



June 8, 2022

City # 00301

City of Corinth  
3300 Corinth Parkway  
Corinth, TX 76208

Attention: Finance Director

Subject: 2023 City Contribution Rate

Your city's 2023 monthly contribution rates are shown below. These rates were determined by the December 31, 2021 actuarial valuation.

Normal Cost	11.49 %
Prior Service	<u>3.54</u>
Full Retirement	15.03 %
Supplemental Death Benefit	<u>0.29</u>
Combined Contribution	15.32 %

Detailed information on your city's TMRS plan is contained in the attached report. The Full Retirement Rate shown above represents the Actuarially Determined Employer Contribution (ADEC) for 2023.

If your city provides Supplemental Death Benefit (SDB) coverage, changes have been made in the calculation of your SDB Rate for 2023. Please see the *Supplemental Death Benefit Rate Increase* section for more information.

If you have questions about your city's contribution rate or would like to evaluate potential changes to your TMRS plan, please contact me at 512-225-3760 or [lhardy@tmrs.com](mailto:lhardy@tmrs.com).

Sincerely,

A handwritten signature in blue ink that reads "Leslee S. Hardy". The signature is written in a cursive style.

Leslee S. Hardy, ASA, EA, FCA, MAAA  
Director of Actuarial Services

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## Supplemental Death Benefit Rate Increase

The Supplemental Death Benefit (SDB) program is voluntary and operates like a group-term life insurance plan for cities that provide SDB coverage. Supplemental death benefits are not advance-funded but are financed on a pay-as-you-go basis. The SDB Rate for each city is equal to the expected benefit payments during the upcoming year (one-year term cost) expressed as a percentage of payroll and is calculated separately for active Members and retirees.

Due to the higher mortality rates associated with the global pandemic, SDB claims rose significantly in 2021. Consequently, the TMRS Board adopted changes to the methodology used for calculating 2023 SDB Rates. Specifically, 2023 SDB Rates were calculated by (i) removing the assumption that grants a small credit to active rates and (ii) adding a margin for adverse experience of 100% for active coverage and 10% for retiree coverage.

**It is important to note that the increase in your SDB Rate only applies to 2023.** Future SDB Rates will be determined based on the most recent mortality experience available at the time.

## Rate Stabilization Techniques

Contribution rate stabilization for cities is a strategic goal of the TMRS Board of Trustees. Since 2007, the Board has approved many actuarial changes to minimize short-term volatility in contribution rates while maximizing long-term System sustainability. Under the current funding policy in which rates are actuarially determined each year, contribution rate stabilization is fully optimized at the System level; therefore, any further rate stabilization must be achieved at the city level.

**Cities with an Unfunded Liability** - For cities with an Unfunded Actuarial Accrued Liability (UAAL), the most effective way for a city to stabilize its TMRS contribution rate is to determine an affordable rate that exceeds the required rate and continue to pay that same rate even when the calculated rate decreases in subsequent valuations. These additional contributions at a predetermined fixed rate accomplish the following:

- Provide a stable annual contribution rate for budgeting purposes;
- Directly reduce the UAAL dollar for dollar;
- Pay off the UAAL quicker;
- Produce cost savings over the long run; and
- Provide a cushion for future adverse plan experience.

**Cities with a Surplus** - For cities with an Overfunded Actuarial Accrued Liability (surplus), the contribution rate is determined by decreasing the Normal Cost Rate (the cost of the current year accruals for active Members) by a Prior Service Rate calculated to keep the funded ratio at approximately the same level. The result is a required contribution rate less than the Normal Cost. It is important to note that adverse plan experience could still result in the funded ratio dropping below 100%. TMRS encourages cities in a surplus position to consider paying the full Normal Cost Rate (or as much as possible toward the full Normal Cost Rate) until the funded ratio is at least 110%. Doing so will dampen contribution rate volatility and increase the likelihood of maintaining a funded ratio greater than 100%.

**How to make Additional Contributions** - No formal action needs to be taken by a city to contribute at a higher level than the required monthly minimum. Additional monthly contributions may be made during the normal payroll reporting process by simply providing the increased rate. Because additional contributions are entirely voluntary, a city may revert to paying the minimum required rate at any time during the year if financial circumstances change.

If your city would like to explore the impact of any of these rate stabilization techniques on your TMRS plan, please contact Actuarial Services at [ActuarialServices@tmrs.com](mailto:ActuarialServices@tmrs.com).

