

Water Loss Control

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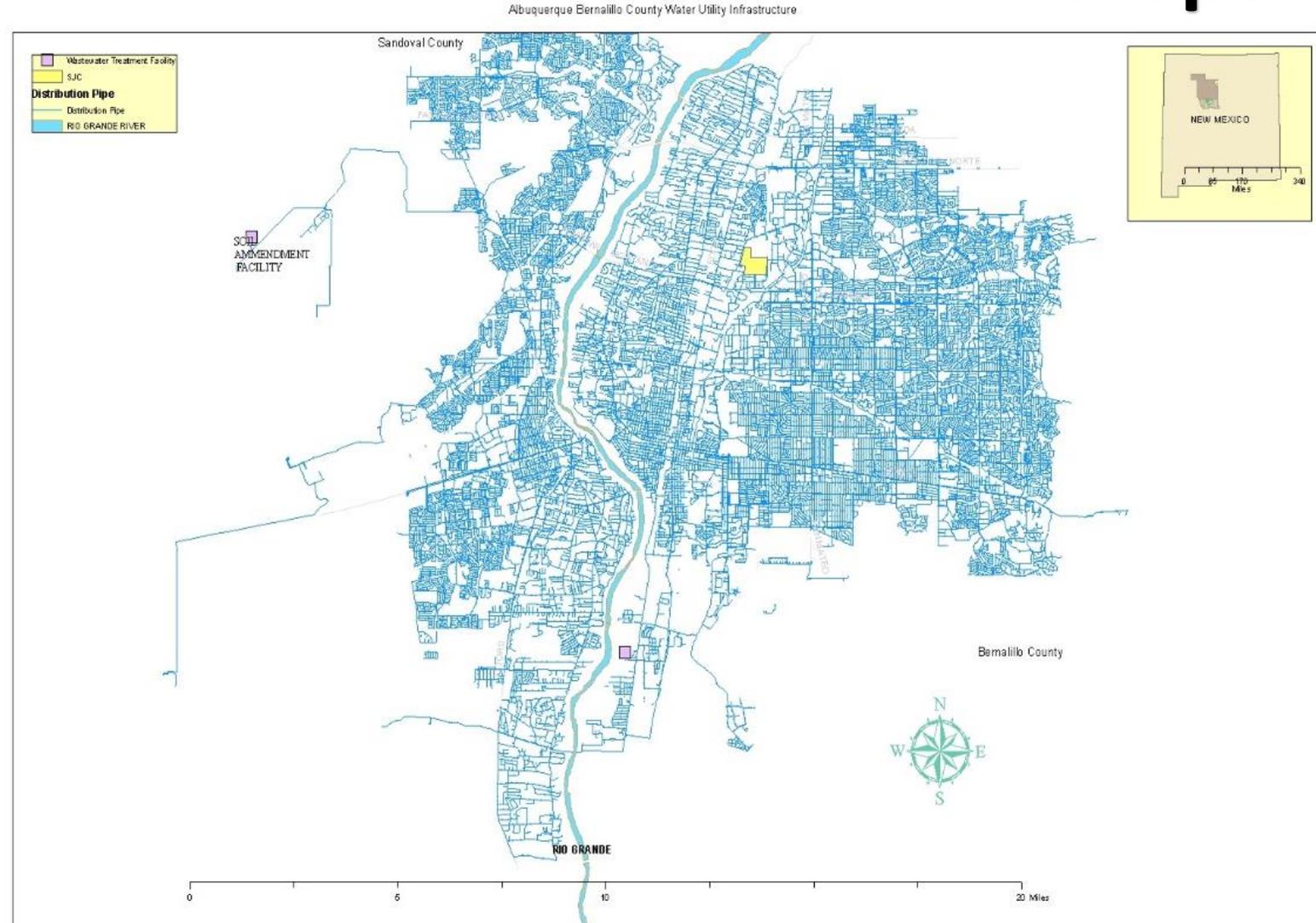
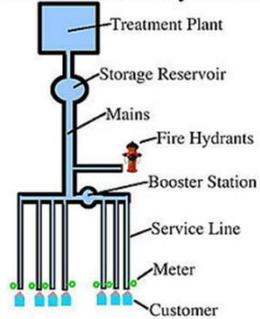
- 💧 State and regional reporting programs aim to evaluate water loss, encourage utilities to proactively pursue water loss control, and allocate financial and educational resources to mitigating water loss.
- 💧 The Office of the State Engineer requires New Mexico drinking water suppliers to assess real water leakage, lost revenue, and conservation potential. The methodology utilized is based on the American Water Works Association, Water Loss Control Committee recommendations and software.
- 💧 As we ask our customers to conserve water, it is important that we set a good example and lead the way in making our water delivery system as efficient as possible.



