## Executive Workshop Agenda

<table>
<thead>
<tr>
<th>Time</th>
<th>Presentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:30</td>
<td>Breakfast</td>
</tr>
<tr>
<td>10:00</td>
<td>Welcome and Introductions</td>
</tr>
<tr>
<td>10:15</td>
<td>2019 Update on TMRS</td>
</tr>
<tr>
<td>10:30</td>
<td>Legislative Update</td>
</tr>
<tr>
<td>10:45</td>
<td>Actuarial Update</td>
</tr>
<tr>
<td>11:00</td>
<td>Investments Update</td>
</tr>
<tr>
<td>11:45</td>
<td>Questions/Summary</td>
</tr>
<tr>
<td>12:00</td>
<td>Lunch</td>
</tr>
</tbody>
</table>

TMRS EXECUTIVE WORKSHOP

www.tmrs.com/workshop.php
TMRS Overview
Legislative Update
Actuarial Update

Anthony Mills, Senior Regional Manager
Dan Wattles, Governmental Relations Director
Leslee Hardy, Actuarial Services Director

www.tmrs.com/workshop.php
TMRS Overview
TMRS History & Membership

• 887 cities participate in TMRS (not Houston, Dallas, Ft. Worth, Austin, El Paso, or Galveston).

• TMRS has approximately 112,000 contributing members and 66,000 retirees and beneficiaries.

• Governed by 6-member Board appointed by Governor with Senate approval.

• The Board selects an Executive Director to oversee all operations of the organization.
Each city chooses its own benefit design

Each city pays an actuarially determined contribution rate

Cities can control the contribution rate by modifying the benefit design
System Soundness = City Choices

SYSTEM
• TMRS’ System funded ratio is 87.1% and System-wide UAAL is $4.35 billion (as of 12/31/18)
• All city plans are funded over a closed period of no more than 25 or 30 years

CITY
• Contribution rates* vary depending on benefits (e.g., 2.63% for cities with 5% / 1:1 match with no USC/COLA, vs. 15.51% for cities with a 7% / 2:1 match and repeating USC/COLAs)
• Weighted average contribution rate for all cities for [2019 is 13.09%]

*Average rates weighted by payroll
Transparency

• Transparency best practices
  • Resource page for cities for earning the Texas State Comptroller’s Transparency Star for Pensions
• Recognized in 2017 by the Center for State and Local Government Excellence as one of five systems nationwide that have developed effective approaches to pension reporting, communication, and transparency.
• All public presentations to Board posted on website immediately after each meeting
Data Security

- MyTMRS is undergoing major security enhancements prior to rollout of direct deposit and retirement applications
- Multi Factor Authentication is coming soon for the City Portal
- Please report any suspected hacking or data theft your city experiences to TMRS
Customer Service Initiatives

• Increased communications, redesigned [www.tmrs.com](http://www.tmrs.com)
  • Expanded topic flyers, Facebook, online videos
  • My City Plan on website, e-subscription management
• Online capabilities in MyTMRS®
  • Beneficiary changes (in most cases)
  • Withholding changes
  • Communications preferences (allows member to opt out of receiving printed publications by mail)
• You may be interested in
  • GASB 75 Resource webpage (affects cities that offer Supplemental Death Benefits)
  • Funding video
Events for Cities

- TMRS’ Annual Seminar November 3-5, 2019 at the JW Marriott San Antonio Hill Country Resort & Spa
- Executive Workshops
- Regional Conferences for members
- Mid-career employee meetings at city request
- City Correspondent Certification Courses
TMRS Governance

• TMRS is subject to the oversight of the State Pension Review Board (PRB) as well as Legislative Committees and meets all PRB requirements for funding and reporting

• TMRS consultants, such as our actuaries, meet or exceed all the standards for their respective professions

• The main state law governing TMRS is the TMRS Act
Legislative Update
Legislative Update

After much herding of cats, we passed a bill this year!

