occur in a contrarian price-sensitive fashion, and being benchmark agnostic allows a focus on absolute return opportunities
  - Fundamental, bottom-up approach
  - Structural and long duration themes : Mass Affluence, New Technologies, Restructuring, Aging
  - Stock selection based on sustainable growth, improving fundamentals, barriers to entry, quality of management, product, technology, transparency, and pricing versus future growth
  - Typically invests in mid-cap and large-cap stocks.
  - 75-125 positions

Process Summary

- Research driven by team, but portfolio manager has the final decision on portfolio inclusion
- Sell discipline – changes in market dynamic, restructuring completed, overvalued vs. prospects

Invesco (formerly OFI) Performance (net)

as of 6/30/19	QTD	YTD	1 Yr	3 Yr	5 Yr	10 Yr	SI 10/2007
Invesco (OFI)	4.2%	21.7%	3.6%	16.8%	8.4%	12.4%	6.3%
MSCI ACWI Net	3.6%	16.2%	5.7%	11.6%	6.2%	10.1%	8.2%
Excess Return	*0.6%*	*5.5%*	*-2.1%*	*5.2%*	*2.2%*	*2.3%*	*-1.9%*

- High beta manager with performance driven by stock selection over the long-term, despite sector allocation variations and performance volatility in the short-term.
- Large positive attribution effects Year-To-Date from overweight to Europe and developed countries while underweight North America.
- Positioning is a result of the bottom-up, long-term thematic investment process, and portfolio has very low turnover year-to-year
- Investment manager believes their investment style leaning towards sustainability and advantage provides a buffer against protectionist trade policies going forward, and that low interest rates are generally supportive of valuations
- On March 31, 2019, co-portfolio manager John Delano, CFA, became sole portfolio manager coincident with the retirement of Rhajeev Bhaman, CFA.

Walter Scott *Global Equity*

Walter Scott
Global Investment Management

Market Value *(06-30-2019):*	$129,696,107	Inception Date	December 2009
Investment Structure:	Separate Account	Style:	Growth

Strategy/Portfolio Summary

- *Philosophy:* sustainable company wealth generation drives investor return
  - Fundamental financial analysis in seven areas: marketability, product/franchise, industry, management, competitive position, profitability, financial control
  - Research to find companies capable of 20% wealth generation per annum
  - High focus on quality with little balance sheet leverage
  - No constraints on countries or market cap.
  - Concentrated portfolio of 40-60 positions with low turnover
  - Typically outperforms in flat or declining markets.

Process Summary

- Investment buys must be unanimous investment team decision (19 members, including research team and investment executives)
- Investment sells require only a single dissenter
- Risk controls on single stock exposure limit of 10%

Walter Scott Performance (net)

as of 6/30/19	QTD	YTD	1 Yr	3 Yr	5 Yr	10 Yr	SI 12/2009
Walter Scott	4.1%	20.2%	13.8%	14.6%	9.6%	--	10.1%
MSCI ACWI Net	3.6%	16.2%	5.7%	11.6%	6.2%	10.1%	8.2%
Excess Return	*0.5%*	*4.0%*	*8.1%*	*3.0%*	*3.4%*	*--*	*1.9%*

- Walter Scott is a concentrated portfolio with high tracking error, that often outperforms in volatile and declining markets.
- YTD performance has been aided by quality focus, as the market is favoring quality and safety.
- Recent outperformance is also driven by sector overweight and stock selection in Information Technology.
- Portfolio has substantial over-weights vs. benchmark in Information Technology, Consumer Discretionary, and Healthcare, and has a slight U.S. tilt at June 30, 2019.
- Manager believes investment style of buying financially strong, globally diversified, flexible businesses that are innovative and market-leading will produce long-term performance that is not dimmed by short term economic scenarios.

Global Asset Management

RBC EM Equity *Emerging Markets Equity*

Market Value *(06-30-2019)*:	$50,891,986	Inception Date:	October 2017
Investment Structure:	Commingled Fund – daily liquidity	Style:	Core EM Equity

Strategy Summary

- *Philosophy: Companies with sustainably high cash flow return on investment (CFROI) produce superior returns.*
  - RBC focuses on quality and growth at a reasonable price
  - Quality focus defined by sustainable cash flow and ROIC
  - Top-down thematic research drives sector views
  - Goal is 60-80% of return from stock selection, 20%-40% from top down themes
  - ESG considerations a part of investment process
  - High conviction portfolio of 40-80 holdings

Process Summary

- Sell discipline: investment case changes, valuation, a better stock is found
- Investment team rotates sector and geographic coverage every few years
- Portfolio manager makes final decision on investment inclusion

RBC – Performance (net)

as of 6/30/19	QTD	YTD	1 Yr	3 Yr	5 Yr	10 Yr	SI 01/2018
RBC EM Equity	3.3%	12.9%	9.3%	--	--	--	0.9%
MSCI EM IMI Net	0.4%	10.2%	0.5%	10.0%	2.3%	5.8%	-4.3%
Excess Return	*2.9%*	*2.7%*	*8.8%*	--	--	--	*5.2%*

- RBC investment approach tends to drive relatively low volatility and Beta, providing some downside protection during declining markets.
- Downside protection was confirmed with outperformance during 4Q18 and overall 1-year returns.
- Despite large variances in sector allocation as a result of top-down thematic views, the majority of YTD performance is attributable to stock selection. Country allocations have not been substantial contributors to performance.
- Investment manager view is that emerging markets are near a bottom and have the potential to recover, with EM equity and currency valuations attractive on a relative basis to developed markets. Higher growth is also expected in a few larger EM countries such as India, Mexico, and Brazil while the U.S. and EU economies are expected to slow.

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C12

Topic: **Private Asset Cash Flow Projection Update**

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.

Discussion: Staff will provide the quarterly update on the private asset cash flow projection model first discussed at the February 2018 Board meeting. The cash flow model projects estimated contributions to, and distributions from, private assets through the end of 2022. These estimates are intended to assist the Board in evaluating the expected time frame to reduce DPFP's exposure to these assets and the implications for the overall asset allocation and expected portfolio risk and return.