## Executive Summary

Valuation as of	12/31/2021	12/31/2020
<b>Membership as of the Valuation Date</b>		
• Number of		
- Active Members	158	160
- Retirees and beneficiaries	104	95
- Inactive Members	<u>156</u>	<u>139</u>
- Total	418	394
• Prior year's payroll provided by TMRS	\$ 11,879,334	\$ 11,553,105
• Valuation Payroll	11,966,584	11,784,820
<b>Benefit Accumulation Fund (BAF) Assets</b>		
• Market BAF Balance	\$ 50,552,065	\$ 43,938,856
• BAF crediting rate	12.26 %	7.45 %
• Interest credited on beginning BAF balance	\$ 5,385,173	\$ 2,945,831
• Employer contributions	1,882,874	1,838,580
• Member contributions	831,553	812,683
• Benefit and refund payments	1,486,392	1,192,581
<b>Actuarial Value of Assets (AVA)</b>		
• Market BAF Balance	\$ 50,552,065	\$ 43,938,856
• Actuarial Value of Assets (AVA)	47,466,784	43,065,076
• AVA as a Percentage of BAF	93.9 %	98.0 %
• Return on AVA	7.37	6.94
<b>Actuarial Information</b>		
• Actuarial Accrued Liability (AAL)	\$ 53,612,546	\$ 49,294,868
• Actuarial Value of Assets (AVA)	47,466,784	43,065,076
• Unfunded Actuarial Accrued Liability (UAAL)	6,145,762	6,229,792
• UAAL as % of pay	51.7 %	53.9 %
• Funded Ratio (AVA/AAL)	88.5	87.4
• Employer Normal Cost Rate	11.49	11.48
• Prior Service Rate	3.54	3.55
<b>Contribution Rates</b>		
• Member	2023 7.00 %	2022 7.00 %
• Full Retirement (ADEC)	15.03	15.03
• Supplemental Death Benefit	0.29	0.16
<b>Combined Employer Contribution Estimates</b>		
• Projected payroll	\$ 12,283,698	\$ 12,097,118
• Combined Contribution Rate	15.32 %	15.19 %
• Estimated employer contribution	\$ 1,881,863	\$ 1,837,552

Note: Results from prior year reflect the plan provisions shown on the next page.

## Summary of Benefit Provisions

Plan provisions are adopted by your city's governing body from the options available in the TMRS Act. Your city's plan provisions in effect as of April 1, 2022 were as follows:

Member Contribution Rate	7%
Matching Ratio (City to Member)	2 : 1
Years Required for Vesting	5
Retirement Eligibility (Age/Service)	60/5, 0/20
Updated Service Credit	100% Repeating Transfers
Retiree Cost of Living Adjustment	70% of CPI Repeating
Supplemental Death Benefit to Active Members	Yes
Supplemental Death Benefit to Retirees	Yes

If you have any questions about your city's benefit provisions or would like to discuss plan changes, please contact the City Services Department at [cityservices@tmrs.com](mailto:cityservices@tmrs.com) or call Anthony Mills at 512-225-3764.

## Calculation of Contribution Requirements

	From Valuation Report as of	
	<u>December 31, 2021</u>	<u>December 31, 2020</u>
1. Prior year's payroll reported to TMRS	\$ 11,879,334	\$ 11,553,105
2. Valuation Payroll	11,966,584	11,784,820
3. Employer Normal Cost Rate	11.49 %	11.48 %
4. Actuarial Accrued Liability		
a. Active Members	\$ 25,884,076	\$ 26,316,883
b. Inactive Members	10,584,758	8,649,862
c. Annuitants	<u>17,143,712</u>	<u>14,328,123</u>
d. Total Actuarial Accrued Liability	\$ 53,612,546	\$ 49,294,868
5. Actuarial Value of Assets	<u>47,466,784</u>	<u>43,065,076</u>
6. Unfunded Actuarial Accrued Liability (4d - 5)	\$ 6,145,762	\$ 6,229,792
7. Funded Ratio (5 / 4d)	88.5 %	87.4 %
8. Equivalent single amortization period*	21.9 Years	22.9 Years
9. Assumed payroll growth rate	2.65 %	2.65 %
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Contribution Rates:	2023	2022
<hr/>		
10. Full Retirement		
a. Normal Cost	11.49 %	11.48 %
b. Prior Service	<u>3.54</u>	<u>3.55</u>
c. Full Retirement	15.03 %	15.03 %
11. Supplemental Death Benefit	0.29	0.16
12. Combined Contribution (10c+11)	15.32 %	15.19 %

\* New losses are laddered over a 20-year period.

