



March 11, 2020

Mr. Reginald Zeno  
Chief Financial Officer  
City of Fort Worth, Texas  
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**Subject: GASB Statement No. 68 Reporting and Disclosure Information for the City of Fort Worth  
Fiscal Year Ending September 30, 2020**

Dear Mr. Zeno,

This report provides information required by the City of Fort Worth (the City) with regards to the Employees' Retirement Fund of the City of Fort Worth (FWERF) in connection with the Governmental Accounting Standards Board (GASB) Statement No. 68, "Accounting and Financial Reporting for Pensions," for the City's fiscal year ending September 30, 2020.

The Net Pension Liability is not an appropriate measure for measuring the sufficiency of plan assets to cover the estimated cost of settling the employer's benefit obligation. The Net Pension Liability is not an appropriate measure for assessing the need for or amount of future employer contributions. A calculation of the plan's liability for purposes other than satisfying the requirements of GASB Statement No. 68 may produce significantly different results. This report may be provided to parties other than the City only in its entirety and only with the permission of the City.

The Total Pension Liability, Net Pension Liability, and certain sensitivity information shown in this report are based on an actuarial valuation performed as of December 31, 2018. The Total Pension Liability was rolled-forward from the valuation date to the FWERF plan year ending September 30, 2019, using generally accepted actuarial principles. There were no significant events or changes in benefit provisions that required an adjustment to the roll-forward liabilities as of September 30, 2019. It is our opinion that the recommended assumptions are internally consistent, reasonable, and comply with the requirements under GASB Statement No. 68.

The actuarial valuation performed as of December 31, 2018 indicates that FWERF is expected to pay Conditional Ad Hoc COLAs in the future. As a result, the Total Pension Liability as of September 30, 2019 was increased by \$5.4 million to account for the future expected Conditional Ad Hoc COLAs.

This report is based upon information, furnished to us by FWERF staff, which include benefit provisions, membership information, and financial data. We did not audit this data and information, but we did apply a number of tests and concluded that it was reasonable and consistent. GRS is not responsible for the accuracy or completeness of the information provided to us by FWERF staff. Any required information not included here will need to be provided by the City, FWERF staff, the FWERF investment consultant or auditor.

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Certain tables included in the Required Supplementary Information should include a 10-year history of information. As provided for in GASB Statement No. 68, this historical information is only presented for the years in which the information was measured in conformity with the requirements of GASB Statement No. 68. The historical information in this report will begin with the information presented for the FWERF fiscal year ending September 30, 2014.

Paragraph 57 of GASB Statement No. 68 indicates that contributions to the pension plan subsequent to the measurement date of the Net Pension Liability and prior to the end of the employer's reporting period should be reported by the employer as a deferred outflow of resources related to pensions. The information contained in this report does not incorporate any contributions made to FWERF subsequent to September 30, 2019.

This report complements the actuarial valuation as of December 31, 2018, provided for plan funding purposes, which was provided to FWERF and should be considered together as a complete report for the FWERF plan year ending September 30, 2019. Please see the actuarial valuation report as of December 31, 2018, dated April 19, 2019, for additional discussion of the actuarial valuation that was used in the roll-forward, including the nature of actuarial calculations and more information related to participant data, economic and demographic assumptions, and benefit provisions. This actuarial valuation report is publically available on FWERF's website.

To the best of our knowledge, the information contained within this report is accurate and fairly represents the actuarial position of the Employees' Retirement Fund of the City of Fort Worth. All calculations have been made in conformity with generally accepted actuarial principles and practices as well as with the Actuarial Standards of Practice issued by the Actuarial Standards Board. Mr. Falls is a member of the American Academy of Actuaries (MAAA) and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Respectfully submitted,



R. Ryan Falls, FSA, EA, MAAA  
Senior Consultant



## Summary of Population Statistics

The total pension liability described in this report is based on the FWERF membership as of December 31, 2018:

Inactive Plan Members or Beneficiaries Currently Receiving Benefits	4,583
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	1,035
Active Plan Members	6,589
Total Plan Members	12,207

## Measurement of the Net Pension Liability

The Net Pension Liability is measured as the Total Pension Liability, less the amount of the plan's Fiduciary Net Position. In actuarial terms, this is analogous to the accrued liability less the market value of assets (not the smoothed actuarial value of assets that is often encountered in actuarial valuations based on the FWERF Board's adopted assumptions and methods).