Scope

- Source Water: Surface water, GW wells
- 3387 miles of Distribution Pipe, 60 storage reservoir tanks, 46,017 valves, 18,563 hydrants
- In excess of 212,000 customer accounts

Distribution System:



Methodology

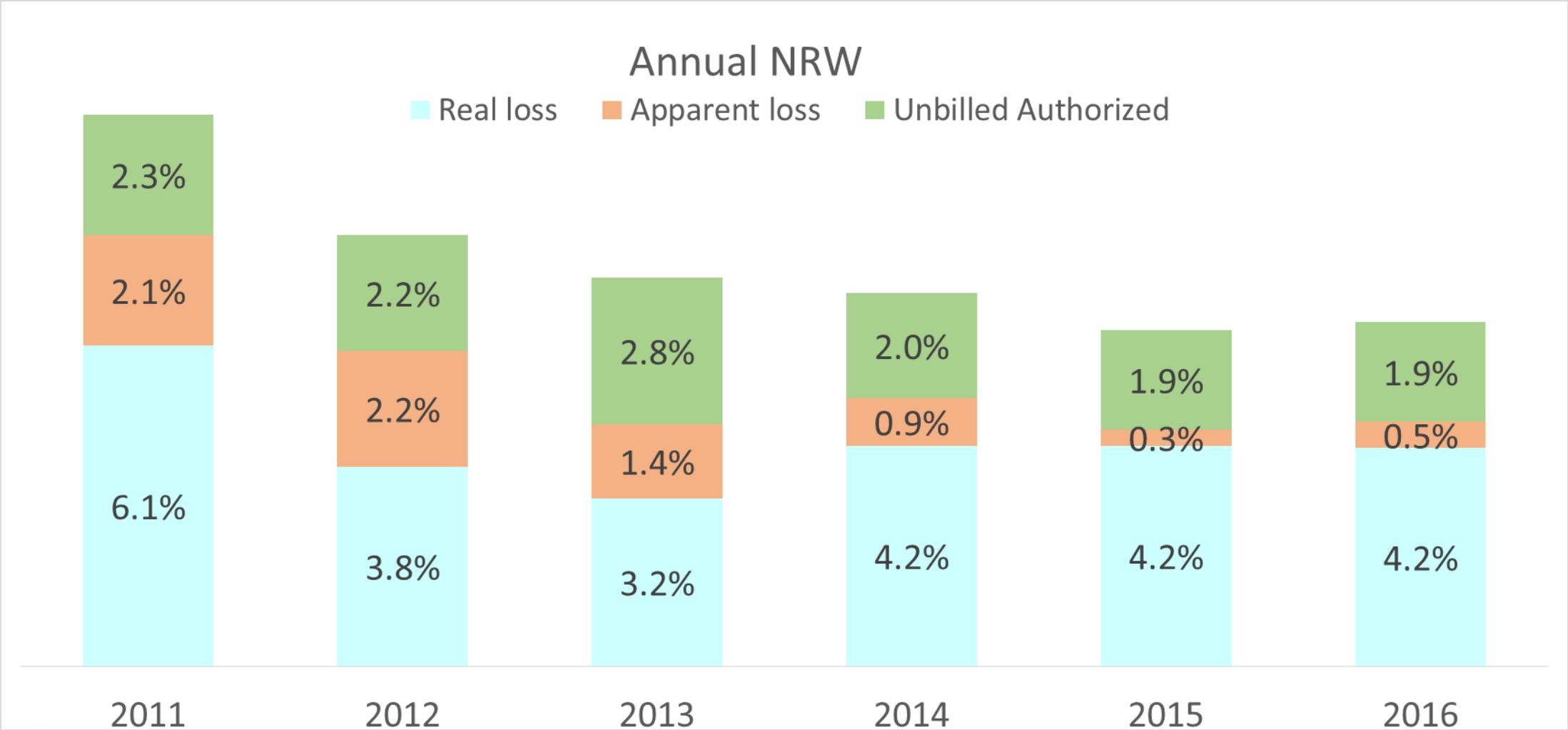
Water Loss Accounting: Standard Water Balance

