
Denison Firemen's Relief and Retirement Fund

Actuarial Report for City's Compliance with GASB Statement No. 68 for the Fiscal Year Ending September 30, 2023

December 13, 2023



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December 13, 2023

Via E-Mail: ztaylor@cityofdenison.com

Board of Trustees
Denison Firemen's Relief and
Retirement Fund
c/o Ms. Zera Taylor, Administrator
300 W. Main Street
Denison, TX 75020

Re: GASB No. 68 Report for the Denison Firemen's
Relief and Retirement Fund for the City's Fiscal
Year Ending September 30, 2023

Dear Board Members:

At your request, we have prepared an actuarial report providing actuarial information for the Denison Firemen's Relief and Retirement Fund (the Fund) for the city's fiscal year ending September 30, 2023 based on a measurement date of December 31, 2022 in accordance with Governmental Accounting Standards Board (GASB) Statement No. 68, *Accounting and Financial Reporting for Pensions*. This information will be used in the preparation of the city's September 30, 2023 financial report.

The disclosures and required supplementary information in this report are based on (1) the Fund's actuarial valuation as of December 31, 2021, including the actuarial assumptions and census data summarized in our report to the board of trustees dated August 5, 2022, and (2) the statement of changes in plan fiduciary net position for the Fund's audited December 31, 2022 financial report.

Governmental Accounting Standards

In June 2012, the GASB issued GASB Statement No. 68, *Accounting and Financial Reporting for Pensions*, which amended GASB Statement No. 27 effective for fiscal years beginning after June 15, 2014. GASB 68 says that the total pension liability should be determined by (a) an actuarial valuation as of the measurement date or (b) the use of update procedures to roll forward to the measurement date from an actuarial valuation as of a date no more than 30 months and one day earlier than the employer's most recent fiscal year-end. For this report, the roll forward procedure is what we used to develop the December 31, 2022 total pension liability from the total pension liability in the December 31, 2021 actuarial valuation. Therefore, there are no differences between expected and actual experience for the Fund year ending December 31, 2022 since the theoretical actual demographic experience for that year was assumed to be the same as the expected experience.

Variability in Future Actuarial Measurement

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.

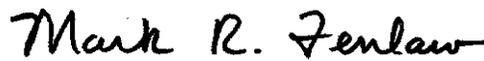
We have not been asked to perform and have not performed any stochastic or deterministic sensitivity analyses of the potential ranges of such future measurements, except as required by GASB 68. If you have an interest in the results of any other such analysis, please let us know.

Required Supplementary Information

The schedules of required supplementary information (RSI) in Section II of the report do not include the one described in paragraph 46(c) of GASB 68 because the Fund does not have actuarially determined contributions. In addition, there is no schedule for the RSI described in paragraph 46(d) since the city's contributions are not statutorily or contractually required.

We hereby certify that we are members of the American Academy of Actuaries who meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein. We do not have any relationship with the Fund or with the city which might impair, or appear to impair, the objectivity of our services for the Fund.

Sincerely,



Mark R. Fenlaw, F.S.A.



Brandon L. Fuller, F.S.A.

MRF/BLF:nlg

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Section I - Disclosures to Comply with GASB Statement No. 68

A. General Information about the Retirement Plan

1. Plan Description

The city contributes to the retirement plan for firefighters in the Denison Fire Department known as the Denison Firemen's Relief and Retirement Fund (the Fund). The Fund is a single employer, contributory, defined benefit plan. The benefit provisions of the Fund are authorized by the Texas Local Fire Fighters' Retirement Act (TLFFRA). TLFFRA provides the authority and procedure to amend benefit provisions. The plan is administered by the Board of Trustees of the Fund. The city does not have access to nor can it utilize assets within the retirement plan trust. The Fund issues a stand-alone report pursuant to GASB Statement No. 67, which may be obtained by writing the Denison Firemen's Relief and Retirement Fund at 300 W. Main Street, Denison, TX 75020. See that report for all information about the plan fiduciary net position.