Preparing for Legislative Session

Results of Legislative Session
Preparing for the 86th Session

TMRS preparation for the 86th Session:

• Performed internal review of governing statutes
• Developed a prioritized inventory of suggested changes
• TMRS Board presented with 19 priority suggestions; finally narrowed to nine
• TMRS Board assigned benefit design topics to Advisory Committee on Benefit Design; held meetings and received input
• Board decided not to seek benefit changes; but decided to pursue operational and administrative changes
• Obtained bill sponsors; TMRS bills filed (SB 1337 / HB 2821)
Results of the 86th Session

• TMRS Bill
  • SB 1337 passed (without resource testimony) and signed into law on June 16th
  • Effective January 1, 2020

• Other pension-related measures that passed:
  • SB 2224 (all public retirement systems required to adopt a funding policy)
  • SB 322 (independent analysis of assets and provide performance report)

• Teacher Retirement System
  • SB 12: TRS Reform Bill provides for gradual contribution increases from the state and active employees (from 6.8% to 8.25% by each) and schools (2%) by 2025 / also provides a one-time payment to members
  • State contributions to system total $1.1 billion for biennium
  • Public Education provided $6.5 billion to improve public education and pay teachers
  • $5.1 billion to lower property taxes
Results of the 86th Session

Summary of SB 1337: *(Specifcics provided in handout)*

- Benefit–Related Changes
  - Updated Service Credit
  - Buy-Backs
  - Excluded Prior Service Credit
  - Occupational Disability
Results of the 86th Session

Summary of SB 1337: *(Specifics provided in handout)*

- Operational / Administrative Proposals
  - Amortization Periods
  - Board Meetings
  - Immunity and Liability Protection
  - Legal Advisory
  - Protection of Confidential Information / Audit Working Papers
  - Investment of Assets / Definition of Security
  - Authority for TMRS to distribute certain information electronically
Preparing for the 87th Session

- Review remaining statutory suggestions
- Prioritize and make recommendations to TMRS Board
- Board will determine what topics to study and whether to pursue additional legislative changes
- If necessary, obtain input from the Advisory Committee on Benefit Design
- Brief Board members / constituencies as we go along
- Preliminary decision by February; Final Decision by September
- Legislative session begins January 12, 2021
Actuarial Update
2019 Experience Study Results

• An Experience Study is a review of the assumptions and methods used by the actuary
• TMRS Act requires one every five years, but the Board Policy is to perform one every four years
• This report tries to answer these questions for each assumption
  • What was TMRS’ actual experience?
  • How does that compare with current assumptions?
  • Is a change warranted?
Experience Study

• Assumptions are not static and should be updated to reflect economic conditions, member behavior, retirement/termination/salary patterns, and mortality
• Based on results of the study, the Actuary recommends revised assumptions to the TMRS Board of Trustees, and the Board considers the Actuary’s recommendation and makes the final decision for the System
• The individual assumptions as well as the overall assumption set should be reasonable
• Keeping assumptions up-to-date will minimize gains and losses and manage volatility of the contribution rates for TMRS cities
Summary of Contribution Impact

- In general, this is a rather uneventful experience study
- The change to the USC assumptions makes up a majority of the impact
- Other recommendations are mainly offsetting

<table>
<thead>
<tr>
<th></th>
<th>Dec 31, 2018 Valuation</th>
<th>Change from USC Load</th>
<th>Change from All Other Sources</th>
<th>Net Change (2) + (3)</th>
<th>Net Illustrated Results New Assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Full Contribution Rates:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Straight Average</td>
<td>8.97%</td>
<td>0.19%</td>
<td>-0.06%</td>
<td>0.13%</td>
<td>9.10%</td>
</tr>
<tr>
<td>Payroll Weighted Average</td>
<td>13.58%</td>
<td>0.31%</td>
<td>-0.03%</td>
<td>0.28%</td>
<td>13.86%</td>
</tr>
</tbody>
</table>
Effect of Experience Study

Based on the December 31, 2018 Valuation

• Most cities (98%) will see less than 1.00% increase in contribution rates resulting from the Experience Study assumption changes
• 88% of cities will have a rate increase less than 0.50%
• Most cities that have a rate increase over 1.00%
  • Are Overfunded and impacted by the change in surplus policy
  • Have a unique turnover assumption that decreased
  • Are very small
The Investment Return Assumption

• Actuaries use a “building block” approach
  
  Long Term annual Investment Return Rate = Inflation Rate + Annual Real Rate of Return

• TMRS’ long-term rate of return assumption is 6.75%
  
  2.50% Inflation + 4.25% Real Return

• GRS examined the this assumption thoroughly in the 2019 Asset Liability, Asset Allocation, and Experience Studies and found the current 6.75% assumption to be reasonable

• No recommended change
Updated Service Credit (USC)

- This is a unique benefit provision
- Attempts to overlay a final pay adjustment for promotions and changes in benefit provisions into a cash balance benefit design
- Different from a final pay design in that once a USC has been granted, it will grow at 5% from that point on and can never grow slower during years of low pay increases
- Since we began projecting USC calculations in the valuation, we have seen consistent losses associated with this provision
Updated Service Credit (cont.)

