

# AUSTIN WATER Water Loss and Mitigation Briefing

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# Water Loss and Mitigation Briefing

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**Overview:** Austin Water's water distribution system includes 3,965 miles of pipeline ranging in size from 2-inch diameter to 84-inch diameter pipes.

While all water systems experience water loss, Austin Water has a multi-pronged approach to increase accuracy of our measurements and reduce sources of water loss in our system.

- 💧 On-going participation in industry best practices and innovations
- 💧 Fast response to reported leaks
- 💧 Infrastructure renewal investments
- 💧 Proactive detection and prevention



# Agenda

- 💧 Measuring Water Loss
- 💧 Performance Indicators for Water Loss
- 💧 Austin Water Performance
- 💧 Production Meter Validation Project
- 💧 Strategies to Address Water Loss
- 💧 Summary and Questions



# Measuring Water Loss

💧 American Water Works Association methodology:

Plant Production Meter Volumes

— Known and Estimated Water Use  
(metered-billed, fire fighting, flushing, etc.)

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**Water Loss**



**American Water Works  
Association**

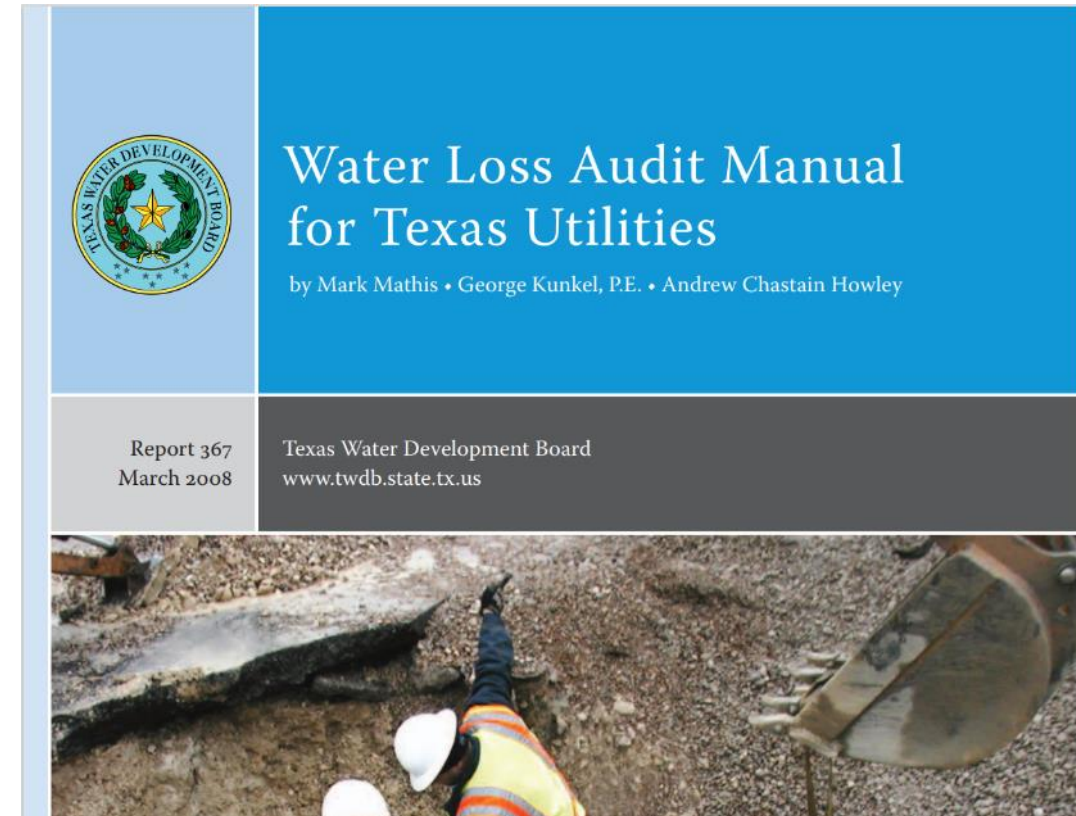
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**TOOLBOX**