2. Benefits Provided

Firefighters in the Denison Fire Department are covered by the Fund which provides service retirement, death, disability, and withdrawal benefits. Firefighters may retire at age 50 with 20 years of service. A vested benefit is provided for firefighters who terminate employment with at least 10 years of service. If a terminated firefighter under age 50 has a vested benefit, he may retire starting on the date he would have both completed 20 years of service if he had remained a Denison firefighter and attained age 50. The present plan provides a monthly normal service retirement benefit, payable in a Joint and 75% to Spouse form of annuity, equal to a percentage of Highest 24-Month Average Salary of 2.65% for each of the first 20 years of service plus 3.00% for each year of service in excess of 20 years. There is a maximum monthly benefit of \$7,250.00 which was increased from \$5,150.00 effective April 8, 2021.

There is no provision for automatic postretirement benefit increases. The Fund has the authority to provide, and has periodically in the past provided, ad hoc postretirement benefit increases.

3. Members Covered by the Fund

In the December 31, 2021 actuarial valuation, the following numbers of members were covered by the Fund:

Retirees and beneficiaries currently receiving benefits	55
Inactive employees entitled to but not yet receiving benefits	8
Active employees	<u>50</u>
	113

4. Contribution Policy

The contribution provisions of the Fund are authorized by TLFFRA. TLFFRA provides the authority and procedure to change the amount of contributions determined as a percentage of pay by each firefighter and a percentage of payroll by the city.

The contribution policy of the Denison Firemen's Relief and Retirement Fund requires contributions equal to a rate of pay by the firefighters elected by the firefighters according to TLFFRA. Through December 31, 2019, the firefighter contribution rate was 12%. Beginning January 1, 2020, it was increased by the firefighters to 13.25%. The city had contributed 15% of payroll for a number of years. Beginning January 1, 2020, the city increased its rate to 18%. The December 31, 2021 actuarial valuation includes the assumption that the city contribution rate will be 18% over the remainder of the unfunded liability amortization period. The costs of administering the plan are paid from the Fund assets.

Ultimately, the contribution policy also depends upon the total return of the Fund's assets, which varies from year to year. Investment policy decisions are established and maintained by the board of trustees. For the year ending December 31, 2022, the money-weighted rate of return on pension plan investments was -17.43%. This measurement of the investment performance is net of investment-related expenses, reflecting the effect of the timing of the contributions received and the benefits paid during the year.

While the contribution requirements are not actuarially determined, state law requires that each change in plan benefits adopted by the Fund must first be approved by an eligible actuary, certifying that the contribution commitment by the firefighters and the assumed city contribution rate together provide an adequate contribution arrangement. Using the entry age actuarial cost method, the plan's normal cost contribution rate is determined as a percentage of payroll. The excess of the total contribution rate over the normal cost contribution rate is used to amortize the plan's unfunded actuarial accrued liability (UAAL). The number of years needed to amortize the plan's UAAL is actuarially determined using an open, level percentage of payroll method.

B. Net Pension Liability

The city's net pension liability was measured as of December 31, 2022, and the total pension liability used to calculate the net pension liability was determined by the actuarial valuation as of December 31, 2021 and rolled forward to December 31, 2022.

Total pension liability	\$ 27,322,134
Plan fiduciary net position	<u>20,072,690</u>
City's net pension liability	\$ 7,249,444
 Plan fiduciary net position as a percentage of the total pension liability	 73.5%

1. Actuarial Assumptions

The total pension liability in the December 31, 2021 actuarial valuation was determined using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	2.50%
Salary increases	2.50%, plus promotion, step and longevity increases that vary by service
Investment rate of return	7.50%, net of investment-related expenses, including inflation

Mortality rates were based on the PubS-2010 (public safety) total dataset mortality tables for employees and for retirees (sex distinct), projected for mortality improvement generationally using the projection scale MP-2019.

The long-term expected rate of return on pension plan investments is reviewed for each biennial actuarial valuation and was determined using a building-block method in which expected future net real rates of return (expected returns, net of investment-related expenses and inflation) were developed for each major asset class. These components were combined to produce the long-term expected rate of return by weighting the expected future net real rates of return by a recent asset allocation percentage (resulting in 5.25%) and by adding expected inflation (2.5%). In addition, the final 7.5% assumption was selected by rounding down. The asset allocation and expected arithmetic net real rates of return for each major asset class are summarized in the following table:

Asset Class	Asset Allocation	Long-Term Expected Net Real Rate of Return
Equities	83.5%	5.95%
REITs	2.7	3.45
Closed-end mutual funds	10.9	1.45
Fixed income securities	2.2	1.45
Cash	<u>0.7</u>	0.00
Total	100.0%	
Weighted Average		5.25%

2. Discount Rate

The discount rate used to measure the total pension liability was 7.5%. No projection of cash flows was used to determine the discount rate because the December 31, 2021 actuarial valuation showed that expected contributions would pay the normal cost and amortize the unfunded actuarial accrued liability (UAAL) in 11 years. Because of the 11-year amortization period of the UAAL, the pension plan's fiduciary net position is expected to be available to make all projected future benefit payments of current active and inactive members. Therefore, the long-term expected rate of return on pension plan investments of 7.5% was applied to all periods of projected benefit payments as the discount rate to determine the total pension liability.