• If not recognized, this is a bias
  – Within a city, the net gains are not large enough to offset net losses
• Recommending the addition of a load into the USC calculation equal to 0.1% per year into the future that the calculation is occurring
• Increase in liabilities and costs for cities with this provision (0.31% rate increase on average)
• We will monitor this provision to access whether a larger load is necessary
Post-Retirement Mortality

- Last study in 2013 for data through 2011 (adopted generational mortality)
- TMRS has enough experience to provide full credibility to an analysis based on our own experience
- Created a custom table called the 2019 Municipal Retirees of Texas Mortality Table
- Change improvement assumption to “Scale UMP” to project future improvement mortality (approximately 1% per year). Current assumption is approximately 1.5% per year
- No recommended change to Annuity Purchase Rate factors
- Results in a slight decrease in liabilities and costs
Payroll Growth Assumption

• The UAAL is amortized based on annuity factors that use a payroll growth assumption (currently 3.0% maximum)

• Adjustments are made for cities with declining populations

• Due to the new property tax limit and with half of the TMRS active population being eligible to retire in the next 10 years, having a more conservative assumption may be prudent and will decrease pressure of increasing rates over time

• Recommend lowering to 2.75%

• Results in a slight increase in the prior service rate
Amortization Policy

• Beginning with actuarial losses occurring in the 2020 valuation and benefit increases effective January 1, 2021 and after, lower the amortization period from 25 years to 20 years
• Change the amortization strategy for overfunded cities from a 25 year open amortization to one that keeps the current overfunded status in place. Current policy pushes overfunded status back to 100%
• Reduce the amortization period for ad hoc benefit enhancements from 15 years to 12 years
• All result in an increase in the prior service rate
Supplemental Death Benefit Plan

- Funded on a term cost (pay-as-you-go) basis
  - Contributions towards actives is 100% of premiums
  - Contributions towards retirees is 33% of premiums ($2,500 of $7,500) to pay down balance in the Fund
- The fund balance is declining quite rapidly
  - Approximately a decade left based on current trends
- Also, the new accounting rules make it harder to apply the credit to the retiree premiums; would be cleaner if credit is applied to active premiums
Supplemental Death Benefit Plan Recommendations

• Recommend to fund term cost for retirees at 100% of premiums
  • Would increase average rate for retiree coverage by 0.08%
• Allow for a credit towards the active premiums equal to 2% of fund balance
  • Would decrease average rate for active coverage by 0.03%
• Net impact will be a 0.05% increase in SDB premiums (will vary by city)
# Recommendations

<table>
<thead>
<tr>
<th>Material Impact</th>
<th>Current Assumption</th>
<th>Proposed Assumption</th>
<th>Impact on Liabilities/Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Load for USC Asymmetry</td>
<td>None</td>
<td>0.10% per year</td>
<td>Increase ++ for those that have USC</td>
</tr>
<tr>
<td>Noticeable Impact</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surplus Credit for Overfunded Cities</td>
<td>Credit over 25 years</td>
<td>Credit over all future years</td>
<td>Increase + for those that are overfunded</td>
</tr>
<tr>
<td>Post-Retirement Mortality for Valuation Purposes</td>
<td>Age 65 Life Expectancy as of 2015: 17.9/20.8 Scale BB (1.5% Annual Improvement)</td>
<td>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</td>
<td>Decrease -</td>
</tr>
<tr>
<td>Rates of Termination (A/E Ratio)</td>
<td>&lt;10 YOS: 106%</td>
<td>101%</td>
<td>Decrease -</td>
</tr>
<tr>
<td></td>
<td>&gt;10 YOS: 110%</td>
<td>104%</td>
<td></td>
</tr>
</tbody>
</table>
## Recommendations (cont.)

<table>
<thead>
<tr>
<th>Minor Impact</th>
<th>Current Assumption</th>
<th>Proposed Assumption</th>
<th>Impact on Liabilities/Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent Selecting 50% Survivor Form of Payment</td>
<td>None</td>
<td>100%</td>
<td>Decrease</td>
</tr>
<tr>
<td>Individual Salary Scale Including Steps</td>
<td>4.78%</td>
<td>4.96%</td>
<td>Increase</td>
</tr>
<tr>
<td>Payroll Growth Rate (Amortization Growth)</td>
<td>3.00%</td>
<td>2.75%</td>
<td>Increase</td>
</tr>
<tr>
<td>Percentage taking Refund (A/E Ratio)</td>
<td>93%</td>
<td>96%</td>
<td>Increase</td>
</tr>
<tr>
<td>Supplemental Death Fund</td>
<td>100% term cost for Actives $2,500 for retirees</td>
<td>Give 2% of Fund as Credit on Actives $7,500 for Retirees</td>
<td>Increase</td>
</tr>
<tr>
<td>Population Decline</td>
<td>163 Impacted, avg 0.6%</td>
<td>202 Impacted, avg 0.5%</td>
<td>Net Increase</td>
</tr>
<tr>
<td>City Termination Load</td>
<td>As much as +/- 5%</td>
<td></td>
<td>Net Decrease</td>
</tr>
</tbody>
</table>
## Recommendations (cont.)