Volume from Own Sources (corrected for known errors)	System Input Volume	Water Exported (corrected for known errors)	Billed Water Exported				Revenue Water
		Water Supplied	Authorized Consumption	Billed Authorized Consumption	Billed Metered Consumption		Non-Revenue Water (NRW)
Unbilled Authorized Consumption	Billed Unmetered Consumption						
Water Losses	Apparent Losses		Unbilled Metered Consumption				
			Unbilled Unmetered Consumption				
Water Imported (corrected for known errors)	Water Losses	Real Losses	Unauthorized Consumption				
			Customer Metering Inaccuracies				
			Systematic Data Handling Errors				
			Leakage on Transmission and Distribution Mains				
			Leakage and Overflows at Utility's Storage Tanks				
			Leakage on Service Connections up to the point of Customer Metering				

Source: AWWA 2016.

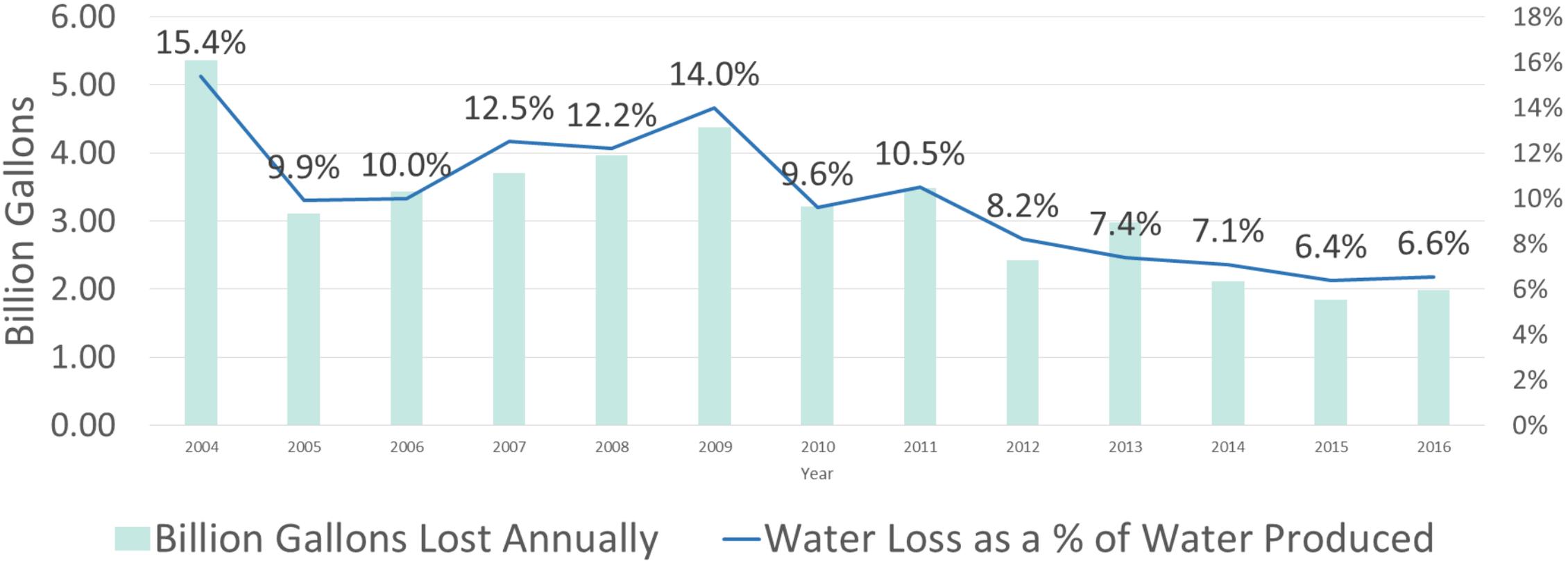
2010-The Water Authority began using the AWWA Standardized water Audit software and participating in the Water Audit Data Initiative data validation process

