



The Safety of Our System

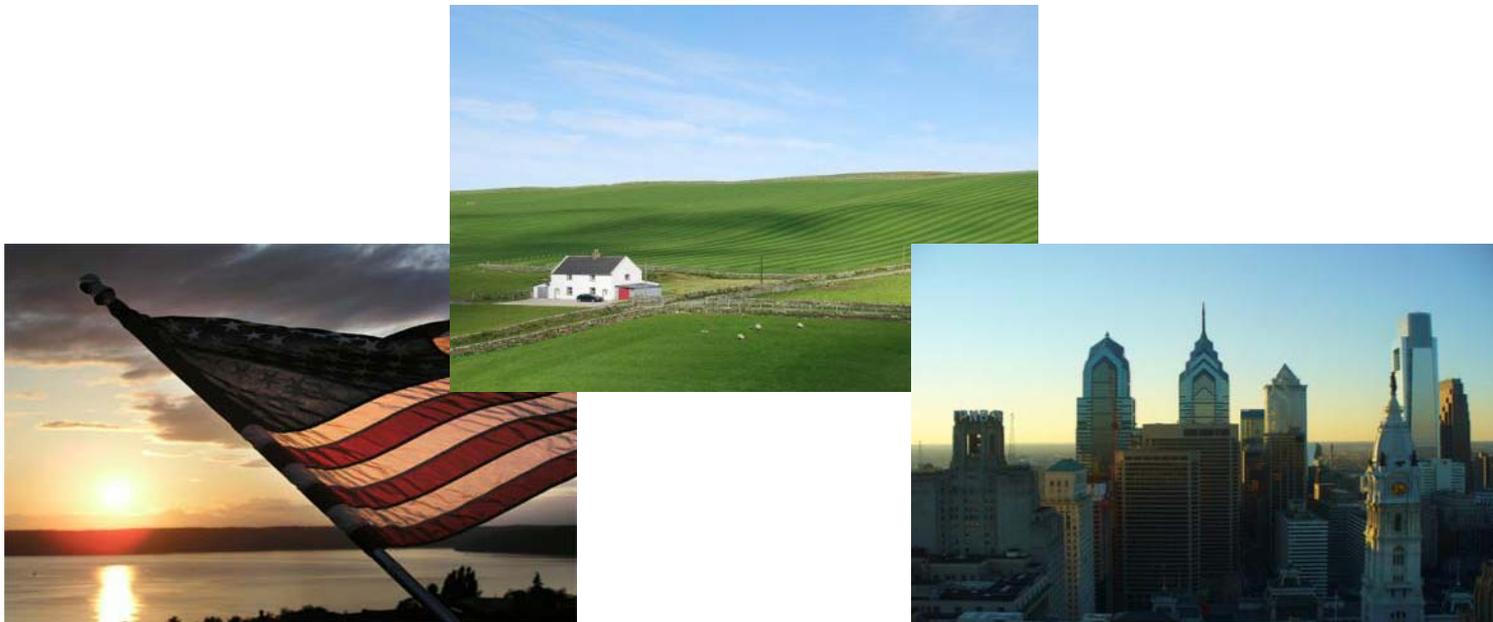
Rich Worsinger
Director of Utilities
City of Rocky Mount, NC

April 18 2011
Charles Dippo
AGA Operating Section Chairman
Vice President, South Jersey Gas



