

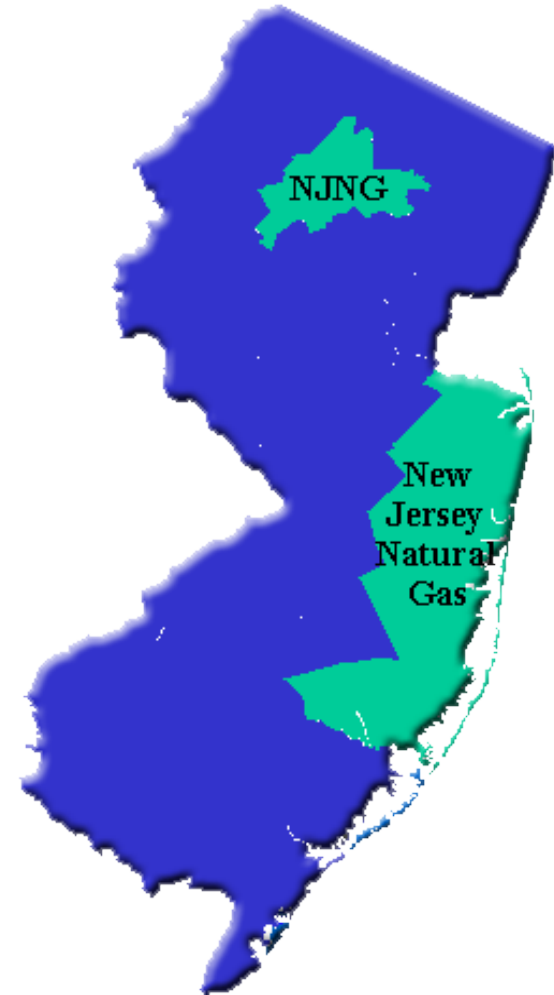
# NJNG Distribution System Overview

**Customers:** 538,700

**Distribution main:** 7,271 miles

- Plastic: 4,113 miles
- Steel: 3,158 miles
  - Cathodically unprotected steel: 196 miles

**Services:** 525,558 services



## History of DIMP

- PHMSA implemented integrity management (“IM”) regulations for gas **transmission** pipelines in 2004. These regulations aimed to assure transmission pipeline integrity and further improve pipeline safety.
- On December 4, 2009, PHMSA published the final rule establishing integrity management regulations for gas distribution pipeline systems.
- Final Rule implemented August, 2011

## Rule Summary

- Identify existing and potential threats, Evaluate and rank risk.
- Identify and implement measures to address risks
- Measure IM program performance, monitor results, and evaluate effectiveness
- Periodically assess and improve the IM program
- Report performance results to PHMSA and State pipeline safety regulators

# How NJNG Applies DIMP

## NJNG DIM Program

- The DIMP is the overall approach by NJNG to ensure the integrity of its gas distribution system.
- This approach includes:
  - Identifying distribution system threats
  - Performing distribution risk assessments
  - Identifying measures to reduce distribution risk
  - Using performance measures to gauge DIM Program effectiveness

## How NJNG Applies DIMP

- Risk Assessments Highlight Top Risks
  - Corrosion Leaks
  - Excavation Damages
- Measures To Reduce Risks Are Identified
  - Accelerated Bare Steel Replacement Programs
  - Damage Prevention and Public Awareness Programs
- Performance Measures Gauge Effectiveness
  - Corrosion Leaks per Metallic Facility Mile
  - Excavation Damages per 1000 Tickets