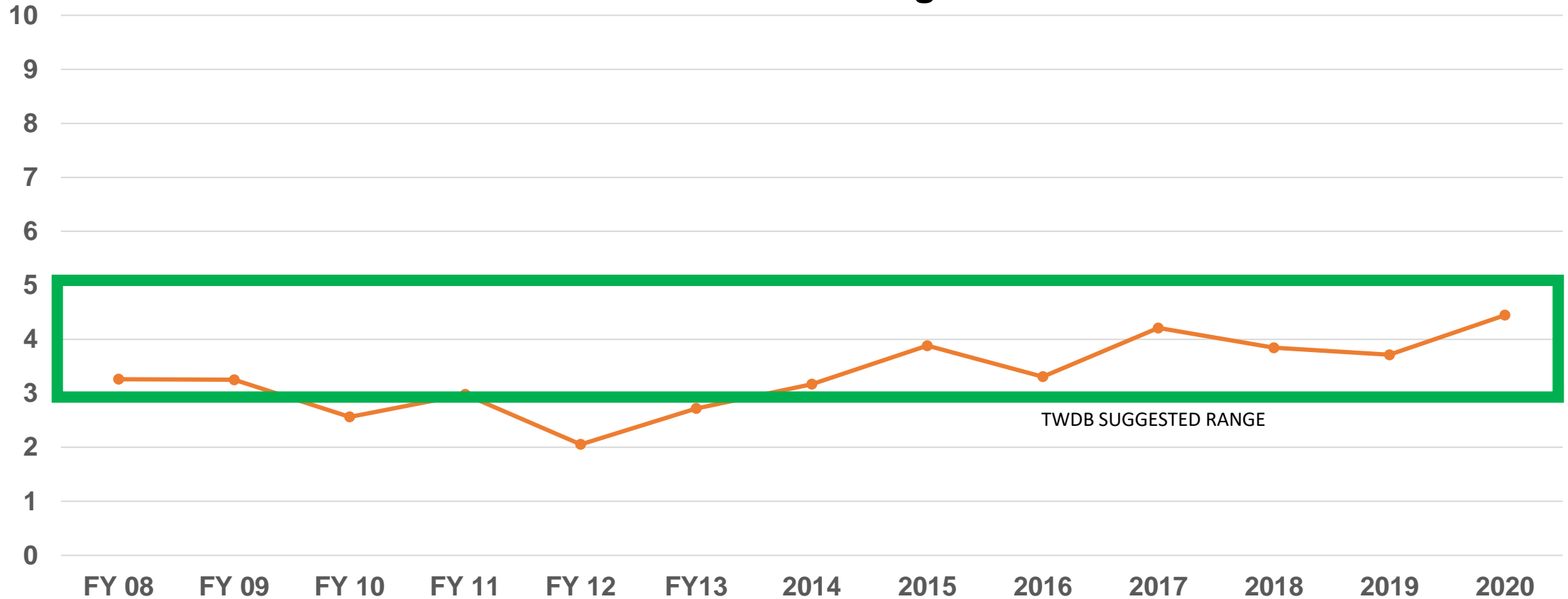
# Performance Indicators

- 💧 Infrastructure Leak Index (ILI)
- 💧 Real Water Losses/Unavoidable Real Loss
- 💧 Based on miles of main, system pressure, and number of connections
- 💧 Benchmarks:
  - 1.0 – Theoretical perfection
  - 2.0 – Excellent performance
  - 3.0-5.0 – Texas Water Development Board suggested range