Focus on Safety

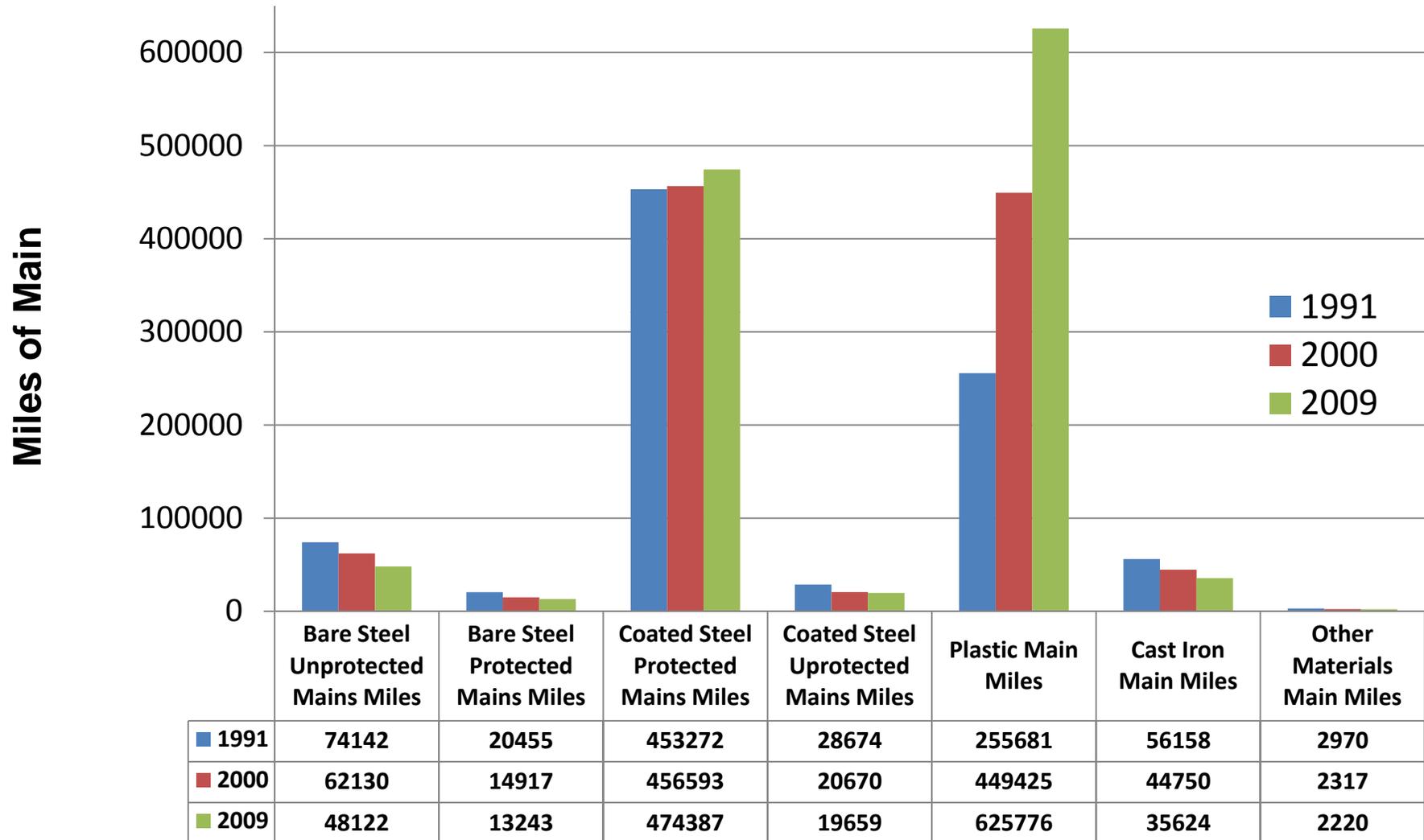
- From coast to coast, the American Public Gas Association and American Gas Association collectively represent natural gas utility operators dedicated to the safe delivery of natural gas.
- Each state is different; diversity in terrain; variable climates. The one constant from coastal town, to rural farm, to the metropolis remains our narrow focus on keeping Americans safe.
- Customers can depend on the safe and reliable delivery of natural gas.



