# Big Spring Firemen's Relief and Retirement Fund

# **GASB 67 ACTUARIAL DISCLOSURES**

for the

Plan Year January 1, 2022 through December 31, 2022

October 10, 2023

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## Introduction

This report for the Big Spring Firemen's Relief and Retirement Fund presents the financial disclosures required under GASB Statement 67 for the Plan's financials for the year ended December 31, 2022. GASB 67 disclosures were first required for the 2014.

GASB 67 is effective for trust years beginning after June 15, 2013 (the 2014 year for this plan). GASB 68 is effective for the City's fiscal years beginning after June 15, 2014 (i.e., FY2015).

The report is presented in the following sections:

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#### **NET PENSION LIABILITY**

The Total Pension Liability (TPL) of the plan is the actuarial accrued liability measured using the Entry Age Normal Cost Method

Under the *Entry Age Normal Cost Method* the actuarial present value of the projected benefits of each individual included in the actuarial valuation is allocated on a level basis over the earnings (or service) of the individual between entry age and assumed exit ages. The portion of this actuarial present value allocated to a valuation year is called the normal cost. The portion of this actuarial present value not provided for at a valuation date by the actuarial present value of future normal costs is called the actuarial accrued liability. It is equal to the theoretical asset accumulation had the plan always been in effect, all actuarial assumptions were perfectly met and the employer contributed the normal cost each year.

The *Net Pension Liability* is the Total Pension Liability less the market value of plan assets (referred to as the Fiduciary Net Position)

The Net Pension Liability as of December 31, 2022 is:

	12/31/2022
Total Pension Liability Active employees Retirees and beneficiaries	\$ 12,066,624 12,825,870
Total Pension Liability	\$ 24,892,494
Plan Fiduciary Net Position	\$ (14,214,795)
Net Pension Liability	\$ 10,677,699
Plan fiduciary net postion as a	
percentge of total pension liability	57.10%

#### **Basis**

Census date 12/31/2022
Valuation date 12/31/2022

Rolled forward to date None

Actuarial cost method Entry Age Normal

Amortization method

Remaining amortization period

Asset valuation method

Asset valuation method

Market value for GASB 67 & 68

Smoothed value for funding valuation

Chicothod value for failuring value

## **Actuarial assumptions**

Interest rate 7.75% (before admin expense)

Pay increases 4.5%

Mortality Pub2010PS with MP2021 projection

Retirement rates Age and service-related Turnover Age and service-related

#### LONG-TERM RATE OF RETURN

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 (3.0%) and deducting expenses. 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:

	Target Allocation	Real Retur
Large cap stocks S&P 500	30%	5.50%
Mid/small cap stocks Russell 2000	30%	6.30%
International stocks MSCI EAFE	5%	5.20%
Bonds Barclays US	10%	2.50%
Multi-sector bonds	20%	3.50%
Real Estate	5%	4.80%
Cash equivalents 3 month Treasury	0%_	0.00%
5 month freasury	100%	

The GASB 67/68 discount rate includes no allowance for administrative expenses, which are expensed separately.

## SENSITIVITY OF THE NET PENSION LIABILITY TO CHANGES IN THE DISCOUNT RATE

This exhibit presents the net pension liability of the Plan, calculated using the discount rate of 7.75 percent, as well as what the City 's net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.75 percent) or 1-percentage-point higher (8.75 percent) than the current rate:

	As of December 31, 2022						
	1% Decrease 6.75%		Current Discount Rate		1% Increase 8.75%		
City's Total Pension Liability Active employees Retirees and beneficiaries	\$	14,251,864.60 13,844,468.42	\$	12,066,624 12,825,870	\$ \$	10,375,884 11,906,393	
Total Pension Liability	\$	28,096,333	\$	24,892,494	\$	22,282,277	
Plan Fiduciary Net Position	\$	(14,214,795)	\$	(14,214,795)	\$	(14,214,795)	
City's Net Pension Liability	\$	13,881,538	\$	10,677,699	\$	8,067,482	
Percentage of base		112.9%		100.0%		89.5%	