## **NJNG DIMP Risk Assessment Models**

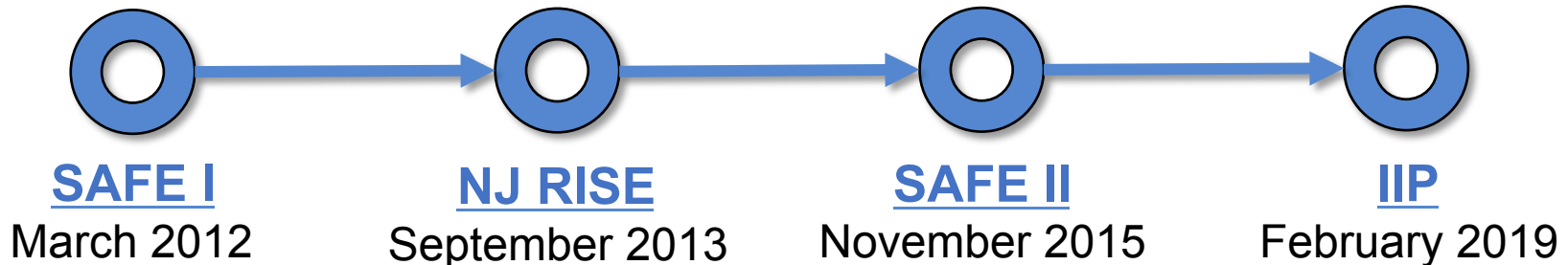
### **Asset Class-Based Relative Risk Model**

- Provides high-level (Top 15) risk ranking by threat category.
- Uses SME input from the Operations, Engineering and Corrosion.
- Incorporates the previous 5 years of NJNG leak data.
- Includes 20 years of national gas incident data.

### **Segment-Based Relative Risk Model**

- Software running within GIS system provides risk ranking at the gas main segment level for replacement prioritization.
- This risk assessment is run annually and results are shared with Engineering for replacement prioritization

## NJNG Accelerated Infrastructure Replacement and Enhancement Programs



1. **SAFE I:** Safety Acceleration and Facility Enhancement I
2. **NJ RISE:** New Jersey Reinvestment in System Enhancements
3. **SAFE II:** Safety Acceleration and Facility Enhancement II
4. **IIP:** Infrastructure Investment Program

**These programs help mitigate Corrosion and Natural Forces threats.**

## **SAFE I** - Safety Acceleration and Facility Enhancement I

- 5 year capital investment program (approx. \$204 million)  
Started 2012
- Replaced 66 miles of cast iron main (100% of total population)
- Replaced 278 miles of unprotected steel main
  - ✓ **Eliminated cast iron in 2015**
  - ✓ **Reduced Corrosion related leaks**

## NJ RISE - NJ Reinvestment in System Enhancements

- 5 year capital investment program (approx. \$102.5 million) started 2013
- **Projects:**
  - Install approx. 30,000 excess flow valves (EFVs) in coastal communities to mitigate storm effects
  - Reconstruct and/or relocate 3 distribution regulator stations on barrier islands to mitigate flooding impacts
  - Install 4 secondary distribution mains from mainland to barrier islands for system reinforcement