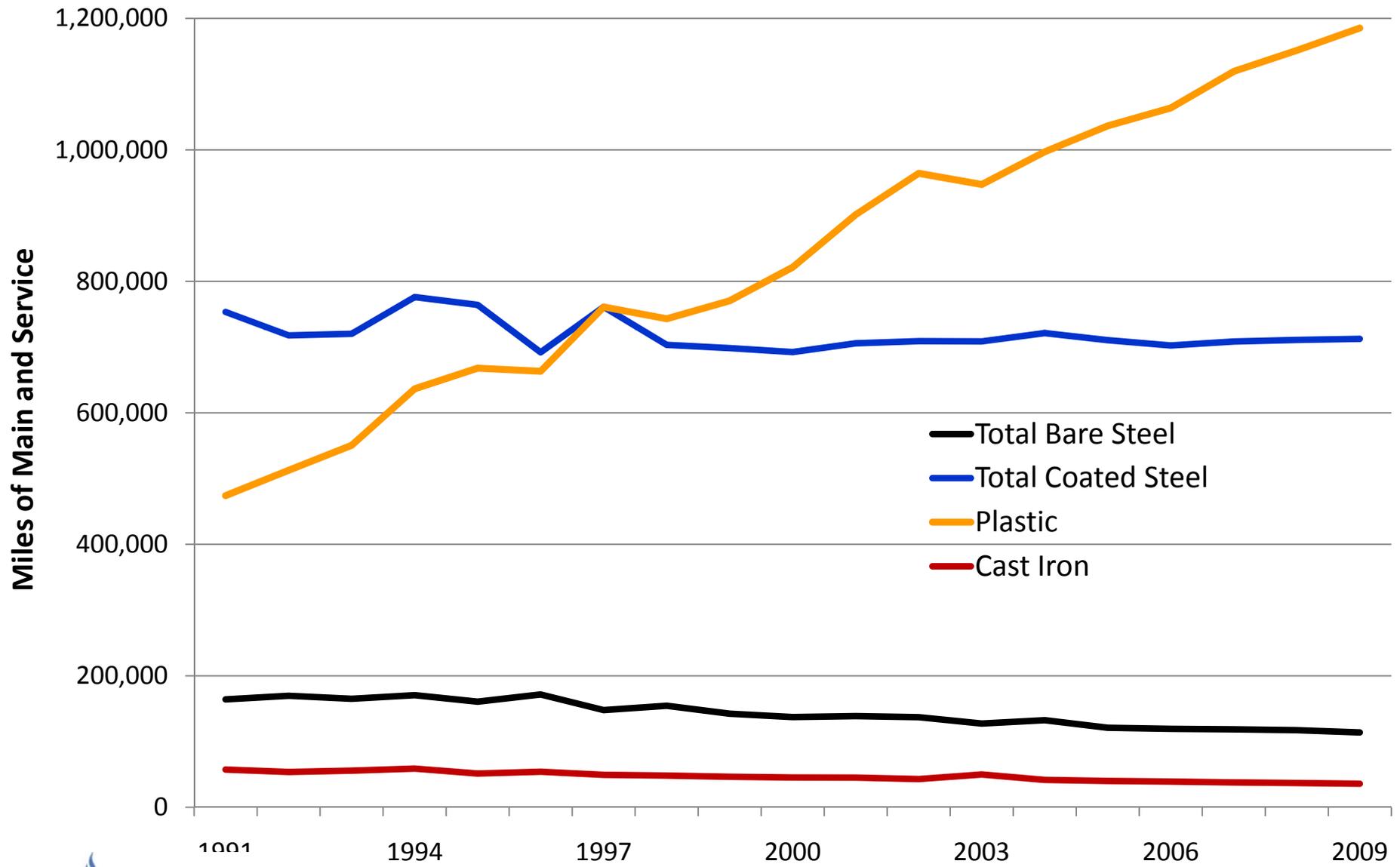
Diversity of Distribution Systems

- 2.1 million miles, 65.5 million services
- Materials: Plastic, PE, Steel, CI, copper, other
- Age: Brand new to greater than 60 years
- Pipe Size: ½” to greater than 12”
- Territory: Metro; suburban; rural; mixed
- Pipe pressures (0.25 psi) to greater than 400 psi
- Customers: Few dozen to few million
- Rate mechanisms: Traditional, market-based, municipal (subsidies to and from cities)