## SCHEDULE OF CHANGES IN NET PENSION LIABILITY

	Year Ended 12/30/2022	Year Ended 12/30/2021	Year Ended 12/30/2020	Year Ended 12/30/2019	Year Ended 12/30/2018
Total Pension Liability					
Service Cost Interest Change of benefit terms	\$ 748,432 2,044,005	\$ 748,432 1,947,163	\$ 728,142 1,800,220	\$ 696,787 1,710,324	\$ 569,984 1,633,082
Differences between expected and actual experience Change of assumptions	(3,066,468)	- -	721,784 (73,715)	(520,414) 450,572	- - -
Benefit payments including contribution refunds	(1,650,229)	(1,249,276)	(1,329,918)	(1,197,642)	(1,199,873)
Net change in Total Pension Liability	\$ (1,924,260)	\$ 1,446,319	\$ 1,846,514	\$ 1,139,626	\$ 1,003,194
Total Pension Liability - beginning of year	26,816,754	25,370,435	23,523,921	22,384,295	21,381,101
Total Pension Liability - end of year	\$24,892,494	\$26,816,754	\$ 25,370,435	\$ 23,523,921	\$ 22,384,295
Plan Fiduciary Net Position					
Contributions - employer	\$ 801,731	\$ 730,857	\$ 710,010	\$ 650,969	\$ 633,568
Contributions - members (transfers)  Net investment income	694,833 (2,552,863)	633,573 1,923,501	615,342 1,861,015	565,707 2,370,032	549,091 (670,804)
Benefit payments and contribution refunds Administrative expense	(1,650,229) (70,670)	(1,249,276) (62,767)	(1,329,918) (88,258)	(1,197,642) (44,110)	(1,199,873) (101,346)
Net change in plan fiduciary net position	\$ (2,777,199)	\$ 1,975,888	\$ 1,768,191	\$ 2,344,957	\$ (789,364)
Plan Fiduciary Net Position - beginning of year	16,991,994	15,016,106	13,247,915	10,902,958	11,692,322
Plan Fiduciary Net Position - end of year	\$14,214,795	\$16,991,994	\$ 15,016,106	\$ 13,247,915	\$ 10,902,958
City's Net Pension Liability - ending	\$10,677,699	\$ 9,824,760	\$ 10,354,329	\$ 10,276,006	\$ 11,481,337
Plan fiduciary net position as a percentage of total pension liability	57.10%	63.36%	59.19%	56.32%	48.71%
Covered employee payroll	\$ 4,506,666	\$ 4,502,000	\$ 4,502,000	\$ 4,030,000	\$ 4,030,000
Net Pension Liability as a percentage of covered employee payroll	236.93%	218.23%	229.99%	254.99%	284.90%

DEAN ACTUARIES 5

#### SUMMARY OF PLAN PROVISIONS

**Credited Service** The number of years of continuous employment with the Fire

Department of the City of Big Spring, Texas.

**Final average compensation:** The monthly average salary during the five years in which

the member earned the highest salary (or the three year average as of December 31, 2006, if higher). Members hired

after 1/12/2018 include only base pay, certificate pay,

longevity pay and FLSA required overtime in the calculation.

**Service retirement eligibility:** Attained age 50 with 20 years of service

Monthly accrued benefit: A monthly benefit equal to 2.55% times years of service

times final average compensation (not to exceed 100% of adjusted final average pay considering only base pay,

longevity pay and certificate pay).

**Contributions:** 13% of compensation for member and (effective in 2018)

15% of salary for the City.

Interest credited on employee

contributions

None

**Vested benefits:**The monthly accrued benefit multiplied by the following percentages:

Years of Service	Percentage Vested
10	50%
11	55
12	60
13	65
14	70
15	75
16	80
17	85
18	90
19	95
20 or more	100

Deferred to the service retirement date (the later of age 50 and the date the member would have had 20 years of service had he continued his employment with the Big Spring Fire Department).

**Separation Benefit:** Return of member contributions without interest for

members terminating with less than 10 years of service.

## **Disability benefit**

A disabled member with 10 or more years of service receives his or her vested monthly accrued benefit without reduction for early payments.

However, if the disability is the result of a pre-existing condition, the maximum monthly benefit is \$100 regardless of service.

#### Normal form of benefit:

Monthly annuity payable for life with a guarantee that total monthly benefit paid shall not be less than the employee's accumulated contributions (installment refund guaranteed). Two thirds of the monthly benefit continues to the spouse of a deceased member until the spouse's death or remarriage.

## **Death Benefits:**

#### **Spouse**

:

66 2/3% continuation of benefits to spouse (in the event of the death of an active employee, the benefit amount is determined as for a Disability pension).

#### Minor Children

With spouse in payment status \$100 a month; with no spouse in payment status \$200 a month; the total of spousal and children's benefits may not exceed the employee's amount.

# Benefit Enhancement Limitation

Plan benefits may not be materially increased unless the funded level of the plan is at least 80% and plan funding is sufficient to amortize the unfunded actuarial liability over 25 years or less.

## **DROP**

(Deferred Retirement Option)

## Option 1

- The Firefighter must retire within 5 years of a DROP election.
- The monthly benefit he will receive from the Plan will be determined based upon his salary and Service at the time of his DROP election.
- At the conclusion of the DROP period, the Firefighter will be paid an amount which is the sum of 1) his Employee contributions from the DROP period including interest at 4% compounded annually, plus 2) the product of his monthly benefit amount times the number of months of the DROP period. This amount must be paid within three (3) years in no more than three (3) installments.