Non-Revenue Water Trends



Annual Water Loss Reduction

Annual Water Loss



Data Initiative NRW Comparison

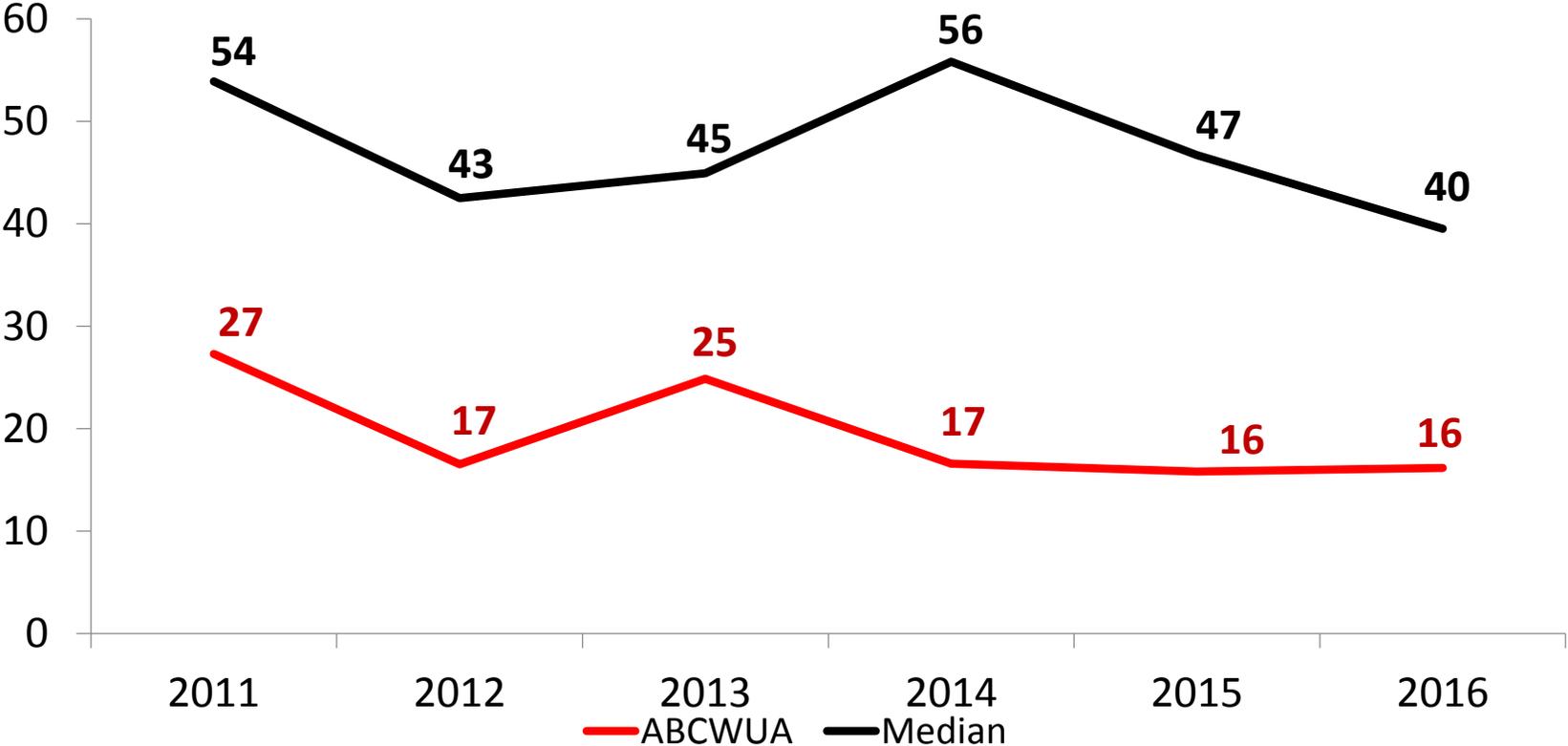
Key Performance Indicator	# Utilities	Average	Range	ABCWUA
NRW as a % by volume	21	22.60%	6.8% - 45.5%	6.60%
NRW Total Cost (Million Dollars)	21	\$5.81	\$.04 - \$42.97	\$1.24
Water Audit Validity Score	21	74.97%	52.28% - 89.72%	87%