Diverse System: Miles of Main by Material



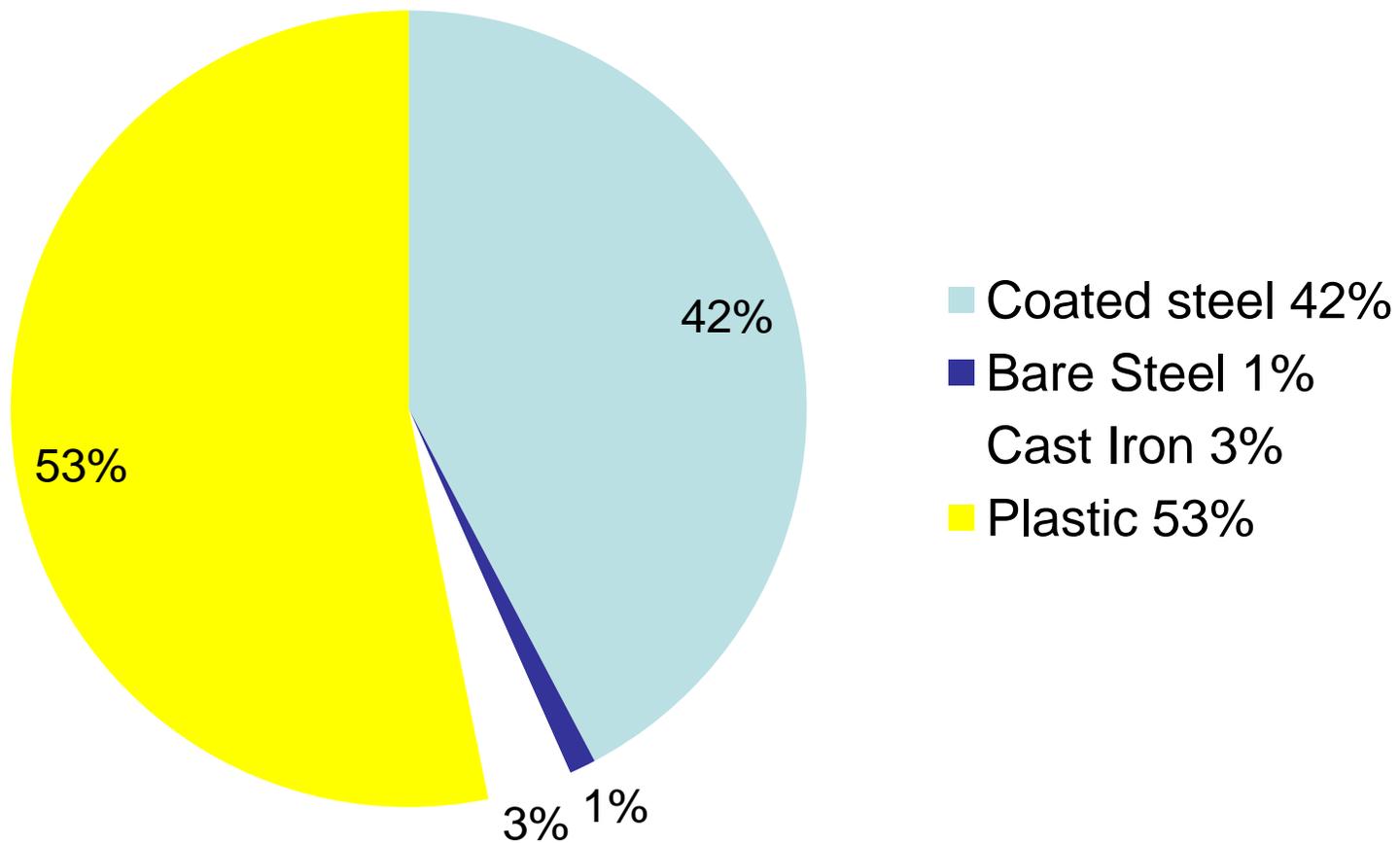
Change in Materials: 1991 - 2009



Public Gas Utilities

- Gas distribution systems owned and operated by local governments
- ~ 1,000 public gas utilities nationwide, serving ~5 million consumers
- Over 700 utilities in 36 states are APGA members

Public Gas System Piping, 2010



Source: PHMSA Distribution Annual Reports for 12/31/2009

Pipe Material Attributes

- Cast Iron -Very corrosion resistant, but smaller diameters may break under bending forces
- Steel - Stronger and tolerant of bending, but in some soils can corrode if no corrosion controls are used (e.g. coating and cathodic protection)
- Plastic - Doesn't corrode and withstands bending, except for certain types of plastic (PVC, ABS and certain vintages of PE) that can crack under bending stress.