## Option 2

• Upon retirement, a Firefighter may elect to receive 85% of his regular monthly benefit (with all survivor benefits appropriately reduced) for life and a lump sum equal to 24 times this reduced benefit. This amount must be paid over three years in no more than three installments.

DROP benefits will be actuarially converted to a life only benefit for purposes of determining the "Maximum Service Retirement Benefit."

# RECONCILIATION OF PLAN ASSETS

December 31, 2021 to December 31, 2022

Receipts	2022					
Contributions Employer Employee Interest and Dividends Net Realized Appreciation/(Depreciation) Total	\$ 801,731 694,833 698,534 0	\$ 2,195,098				
Disbursements						
Benefit Payments DROP contribution refunds Return of member contributions Expenses Total	\$ 1,158,176 283,466 208,588 70,670	1,720,899				
Reconciliation						
Market Value as of December 31, prior year Excess of Receipts over Disbursements Unrealized Appreciation /(Depreciation) during t	he year	\$ 16,991,994 474,198 (3,251,397)				
Market Value of Invested Assets as of Dece	mber 31	\$ 14,214,795				
Contributions Receivable Payables		0				
Market Value as of December 31		\$ 14,214,795				
Average return on assets (BAI method)	before expense net of expense	-15.12% -15.51%				

# **SCHEDULE OF INVESTMENT RETURNS**

Last 10 Calendar Years

	2013	2014	2015	2016	2017
Average money-weighted rate of return net of investment expenses	15.14%	5.54%	-0.98%	6.77%	16.20%
Average money-weighted	2018	2019	2020	2021	2022
rate of return net of investment expenses	-5.77%	21.76%	14.14%	12.79%	-15.12%

# **SCHEDULE OF CITY CONTRIBUTIONS**

Last 10 Fiscal Years

	2022	2021	2020	2019	2018
Actuarially determined contribution	\$ 1,400,568	\$ 1,400,568	\$ 1,328,042	\$ 1,256,658	\$ 1,028,667
Contribution in relation to the actuarially determined contribution	\$ 1,496,563	\$ 1,364,430	\$ 1,325,352	\$ 1,216,677	\$ 1,182,659
Contribution deficiency (excess)	\$ (95,995)	\$ 36,138	\$ 2,690	\$ 39,981	\$ (153,992)
Covered employee payroll	4,506,666	\$ 4,634,574	\$ 4,501,839	\$ 4,259,859	\$ 4,030,000
Contributions as a percentage of covered payroll	32.29%	29.44%	29.44%	28.56%	29.35%
	2017	2016	2015	2014	2013
Actuarially determined contribution	\$ 1,028,667	\$ 934,058	\$ 934,058	\$ 799,962 *	\$ 799,962
Contribution in relation to the actuarially determined contribution	\$ 977,110	\$ 1,039,822	\$ 1,051,143	\$ 992,091	\$ 904,532
Contribution deficiency (excess)	\$ 51,557	\$ (105,764)	\$ (117,085)	\$ (192,129)	\$ (104,570)
Covered employee payroll	\$ 3,766,262	\$ 3,766,262	\$ 3,634,001	\$ 3,403,526 **	\$ 3,173,050
Contributions as a percentage of covered payroll	25.94%	27.61%	28.93%	29.15%	28.51%

 $<sup>^{\</sup>star}$  No valuation for the year; actuarially determined contribution is the same as for the most recent valuation

<sup>\*\*</sup> No valuation for the year; covered employee payroll is interpolated from ajoining valuation years.

## **PARTICIPANT CENSUS DATA**

This section summarizes the census data used in the actuarial valuation and provides plan membership statistics. We maintain a database of participant information for the Retirement System which is available to the City for ad hoc queries and special reports.

Census used in this valuation:

Summary	of A	ctive	Census	Data
Sullillary	$\cup$	CUVE	CELISUS	Dala

	Count	Pay	Ave Age	Ave Service
Beyond full ret age	2	121,647	60.90	22.72
100% vested	10	822,060	47.02	23.15
Partially vested	28	1,831,473	38.34	10.65
Not vested	34	1,731,487	28.82	1.83
Total	74	4,506,666	35.75	8.61