# Austin Water's Performance

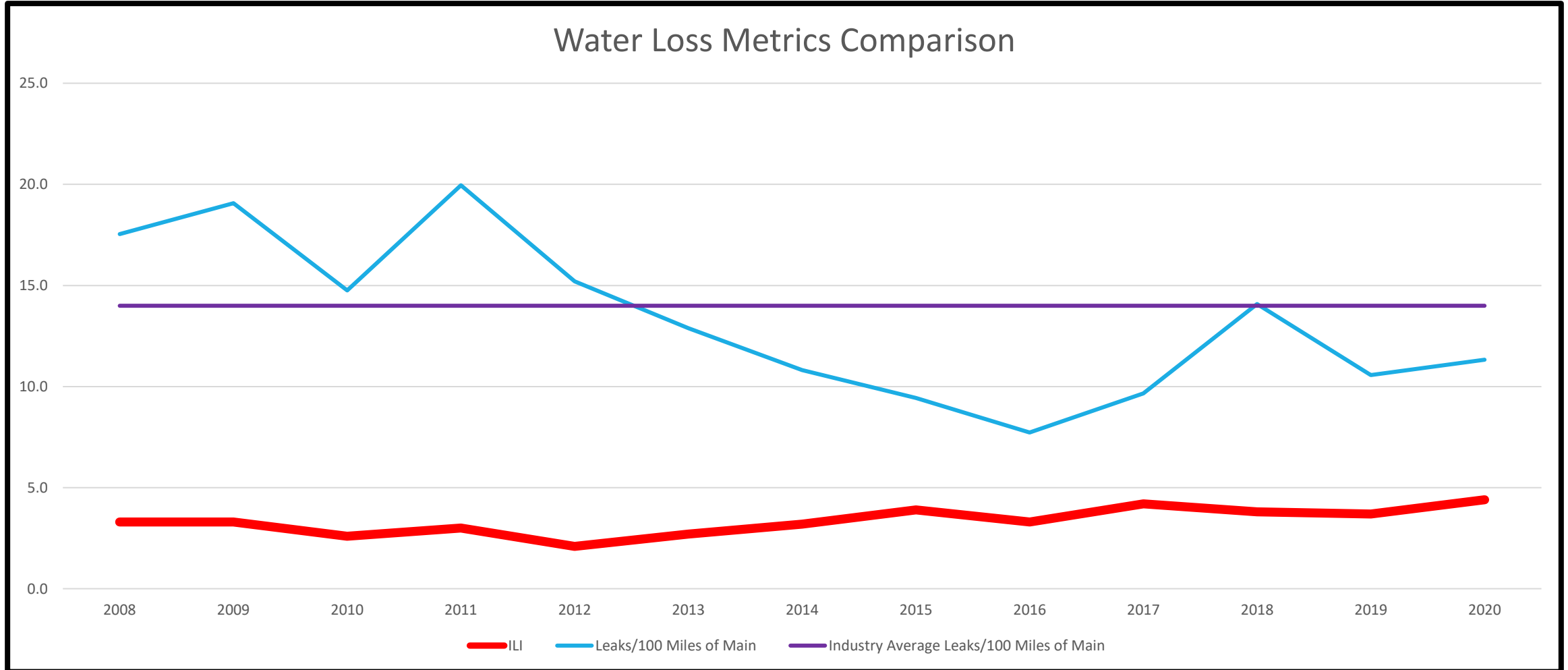
## Infrastructure Leakage Index



- ILI is within Texas Water Development Board's suggested range
- Total water loss is increasing