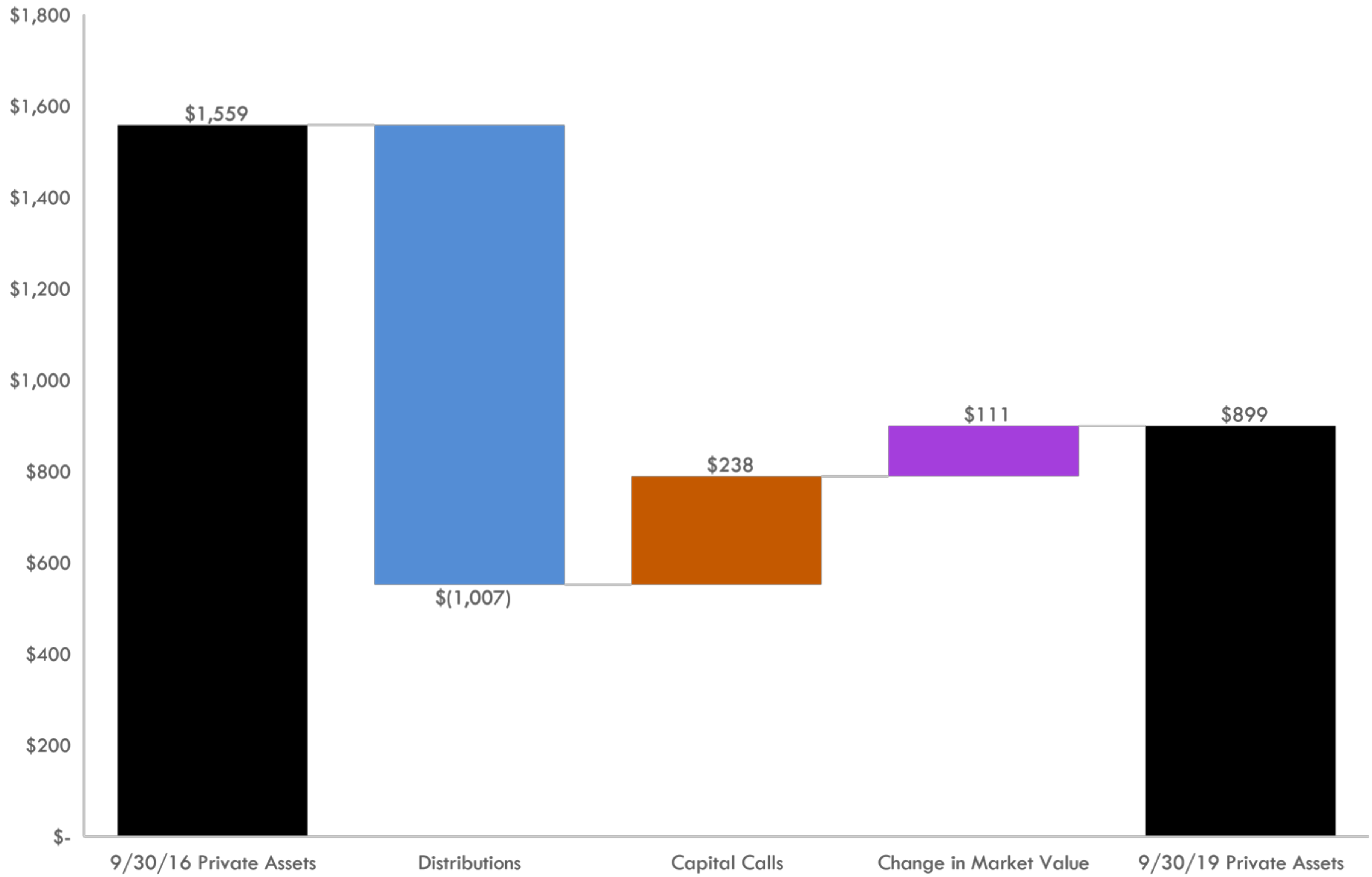
DALLAS POLICE & FIRE PENSION SYSTEM

Quarterly Private Asset Cash Flow Projection Update

October 10, 2019

Private Asset Bridge Chart – Since 9/30/16

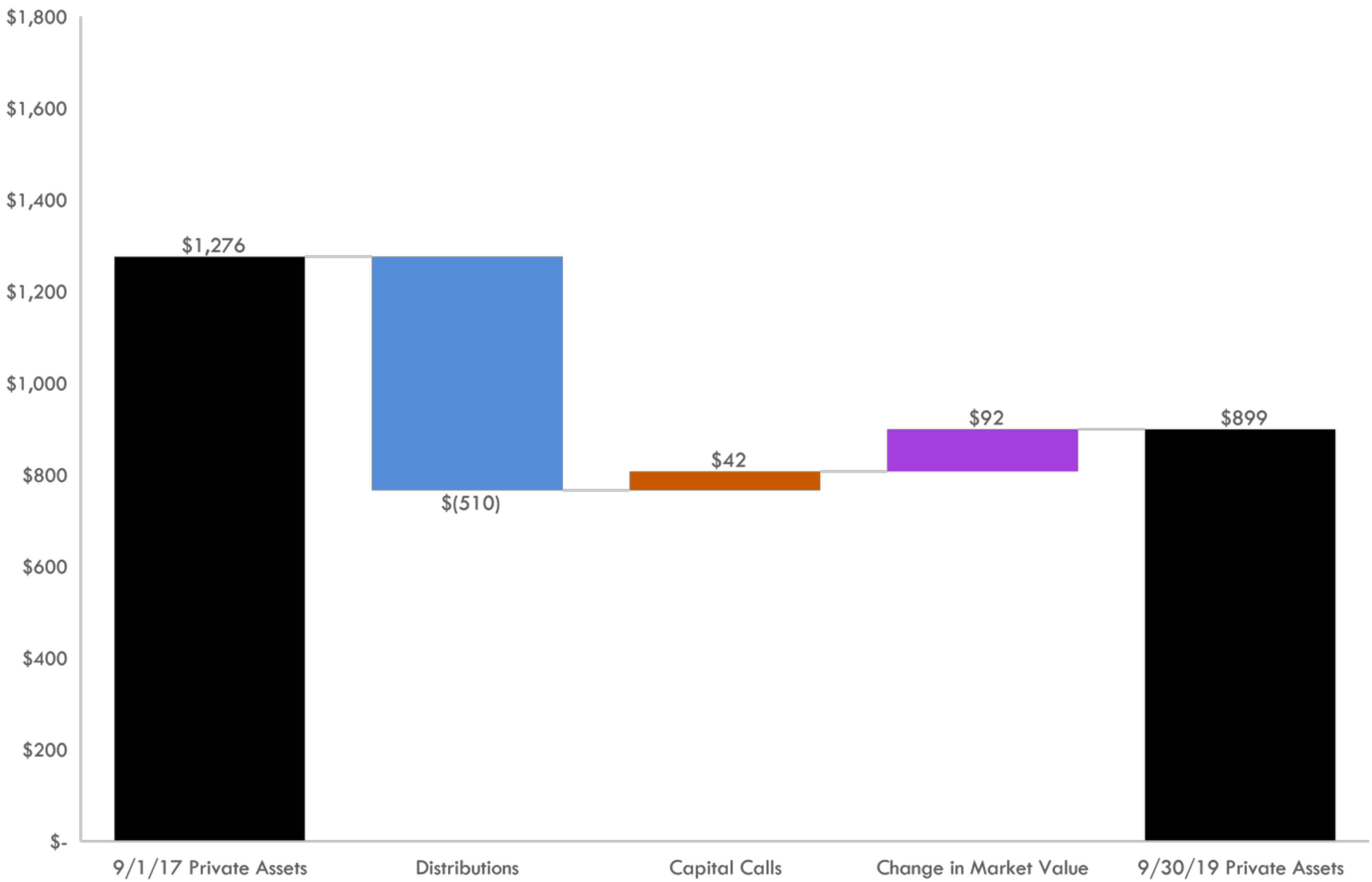
In Millions



Numbers may not foot due to rounding.

Private Asset Bridge Chart – Since 9/1/17 (New Board Formation)

In Millions



Numbers may not foot due to rounding.