#### AGE AND SERVICE OF ACTIVE PARTICIPANTS

1/1/2023

							Years of	f Service						
Age Grou	р 0-	4	5 -	9	10-	14	15 -	19	20 -	24	25 -	29	All Service	æ
	Count	Ave Pay	Count	Ave Pay	Count	Ave Pay	Count	Ave Pay	Count	Ave Pay	Count	Ave Pay	Count	Ave Pay
18 - 19	1	49,227	0		0		0		0		0		1	49,227
20 - 24	8	50,319	0		0		0		0		0		8	50,31
25 - 29	10	52,504	2	61,394	0		0		0		0		12	53,98
30 - 34	10	50,604	4	67,904	2	54,336	0		0		0		16	55,39
35 - 39	4	49,539	7	58,324	2	71,546	1	87,063	0		0		14	59,75
40 - 44	1	50,474	3	58,687	2	73,565	0		1	74,314	0		7	63,99
45 - 49	0		0		2	64,970	1	82,840	7	76, 120	1	103,631	11	77,20
50 - 54	0		0		0		2	77,000	1	111,272	1	74,789	4	85,01
55 - 59	0		0		0		0		0		٥		0	
60 - 64	0		0		0		0		0		0		0	
65 - 69	0		0		0		1	46,858	0		0		1	46,85
tals	34		16		8		5		9		2		74	

Age is in completed years (age last birthday) on the census date. Service is completed years of credited service on the census date.

Pay is the considered compensation for the preceding plan year.

# SUMMARY OF NONACTIVE PARTICIPANTS

January 1, 2023

	Males			Females				Total			
Age Group	Count	Benefit	Weighted Ave Age		Count	Benefit	Weighted Ave Age		Count	Benefit	Weighted Ave Age
	Retired Participants in Payment Status										
50 - 54 55 - 59 60 - 64 65 - 69	1 3 7 10	47,312 97,167 286,108 353,864	58.28 62.44 67.66						3 3 7 10	284,995 97,167 286,108 353,864	67.66
70 - 74 75 - 79 80 - 84 85 - 89 90 - 110	6 2 1	119,065 40,005 14,863	75.93						6 2 1	119,065 40,005 14,863	75.93
Totals Ave amount	30	958,385 31,946.16	65.78		0	0.00			32	1,196,068 37,377.14	62.90
			Sui	rvi	vors in Pa	ayment Sta	atus				
55 - 59 60 - 64				I	1	27,263	55.92		1	27,263	55.92
65 - 69 70 - 74 75 - 79 80 - 84 85 - 89					2 1 2 2	15,847 36,977	66.77 70.70 79.17 82.60		2 1 2 2	29,013 15,847 36,977 19,518	66.77 70.70 79.17 82.60
90 - 110 Totals Ave amount	0	0.00			8	128,619 16,077.33	70.92		8	128,619 16,077.33	70.92
				Di	sabled P	articipants					
50 - 54 55 - 59 60 - 64 65 - 69 70 - 74	1	4,842	70.79						1	4,842	70.79
75 - 79 80 - 84 85 - 89	1	14,820							1	14,820	
90 - 110 Totals Ave amount	2	19,662 9,831.00	79.46		0	0.00			2	19,662 9,831.00	79.46
	Deferred Vested Former Employees										
30 - 39 40 - 49											
50 - 54 Totals Ave amount	2 <b>2</b>	137,498 137,498 68,749.02	51.02		0	0.00			2 <b>2</b>	137,498 137,498 68,749.02	
Grand Totals	34	1,115,545	64.20		8	128,619	70.92		44	1,481,847	62.72
Ave amount		32,810.15				16,077.33				33,678.34	

## **ACTUARIAL METHOD AND ASSUMPTIONS**

This report assumes the plan will exist as an ongoing entity. All numbers presented are based on this ongoing plan concept with costs and liabilities determined under the projected unit credit actuarial cost method.

## **Entry Age Normal Cost Method**

Under the entry age normal cost method, the normal cost is computed as the level dollar amount which, if paid from the time each employee became a participant until his assumed retirement, would accumulate with interest at the assumed valuation rate to a fund sufficient to pay his retirement benefits

Experience gains (decreases in cost due to favorable experience), or experience losses (increases in cost due to adverse experience), attributable to deviations between the assumed and actual experience of the Plan, are reflected as increases or decreases in the unfunded actuarial liability and, through the amortization amount, the contribution required for the plan.

#### **Valuation of Liabilities**

All active participants included in the valuation are assumed to earn one full year of credited service for each year of future participation. Employees terminating with vested benefits are assumed to elect either a refund of their contributions with interest or a deferred annuity, which ever has the larger economic value.

Costs for ancillary benefits provided by the System have been determined in the same manner and on the same basis as costs for normal retirement benefits.

## **Valuation of Assets**

*For plan funding:* Smoothed market value based on 5 year amortization of gains or losses for each of the 5 trailing years measured against the expected rate of return using the actuarial discount rate.

For GASB 67 disclosures: Fair market value.