Risk Is Utility Specific

- Not all cast iron is high risk – unless subjected to bending stresses (earth movement, subsidence, etc.)
- Not all bare steel is corroding – Not all soils are corrosive
- PHMSA and industry collaborated to inform utilities about certain types of plastic pipe subject to brittle cracking

Risk Ranking Program

- PHMSA and APGA's Security and Integrity Foundation collaborated to develop a risk analysis program that considers much more than just pipe material and age
 - Inspection records
 - Maintenance history
 - Experience with similar pipe
 - Operating environment

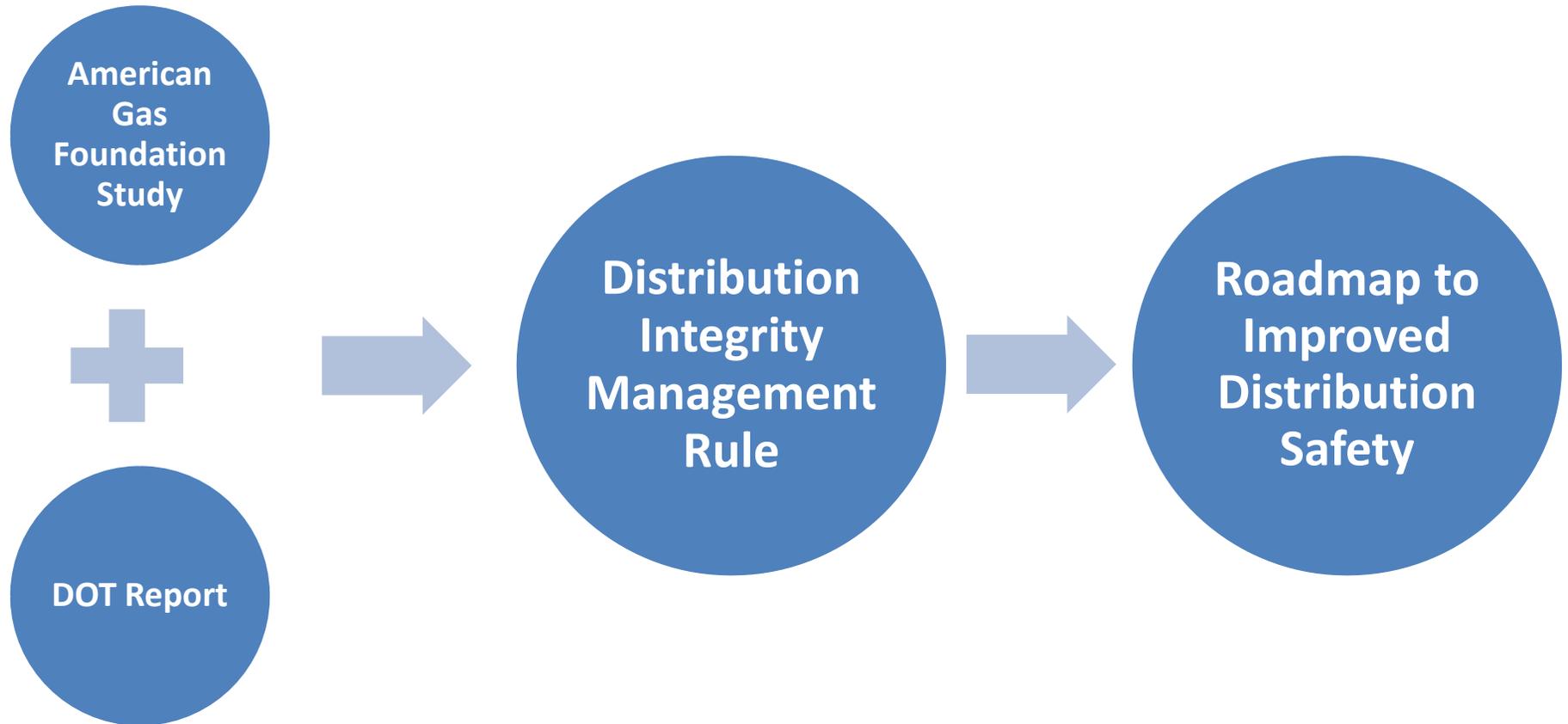
Investor Owned Utilities

- AGA members have 64 million customers, 1.7 million miles
- 16 members exceed 1 million customers
- 23 members exceed 20,000 miles piping
- Similar material and age as public utilities, but vastly larger operating scope
- Diverse rate mechanisms