Private Asset Quarterly Cash Flows – Q3 2019

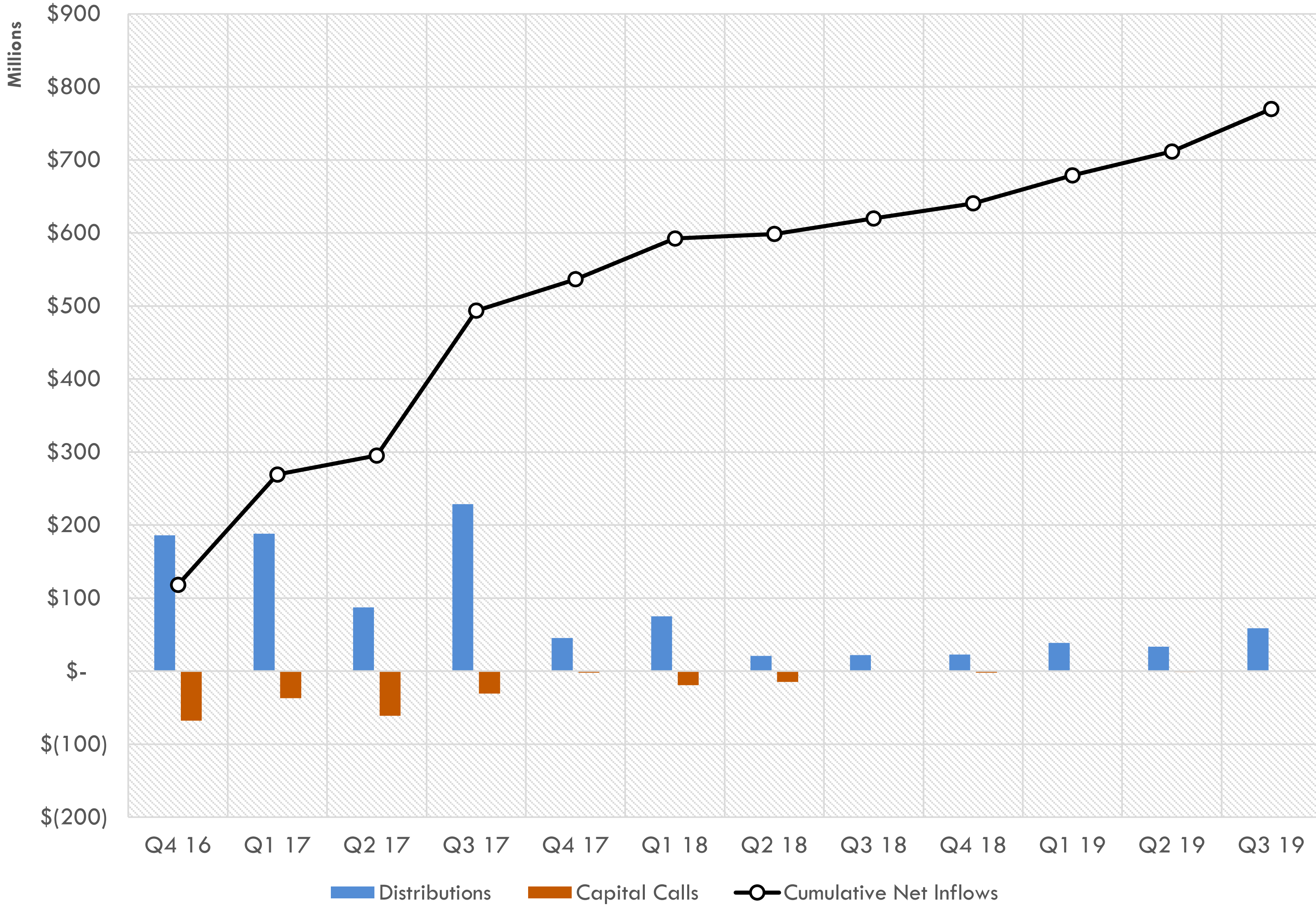
TOTAL CAPITAL CALLS & CONTRIBUTIONS		**$454,861**
TRG AIRRO	Capital Call	$274,861
Industry Ventures	Capital Call	$180,000

TOTAL DISTRIBUTIONS		**$58,730,060**
Inflows $500k and Over		
Clarion	Tribute Land Sale	$22,000,000
Clarion	Tribute Golf Course, Land Sale	$12,159,980
AEW	Camel Square Suns Sale	$9,853,024
Hancock	Ironbark Distribution	$6,039,512
Hancock	TMPC Income	$4,000,000
Barings	Napa Tax Proceeds	$975,261
Highland Crusader	Distribution	$905,732
L&B	Kings Harbor	$546,000
BentallGreenOak	Vista 7 Income	$525,000

Numbers may not foot due to rounding.

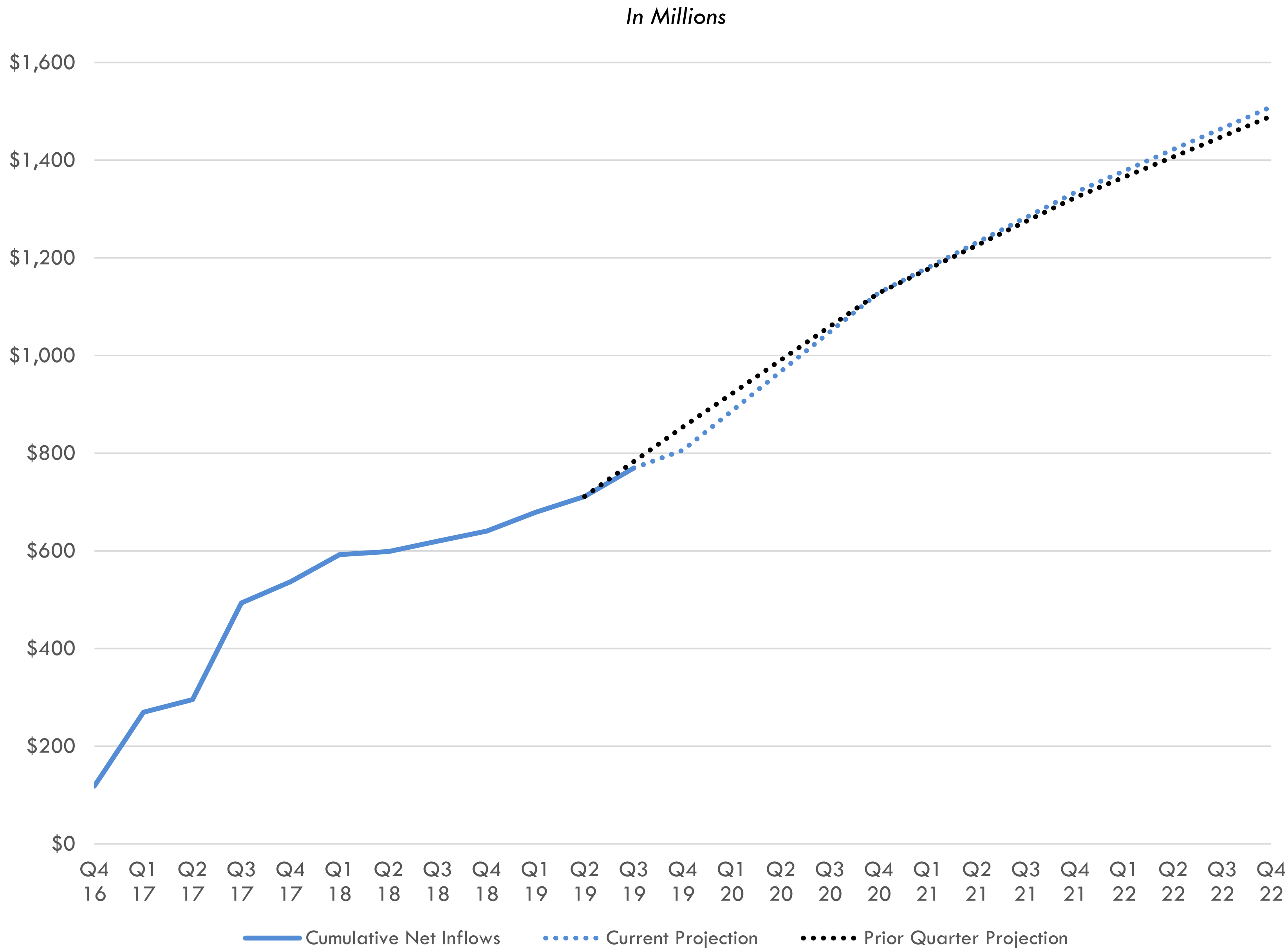
Private Asset Quarterly Cash Flows – Since 9/30/16