AWWA Data Initiative Data Ranges

2016 Water
Authority Audit
Results

System Leakage Loss

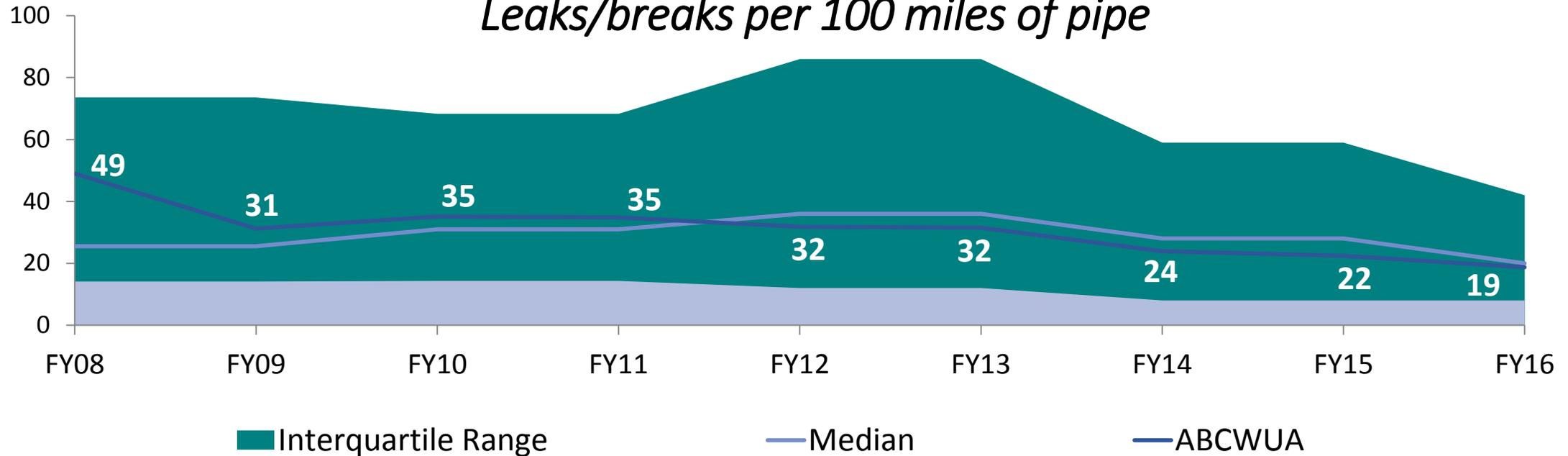
*System Leakage Losses per service connection per day
(gallons/connection/day)*