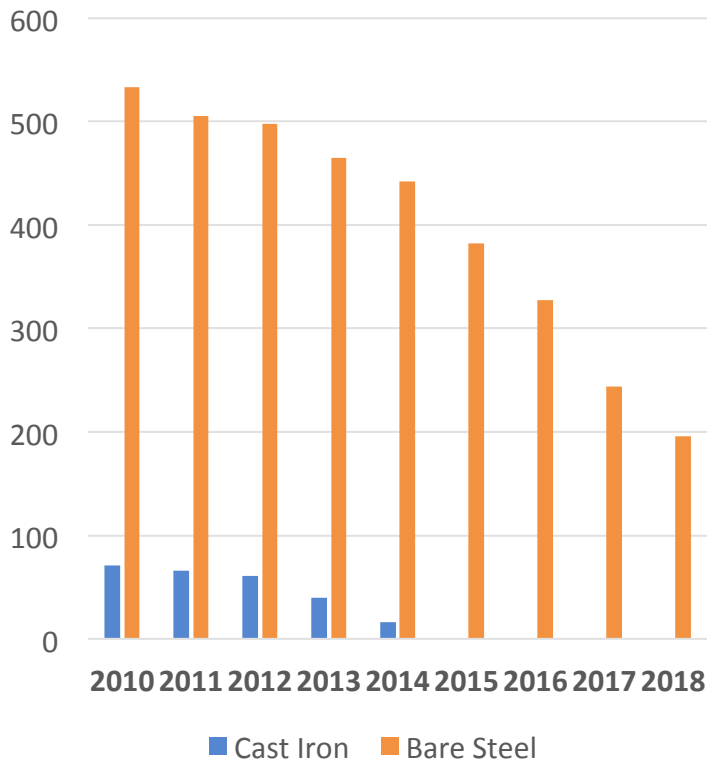


## SAFE II - Safety Acceleration and Facility Enhancement II

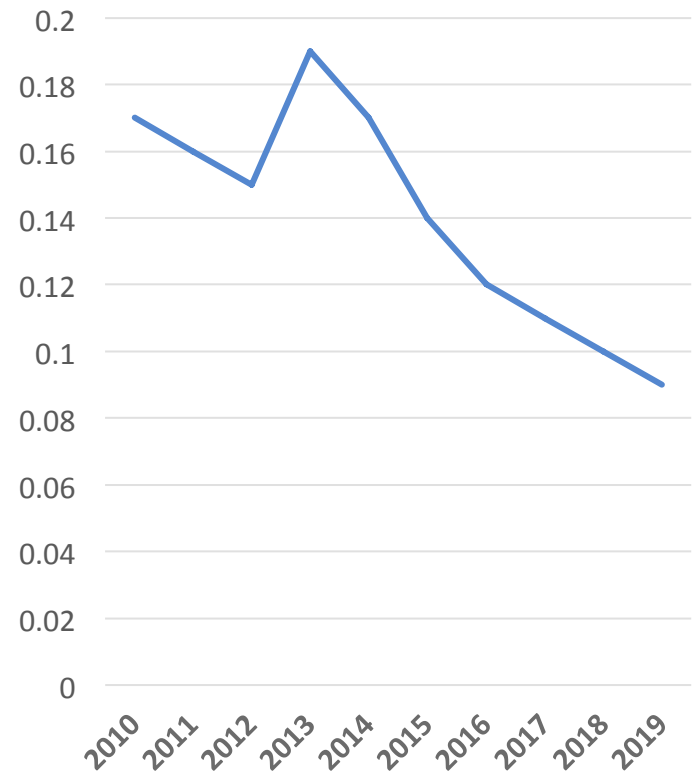
- 5 year capital investment program (approx. \$200 million)
- **Replacement Projects:**
  - Replace all remaining unprotected steel main and associated services (100% of approx. 276 miles)
    - Reduced corrosion leaks per metallic facility mile