In Millions



Cumulative Actual and Projected Private Asset Net Inflows

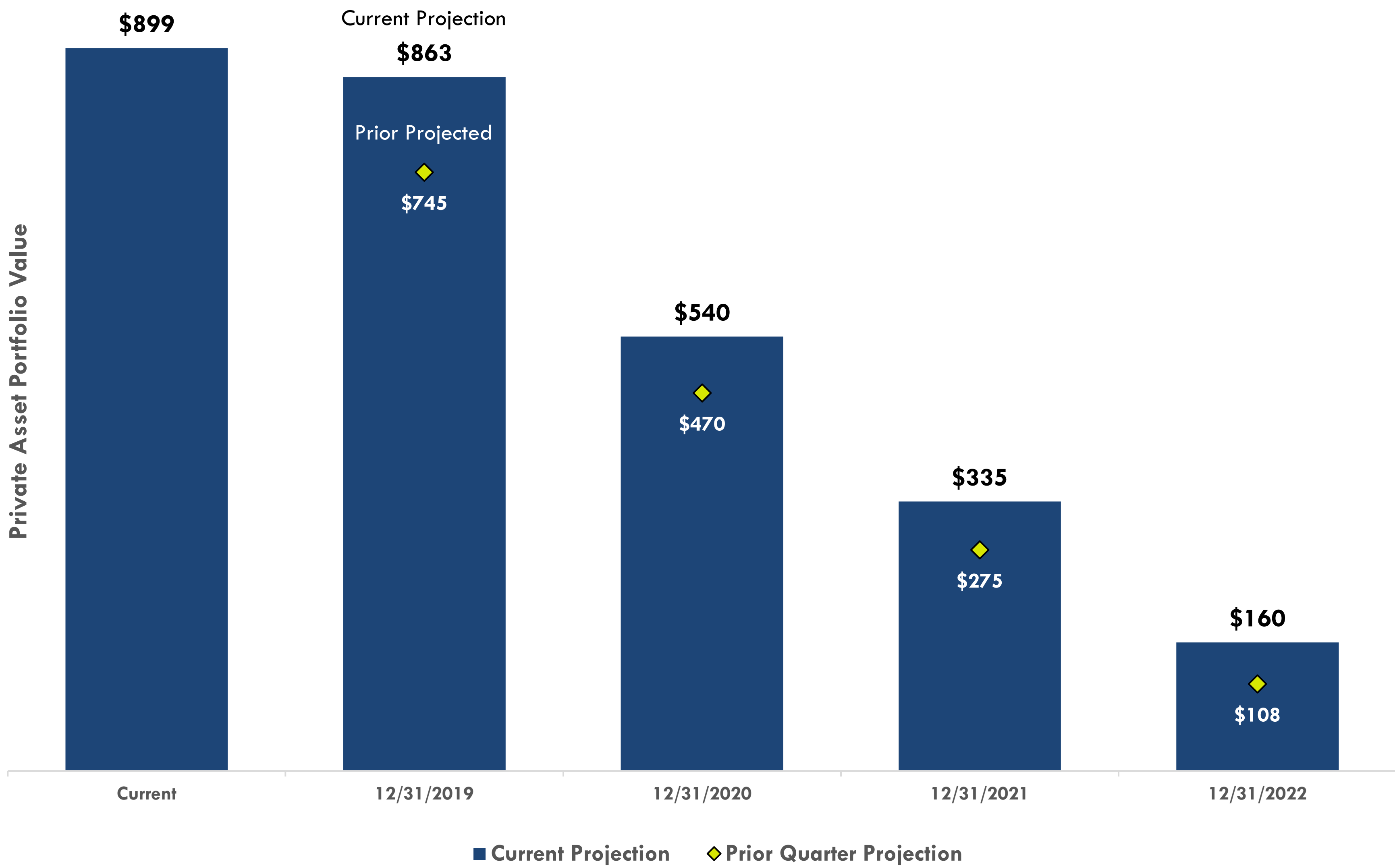
Private asset cash flows projections are based on either in-process/planned sales, if available, or a gradual disposition through 2022.



Private Asset Year-End vs. Prior Projection

Private asset cash flows projections are based on either in-process/planned sales, if available, or a gradual disposition through 2022.

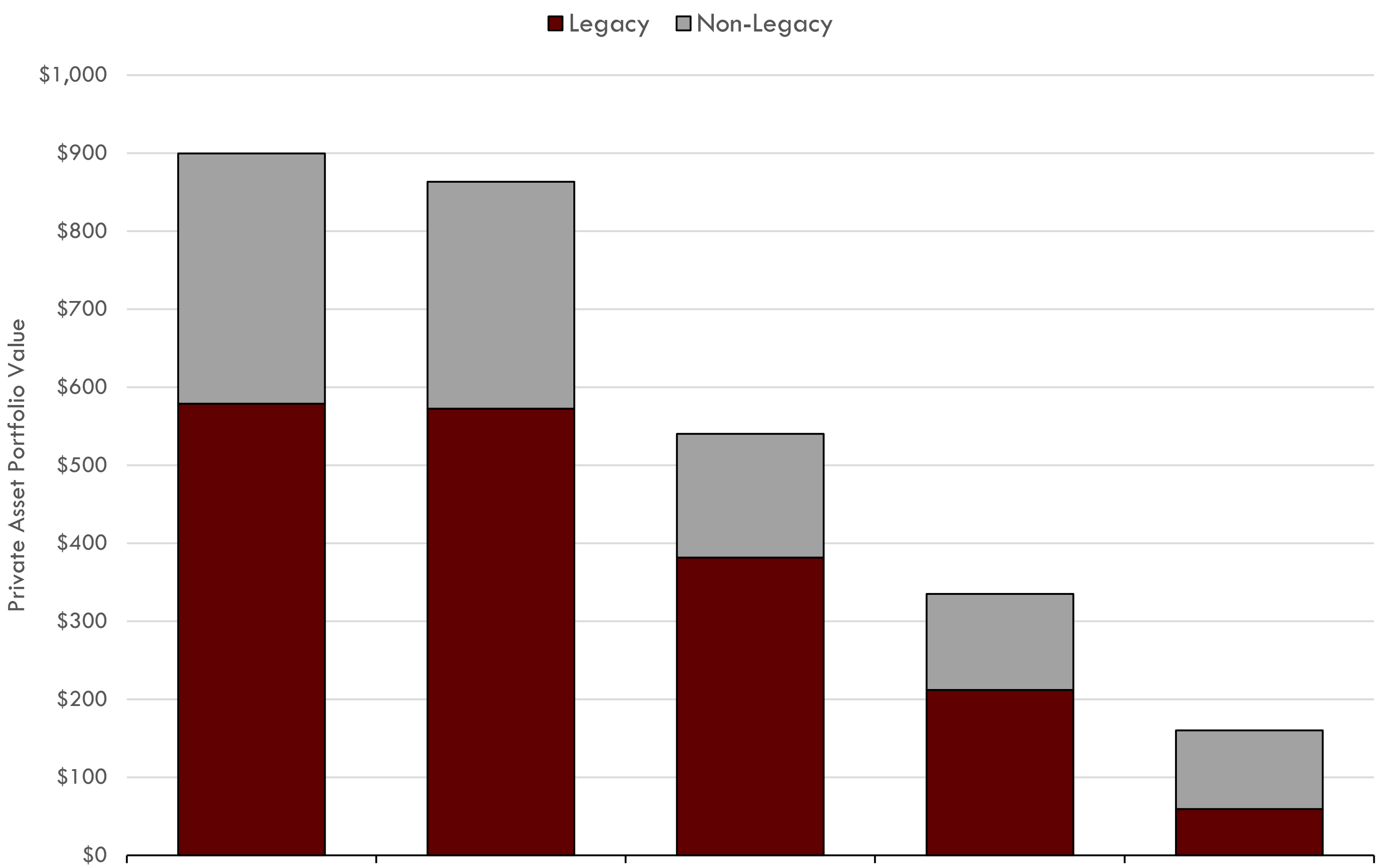
In Millions



Private Asset Disposition Timeline & Composition

Private asset cash flows projections are based on either in-process/planned sales, if available, or a gradual disposition through 2022.