# **SUMMARY OF ACTUARIAL ASSUMPTIONS**

Mate   Nation   N		I		Rates per Thousand				
Defore retirement   7.75%   20	Interest Rates		Age	Mor	tality	Turnover	Disability	Retirement
after retirement	Purpose	Rate		Male	Female			
Mortality Tables	before retirement	7.75%	20	0.410	0.130	173.86	0.60	0
Mortality Tables         23         0.300         0.120         156.57         0.76         0           Not in pay status         Pub2010PS employee         24         0.380         0.110         151.71         0.81         0           Healthy annutiants         Pub2010PS disabled         26         0.380         0.130         142.51         0.90         0           Mortality rates are projected by scale MP-2021         27         0.390         0.140         137.97         0.95         0           Pay Increase Assumption         29         0.410         0.170         129.19         1.05         0           Annual rates of pay increase         30         0.410         0.190         125.01         1.10         0           As shown         31         0.420         0.210         121.00         1.16         0           Age-related rates as shown         31         0.420         0.210         121.00         1.16         0           Age-related rates as shown         33         0.440         0.250         103.48         1.30         0           Retirement Age         36         0.490         0.320         63.31         1.58         0           Rates are only applied if the employee is eligibl	after retirement	7.75%	21	0.410	0.130	167.66	0.66	0
Not in pay status         Pub2010PS employee         24         0.380         0.110         151.71         0.81         0           Healthy amultants         Pub2010PS aliashled         25         0.370         0.120         146.99         0.85         0           Disabled amultants         Pub2010PS disabled         26         0.380         0.130         142.51         0.90         0           Mortality rates are projected by scale MP-2021         27         0.390         0.140         137.97         0.95         0           Pay Increase Assumption         29         0.410         0.170         129.19         1.05         0           Annual rates of pay increase         30         0.410         0.190         125.01         1.10         0           as shown         31         0.420         0.210         121.00         1.16         0           as shown         31         0.420         0.210         121.00         1.16         0           Tumover         33         0.440         0.250         103.48         1.30         0           Age-related rates as shown         37         0.50         0.300         76.56         1.47         0           Ratis are origible to retire.			22	0.400	0.120	161.90	0.71	0
Healthy annuitants	Mortality Tables		23	0.390	0.120	156.57	0.76	0
Disabled annuitants	Not in pay status	Pub2010PS employee	24	0.380	0.110	151.71	0.81	0
Mortality rates are projected by scale MP-2021   28	Healthy annuitants	Pub2010PS annuitant	25	0.370	0.120	146.99	0.85	0
Pay Increase Assumption         28         0.400         0.160         133.51         1.00         0           Annual rates of pay increase         30         0.410         0.170         129.19         1.05         0           as shown         31         0.420         0.210         121.00         1.16         0           as shown         32         0.430         0.220         117.16         1.22         0           Turnover         33         0.440         0.250         103.48         1.30         0           Age-related rates as shown         34         0.450         0.270         89.95         1.38         0           Retirement Age         36         0.490         0.320         63.31         1.58         0           Rates of retirement as shown         37         0.500         0.360         50.18         1.71         0           Rates are only applied if the employee is eligible to retire.         38         0.530         0.300         76.56         1.47         0           Form of payment         41         0.620         0.430         44.22         2.01         0           mandatory cashouts         Lump sum         42         0.670         0.550	Disabled annuitants	Pub2010PS disabled	26	0.380	0.130	142.51	0.90	0
Pay Increase Assumption   29   0.410   0.170   129.19   1.05   0   0   Annual rates of pay increase   30   0.410   0.190   125.01   1.10   0   0   as shown   31   0.420   0.210   121.00   1.16   0   0   0   0   0   0   0   0   0	Mortality rates are proj	iected by scale MP-2021	27	0.390	0.140	137.97	0.95	0
Annual rates of pay increase as shown 31 0.410 0.190 125.01 1.10 0 as shown 31 0.420 0.210 121.00 1.16 0 0  Turnover 33 0.440 0.250 103.48 1.30 0  Age-related rates as shown 34 0.450 0.270 89.95 1.38 0  Retirement Age 36 0.490 0.300 76.56 1.47 0  Retirement as shown 37 0.500 0.360 50.18 1.71 0  Rates are only applied if the employee is eligible to retire. 39 0.560 0.430 44.22 2.01 0  Form of payment 41 0.620 0.510 38.58 2.42 0  mandatory cashouts Lump sum 42 0.670 0.550 35.81 2.66 0  other benefits Normal form 43 0.710 0.600 33.05 2.93 0  Other Assumptions 45 0.820 0.720 27.54 3.60 0  Percent married 90% 46 0.880 0.780 24.79 3.99 0  Increase in Social Security 49 1.110 0.990 16.39 5.46 0  Wage Base 3.00% 50 1.200 1.070 13.53 6.06 0  CPI 3.00% 54 1.620 1.450 1.67 9.13 1000			28	0.400	0.160	133.51	1.00	0
As shown   31	Pay Increase Assun	nption	29	0.410	0.170	129.19	1.05	0
Turnover  33	Annual rates of pay in	ncrease	30	0.410	0.190	125.01	1.10	0
Turnover   33   0.440   0.250   103.48   1.30   0   0   Age-related rates as shown   34   0.450   0.270   89.95   1.38   0   0   35   0.470   0.300   76.56   1.47   0   0   0   0   0   0   0   0   0	as shown		31	0.420	0.210	121.00	1.16	0