3. Sensitivity of the Net Pension Liability to Changes in the Discount Rate

The following presents the net pension liability of the city, calculated using the discount rate of 7.5%, compared to what the city's net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.5%) or 1-percentage-point higher (8.5%) than the current rate:

	1% Decrease (6.5%)	Current Discount Rate (7.5%)	1% Increase (8.5%)
City's Net Pension Liability	\$10,652,631	\$7,249,444	\$4,430,425

4. Plan Fiduciary Net Position

The plan fiduciary net position reported above is the same as reported by the Fund. Detailed information about the plan fiduciary net position is available in the Fund's separately issued audited financial statements, which are reported using the economic resources measurement focus and the accrual basis of accounting in conformity with accounting principles generally accepted in the United States of America. Revenues are recorded when earned, and expenses are recorded when a liability is incurred, regardless of the timing of the related cash flows. Investments are reported at fair value, the price that would be recognized to sell an asset in an orderly transaction between market participants at the measurement date.

C. Changes in the Net Pension Liability

	Increase (Decrease)		
	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) – (b)
Amounts as of September 30, 2022¹	\$ 26,725,580	\$ 24,957,398	\$ 1,768,182
Changes for the year:			
Service cost	535,217		535,217
Interest	1,972,877		1,972,877
Differences between expected and actual experience	0		0
City contributions		791,048	(791,048)
Firefighter contributions		582,299	(582,299)
Net investment income		(4,299,891)	4,299,891
Benefit payments	(1,911,540)	(1,911,540)	0
Administrative expenses		(46,624)	46,624
Assumption changes	0		0
Change of benefit provisions	0		0
Net changes	<u>596,554</u>	<u>(4,884,708)</u>	<u>5,481,262</u>
Amounts as of September 30, 2023²	\$ 27,322,134	\$ 20,072,690	\$ 7,249,444

¹ Measurements for the fiscal year ended September 30, 2022 were taken as of December 31, 2021.

² Measurements for the fiscal year ended September 30, 2023 were taken as of December 31, 2022.

D. Pension Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions

For the year ended September 30, 2023, the city's GASB 68 pension expense was \$430,447. Amounts recognized in the fiscal year represent changes between the current and prior measurement dates.

1. Components of Pension Expense for the Fiscal Year Ended September 30, 2023

Components of Pension Expense	
Service cost	\$ 535,217
Interest	1,972,877
Firefighter contributions	(582,299)
Projected earnings on pension plan investments	(1,849,874)
Amortization of differences between projected and actual earnings on plan investments	347,519
Amortization of changes of assumptions	95,645
Amortization of differences between expected and actual experience	(135,262)
Pension plan administrative expenses	46,624
Change of benefit provisions	0
Total pension expense	\$ 430,447

2. Deferred Outflows of Resources and Deferred Inflows of Resources to Be Recognized in Pension Expense in Future Years

	Deferred Outflows of Resources	Deferred Inflows of Resources
Net difference between projected and actual earnings on pension plan investments	\$ 2,527,774	\$ 0
Changes of assumptions	290,026	184,489
Differences between expected and actual experience	132,179	255,981
Total	\$ 2,949,979	\$ 440,470

Amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense as follows:

Year Ended September 30	Net of Deferred Outflows Minus Deferred Inflows
2024	\$ (50,497)
2025	617,454
2026	683,262
2027	1,259,290
2028	0
Thereafter	0
Total	\$ 2,509,509

3. Deferred Outflow of Resources to Be Recognized Next Year

The total of the contributions by the city to the Fund contributed subsequent to the measurement date of the net pension liability, December 31, 2022, through September 30, 2023 is a deferred outflow of resources that will be recognized as a reduction in the net pension liability in the fiscal year ending September 30, 2024. **This amount will be provided by the city.**

