Texas Municipal Retirement System

2019 Experience Study Recommendations
October 2019

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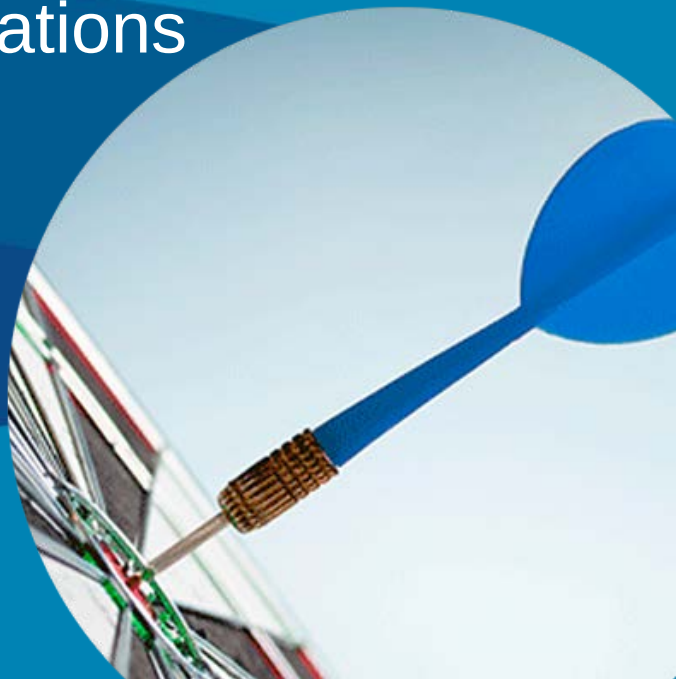

Purpose of the 2019 Experience Study

- Assumptions are not static; they should occasionally change to reflect
  - Developing industry best practices
  - New information and changing knowledge
  - Mortality improvement
  - Changing patterns of retirements, terminations, etc.
  - Implementation of improved technology and processes
- Our analysis will address the following questions for each assumption
  - What was TMRS' actual experience?
  - How does that compare with current assumptions?
  - Is a change warranted?

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Recommendations

Material Impact	Current Assumption	Proposed Assumption	Impact on Liabilities/Costs
Load for USC Asymmetry	None	0.10% per year	Increase ++ for those that have USC
Noticeable Impact			
Surplus Credit for Overfunded Cities	Credit over 25 years	Credit over all future years	Increase + for those that are overfunded
Post-Retirement Mortality for Valuation Purposes	Age 65 Life Expectancy as of 2015: 17.9/20.8 Scale BB (1.5% Annual Improvement)	Age 65 Life Expectancy as of 2015: 18.2/21.7 Scale UMP (1.0% Annual Improvement) Assume no cross subsidy in APR over time	Decrease -
Rates of Termination (A/E Ratio)	<10 YOS: 106% >10 YOS: 110%	101% 104%	Decrease -

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Recommendations (cont.)

Minor Impact	Current Assumption	Proposed Assumption	Impact on Liabilities/Costs
Percent Selecting 50% Survivor Form of Payment	None	100%	Decrease
Individual Salary Scale Including Steps	4.78%	4.96%	Increase
Payroll Growth Rate (Amortization Growth)	3.00%	2.75%	Increase
Percentage taking Refund (A/E Ratio)	93%	96%	Increase
Supplemental Death Fund	100% term cost for Actives $2,500 for retirees	Give 2% of Fund as Credit on Actives $7,500 for Retirees	Increase
Population Decline	163 Impacted, avg 0.6%	202 Impacted, avg 0.5%	Net Increase
City Termination Load		As much as +/- 5%	Net Decrease
No Impact			
Amortization Period for New Sources of UAAL	25 Years	20 Years	Volatility will slightly increase Reduces down side on Funded Ratio
Amortization Period for Ad Hoc COLAs	15 Years	12 Years	Will increase cost approx. 15%
Inflation	2.50%	2.50%	None
Nominal Investment Return	6.75%	6.75%	None
Long-Service Salary Scale	3.50%	3.50%	None
Patterns of Retirement	86%	92%	None

Illustrative Results

- The following slides provide illustrative valuation results based upon the latest completed actuarial valuation of TMRS
- These results are based on current funding and amortization policies
- The impact would not become effective until the 2019 valuation and the 2021 rates

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Summary of System-wide Results

$ amounts in millions	Dec 31, 2018 Valuation	Change from USC Load	Change from All Other Sources	Net Change (2) + (3)	Net Illustrated Results New Assumptions
	(1)	(2)	(3)	(4)	(5)
Actuarial Accrued Liability (AAL)	$33,731	$65	$23	$88	$33,819
Actuarial Value of Assets	29,385	0	0	0	29,385
Unfunded Actuarial Accrued Liability (UAAL)	$4,346	$65	$23	$88	$4,434
Funded Ratio	87.1%	-0.2%	0.0%	-0.2%	86.9%
Average Funding Period (Years)	18.2	0.1	0.0	0.1	18.3
Full Contribution Rates:					
Straight Average	8.97%	0.19%	-0.06%	0.13%	9.10%
Payroll Weighted Average	**13.58%**	**0.31%**	**-0.03%**	**0.28%**	**13.86%**
Normal Cost %	8.61%	0.25%	-0.15%	0.10%	8.71%
Prior Service %	4.97%	0.06%	0.12%	0.18%	5.15%