Age-related rates as shown 34 0.450 0.270 89.95 1.38 0  Retirement Age 36 0.490 0.320 63.31 1.58 0  Rates of retirement as shown 37 0.500 0.360 50.18 1.71 0  Rates are only applied if the employee is eligible to retire. 39 0.560 0.430 44.22 2.01 0  Form of payment 41 0.620 0.510 38.58 2.42 0  The mandatory cashouts Lump sum 42 0.670 0.550 35.81 2.66 0  other benefits Normal form 43 0.710 0.600 33.05 2.93 0  Other Assumptions 45 0.820 0.720 27.54 3.60 0  Forcent married 90% 46 0.880 0.780 24.79 3.99 0  Husband/wife age differ 3 47 0.950 0.840 22.01 4.43 0  Rates are only applied if the employee is 38 0.530 0.390 47.15 1.85 0  Other Assumptions 45 0.820 0.720 27.54 3.60 0  Increase in Social Security 49 1.110 0.990 16.39 5.46 0  Wage Base 3.00% 50 1.200 1.070 13.53 6.06 0  CPI 3.00% 51 1.290 1.150 10.61 6.72 0  For details a shown 4.59 8.25 1000 1.			32	0.430	0.220	117.16	1.22	0
Retirement Age  Rates of retirement as shown Rates are only applied if the employee is eligible to retire.  36 0.490 0.320 63.31 1.58 0 37 0.500 0.360 50.18 1.71 0 38 0.530 0.390 47.15 1.85 0 38 0.530 0.390 47.15 1.85 0 39 0.560 0.430 44.22 2.01 0 40 0.590 0.470 41.38 2.20 0 50 0.470 0.550 35.81 2.66 0 0.510 38.58 2.42 0 0.670 0.550 35.81 2.66 0 0.680 0.670 0.550 35.81 2.66 0 0.680 0.660 30.30 3.24 0 0.710 0.600 33.05 2.93 0 0.720 27.54 3.60 0 0.720 3.00 0 0.720 27.54 3.60 0 0.720 3.00 0 0.720	Turnover		33	0.440	0.250	103.48	1.30	0
Retirement Age       36       0.490       0.320       63.31       1.58       0         Rates of retirement as shown       37       0.500       0.360       50.18       1.71       0         Rates are only applied if the employee is eligible to retire.       38       0.530       0.390       47.15       1.85       0         eligible to retire.       39       0.560       0.430       44.22       2.01       0         40       0.590       0.470       41.38       2.20       0         Form of payment       41       0.620       0.510       38.58       2.42       0         mandatory cashouts       Lump sum other benefits       42       0.670       0.550       35.81       2.66       0         other benefits       Normal form       43       0.710       0.600       33.05       2.93       0         Other Assumptions       45       0.820       0.720       27.54       3.60       0         Percent married       90%       46       0.880       0.780       24.79       3.99       0         Husband/wife age differ       3       47       0.950       0.840       22.01       4.43       0         Wage Base       <	Age-related rates as s	shown	34	0.450	0.270	89.95	1.38	0
Rates of retirement as shown       37       0.500       0.360       50.18       1.71       0         Rates are only applied if the employee is eligible to retire.       38       0.530       0.390       47.15       1.85       0         40       0.590       0.470       41.38       2.20       0         Form of payment       41       0.620       0.510       38.58       2.42       0         mandatory cashouts       Lump sum       42       0.670       0.550       35.81       2.66       0         other benefits       Normal form       43       0.710       0.600       33.05       2.93       0         Other Assumptions       45       0.820       0.720       27.54       3.60       0         Percent married       90%       46       0.880       0.780       24.79       3.99       0         Husband/wife age differ       3       47       0.950       0.840       22.01       4.43       0         Wage Base       3.00%       50       1.200       1.070       13.53       6.06       0         CPI       3.00%       51       1.290       1.150       10.61       6.72       0         52 <t< td=""><td></td><td></td><td>35</td><td>0.470</td><td>0.300</td><td>76.56</td><td>1.47</td><td>0</td></t<>			35	0.470	0.300	76.56	1.47	0
Rates are only applied if the employee is eligible to retire.       38       0.530       0.390       47.15       1.85       0         Form of payment       40       0.590       0.470       41.38       2.20       0         Form of payment       41       0.620       0.510       38.58       2.42       0         mandatory cashouts Lump sum other benefits       42       0.670       0.550       35.81       2.66       0         other benefits       Normal form       43       0.710       0.600       33.05       2.93       0         Other Assumptions       45       0.820       0.720       27.54       3.60       0         Percent married       90%       46       0.880       0.780       24.79       3.99       0         Husband/wife age differ       3       47       0.950       0.840       22.01       4.43       0         Wage Base       3.00%       50       1.200       1.070       13.53       6.06       0         CPI       3.00%       51       1.290       1.150       10.61       6.72       0         52       1.400       1.240       7.64       7.45       1000 </td <td>Retirement Age</td> <td></td> <td>36</td> <td>0.490</td> <td>0.320</td> <td>63.31</td> <td>1.58</td> <td>0</td>	Retirement Age		36	0.490	0.320	63.31	1.58	0
eligible to retire.  39	Rates of retirement as	s shown	37	0.500	0.360	50.18	1.71	0
Form of payment	Rates are only applied	l if the employee is	38	0.530	0.390	47.15	1.85	0
Second of payment   41	eligible to retire.		39	0.560	0.430	44.22	2.01	0
mandatory cashouts         Lump sum other benefits         42         0.670         0.550         35.81         2.66         0           other benefits         Normal form         43         0.710         0.600         33.05         2.93         0           Other Assumptions         45         0.820         0.720         27.54         3.60         0           Percent married         90%         46         0.880         0.780         24.79         3.99         0           Husband/wife age differ         3         47         0.950         0.840         22.01         4.43         0           Wage Base         3.00%         49         1.110         0.990         16.39         5.46         0           CPI         3.00%         50         1.200         1.070         13.53         6.06         0           52         1.400         1.240         7.64         7.45         1000           53         1.510         1.340         4.59         8.25         1000           54         1.620         1.450         1.67         9.13         1000			40	0.590	0.470	41.38	2.20	0