Section II – Schedules of Required Supplementary Information

A. Schedule of Changes in the City's Net Pension Liability and Related Ratios for the Last 10 Fiscal Years¹

	Fiscal Year Ending				
	9/30/2023	9/30/2022	9/30/2021	9/30/2020	9/30/2019
1. Total Pension Liability					
a. Service cost	\$ 535,217	\$ 497,868	\$ 484,543	\$ 504,489	\$ 487,429
b. Interest	1,972,877	1,907,746	1,857,246	1,713,480	1,679,321
c. Changes of benefit provisions	0	0	1,227,295	0	0
d. Differences between expected and actual experience	0	203,053	0	(693,239)	0
e. Changes of assumptions	0	27,219	0	966,083	0
f. Benefit payments	<u>(1,911,540)</u>	<u>(1,698,097)</u>	<u>(1,665,468)</u>	<u>(1,897,085)</u>	<u>(1,559,639)</u>
g. Net Change	596,554	937,789	1,903,616	593,728	607,111
h. Beginning	<u>26,725,580</u>	<u>25,787,791</u>	<u>23,884,175</u>	<u>23,290,447</u>	<u>22,683,336</u>
i. Ending	\$ 27,322,134²	\$ 26,725,580	\$ 25,787,791²	\$ 23,884,175	\$ 23,290,447²
2. Plan Fiduciary Net Position					
a. Contributions by the city	\$ 791,048	\$ 655,168	\$ 674,130	\$ 529,465	\$ 504,819
b. Firefighter contributions	582,299	482,276	496,234	423,572	404,045
c. Net investment income	(4,299,891)	4,492,329	1,367,729	4,623,990	(461,618)
d. Benefit payments	(1,911,540)	(1,698,097)	(1,665,468)	(1,897,085)	(1,559,639)
e. Administrative expenses	<u>(46,624)</u>	<u>(54,295)</u>	<u>(17,749)</u>	<u>(43,403)</u>	<u>(24,075)</u>
f. Net Change	(4,884,708)	3,877,381	854,876	3,636,539	(1,136,468)
g. Beginning	<u>24,957,398</u>	<u>21,080,017</u>	<u>20,225,141</u>	<u>16,588,602</u>	<u>17,725,070</u>
h. Ending	\$ 20,072,690	\$ 24,957,398	\$ 21,080,017	\$ 20,225,141	\$ 16,588,602
3. City's Net Pension Liability [Item 1(i) – 2(h)]	\$ 7,249,444	\$ 1,768,182	\$ 4,707,774	\$ 3,659,034	\$ 6,701,845
4. Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	73.5%	93.4%	81.7%	84.7%	71.2%
5. Covered Payroll³	\$ 4,394,711	\$ 3,639,822	\$ 3,745,167	\$ 3,529,767	\$ 3,365,460
6. City's Net Pension Liability as a Percentage of Covered Payroll	165.0%	48.6%	125.7%	103.7%	199.1%

Notes to Schedule:

¹ Until a full 10-year trend is compiled, only available information is shown. The measurement date is December 31, nine months prior to the fiscal year end.

² Determined from the beginning of year total pension liability using the roll forward procedure allowed by GASB 68.

³ Contributions by the city divided by the city contribution rate.