A single discount rate of 7.00% was used to measure the total pension liability as of September 30, 2019. This single discount rate was based on an expected rate of return on pension plan investments of 7.00%. Based on the stated assumptions and the projection of cash flows, the pension plan's fiduciary net position and future contributions were sufficient to finance all future benefit payments of current plan members. As a result, 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.

A single discount rate of 5.35% was used to measure the total pension liability as of September 30, 2018. This single discount rate was based on an expected rate of return on pension plan investments of 7.75% and a municipal bond rate of 3.83%. Based on the stated assumptions and the projection of cash flows, the pension plan's fiduciary net position and future contributions were sufficient to finance the benefit payments through the year 2042. As a result, the long-term expected rate of return on pension plan investments was applied to projected benefit payments through the 2042 fiscal year, and the municipal bond rate was applied to all benefit payments after that date.

The source of the municipal bond rate is the rate for Fixed Income Market Data/Yield Curve/Data Municipal bonds with 20 years to maturity that include only federally tax-exempt municipal bonds as reported in Fidelity Index's "20-Year Municipal GO AA Index." In describing this index, Fidelity notes that the municipal curves are constructed using option adjusted analytics of a diverse population of over 10,000 tax exempt securities. The rate shown is as of the last date available on or before the measurement date.

The projection of cash flows used to determine this single discount rate assumed that plan member and employer contributions will be made at the current levels and remain a level percentage of payroll. In addition, the projection of cash flows includes the Risk-Sharing Contributions and Conditional Ad Hoc COLAs expected to be paid in the future.



## Sensitivity of the Net Pension Liability to the Single Discount Rate Assumption

Below is a table providing the sensitivity of the Net Pension Liability to changes in the discount rate as of September 30, 2019. In particular, the table presents the plan's Net Pension Liability, if it were calculated using a single discount rate that is one-percentage-point lower or one-percentage-point higher than the single discount rate:

	Current Single Discount	
1% Decrease	Rate Assumption	1% Increase
6.00%	7.00%	8.00%
\$ 2,833,950,926	\$ 2,259,057,875	\$ 1,783,480,750