# Austin Water's Performance



💧 ***ILI is not tracking the same as our other metrics***



# Production Meter Validation Project

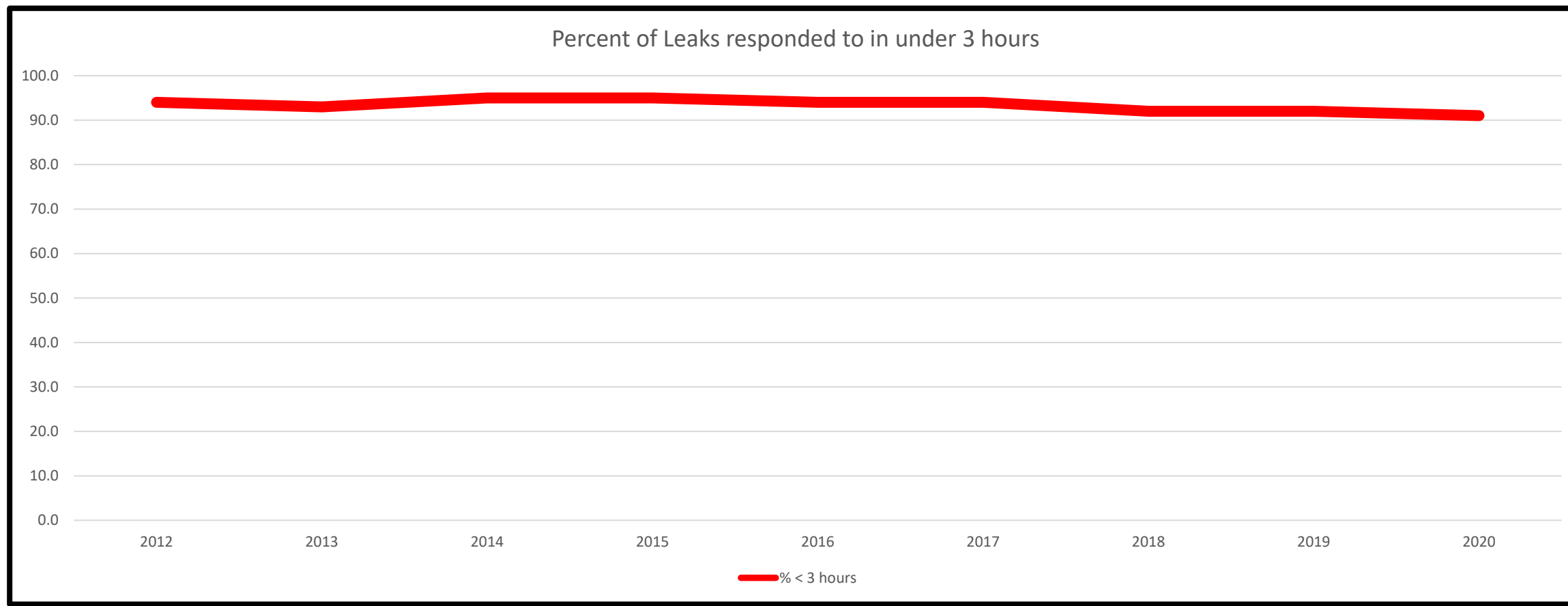
- 💧 **Consultant performed meter validation at all three plants (37 meters)**
- 💧 **Preliminary take-aways:**
  - Not all meters were calibrated correctly
  - Some plant meters have errors in excess of  $\pm 5\%$
  - Errors are variable
  - Impact on previous calculations are not clear
- 💧 **Action items:**
  - Refine calibration procedures
  - Make recommended corrections and improvements
  - Repeat validation process after improvements are completed





# Strategies to Address Water Loss

## Response to reported leaks



💧 **Crews respond to Priority 1 leaks within 3 hours about 90% of the time**



# Strategies to Address Water Loss Infrastructure Renewal

- 💧 Replacing, renewing, rehabilitating water pipelines
- 💧 Program focused on pipes most vulnerable to additional leaks
- 💧 Includes program to reduce the number of polybutylene services
- 💧 Incorporating seamless HDPE pipe into our system



# Strategies to Address Water Loss

## Advanced Meter Infrastructure

- 💧 My ATX Water – 240,000 meters to be replaced by 2025
- 💧 Enhanced leak detection on the customer side
- 💧 Potential for reducing losses through pressure sensors, leak sensors, and district metered areas





# Strategies to Address Water Loss

## Proactive Detection and Prevention

### 💧 Condition Assessments Conducted Annually:

- 500-700 miles of the system
- 10 miles of transmission main leak detection
- 5-10 miles of transmission main condition assessment

### 💧 Innovation and Partnerships:

- Emerging technologies research
- UT collaboration





# Proactive Detection and Prevention

## 💧 Potential catastrophic failures averted:

48" at Westgate/William Cannon



48" along MoPac at 2222



# Next steps:

- Complete action items from production meter validation project
- Continue current best practice water loss reduction strategies
- Engage a water loss expert consultant to review our programs



# Questions?