Expectation is Safe Delivery



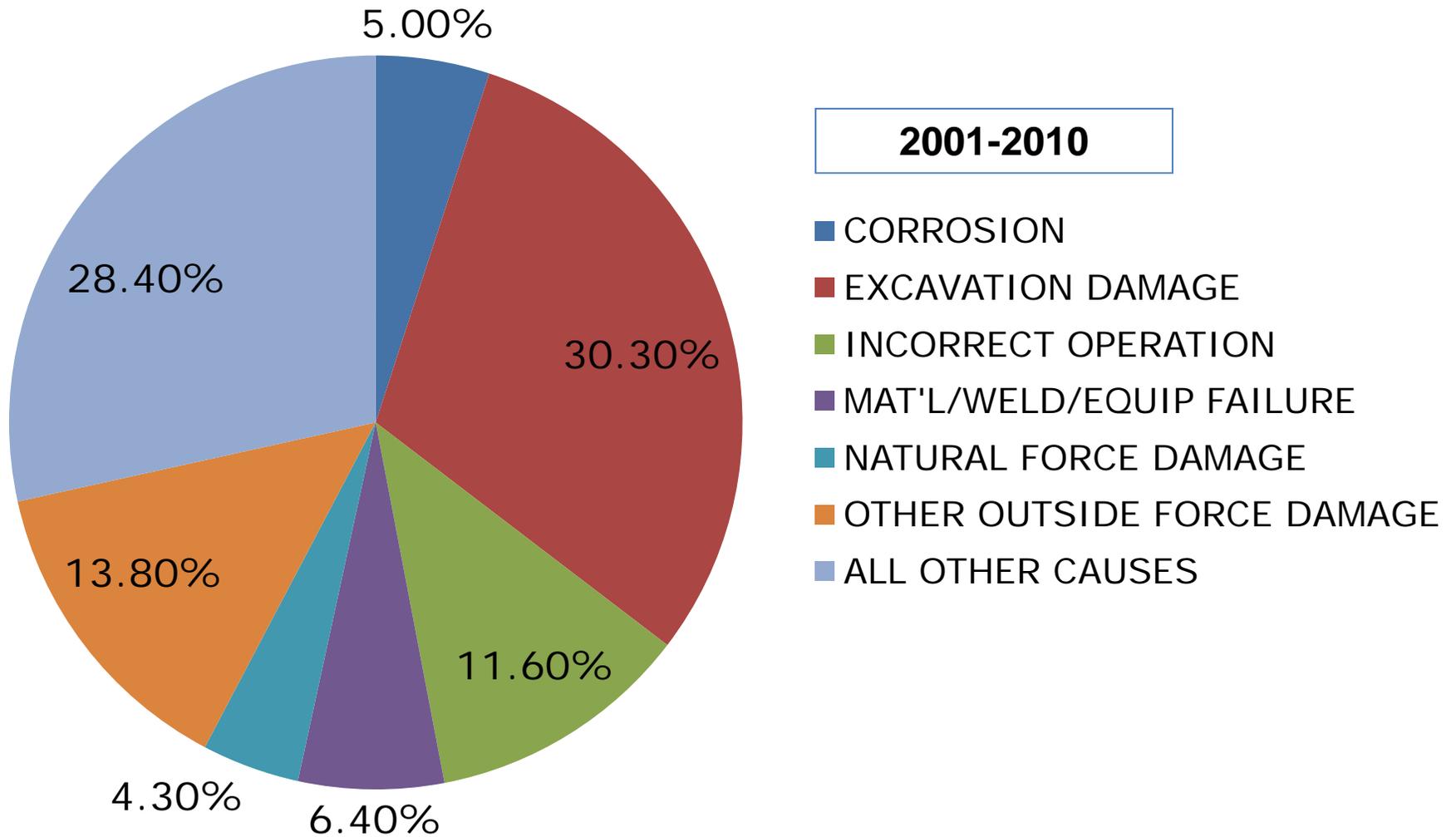
Understanding the Distribution Infrastructure