Schedule A, Continued¹

	Fiscal Year Ending			
	9/30/2018	9/30/2017	9/30/2016	9/30/2015
1. Total Pension Liability				
a. Service cost	\$ 584,359	\$ 561,884	\$ 540,273	\$ 519,493
b. Interest	1,754,603	1,691,849	1,636,517	1,570,247
c. Changes of benefit provisions	0	0	0	0
d. Differences between expected and actual experience	(246,506)	0	(322,524)	0
e. Changes of assumptions	(750,691)	0	249,916	0
f. Benefit payments	<u>(1,428,216)</u>	<u>(1,504,730)</u>	<u>(1,318,961)</u>	<u>(1,212,961)</u>
g. Net Change	(86,451)	749,003	785,221	876,779
h. Beginning	<u>22,769,787</u>	<u>22,020,784</u>	<u>21,235,563</u>	<u>20,358,784</u>
i. Ending	\$ 22,683,336	\$ 22,769,787²	\$ 22,020,784	\$ 21,235,563²
2. Plan Fiduciary Net Position				
a. Contributions by the city	\$ 501,647	\$ 500,182	\$ 493,062	\$ 487,188
b. Firefighter contributions	401,067	400,158	398,318	389,748
c. Net investment income	2,568,080	1,139,415	(1,053,804)	1,368,721
d. Benefit payments	(1,428,216)	(1,504,730)	(1,318,961)	(1,212,961)
e. Administrative expenses	<u>(38,876)</u>	<u>(28,393)</u>	<u>(28,842)</u>	<u>(21,105)</u>
f. Net Change	2,003,702	506,632	(1,510,227)	1,011,591
g. Beginning	<u>15,721,368</u>	<u>15,214,736</u>	<u>16,724,963</u>	<u>15,713,372</u>
h. Ending	\$ 17,725,070	\$ 15,721,368	\$ 15,214,736	\$ 16,724,963
3. City's Net Pension Liability [Item 1(i) – 2(h)]	\$ 4,958,266	\$ 7,048,419	\$ 6,806,048	\$ 4,510,600
4. Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	78.1%	69.0%	69.1%	78.8%
5. Covered Payroll³	\$ 3,344,313	\$ 3,334,547	\$ 3,287,080	\$ 3,247,120
6. City's Net Pension Liability as a Percentage of Covered Payroll	148.3%	211.4%	207.1%	138.9%

Notes to Schedule:

¹ Until a full 10-year trend is compiled, only available information is shown. The measurement date is December 31, nine months prior to the fiscal year end.

² Determined from the beginning of year total pension liability using the roll forward procedure allowed by GASB 68.

³ Contributions by the city divided by the city contribution rate.

B. Schedule of City Contributions for the Last 10 Fiscal Years¹

¹ A schedule of city contributions is not required because the city contributions to the Fund are neither actuarially determined nor statutorily or contractually established.

Section III – Amortization Schedules

A. Increase (Decrease) in Pension Expense Arising from the Recognition of Differences between Projected and Actual Earnings on Pension Plan Investments

Fiscal Year Difference Occurred	Differences between Projected and Actual Earnings	Amortization Period	Recognized Outflow (Inflow) of Resources						
			Fiscal Year Recognized						
			2023	2024	2025	2026	2027	2028	Thereafter
2019	\$ 1,809,161	5 yrs	\$ 361,833	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
2020	(3,416,874)	5 yrs	(683,374)	(683,374)	0	0	0	0	0
2021	129,925	5 yrs	25,985	25,985	25,985	0	0	0	0
2022	(2,934,388)	5 yrs	(586,878)	(586,878)	(586,878)	(586,878)	0	0	0
2023	6,149,765	5 yrs	1,229,953	1,229,953	1,229,953	1,229,953	1,229,953	0	0

Net increase (decrease) for A \$ 347,519

B. Increase (Decrease) in Pension Expense Arising from the Recognition of Changes in Assumptions

Fiscal Year Difference Occurred	Recognition of Changes in Assumptions	Amortization Period	Recognized Outflow (Inflow) of Resources						
			Fiscal Year Recognized						
			2023	2024	2025	2026	2027	2028	Thereafter
2016	\$ 249,916	7.3474 yrs	\$ 11,818	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
2018	(750,691)	7.9550 yrs	(94,367)	(94,367)	(90,122)	0	0	0	0
2020	966,083	5.57 yrs	173,444	173,444	98,863	0	0	0	0
2022	27,219	5.73 yrs	4,750	4,750	4,750	4,750	3,469	0	0

Net increase (decrease) for B \$ 95,645

C. Increase (Decrease) in Pension Expense Arising from the Recognition of Differences between Expected and Actual Experience

Fiscal Year Difference Occurred	Differences between Expected and Actual Experience	Amortization Period	Recognized Outflow (Inflow) of Resources						
			Fiscal Year Recognized						
			2023	2024	2025	2026	2027	2028	Thereafter
2016	\$ (322,524)	7.3474 yrs	\$ (15,252)	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
2018	(246,506)	7.9550 yrs	(30,988)	(30,988)	(29,590)	0	0	0	0
2020	(693,239)	5.57 yrs	(124,459)	(124,459)	(70,944)	0	0	0	0
2022	203,053	5.73 yrs	35,437	35,437	35,437	35,437	25,868	0	0

Net increase (decrease) for C \$ (135,262)

Net for future years (A+B+C) \$ (50,497) \$ 617,454 \$ 683,262 \$ 1,259,290 \$ 0 \$ 0