## UAAL/OAAL Amortization Bases and Payments

Year Established	Description	Years Remaining	Remaining Base	Payment
2013	2013 Valuation (Fresh Start)	22	\$ 7,642,011	\$ 525,004
2014	2014 Experience	22	(316,479)	(21,742)
2015	2015 Experience	22	(271,078)	(18,623)
2015	2015 Actuarial Changes	22	(171,384)	(11,774)
2016	2016 Experience	20	499,548	36,494
2017	2017 Experience	22	(611,051)	(41,979)
2018	2018 Experience	22	(328,225)	(22,549)
2019	2019 Experience	22	(29,403)	(2,020)
2019	2019 Actuarial Changes	23	202,553	13,535
2020	2020 Experience	22	(398,066)	(27,347)
2021	2021 Experience	22	<u>(72,664)</u>	<u>(4,992)</u>
	<b>Total</b>		6,145,762	424,007

TMRS amortizes the UAAL/OAAL through the process of laddering each base created during the valuation process. The city's UAAL/OAAL equals the total of the remaining amortization bases. The city's Prior Service Rate equals the total amortization payments divided by the Valuation Payroll (Item 2 of the prior page).



## Reconciliation of Full Retirement Rate from Prior Actuarial Valuation Report

Actuarial valuations are based on long-term assumptions, and results in a specific year can, and almost certainly will, differ as actual plan experience deviates from the assumptions. The following table provides a detailed breakdown of changes in your city’s Full Retirement Rate (ADEC) from 2022 to 2023. A brief description of such changes follows the table.

Change in Full Retirement Rate	
Full Retirement Rate from 12/31/2020 Valuation (2022 Rate)	15.03 %
Benefit Changes	0.00 %
Return on Actuarial Value of Assets	(0.15)
Contributions/Fully Amortized Prior Bases	(0.07)
Payroll Growth	0.03
Normal Cost	0.01
Liability Growth	0.18
Total Change	0.00 %
Full Retirement Rate from 12/31/2021 Valuation (2023 Rate)	15.03 %

**Benefit Changes** - Shows the increase or decrease in the contribution rate associated with any plan changes.

**Return on Actuarial Value of Assets (AVA)** - Shows the change in the contribution rate associated with the return on the AVA being different than the assumed 6.75%. For the year ending December 31, 2021, the return on an AVA basis was 7.37%. The impact may show as 0.00% due to rounding.

**Contributions/Fully Amortized Prior Bases** - Shows the total increase or decrease in the contribution rate associated with contributions different than the Full Retirement Rate, the contribution lag (see below), and the impact of the amortization bases which become fully amortized as of this valuation since payments for those bases are no longer part of the Prior Service Rate calculation. Contributions different from the Full Retirement Rate may include phase-in contributions, contributions in excess of the Full Retirement Rate, and/or lump sum contributions. The effect of the contribution lag refers to the time delay between the actuarial valuation date and the date the contribution rate becomes effective (i.e., the Actuarial Valuation as of December 31, 2021 sets the rate effective for 2023). This impact is expected to become immaterial once a city is contributing the Full Retirement Rate and the Full Retirement Rate stabilizes.

**Payroll Growth** - Shows the increase or decrease in the contribution rate associated with higher or lower than expected growth in the city’s overall payroll. The amortization payments were calculated assuming payroll grows at 2.65% per year. Overall payroll growth greater (less) than 2.65% will typically cause a decrease (increase) in the Prior Service Rate.

**Normal Cost** - Shows the increase or decrease in the contribution rate associated with changes in the average Normal Cost Rate for the city's active Members. The Normal Cost Rate for a Member is the contribution rate which, if applied to a Member's compensation throughout their period of anticipated covered service with the city, would be sufficient to meet all benefits payable on their behalf. The salary-weighted average of the individual rates is the city's total Normal Cost Rate. The employer Normal Cost Rate is the pay-weighted average of the individual Normal Cost Rates less the Member Contribution Rate and will generally increase (decrease) as the average entry age of the group increases (decreases).

**Liability Growth** - Shows the increase or decrease in the contribution rate associated with larger or lower than expected growth in the city's overall plan liabilities. The most significant sources for variance will be turnover and individual salary increases differing from the assumptions.