# NJNG Risk Reduction

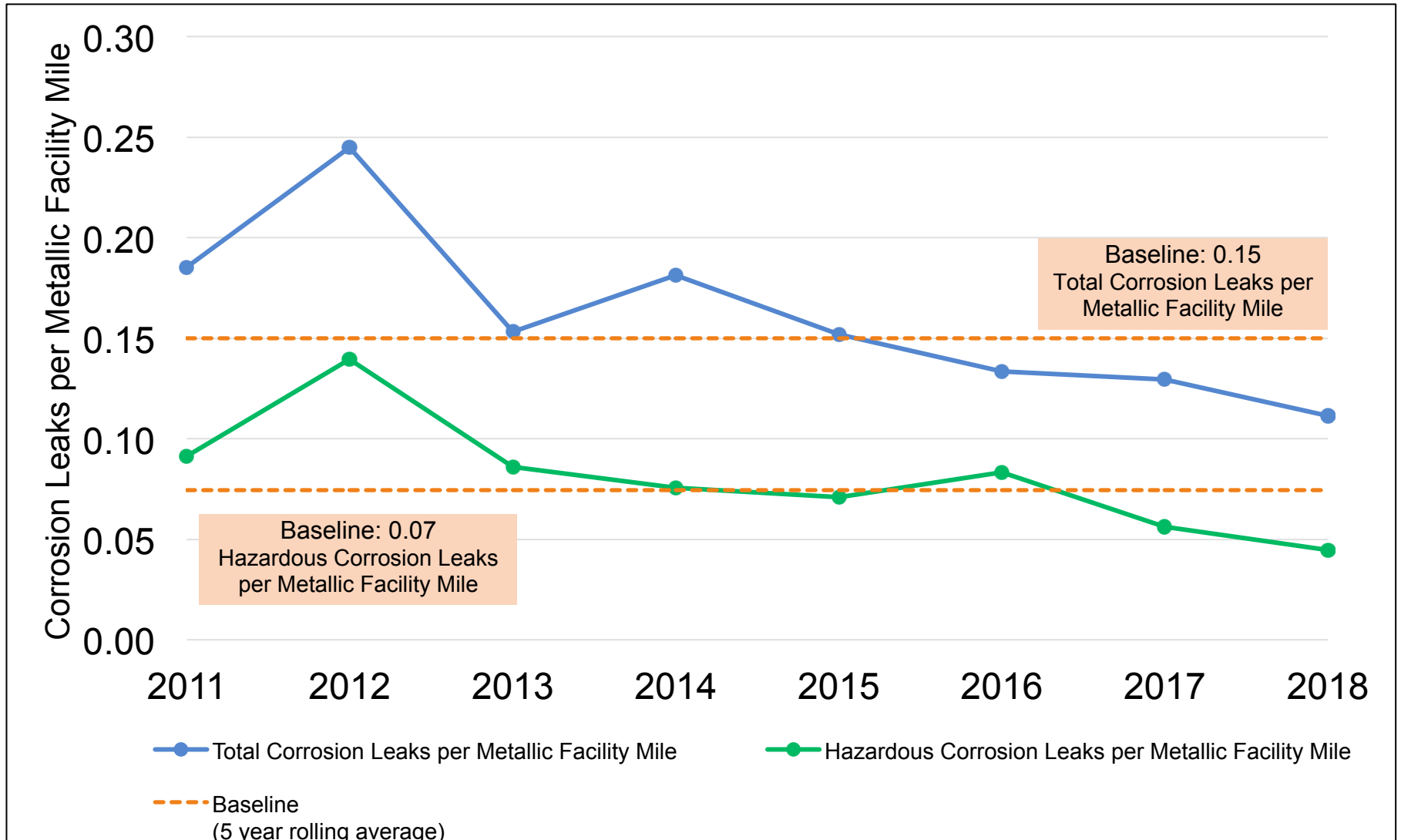
### CI/Bare Steel Inventory



### Leaks per Mile of System



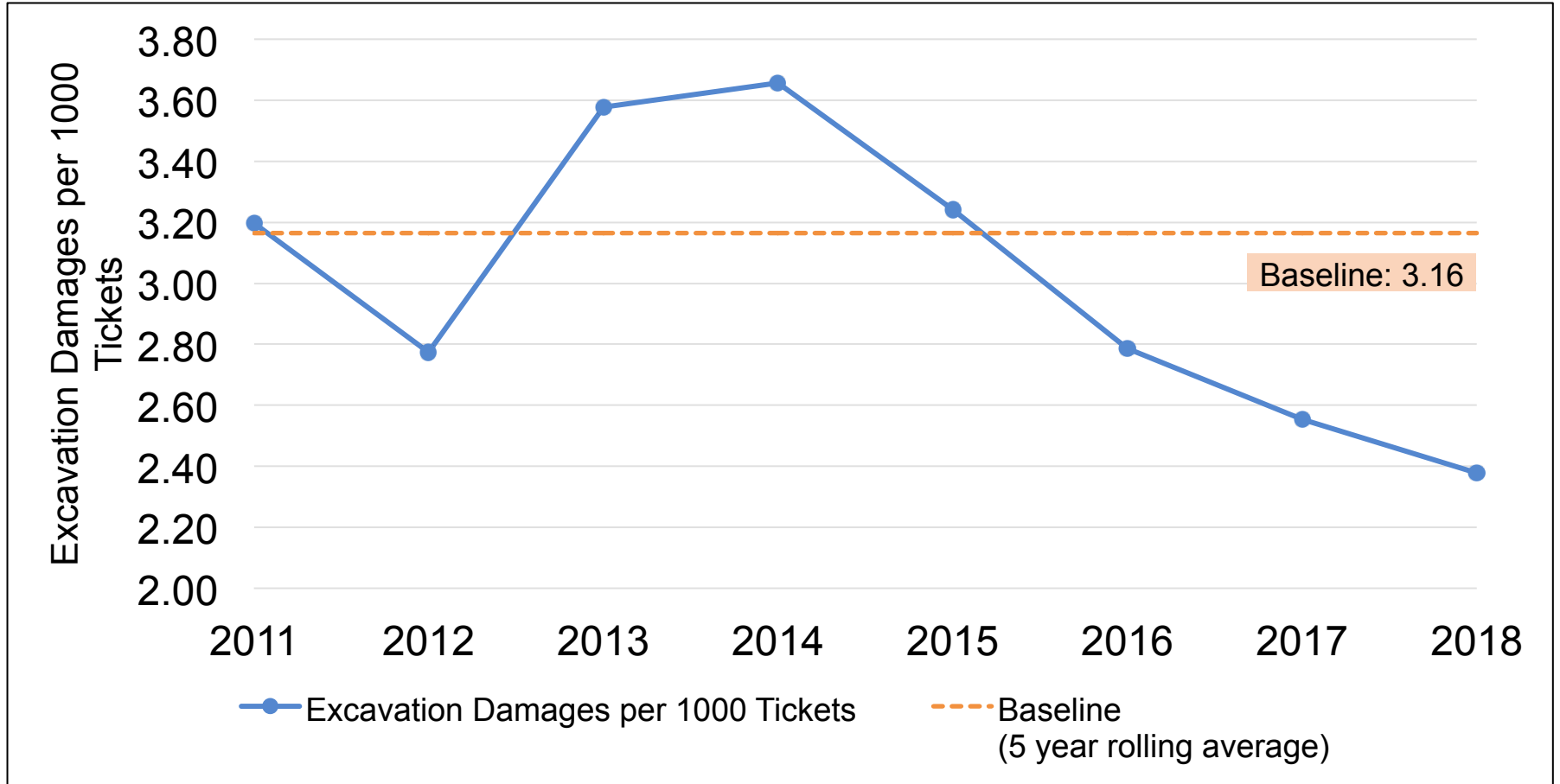
# NJNG – Corrosion Leaks per Metallic Facility Mile



## Excavation Damage Prevention Action Items

- Provided Partners in Safety training for excavators within our service territory
- Hold “Dig Safely” fairs at various locations to educate general population in damage prevention and natural gas safety
- Invite excavators to breakfast seminars to update on current 811 updates and other locating changes
- Dedicated department to locating inspections and excavator damage oversight and random quality audits
- Participate in regional CGA chapter and propagate Damage Prevention Best Practices

## NJNG – Excavation Damages per 1000 One Call Tickets



Note: Hurricane Sandy made landfall in New Jersey on October 29, 2012. Subsequent repairs contributed to an increase in excavation damages.

## DIMP Benefits

- DIMP provides a structured approach to accurately identify and effectively mitigate distribution system threats
- Continuous monitoring of leak data and performance measures allows NJNG to clearly see deviations and address issues accordingly
  - This has helped us achieve the lowest leak ratio in the state
  - There were 2,000 less leak calls in our fiscal year 2019 than in 2018
- Educating the public regarding proper locating has reduced excavation damages
  - Over 30% reduction in 3<sup>rd</sup> party damages since the inception of DIMP