other benefits         Normal form         43         0.710         0.600         33.05         2.93         0           Other Assumptions         45         0.820         0.720         27.54         3.60         0           Percent married         90%         46         0.880         0.780         24.79         3.99         0           Husband/wife age differ         3         47         0.950         0.840         22.01         4.43         0           48         1.020         0.910         19.22         4.92         0           Increase in Social Security         49         1.110         0.990         16.39         5.46         0           Wage Base         3.00%         50         1.200         1.070         13.53         6.06         0           CPI         3.00%         51         1.290         1.150         10.61         6.72         0           52         1.400         1.240         7.64         7.45         1000           53         1.510         1.340         4.59         8.25         1000           54         1.620         1.450         1.67         9.13         1000	Form of payment		41	0.620	0.510	38.58	2.42	0
Other Assumptions       44       0.760       0.660       30.30       3.24       0         Percent married       90%       45       0.820       0.720       27.54       3.60       0         Husband/wife age differ       3       46       0.880       0.780       24.79       3.99       0         Husband/wife age differ       3       47       0.950       0.840       22.01       4.43       0         48       1.020       0.910       19.22       4.92       0         Increase in Social Security       49       1.110       0.990       16.39       5.46       0         Wage Base       3.00%       50       1.200       1.070       13.53       6.06       0         CPI       3.00%       51       1.290       1.150       10.61       6.72       0         52       1.400       1.240       7.64       7.45       1000         53       1.510       1.340       4.59       8.25       1000         54       1.620       1.450       1.67       9.13       1000	mandatory cashouts	Lump sum	42	0.670	0.550	35.81	2.66	0
Other Assumptions       45       0.820       0.720       27.54       3.60       0         Percent married       90%       46       0.880       0.780       24.79       3.99       0         Husband/wife age differ       3       47       0.950       0.840       22.01       4.43       0         48       1.020       0.910       19.22       4.92       0         Increase in Social Security       49       1.110       0.990       16.39       5.46       0         Wage Base       3.00%       50       1.200       1.070       13.53       6.06       0         CPI       3.00%       51       1.290       1.150       10.61       6.72       0         52       1.400       1.240       7.64       7.45       1000         53       1.510       1.340       4.59       8.25       1000         54       1.620       1.450       1.67       9.13       1000	other benefits	Normal form	43	0.710	0.600	33.05	2.93	0
Percent married 90% Husband/wife age differ 3 47 0.950 0.840 22.01 4.43 0 48 1.020 0.910 19.22 4.92 0 Increase in Social Security 49 1.110 0.990 16.39 5.46 0 Wage Base 3.00% 50 1.200 1.070 13.53 6.06 0 CPI 3.00% 51 1.290 1.150 10.61 6.72 0 52 1.400 1.240 7.64 7.45 1000 53 1.510 1.340 4.59 8.25 1000 54 1.620 1.450 1.67 9.13			44	0.760	0.660	30.30	3.24	0
Husband/wife age differ 3 47 0.950 0.840 22.01 4.43 0 48 1.020 0.910 19.22 4.92 0 Increase in Social Security 49 1.110 0.990 16.39 5.46 0 Wage Base 3.00% 50 1.200 1.070 13.53 6.06 0 CPI 3.00% 51 1.290 1.150 10.61 6.72 0 52 1.400 1.240 7.64 7.45 1000 53 1.510 1.340 4.59 8.25 1000 54 1.620 1.450 1.67 9.13 1000	Other Assumptions		45	0.820	0.720	27.54	3.60	0
Harmonic Mage Base Social Security Secu	Percent married	90%	46	0.880	0.780	24.79	3.99	0
Increase in Social Security Wage Base 3.00% CPI 3.00% 50 1.200 1.070 13.53 6.06 0 51 1.290 1.150 10.61 6.72 0 52 1.400 1.240 7.64 7.45 1000 53 1.510 1.340 4.59 8.25 1000 54 1.620 1.450 1.67 9.13 1000	Husband/wife age diff	feı 3	47	0.950	0.840	22.01	4.43	0
Wage Base       3.00%       50       1.200       1.070       13.53       6.06       0         CPI       3.00%       51       1.290       1.150       10.61       6.72       0         52       1.400       1.240       7.64       7.45       1000         53       1.510       1.340       4.59       8.25       1000         54       1.620       1.450       1.67       9.13       1000			48	1.020	0.910	19.22	4.92	0
CPI       3.00%       51       1.290       1.150       10.61       6.72       0         52       1.400       1.240       7.64       7.45       1000         53       1.510       1.340       4.59       8.25       1000         54       1.620       1.450       1.67       9.13       1000	Increase in Social Sec	curity	49	1.110	0.990	16.39	5.46	0
52     1.400     1.240     7.64     7.45     1000       53     1.510     1.340     4.59     8.25     1000       54     1.620     1.450     1.67     9.13     1000	Wage Base	3.00%	50	1.200	1.070	13.53	6.06	0
53 1.510 1.340 4.59 8.25 1000 54 1.620 1.450 1.67 9.13 1000	CPI	3.00%	51	1.290	1.150	10.61	6.72	0
54 1.620 1.450 1.67 9.13 1000			52	1.400	1.240	7.64	7.45	1000
			53	1.510	1.340	4.59	8.25	1000
55 1.750 1.570 0.00 10.09 1000			54	1.620	1.450	1.67	9.13	1000
			55	1.750	1.570	0.00	10.09	1000