## Historical and Projected Accumulation of the BAF Balance

Year Ending December 31 (1)	Payroll for the Year (2)	Effective Retirement Contribution Rate <sup>a</sup> (3)	Employer Contributions for the Year (4)	Member Contributions for the Year (5)	Benefit Payments (6)	External Cash Flow for the Year (7)	Interest Credit (8)	BAF Balance <sup>b</sup> (9)
		(4) / (2)				(4) + (5) + (6)		
2019	\$ 10,771,734	15.86%	\$ 1,708,397	\$ 754,021	\$ (949,129)	\$ 1,513,289	\$ 5,079,828	\$ 39,534,344
2020	11,553,105	15.91%	1,838,580	812,683	(1,192,581)	1,458,682	2,945,831	43,938,856
2021	11,879,334	15.85%	1,882,874	831,553	(1,486,392)	1,228,035	5,385,173	50,552,065
2022	11,966,584	15.03%	1,798,578	837,661	(1,863,980)	772,259	3,412,264	54,736,588
2023	12,283,698	15.03%	1,846,240	859,859	(1,796,402)	909,697	3,694,720	59,341,005

a. Effective retirement contribution rate is the employer contribution received divided by the payroll paid.

b. BAF Balance may not sum due to rounding.

## **Risks Associated with Measuring the Actuarial Accrued Liability and Actuarially Determined Employer Contribution**

Risk measures help with illustrating the potential volatility in the Actuarial Accrued Liability and the Actuarially Determined Employer Contribution that results from the differences between actual plan experience and the actuarial assumptions. Risks facing a pension plan evolve over time. A young plan with virtually no investments and paying few benefits may experience little investment risk. An older plan with a large number of Members in payment status and a significant trust may be much more exposed to investment risk. Generally accepted plan maturity measures include the following:

Ratio of Market Value of Assets to Payroll	4.3
Ratio of Actuarial Accrued Liability to Payroll	4.5
Ratio of Active Members to Retirees and Beneficiaries	1.5
Net Cash Flow as a Percentage of Market Value of Assets	2.4 %
Duration of Liabilities	20.5
Change in Contribution Rate with 10% Decline in Assets (Smoothed)	0.29 %
Change in Contribution Rate with 10% Decline in Assets (Unsmoothed)	2.90 %

**Ratio of Market Value of Assets to Payroll** - The relationship between assets and payroll is a useful indicator of the potential volatility of contributions. For example, if the Market Value of Assets is 4 times the payroll, a return on assets 5% different than assumed would equal 20% of payroll. A higher (lower) or increasing (decreasing) level of this maturity measure generally indicates a higher (lower) or increasing (decreasing) volatility in city contributions as a percentage of payroll.

**Ratio of Actuarial Accrued Liability to Payroll** - The ratio of liability to payroll may also be used as a measure of sensitivity of the liability itself. For example, if the Actuarial Accrued Liability is 5 times the payroll, a change in liability 2% different than assumed would equal 10% of payroll. A higher (lower) or increasing (decreasing) level of this maturity measure generally indicates a higher (lower) or increasing (decreasing) volatility in liability (and also city contributions) as a percentage of payroll.

The relationship between the Actuarial Accrued Liability and payroll is a useful indicator of the potential longer term asset-related volatility once the current UAAL is fully amortized. A funding policy that targets a funded ratio of 100% is expected to result in the ratio of assets to payroll and the ratio of liability to payroll converging over time.

**Ratio of Active Members to Retirees and Beneficiaries** - A young plan with many active Members and few retirees will have a high ratio of active Members to retirees. A mature open plan may have close to the same number of active Members to retirees resulting in a ratio near 1. A very mature or closed plan may have significantly more retirees than active Members resulting in a ratio below 1.

**Net Cash Flow as a Percentage of Market Value of Assets** - A positive net cash flow means contributions exceed benefits and expenses. A negative cash flow means existing funds are being used to make payments. A certain amount of negative net cash flow is generally expected to occur when benefits are prefunded through a qualified trust. Large negative net cash flows as a percent of assets may indicate a very mature plan or a need for additional contributions.

**Duration of Liabilities** - The duration of the Present Value of Future Benefits (PVFB) may be used to approximate the sensitivity to a 1% change in the assumed rate of return. For example, duration of 10 indicates that the PVFB would increase approximately 10% if the assumed rate of return were lowered 1%.

**Change in Contribution Rate with 10% Decline in Assets (Smoothed)** - This shows the rate impact in one year if the Actuarial Value of Assets (AVA) was 10% lower than in the current actuarial valuation with the asset loss smoothed over a 10-year period as is done in the system-wide calculation of the AVA.

**Change in Contribution Rate with 10% Decline in Assets (Unsmoothed)**: This shows the rate impact if the AVA was 10% lower than in the current actuarial valuation with the full asset loss recognized in the current valuation.