In Millions

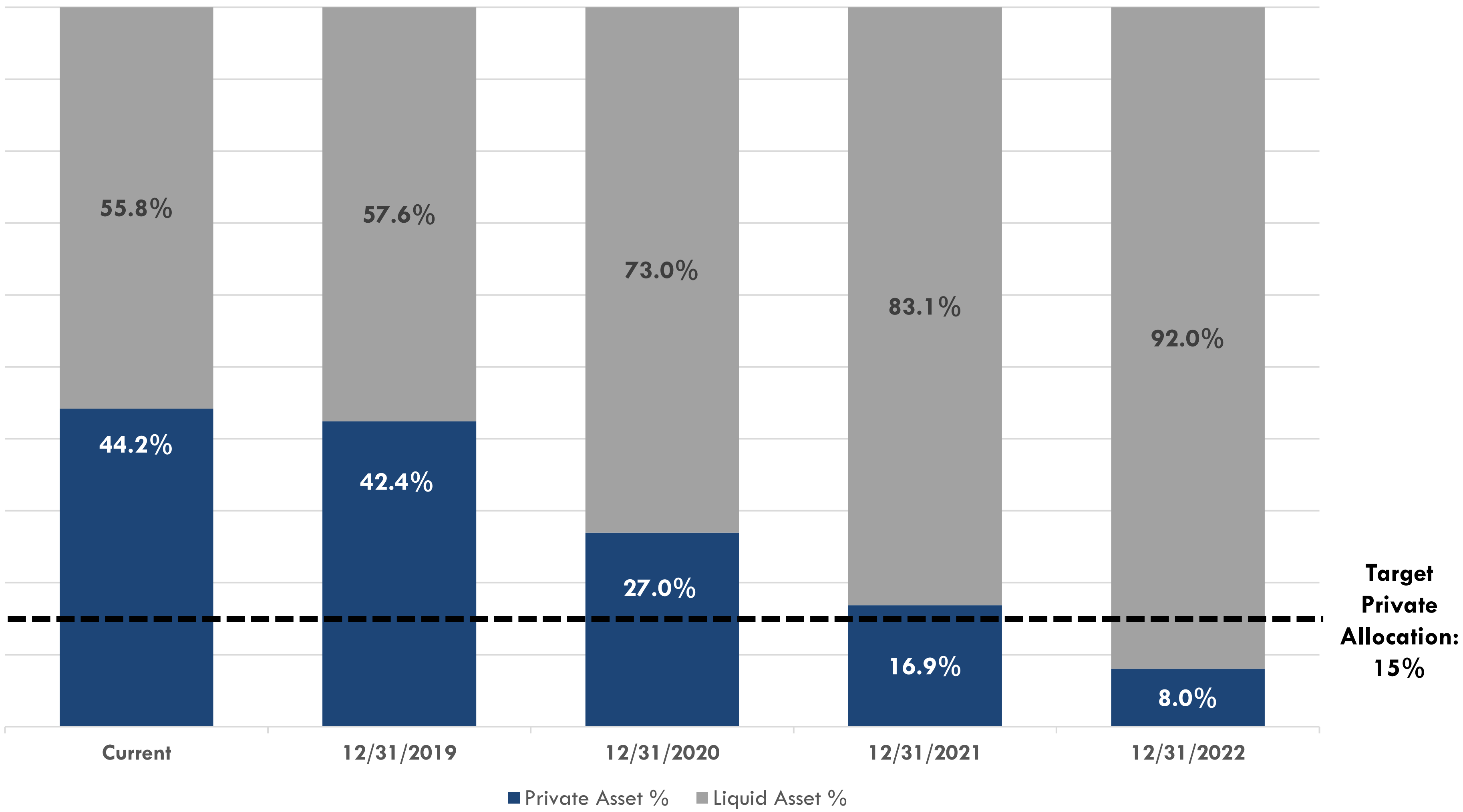


	Current	12/31/2019	12/31/2020	12/31/2021	12/31/2022
Legacy NAV (M)	$579	$572	$382	$212	$59
% of Private Portfolio	64%	66%	70%	63%	37%
% of DPFP Portfolio	28%	28%	19%	11%	3%

Forward Liquidity Projection

Private asset cash flows projections are based on either in-process/planned sales, if available, or a gradual disposition through 2022.

Based on projected year-end NAVs provided by actuary in 1/1/2018 Actuarial Report
Assumes 100% of private asset proceeds are reinvested into liquid investments



DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C13

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: The Lone Star Growth Capital fund and the Lone Star CRA fund terms will expire on October 25, 2019. 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 #C14

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, including claims against City of Dallas regarding unpaid contributions under USERRA, consideration of legal options regarding DPFP's interests in funds managed by Lone Star Investment Advisors 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.

DISCUSSION SHEET

ITEM #D1

Topic: **Reports and concerns of active members and pensioners of the Dallas Police and Fire Pension System**

Discussion: This is a Board-approved open forum for active members and pensioners to address their concerns to the Board and staff.

Regular Board Meeting – Thursday, October 10, 2019

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #D2

Topic: **Executive Director's report**

a. Associations' newsletters
- NCPERS (September 2019)

b. Open Records

c. Dallas Citizens Council Presentation

Discussion: The Executive Director will brief the Board regarding the above information.

Regular Board Meeting – Thursday, October 10, 2019

THE NCPERS

MONITOR

The Latest in Legislative News

September 2019

In This Issue

Case Studies Show Shutting Down Pension Plans Backfired in Four States

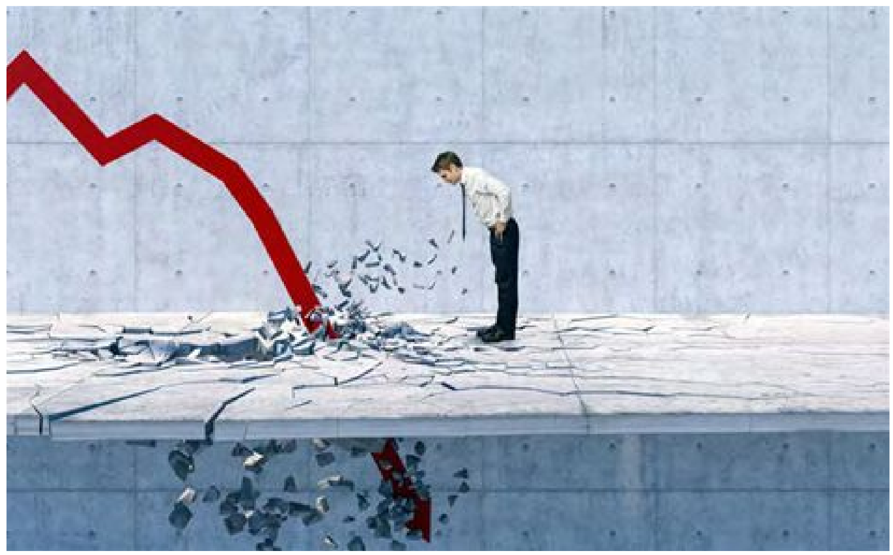


Photo Illustration © 2019, istock.com

For years, governments have been pushing defined-contribution and cash-balance retirement plans as an economical alternative to traditional pensions. A new series of case studies from the National Institute on Retirement Security finds serious flaws in that strategy.

NIRS found that changing the design of public sector retirement plans backfired in Alaska, Kentucky, Michigan and West Virginia, increasing costs for taxpayers without improving funding in a meaningful way. Additionally, the changes undermined public workers' retirement security and made it harder for governments to attract the talent they need to deliver public services.

The research, *Enduring Challenges: Examining the Experiences of States that Closed Pension Plans*, examined four states that closed their pension plans in favor of alternative plan designs. "The data make it clear that closing a pension plan to new employees increases taxpayer costs and doesn't close any funding shortfalls," said Dan Doonan, NIRS executive director and co-author of the report, in a news release. "What's important to understand is that switching away from pensions starves the plan of employee contributions while the liabilities

CONTINUED ON PAGE 8

NCPERS Executive Directors Corner

Why NCPERS Is Getting to Know Arnold Ventures

As an organization, NCPERS has inevitably had its differences with others on the vital issue of protecting public pensions. One of our most vigorous foes for years was the Laura and John Arnold Foundation, which had a long track record of advocating for converting public pensions into defined benefit plans.

Photo illustration © 2019, istock.com

But changes are afoot at the foundation, which is now known as Arnold Ventures. Over the past year, NCPERS has watched with keen interest as the foundation has remade itself into a more progressive, forward-looking organization. Old staffers, who could be counted upon to offer up a backwards perspective on pension reform, have been the shown the door. They have been replaced by new people with a refreshing desire to listen to and explore other points of view.

Since November 2018, we have been in steady communication with one of the organization's key players—Robb Gray, vice president of policy and advocacy. Gray joined Arnold Ventures from the Center for Budget & Policy Priorities, a respected organization that focuses on federal and state budgets and their impact on ordinary Americans, and with which we have shared common goals on many occasions.

"When things go awry for some pension plans, it is often not because the accounting rules are ignored but because they are followed."