# Schedules of Required Supplementary Information

## Schedule of Changes in the Employers' Net Pension Liability and Related Ratios

Fiscal year ending September 30,	2019	2018	2017	2016	2015	2014
<b>Total pension liability</b>						
Service cost	\$ 111,950,763	\$ 113,947,000	\$ 123,792,923	\$ 98,173,277	\$ 85,592,978	\$ 92,189,100
Interest on the total pension liability	290,020,564	274,954,967	251,645,608	252,240,071	246,292,813	234,701,479
Changes of benefit terms	(1,543,331,519)	0	0	0	(1,828,408)	110,187,898
Difference between expected and actual experience	(18,487,311)	62,114,429	186,853,574	4,177,731	(10,817,086)	(106,951,077)
Changes of assumptions	536,393,855	(165,300,608)	(327,287,818)	1,022,192,887	364,494,287	0
Benefit payments, including refunds of employee contributions	(227,239,084)	(217,801,696)	(198,611,599)	(185,819,878)	(167,065,955)	(161,158,600)
<b>Net change in total pension liability</b>	<b>(850,692,732)</b>	<b>67,914,092</b>	<b>36,392,688</b>	<b>1,190,964,088</b>	<b>516,668,629</b>	<b>168,968,800</b>
<b>Total pension liability - beginning</b>	<b>5,422,613,892</b>	<b>5,354,699,800</b>	<b>5,318,307,112</b>	<b>4,127,343,024</b>	<b>3,610,674,395</b>	<b>3,441,705,595</b>
<b>Total pension liability - ending (a)</b>	<b>\$ 4,571,921,160</b>	<b>\$ 5,422,613,892</b>	<b>\$ 5,354,699,800</b>	<b>\$ 5,318,307,112</b>	<b>\$ 4,127,343,024</b>	<b>\$ 3,610,674,395</b>
<b>Plan fiduciary net position</b>						
Employer contributions	\$ 113,109,911	\$ 93,504,064	\$ 89,408,134	\$ 84,746,991	\$ 80,820,598	\$ 78,165,049
Employee contributions	40,634,725	37,618,303	35,963,200	33,977,411	32,541,773	31,929,289
Pension plan net investment income	67,729,548	145,408,403	250,912,773	166,305,791	(20,635,550)	159,994,300
Benefit payments, including refunds of employee contributions	(227,239,084)	(217,801,696)	(198,611,599)	(185,819,878)	(167,065,955)	(161,158,600)
Pension plan administrative expense	(5,707,390)	(4,915,335)	(4,867,413)	(4,521,503)	(3,823,331)	(3,738,927)
Other	0	0	0	(241,634)	(143,219)	(130,935)
<b>Net change in plan fiduciary net position</b>	<b>(11,472,290)</b>	<b>53,813,739</b>	<b>172,805,095</b>	<b>94,447,178</b>	<b>(78,305,684)</b>	<b>105,060,176</b>
<b>Plan fiduciary net position - beginning</b>	<b>2,324,335,575</b>	<b>2,270,521,836</b>	<b>2,097,716,741</b>	<b>2,003,269,563</b>	<b>2,081,575,247</b>	<b>1,976,515,071</b>
<b>Plan fiduciary net position - ending (b)</b>	<b>\$ 2,312,863,285</b>	<b>\$ 2,324,335,575</b>	<b>\$ 2,270,521,836</b>	<b>\$ 2,097,716,741</b>	<b>\$ 2,003,269,563</b>	<b>\$ 2,081,575,247</b>
<b>Net pension liability - ending (a) - (b)</b>	<b>\$ 2,259,057,875</b>	<b>\$ 3,098,278,317</b>	<b>\$ 3,084,177,964</b>	<b>\$ 3,220,590,371</b>	<b>\$ 2,124,073,461</b>	<b>\$ 1,529,099,148</b>
<b>Plan fiduciary net position as a percentage of total pension liability</b>	<b>50.59 %</b>	<b>42.86 %</b>	<b>42.40 %</b>	<b>39.44 %</b>	<b>48.54 %</b>	<b>57.65 %</b>
<b>Covered-employee payroll</b>	<b>\$ 484,410,754</b>	<b>\$ 467,754,197</b>	<b>\$ 447,488,158</b>	<b>\$ 424,371,512</b>	<b>\$ 404,507,497</b>	<b>\$ 391,216,461</b>
<b>Net pension liability as a percentage of covered-employee payroll</b>	<b>466.35 %</b>	<b>662.37 %</b>	<b>689.22 %</b>	<b>758.91 %</b>	<b>525.10 %</b>	<b>390.86 %</b>

**Notes to Schedule:**

- The covered-employee payroll was estimated based on the actual employer contributions received and a weighted average contribution rate.
- Changes to benefit terms for FYE 2014 relate to the benefit changes for General employees hired before July 1, 2011 and Police employees hired before January 1, 2013
- Changes to benefit terms for FYE 2015 relate to the benefit changes for Fire employees hired before January 10, 2015
- Changes to benefit terms for FYE 2019 relate to the changes to contributions and benefit enacted during 2019. The change in the blended discount rate from 5.35% to 7.00% was included with the change in benefit terms since the change in the blended discount rate was directly related to the change in benefit terms.
- Changes of assumptions for FYE 2016 include the impact of the comprehensive Actuarial Experience Review covering the period January 1, 2013 through December 31, 2015.
- Changes of assumptions for FYE 2019 is the impact of the comprehensive Actuarial Experience Review covering the period January 1, 2016 through December 31, 2018.
- Changes of assumptions prior to FYE 2019 include the change in the blended discount rate. The blended discount rates for 2014, 2015, 2016, 2017, 2018 and 2019 were 6.98%, 6.25%, 4.71%, 5.13%, 5.35% and 7.00%, respectively.

# Schedules of Required Supplementary Information

## Schedule of Employer Contributions

<b>FY Ending September 30,</b>	<b>Actuarially Determined Contribution</b>	<b>Actual Contribution</b>	<b>Contribution Deficiency (Excess)</b>	<b>Covered Payroll</b>	<b>Actual Contribution as a % of Covered Payroll</b>
2014	\$ 82,937,890	\$ 78,165,049	\$ 4,772,841	\$ 391,216,461	19.98 %
2015	93,562,584	80,820,598	12,741,986	404,507,497	19.98 %
2016	101,339,917	84,746,991	16,592,926	424,371,512	19.97 %
2017	112,185,281	89,408,134	22,777,147	447,488,158	19.98 %
2018	131,766,357	93,504,064	38,262,293	467,754,197	19.99 %
2019	136,167,863	113,109,911	23,057,952	484,410,754	23.35 %

### Notes to Schedule of Contributions

**Valuation Date:** December 31, 2018

**Notes** The Actuarially Determined Contribution is equal to the total calculated contribution rate in the prior actuarial valuation, minus the portion expected to be covered by employee contributions, multiplied by the covered-employee payroll. City and Member contribution rates are established by ordinance.