**Interest Rate** 7.75% per annum effective for the 2017 and later years (8.0%)

for prior years

**Pay Increases** 4.5% per year plus additional percentages for the first 10 years

of service (5% before 2017)

**Retirement Rates** Upon the attainment of age 52 or, if later, 20 years of service

Mortality RP 2000 fully projected for cohort mortality improvement

(appropriate versions of this table for employees, annuitants

and disabled individuals)

**Disability** Rates by age as shown below

**Turnover** Rates by age and years of service as shown below

Percent Married 90%

Additional turnover rates for first five years of service (added to attained age rates)

<u>Year</u>	Rate/thousand
1	50
2	40
3	30
4	20
5	10

Additional pay increases for the first ten years of service (added to basic 5% assumed pay increases)

	Additional		Additional
Year	Percentage	Year	Percentage
1	5.0%	6	2.5%
2	4.5	7	2.0
3	4.0	8	1.5
4	3.5	9	1.0
5	3.0	10	0.5

#### **CERTIFICATION**

This report presents the actuarial position of the Big Spring Firemen's Relief and Retirement Fund as of December 31, 2022, in accordance with our understanding of GASB Statement 67.

The results shown in this report are based on an actuarial valuation as of January 1, 2022 for a measurement date of December 31, 2022. The Total Pension Liability as of the measurement date was based on a roll forward of values from the valuation date.

Plan provisions were unchanged from the prior valuation. The most recent plan changes were effective January 2018 to limit the types of pay included in the calculation for employees hired after January 2018, to increase the City's contribution from 13% to 15% of pay and to limit any future benefit enhancements depending on the funding level of the plan.

The valuation results in this report are based on participant and financial data provided by the plan administrator and the trustee.

In our opinion, each assumption used in combination to calculate GASB 67 disclosure values represents our best estimate of anticipated experience under the plan and is reasonably related to the plan experience and to reasonable expectations. However, the most appropriate assumption for different purposes may vary and use of the values in this report for purposes other than those stated should be avoided or discussed with the actuary.

The undersigned are independent actuaries. Both are Fellows of the Society of Actuaries and are experienced in performing actuarial valuations for governmental retirement plans

DEAN ACTUARIES, LLC

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10/10/2023

Date

Charles E. Dean, FSA, FCA Enrolled Actuary 23-01249

10/10/2023

Date

Sean M. Sullivan, FSA Enrolled Actuary 23-03649

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