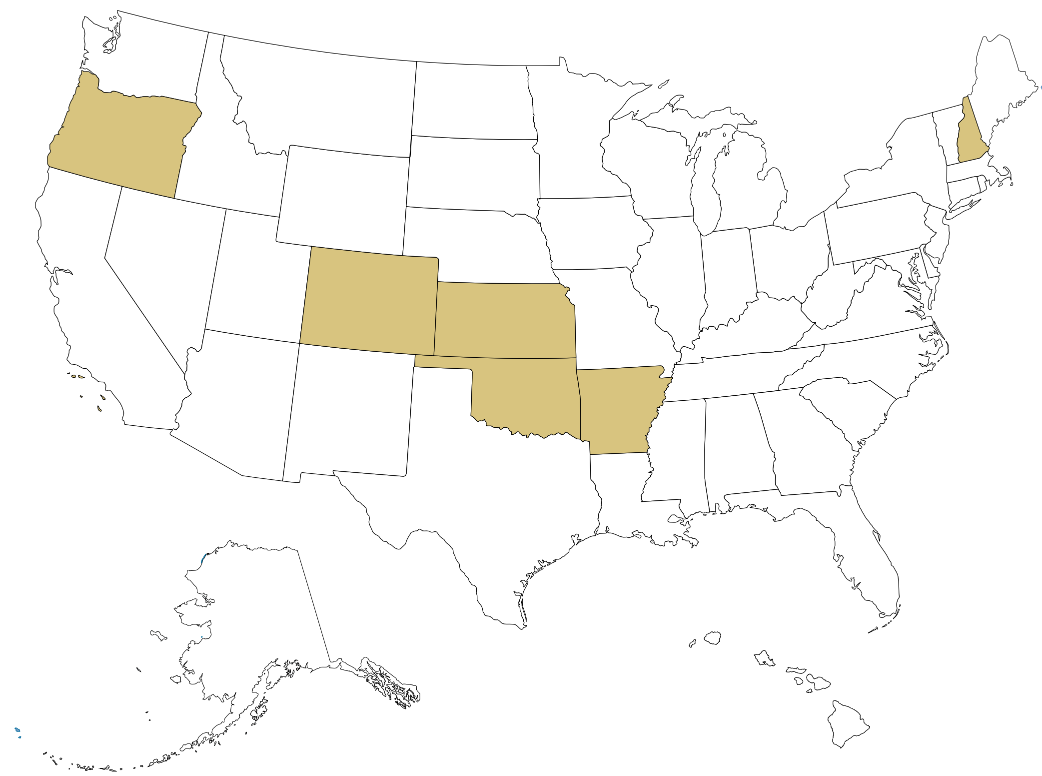
Under Gray's direction, Arnold Ventures is reappraising its positions on public pensions, and thus far the changes are moving in a positive direction. Arnold Ventures has been aligned with NCPERS and other public pension organizations in fighting bad state legislation and has prodded its grant recipients, including Pew and the Reason Foundation, to back off on state lobbying.

In the coming months, we expect Arnold Ventures to revamp its stable of grant recipients. The organization is actively looking to fund new researchers and academics who would bring balance to its views on public pensions.

Recently, Gray facilitated a meeting between NCPERS, public sector unions, and John Arnold himself. We had a good 90-minute dialogue with Arnold in which we heard his positions and we know he heard ours. One of the outcomes of that meeting was statement by the Arnold Foundation of its three principles for public pensions and retirement security: Fiscal sustainability, retirement security, and accountability and engagement.

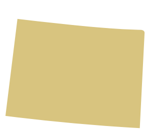
CONTINUED ON PAGE 10

State Update



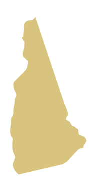
Since our March 2019 installment, state legislatures have been busy with various public pension reforms. Previously reported pension reform bills in Arkansas and Kansas have died in committee. Additionally, in Oklahoma, a bill to provide cost-of-living adjustments (COLAs) was stalled until 2020. On a more positive note, there are efforts to repay plans and defeat of defined contribution bills in Kansas. Details on specific state legislation are as follows:

Arkansas: As previously reported, House Bill (HB) 1173 would have required an annual financial stress test for the retirement systems. On April 24, that bill died in the House.



Colorado: On March 4, Representative KC Becker (D), Senator Lois Court (D), and Sen. Jack Tate (R) introduced HB 1217, a bill which will eliminate the 2% increase in member contributions to Colorado Public Employee Retirement Association (COPERA) for local government employees. Governor Jared Polis (D) signed the bill into law on May 20.

Kansas: As previously reported, Senate Bill (SB) 9 was presented to Gov. Laura Kelly (D) on February 26; at time of print it was unclear of the governor would sign the legislation. On March 11, the governor signed the bill which paid back $115 million borrowed from Kansas Public Employees Retirement System (KPERS). The governor did veto an additional $51 million unscheduled payment to KPERS; however, the legislature was able to override her veto. Separately, HB 2165, which would have moved all correctional officers from KPERS to the Kansas Police & Fire Retirement System, failed to pass committee.



New Hampshire: As previously reported, HB 616 would give a cost-of-living-adjustment (COLA) for retirees in the state retirement system that have been retired for at least 60 months. The last COLA for state retirees was in 2010. The bill passed the Senate on May 23. While Gov. Chris Sununu (R) has yet to sign the bill, he has announced that he will sign it, despite opposition from

CONTINUED ON PAGE 10

Congress's Fall Session

By Tony Roda

Photo Illustration © 2019, adobestock.com

A politically divided Congress, a competitive Democratic presidential primary, and inconsistent policy direction from the White House are likely to result in a chaotic scene in Washington this fall. We expect sharp partisan disagreement on high profile, politically charged issues, such as immigration, gun control, and economic policy. However, as we have seen time and time again, retirement and pension legislation tend to be bipartisan and can often fly below the partisan flak.

The SECURE Act

A recent example of this is the SECURE Act, H.R. 1994, which passed the House on May 23 by a vote of 417-3. The bill's provisions are aimed at enhancing retirement savings by adding more flexibility to the tax rules that apply to defined contribution plans and IRAs. The legislation also demonstrates a clear recognition of the increased longevity of Americans. For instance, it would remove the age cap on contributions to IRAs and increase from 70 ½ to 72 the age at which Required Minimum Distributions (RMD) are triggered. In addition to 401(k) plans and IRAs, the RMD provision affects Internal Revenue Code section 401(a) qualified retirement plans, 457(b) plans, and 403(b) plans.

The SECURE Act is pending in the Senate, where a few Senators are blocking it and demanding changes. Given its overwhelming bipartisan support in the House, the legislation is expected ultimately to clear these hurdles and move through the Senate this fall. It's possible that the bill could be attached to an end-of-year, must-pass piece of legislation, such as an appropriations bill or extension of expiring tax provisions.

Of course, NCPERS is monitoring the SECURE Act for attempts to add problematic amendments, such as the Public Employee Pension Transparency Act (PEPTA) or a provision to subject state and local governmental pension plans to the Unrelated Business Income Tax (UBIT).

Windfall Elimination Provision

Legislation is expected to be introduced in September by House Ways and Means Committee Chairman Richie Neal (D-MA) to repeal the Social Security penalty known as the Windfall Elimination Provision (WEP). The bill is expected to be similar but more generous than legislation (H.R. 3934) recently introduced by Rep. Kevin Brady (R-TX), who is the senior Republican Member of the Committee.

The Brady bill would divide the Social Security beneficiary universe into three categories:

- Group 1: Those who are age 60 and older would continue to be hit by the WEP penalty but would receive a $100 monthly rebate ($50 for spousal benefit).
- Group 2: Ages 59 to 21 would receive the higher of current law or the new proportional formula, which is designed to ensure that each worker's actual work history is used in determining the benefit. This means that anyone in the workforce today, as long as they are at least age 21, would be able to be completely exempt from WEP through the substantial earnings exemption.
- Group 3: Ages 20 and younger would have their Social Security benefit calculated under the proportional formula.