The assumptions and methods, summarized below, were adopted by the Board of Trustees on March 27, 2019 based on the experience investigation that covered the three-year period from January 1, 2016 through December 31, 2018. These assumptions first applied for actuarial valuation as of December 31, 2018 and the Actuarially Determined Contribution for FYE 2020.

**Methods and Assumptions Used to Determine Contribution Rates:**

Actuarial Cost Method	Entry Age Normal
Amortization Method	Level Percentage of Payroll, 30-year closed beginning in 2018
Remaining Amortization Period	30 years
Asset Valuation Method	Five-year smoothed market
Inflation	2.50%
Salary Increases	3.25% - 28.25%
Investment Rate of Return	7.00%
Retirement Age	Experience-based table of rates based on job classification and number of years since first retirement eligibility
Mortality	PubG-2010 Healthy Retiree Mortality Table for General Employees and PubS-2010 Healthy Retiree Mortality Table for Police Officers and Firefighters. Generational mortality improvements from the year 2010 using the ultimate mortality improvement rates in the MP tables.
Cost-of-Living Adjustment	A 2% cost-of-living adjustment (COLA) is assumed for all members in the Guaranteed COLA program; no COLAs are assumed for members with a Variable COLA. Timing of Conditional Ad Hoc COLAs is based on an open group projection.

**Other Information:**

**Notes** The covered-employee payroll was estimated based on the actual employer contributions received and a weighted average contribution rate.

## NOTES TO FINANCIAL STATEMENTS

### Pension Expense for FWERF Fiscal Year Ending September 30, 2019 To be used for the City's Reporting for Fiscal Year Ending September 30, 2020

1. Service Cost	\$ 111,950,763
2. Interest on the Total Pension Liability	290,020,564
3. Current-Period Benefit Changes	(1,543,331,519)
4. Employee Contributions	(40,634,725)
5. Projected Earnings on Plan Investments	(159,931,426)
6. Pension Plan Administrative Expense	5,707,390
7. Other Changes in Plan Fiduciary Net Position	0
8. Recognition of Outflow (Inflow) of Resources due to Liabilities	259,360,156
9. Recognition of Outflow (Inflow) of Resources due to Assets	41,881,507
10. Total Pension Expense	\$ (1,034,977,290)

#### Recognition of Deferred Outflows and Inflows of Resources

According to paragraph 33 of GASB No. 68, *differences between expected and actual experience and changes in assumptions* are recognized in pension expense using a systematic and rational method over a closed period equal to the average of the expected remaining service lives of all employees that are provided with pensions through the pension plan (active employees and inactive employees) determined as of the beginning of the measurement period.

At the beginning of the 2019 fiscal year, the expected remaining service lives of all employees was 72,083 years for FWERF. Additionally, the FWERF plan membership (active employees and inactive employees) was 12,207. As a result, the average of the expected remaining service lives for purposes of recognizing the applicable deferred outflows and inflows of resources established in the 2019 fiscal year is 5.9 years.

Additionally, *differences between projected and actual earnings on pension plan investments* should be recognized in pension expense using a systematic and rational method over a closed five-year period.

For this purpose, the deferred outflows and inflows of resources are recognized in the pension expense as a level dollar amount over the closed period identified above.