Lower Values Desirable

Operational Success Measures

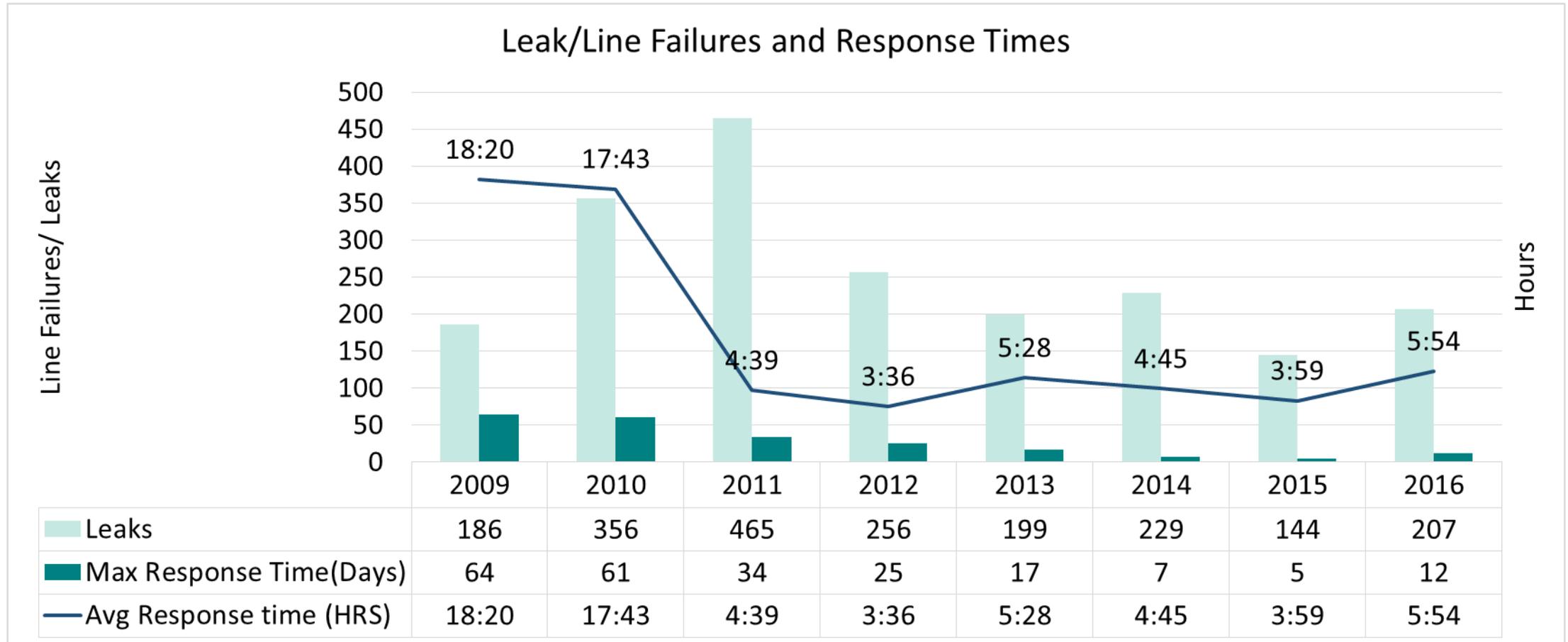
Water Line Integrity *Leaks/breaks per 100 miles of pipe*



Lower Values Desirable

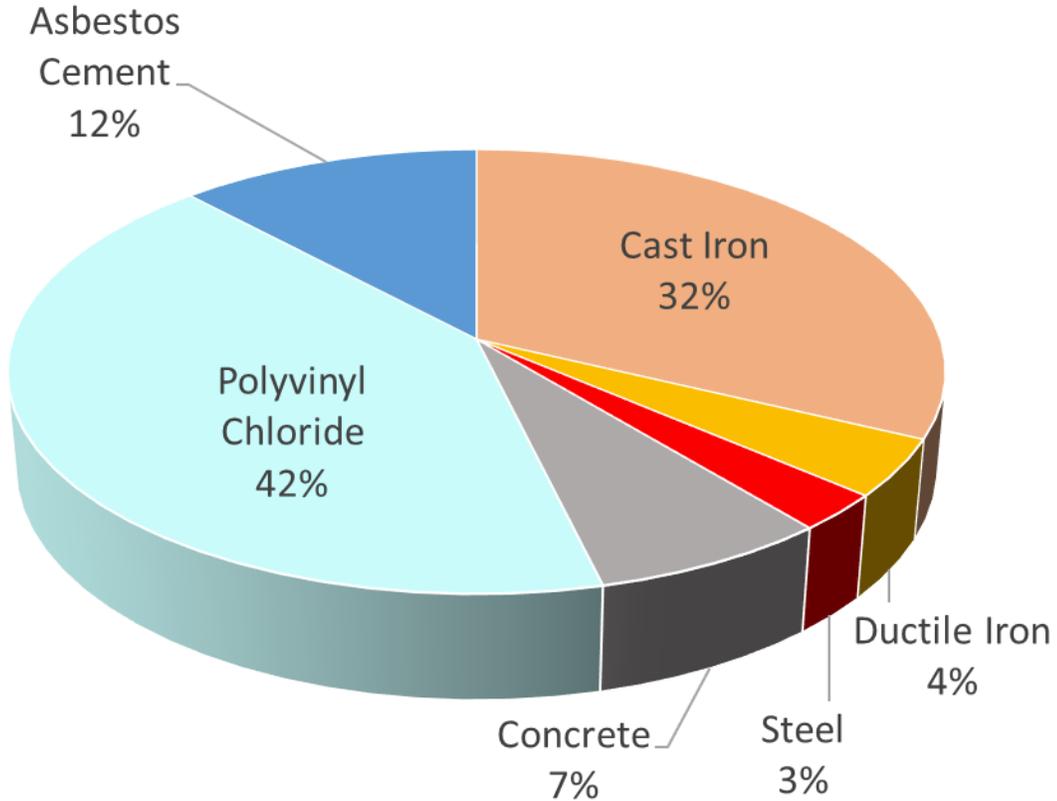
WRF-4109 Distribution Optimization Criteria describes an optimized distribution system as having 15 breaks/100 miles