CONTINUED ON PAGE 11

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The Voice for Public Pensions

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Early-Bird Registration Deadline Tuesday, August 20

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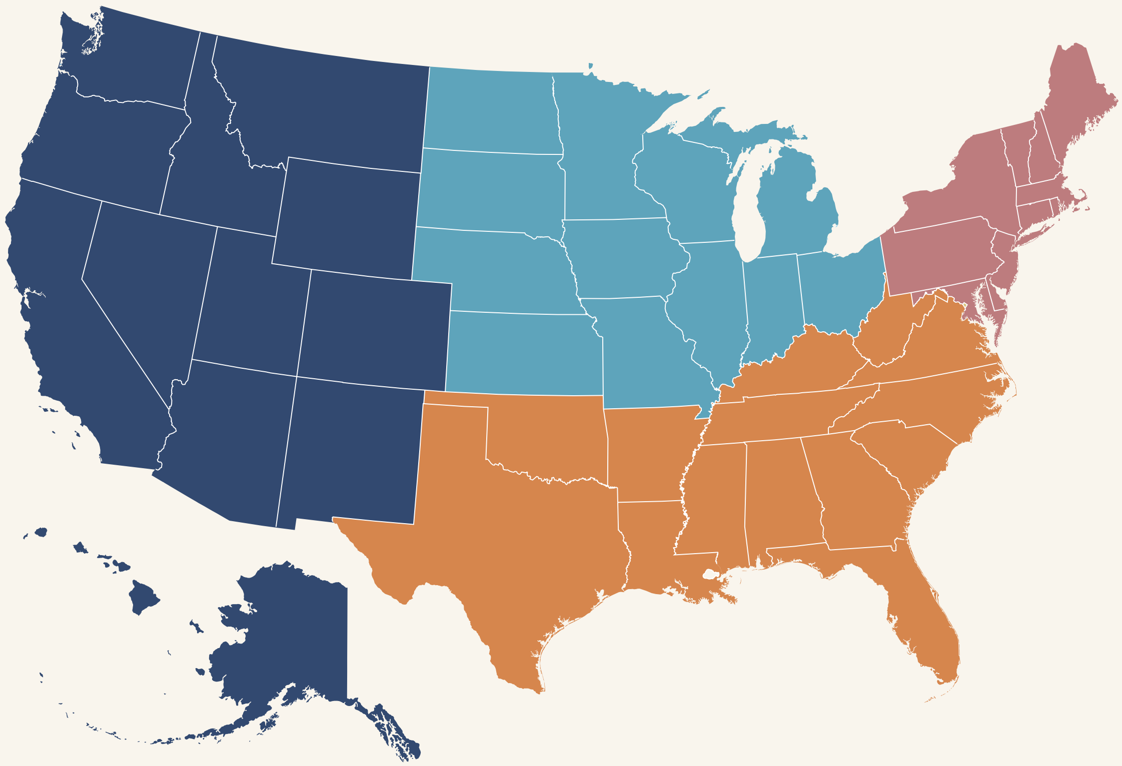
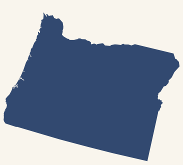
NCPERS Around the Regions

This month, we will highlight Oregon, Kentucky, Maryland, and Wisconsin.



WEST: Oregon



Nine public employees have petitioned Oregon's Supreme Court for a direct review of a new state policy that cut their retirement benefits.

At issue is Senate Bill 1049, which was enacted in May. The bill changed the way the state pays for retirement costs, in a bid to save the state $1.2 billion to $1.8 billion every two years to apply toward a $27 billion pension shortfall. The employees say they will end up with less money when they retire. Jennifer James, a school district secretary earning less than $40,000 a year and the lead plaintiff in the case, told the *Oregon Tribune* that her retirement assets would decline 13% due to SB 1049.

The lawsuit challenges two of the changes contained in the law: Cuts to the amount of money that will go into employees' savings accounts and a new $195,000 cap on the final average salary used to determine retirement benefits for each employee. Employees will contribute the same amount of money to their retirement, but a greater portion will go to fund pensions.

The plaintiffs assert that the loss of retirement benefits violates both state and federal constitutions, is a breach of contract, and is an illegal taking without compensation. Oregon public employees have a retirement plan with two distinct parts: a defined-benefit pension, and a market-based savings account similar to a 401(k) plan. About 176,000 state and local government employees are part of the Oregon Public Employees Retirement System, or PERS.

CONTINUED ON PAGE 7

AROUND THE REGIONS CONTINUED FROM PAGE 6

SOUTH: Kentucky

New A group representing 15,000 Kentucky Retirement Systems retirees and active employees has spoken out in strong opposition to the passage of the Kentucky pension reform bill. The group, Kentucky Government Retirees, said it was "bitterly disappointed" with the passage of House Bill 1, which it said "assaults the contract rights of dedicated public employees."

"We will stand in solidarity with affected employees when guaranteed benefits are terminated next year and this matter is litigated. We will expect the Kentucky Retirement Systems board of trustees to fulfill its fiduciary duty to its members by joining in any such litigation," the statement continued.

Pensions & Investments reported that the relief bill signed into law July 24 by Governor Matt Bevin would force quasi-governmental agencies to leave the $2 billion Kentucky Employees Retirement System for Non-Hazardous employees if they are unable or unwilling to pay rising pension contribution costs.

The new law allows 118 agencies—including local health departments, domestic violence shelters, rape crisis centers, child advocacy centers, and other state-supported universities and community colleges, some of which are struggling to remain open—to leave the KERS non-hazardous plan. The plan was 12.9% funded and had 122,788 members as of June 30, 2018, its most recent annual financial report shows.

Agencies that leave the pension plan to avoid a spike in the employer contribution rate next year, would have to offer public employees a defined contribution plan. Employers must choose whether they will exit the non-hazardous plan during a window that starts April 1, 2020, and ends April 30, 2020.

In a related development, the non-hazardous employees fund will receive a $60 million infusion from the state's general fund surplus during fiscal year 2020, *Pensions & Investments* reported. P&I said David L. Eager, KRS's executive director, made the announcement August 22 to a legislature committee on appropriations and revenue. In addition, a Teachers' Retirement System medical insurance fund will receive $70 million from the general fund surplus.

NORTHEAST: Maryland

The Maryland State Retirement and Pension System says its portfolio returned 6.46% on investments for the fiscal year that ended June 30, 2019. The portfolio's performance raised the system's assets to $54.2 billion, up $2.4 billion from a year earlier. 4

The results fell short of the 7.45% assumed actuarial rate of return, the system announced. However, earnings have averaged 8.6% over the last 10 years, well above the plan's expected rate of return and consistent with the Board's investment policy, said State Treasurer Nancy K. Kopp, chair of the system's board of trustees.

Chief Investment Officer Andrew Palmer said the returns reflected a strong performance by private equity assets and nominally fixed income assets, along with positive but more modest returns in the remaining asset classes. He noted that private equity provided 13.7% net of all fees and expenses and remained the best-performing asset class for the system. Rate-sensitive investments provided a 9.3% return, and all asset classes contributed positive returns.

MIDWEST: Wisconsin

Milwaukee officials are anticipating the city's public pension contribution will jump from $70 million currently to about $160 million in 2023, and Democratic Mayor Tom Barrett said the search for solutions is underway.

Projections call for adding $10 million to the pension reserve fund in next year's budget and additional funds in the two subsequent years to smooth the transition to the higher annual pension contribution, Barrett told the *Milwaukee Journal Sentinel.* He added that the city is looking at the structure of the pension system for police officers and firefighters across Wisconsin as a possible template. Milwaukee and Milwaukee County are separate from the state's retirement system.

CONTINUED ON PAGE 10

SHUTTING DOWN PENSION PLANS CONTINUED FROM PAGE 1

remain. This can reduce the economic efficiencies of a pension system as the number of retirees grows compared to the number of employees paying in."

The NIRS analysis covers the following key issues for each plan and the impact of the plan change over time. The impact of the changes on the demographics of system membership; changes in the cost of providing benefits under the plan; the percent of the actuarially determined employer contribution made by the state and other public employers each year; the effect on workers' retirement security; and the impact on the funding level over time. Where possible, the case studies also reflect subsequent policy actions related to the plan changes.