## NOTES TO FINANCIAL STATEMENTS

### Statement of Outflows and Inflows Arising from Current and Prior Reporting Periods

For Plan Year Ending September 30, 2019

To be used for the City's Reporting for Fiscal Year Ending September 30, 2020

#### A. New Deferred Outflows and Inflows of Resources by Source Established in Fiscal Year

	Outflows of Resources	Inflows of Resources	Net Outflows of Resources
1. Differences between expected and actual experience	\$ 0	\$ 18,487,311	\$ (18,487,311)
2. Assumption Changes	536,393,855	0	536,393,855
3. Net Difference between projected and actual earnings on pension plan investments	92,201,878	0	92,201,878
<b>4. Total</b>	<b>\$ 628,595,733</b>	<b>\$ 18,487,311</b>	<b>\$ 610,108,422</b>

#### B. Outflows and Inflows of Resources by Source to be recognized in Current Pension Expense

	Outflows of Resources	Inflows of Resources	Net Outflows of Resources
1. Differences between expected and actual experience	\$ 42,190,957	\$ 22,761,471	\$ 19,429,486
2. Assumption Changes	322,028,742	82,098,072	239,930,670
3. Net Difference between projected and actual earnings on pension plan investments	61,387,646	19,506,139	41,881,507
<b>4. Total</b>	<b>\$ 425,607,345</b>	<b>\$ 124,365,682</b>	<b>\$ 301,241,663</b>

#### C. Deferred Outflows and Deferred Inflows of Resources by Source to be recognized in Future Pension Expense

	Deferred Outflows of Resources	Deferred Inflows of Resources	Net Outflows of Resources
1. Differences between expected and actual experience	\$ 136,228,982	\$ 17,156,716	\$ 119,072,266
2. Assumption Changes	846,959,652	273,844,312	573,115,340
3. Net Difference between projected and actual earnings on pension plan investments	89,966,148	37,779,417	52,186,731
<b>4. Total</b>	<b>\$ 1,073,154,782</b>	<b>\$ 328,780,445</b>	<b>\$ 744,374,337</b>

#### D. Deferred Outflows and Deferred Inflows of Resources by Year to be recognized in Future Pension Expenses

City Fiscal Year Ending	Outflows of Resources	Inflows of Resources	Net Outflows of Resources
2021	\$ 388,061,625	\$ 106,540,502	\$ 281,521,123
2022	327,312,577	103,504,793	223,807,784
2023	156,250,799	85,231,513	71,019,286
2024	119,706,991	30,683,541	89,023,450
2025	81,822,790	2,820,096	79,002,694
Thereafter	0	0	0
<b>Total</b>	<b>\$ 1,073,154,782</b>	<b>\$ 328,780,445</b>	<b>\$ 744,374,337</b>



**NOTES TO FINANCIAL STATEMENTS**  
**Recognition of Deferred Outflows and Inflows of Resources**  
**For Plan Year Ending September 30, 2019**  
**To be used for the City's Reporting for Fiscal Year Ending September 30, 2020**

Year Established	Initial Amount	Initial Recognition Period	Current Year Recognition	Remaining Recognition	Remaining Recognition Period
<b>Deferred Outflow (Inflow) due to Differences Between Expected and Actual Experience on Liabilities</b>					
2014	(106,951,077)	6.00	(17,825,180)	0	0.00
2015	(10,817,086)	6.00	(1,802,848)	(1,802,848)	1.00
2016	4,177,731	6.00	696,289	1,392,578	2.00
2017	186,853,574	6.00	31,142,263	93,426,785	3.00
2018	62,114,429	6.00	10,352,405	41,409,619	4.00
2019	(18,487,311)	5.90	(3,133,443)	(15,353,868)	4.90
Total			19,429,486	119,072,266	

<b>Deferred Outflow (Inflow) due to Assumption Changes</b>					
2014	0	6.00	0	0	0.00
2015	364,494,287	6.00	60,749,048	60,749,048	1.00
2016	1,022,192,887	6.00	170,365,481	340,730,962	2.00
2017	(327,287,818)	6.00	(54,547,970)	(163,643,908)	3.00
2018	(165,300,608)	6.00	(27,550,102)	(110,200,404)	4.00
2019	536,393,855	5.90	90,914,213	445,479,642	4.90
Total			239,930,670	573,115,340	

<b>Deferred Outflow (Inflow) due to Differences Between Projected and Actual Earnings on Plan Investments</b>					
2014	(1,341,792)	5.00	0	0	0.00
2015	187,728,601	5.00	37,545,720	0	0.00
2016	(6,164,294)	5.00	(1,232,859)	(1,232,859)	1.00
2017	(91,366,398)	5.00	(18,273,280)	(36,546,558)	2.00
2018	27,007,746	5.00	5,401,550	16,204,646	3.00
2019	92,201,878	5.00	18,440,376	73,761,502	4.00
Total			41,881,507	52,186,731	