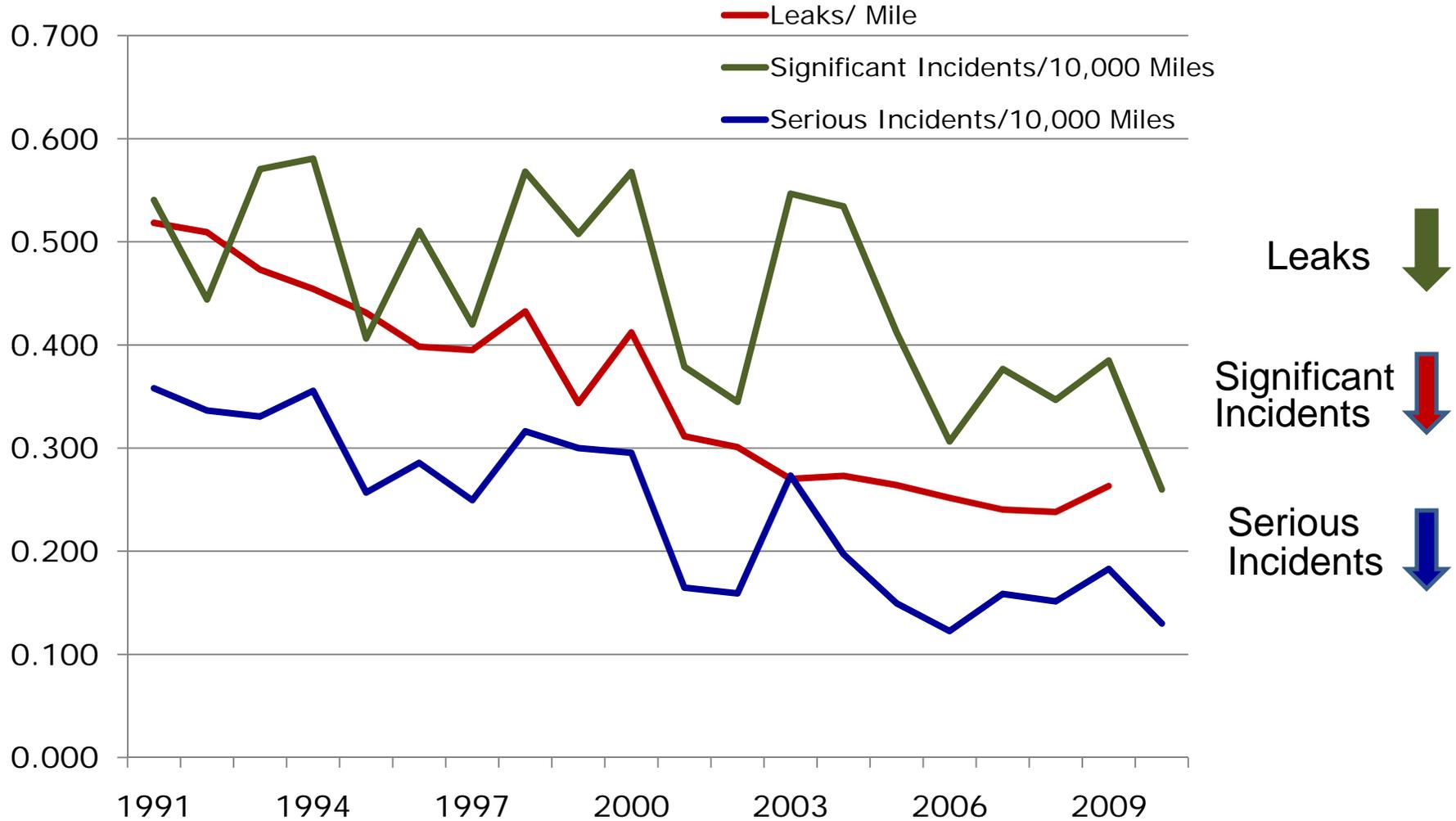
Distribution Integrity Management Regulation

1. Know your infrastructure
2. Identify the threats
3. Assess & prioritize risks
4. Implement appropriate measures to mitigate risks, if needed
5. Measure performance, monitor results & evaluate effectiveness of program;
6. Periodic evaluation
7. Report results to state and federal regulators

Causes of Pipeline Incidents



Distribution Safety Performance Leaks & Incidents



Note: Leak and mileage data for 2010 is not yet available. 2010 Incidents are per 10,000 miles using 2009 miles.

Managing a Safe System