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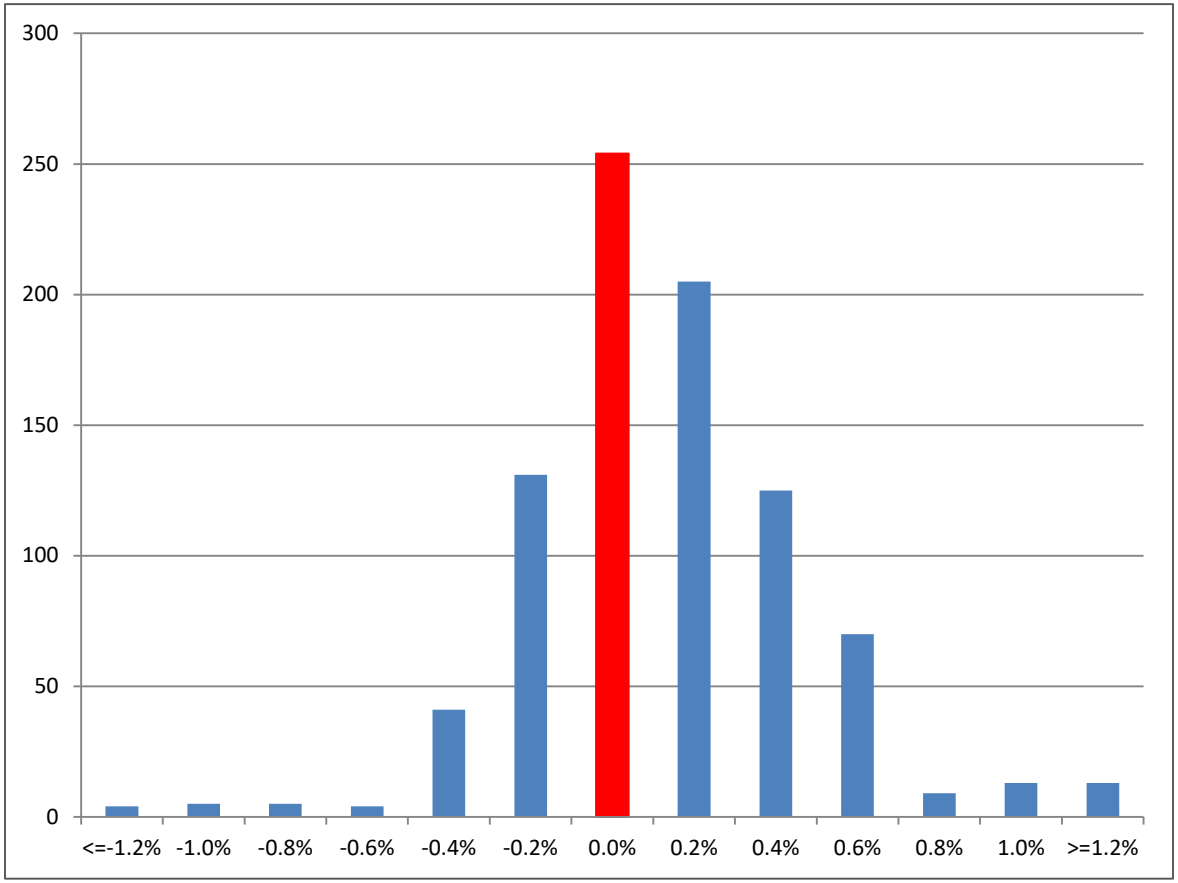
Distribution of Changes: By City
Total Changes in Full Retirement Rate



Nearest 0.2% change in rate

88% of Cities have a rate increase less than 0.50%

98% of Cities have a rate increase less than 1.00%

Most Cities >1.00%:
- Are overfunded and impacted by the change in surplus policy, or
- Have unique turnover assumption that decreased
- Are very small

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Summary from ALM

			20 Year Contribution Dollars			20 Year Effective Contribution Rate			Probability of Contribution Increase Greater		Probability Less than 80% Funded		Prob, >100% Funded
	Expected Return	SD	Expected	Poor Outcome	Very Poor Outcome	Expected	Poor Outcome	Very Poor Outcome	0.50%	1.00%	In 2050 (MVA)	Anytime before 2040 (AVA)	Anytime before 2040 (AVA)
Current Portfolio 25 Layered	6.3%	10.7%	$ 18.3	$ 25.2	$ 33.4	16.4%	21.3%	27.4%	19.3%	7.0%	30.8%	33.6%	45.0%
Alt 3 Portfolio 25 Layered	6.4%	10.6%	$ 17.6	$ 24.4	$ 32.8	15.9%	20.7%	26.9%	18.5%	6.6%	28.1%	31.1%	47.4%
Alt 3 Portfolio 20 Layered	6.4%	10.6%	$ 17.6	$ 24.2	$ 32.4	15.9%	20.6%	26.7%	22.2%	8.5%	23.1%	27.0%	48.9%

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Summary

- Full Listing of Recommendations in Experience Study Report
  - Includes Detailed information and Rationale for each assumption
- Approved assumptions to be used in the December 31, 2019 valuation
- Changes to Amortization Periods will take effect for new bases created after the 2019 valuation and benefit changes effective January 1, 2021

Disclaimers

- This presentation is intended to be used in conjunction with the 2019 Actuarial Experience Study. This presentation should not be relied on for any purpose other than the purpose described in the report.
- Readers are cautioned to examine original source materials and to consult with subject matter experts before making decisions related to the subject matter of this presentation.
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