Among the key findings:

- Costs for states increased after they closed their pension plans, and promised improvements in pension underfunding were not delivered by switching to a new plan structure.
- Changing benefits for new hires does not resolve funding shortfalls. The key to managing legay costs associated with pension plans is to fund them responsibly in the first place, with government making their fair share of contributions.
- Plan changes have increased retirement income insecurity for workers. This recognition led West Virginia to ultimately reopen its pension plan in 2005, 14 years after it closed it. The plan's funding level has climbed from 25% when it was reopened to 70% in 2018.
- Reducing retirement benefits has a negative impact on the work force. Alaska has experienced increased difficulty in recruiting and retaining public employees since it closed its plan in 2005. The study noted a trend toward teachers and public employees in the defined contribution plan taking their money and leaving the state as soon as they vest after five years.

The complete report may be found on the NIRS website, www.nirsonline.org. ◆

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Register by October 4 for Early-Bird Registration Rates.

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EXECUTIVE DIRECTOR'S CORNER CONTINUED FROM PAGE 2

The devil, of course, is in the details, and we will be paying close attention. We are learning more about the Arnold Ventures agenda and beginning to color in the white spaces of this new relationship. We're not naïve, and we recognize that the Arnold Foundation's anti-pension positions have harmed NCPERS and its members in the past. At the same time, we are sophisticated and shrewd enough to understand the importance of finding areas of agreement.

Desmond Tutu, the South African bishop, human rights activist and peacemaker, once said, "If you want peace, you don't talk to your friends. You talk to your enemies." That sums up very neatly what we are striving to do. Détente –the act of finding common ground by working purposefully to ease strained relationships—takes time, and it isn't always successful. But we won't change minds and find commonalities unless we try.

I'm very proud of NCPERS' efforts to broker a new, more positive, and proactive relationship with an organization that has been a thorn in our side for too long. As Arnold Ventures "resets" itself, we will be listening with an open mind. If you have questions or concerns about how and why we are exploring new connections, I would be happy to chat with you. ◆

STATE UPDATE CONTINUED FROM PAGE 3

his party. Separately, SB 28 was signed by the governor on June 10. The bill requires that one of the members of the independent Investment Committee of the retirement system be an active member appointed from a list of nominations.

Oklahoma: As previously reported, there are 2 COLA bills in the House and Senate. HB 2304 passed the House on March 11. On April 9, the Senate Retirement and Insurance Committee opted to pursue an actuarial study on a 2 percent COLA, instead of the House's 4 percent version. The actuarial analysis will be completed by December 1, 2019, so the legislature can pursue a COLA in 2020. The House passed their version of this bill (HB 2485), with an actuarial analysis of 4 percent.

Oregon: On May 6, SB 1049 was introduced by Sen.'s Peter Courtney (D) and Tina Kotek (D). For Tier 1 and 2 employees, the bill redirects 2.5% of the 6% employee contribution into their Individual Account Program to pay down Oregon Public Employees Retirement System (PERS) liability. For Tier 3 employees, .75% of their contribution is redirected. Gov. Kate Brown (D) signed the bill into law on June 11.

Stay tuned and visit www.NCPERS.org for more information on upcoming state pension reform legislation. You can visit the legislation maps on www.NCPERS.org to track different state pension reform bills. Make sure to read our monthly *'Around the Regions'* column, where we dive deeper into state legislation and other issues. As always, if your state is facing pension reform efforts and you would like NCPERS' help, please let us know. ◆

AROUND THE REGIONS CONTINUED FROM PAGE 7

The city is interested in having parity with the Wisconsin retirement system, Barrett told the *Journal Sentinel*. "We are faced with the notion of having a dramatic increase in the pension payment on the horizon, (and) a law that does not allow us to renegotiate this unless we do it through collective bargaining," Barrett said.

Union officials said public employees have already made significant concessions. Shawn Lauda, president of the Milwaukee Police Association, said he believes the parity with the state system is already there. "I think we're absolutely paying our fair share if not more so than some," he told the *Journal Sentinel*.

"We understand the financial challenges that the city faces, and we're here to be a part of the solution, not part of the problem," Mike Bongiorno, president of Local 215 of the Milwaukee Professional Fire Fighters, told the *Journal-Sentinel*. He noted that both sides perform significant research before bargaining to ensure the city retains good employees and is comparable to the rest of the state and cities of the same size. ◆

CONGRESS'S FALL SESSION CONTINUED FROM PAGE 4

The bill we expect Chairman Neal to introduce in a few weeks would not have a group three. Instead, it would extend the treatment afforded group two in the Brady bill to everyone who has not reached age 60. It is also possible that the Neal bill will increase the monthly rebate to those in group one to $150.

It is expected that the House Ways and Means Committee will take action on the Neal bill sometime this fall. Full House action is possible as well.

Early Medicare Buy-In for Retired First Responders

Also in September, Senator Sherrod Brown (D-OH) and Reps. Tom Malinowski (D-NJ) and Harley Rouda (D-CA) are expected to introduce the first-ever piece of legislation to allow retired first responders who have reached age 50 to buy into Medicare. The Medicare eligibility age under current law is 65. Given that the vast majority of first responders retire in their fifties, they face a significant gap in time prior to Medicare eligibility and their health care options are shrinking because many states and municipalities are cutting back or eliminating retiree health care. This legislation recognizes the financial drain that retiree health care imposes on our nation's first responders and would provide them with a more affordable option -- enrolling in Medicare.

While it is not expected that the measure will see any formal action in the House or Senate this year, proponents of the bill want to capitalize on the bill's introduction to enlist Congressional cosponsors and outside stakeholder support. The bill will be introduced with the support of the International Association of Fire Fighters, the Fraternal Order of Police, the National Association of Police Organizations, and the Ohio Police and Fire Pension Fund. NCPERS supports the legislation as well.

Multiemployer Pension Relief Legislation

On July 24, H.R. 397, which would establish a loan program at the U.S. Department of the Treasury to assist certain financially-troubled multiemployer pension plans, was approved by the House on a 264-169 vote, with all Democrats supporting the bill. Unfortunately, only 29 of 197 Republicans voted for final passage.

While the plans are private sector, collectively-bargained pension plans ("Taft-Hartley") and not state or local governmental plans, NCPERS is paying close attention to this legislation because the issue of discount rates has been discussed. Some Members of Congress have specifically said that legislatively mandating a lower assumed rate of return should be done both for multiemployer plans and for state and local governmental plans, which we would vehemently oppose.

At the House Ways and Means Committee's markup of the SECURE Act, Rep. David Schweikert (R-AZ) stressed that funding relief contained in the bill for another group of pensions, community-owned newspapers, was positive in only one aspect – the requirement that any pension plan taking advantage of the relief would have to calculate the funding targets and normal cost of any new benefit accruals by using the U.S. Treasury obligation yield curve. Rep. Schweikert added that this concept, once put into statute, should be applied to multiemployer and governmental pension plans. As our community knows, PEPTA's reporting requirements mandate the use of the Treasury yield curve to calculate the funded status of public pension plans.

Senate action on the multiemployer pension bill may be possible this fall. There is bipartisan support for the concept of assisting the troubled pension plans. However, Senators have yet to coalesce around a specific bill. In addition, House Republican support for H.R. 397 was weak and that casts doubt on the legislation in the GOP-controlled Senate.

Please be assured that NCPERS will pay close attention to all of the issues discussed above as well as any other legislative or regulatory proposals that would affect state or local governmental pension plans. ◆

__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, Georgia, Kentucky, Ohio, Tennessee and Texas. He has an undergraduate degree in government and politics from the University of Maryland, J.D. from Catholic University of America, and LL.M (tax law) from Georgetown University.

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2019 Conferences

September

Public Pension Funding Forum
September 11 – 13
New York, NY

October

NCPERS Accredited Fiduciary Program (All modules)
October 26 – 27
New Orleans, LA

Public Safety Conference
October 27 – 30
New Orleans, LA

The Voice for Public Pensions

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