Workforce Success Measures

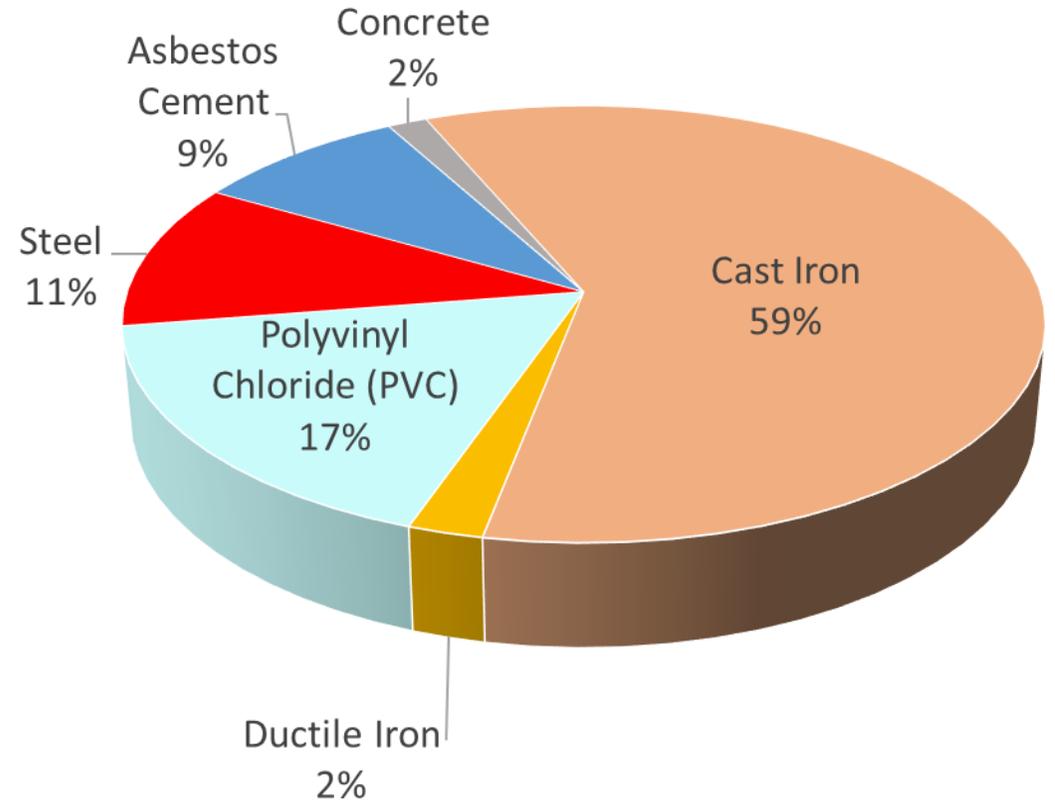


Pipeline Rehabilitation and Replacement

Potable Pipe Inventory



Pipe Failures by Pipe Material



Conclusions

- ▶ Water Loss Control has reduced water loss by 3.38 billion gallons/year since 2004
- ▶ Water Audit Data validity has increased from 74% to 87% since 2010
- ▶ Field crews have reduced response times to line failures by 30% since 2009