<table>
<thead>
<tr>
<th>No Impact</th>
<th>25 Years</th>
<th>20 Years</th>
<th>Volatility will slightly increase. Reduces downside on funded ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amortization Period for New Sources of UAAL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amortization Period for Ad Hoc COLAs</td>
<td>15 Years</td>
<td>12 Years</td>
<td>Will increase cost approx. 15%</td>
</tr>
<tr>
<td>Inflation</td>
<td>2.50%</td>
<td>2.50%</td>
<td>None</td>
</tr>
<tr>
<td>Nominal Investment Return</td>
<td>6.75%</td>
<td>6.75%</td>
<td>None</td>
</tr>
<tr>
<td>Long-Service Salary Scale</td>
<td>3.50%</td>
<td>3.50%</td>
<td>None</td>
</tr>
<tr>
<td>Patterns of Retirement</td>
<td>86%</td>
<td>92%</td>
<td>None</td>
</tr>
</tbody>
</table>
# Summary of System-wide Results

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

$ amounts in millions
TMRS Dashboard Rollout

• By the end of 2019, there will be a Dashboard available on our website reflecting valuation data beginning with calendar year 2010
• It will provide both historical data by city as well as a comparison with all other active TMRS cities (“Peer Comparison”)
Dashboard – Historical

Data As Of: 10/01/2019 10:03:40 AM

Available Dashboards:
- Historical
- Peer Comparison

Available Charts:
- Assets and Liabilities
  - Contribution Rates
  - Funded Ratio
  - Unfunded
  - Asset Values
  - Actuarial Accrued Liability
  - Actuarial Value of Assets
  - Participant Counts
  - Risk Metrics
  - Cash Flow

Accrued Liability and Assets

- Actuarial Accrued Liability: $45,268,777
- Actuarial Value of Assets: $37,475,973

TMRS
- Valuation Date: 12/31/2018
- Accrued Liability: $49,390,903
- Smoothed Assets: $41,206,230
- Active Annual Payroll: $11,624,611

Member Data Summary
- Number of Actives: 114
- Average Age: 27.46
- Average Service: 11.51
- Number of Inactives: 30
- Number of Annuitants: 35

Benefit Provisions
- COLA: 7%
- USC: 100%(T)
- ER Match: 2 : 1
- Vesting: 5 years
- Member Deposit Rate: 7%
- Retirement Eligibility: 20 years

City: TMRS

Employer Contribution Rates
- Phase in Minimum: 15.74%
- Full Rate: 15.74%
- Funded Ratio: 83.6%
- Based on Smoothed Assets: 83.6%
Dashboard – Peer Comparison

Data As Of: 10/01/2019 10:03:40 AM

Available Dashboards
- Historical
- Peer Comparison

Available Charts
- Funded Ratio: 83.6%
- Normal Cost: 11.17%
- Employer Contribution: 15.74%
- Unfunded / Payroll: 7.0%
- Amortization Period: 22 years
- COLA: 7.0%
- Updated Service Credits: 100%
- Employer Match: 2 : 1
- Vesting: 5 years
- Member Deposit Rate: 7%
- Retirement Eligibility: 20 years

TMRS Peer Comparison: Funded Ratio

- 85% of employees: 130

City: TMRS

Employer Contribution Rates
- Phase in Minimum: 15.74%
- Full Rate: 15.74%

Funded Ratio
- Based on Smoothed Assets: 83.6%

TMRS
- Valuation Date: 12/31/2018
- Accrued Liability: $49,569,903
- Smoothed Assets: $41,236,238
- Active Annual Payroll: $11,824,011

Member Data Summary
- Number of Actives: 114
- Average Age: 47.46
- Average Service: 11.51
- Number of Inactives: 30
- Number of Annuitants: 35

Benefit Provisions
- COLA: 7.0%
- USC: 100%(T)
- ER Match: 2 : 1
- Vesting: 5 years
- Member Deposit Rate: 7%
- Retirement Eligibility: 20 years
QUESTIONS?