



NW Natural

Capital Programs and Lost and Unaccounted Gas:

NW Natural's Approach to Improving Pipeline Safety

Presented at the
2013 NASUCA Mid-Year Meeting

**Seattle, WA
June 11, 2013**

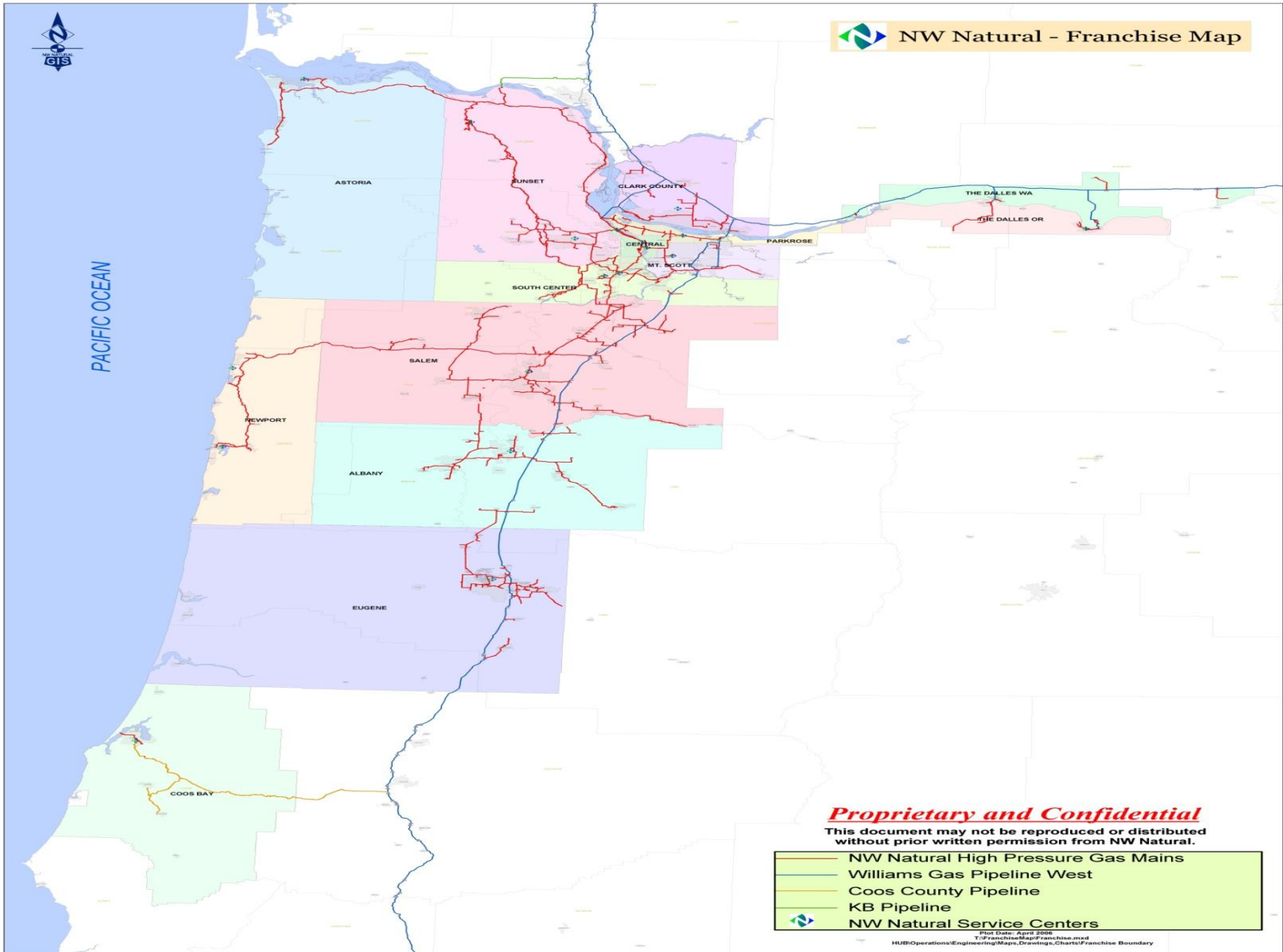
**Bruce Paskett
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NW Natural**

Agenda

- NW Natural Company Background
- Overview of Company Piping Infrastructure
- Lost and Unaccounted For Gas
- NW Natural's Enhanced Pipeline Safety Programs
- Rate Treatment Mechanisms
- Summary






NW Natural Company Background

- Company founded in 1859
- Operate in Oregon and SW Washington
- Serve approximately 681,000 residential, commercial and industrial customers
- Designed, constructed, own and operate 634 miles of transmission main, 13,300 miles of distribution main and 670,000 services



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-  NW Natural High Pressure Gas Mains
-  Williams Gas Pipeline West
-  Coos County Pipeline
-  KB Pipeline
-  NW Natural Service Centers

NW Natural Commitment to PL Safety

- Company is committed to the safe, reliable and cost-effective delivery of natural gas to our customers
- Company has made significant progress toward further improving the safety of our natural gas infrastructure

NW Natural Transmission PL Overview

Transmission Pipelines- Oregon & Washington

- 634 miles
- Sizes- 4"-24"
- Installed 1956- 2013
- Arc welded construction
- Coated/ cathodically protected steel
- All transmission lines subjected to post-construction pressure testing
- 100% NDT on welds

NW Natural Distribution PL Overview

Distribution Pipelines- Oregon & Washington;

- 13,300 miles of main
 - Bare steel- 0.1%
 - Coated/ cathodically protected steel- 49.5%
 - State-of-art polyethylene (PE) plastic- 50.4%
- 670,000 services
 - Bare steel- 0.0% (<90 remaining)
 - Coated/ cathodically protected steel- 29.2%
 - State-of-art PE plastic- 70.8%

NW Natural Transmission and Distribution Piping Characteristics

As a result of NW Natural's Enhanced Pipeline Safety Programs, nearly 100% of NW Natural's underground infrastructure is constructed of modern day materials (coated, cathodically protected steel and state-of-art polyethylene plastic) that perform very well

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NW Natural's Enhanced Pipeline Safety Programs

➤ Key Driver Was Pipeline Safety

Lost and Unaccounted For Gas (LUAF)

LUAF is comparison between gas measured coming into system and gas going out of system- Not a measure of system leakage

- There are many factors that affect a company's LUAF, including;
 - Gate station metering accuracy
 - Customer metering accuracy
 - Timing of meter reading / billing cycle
 - Time of year- winter (cold) / summer (warm) / line pack
 - Major temperature variations within a given period (month)
 - Storage injection/ withdrawals
 - System leakage

NW Natural's Enhanced PL Safety Programs

- Distribution Integrity Management Program-1983
- Cast Iron Replacement Program- 1983 to 2000
- Bare Steel Replacement Program- 2001 to 2021
- Natural Forces (Geo-Hazard) Program- 2001
- Transmission Integrity Management Program- 2002
- System Integrity Program (SIP- Bare Steel Replacement, TIMP & DIMP)- 2009
- Formal DIMP Program- 2009

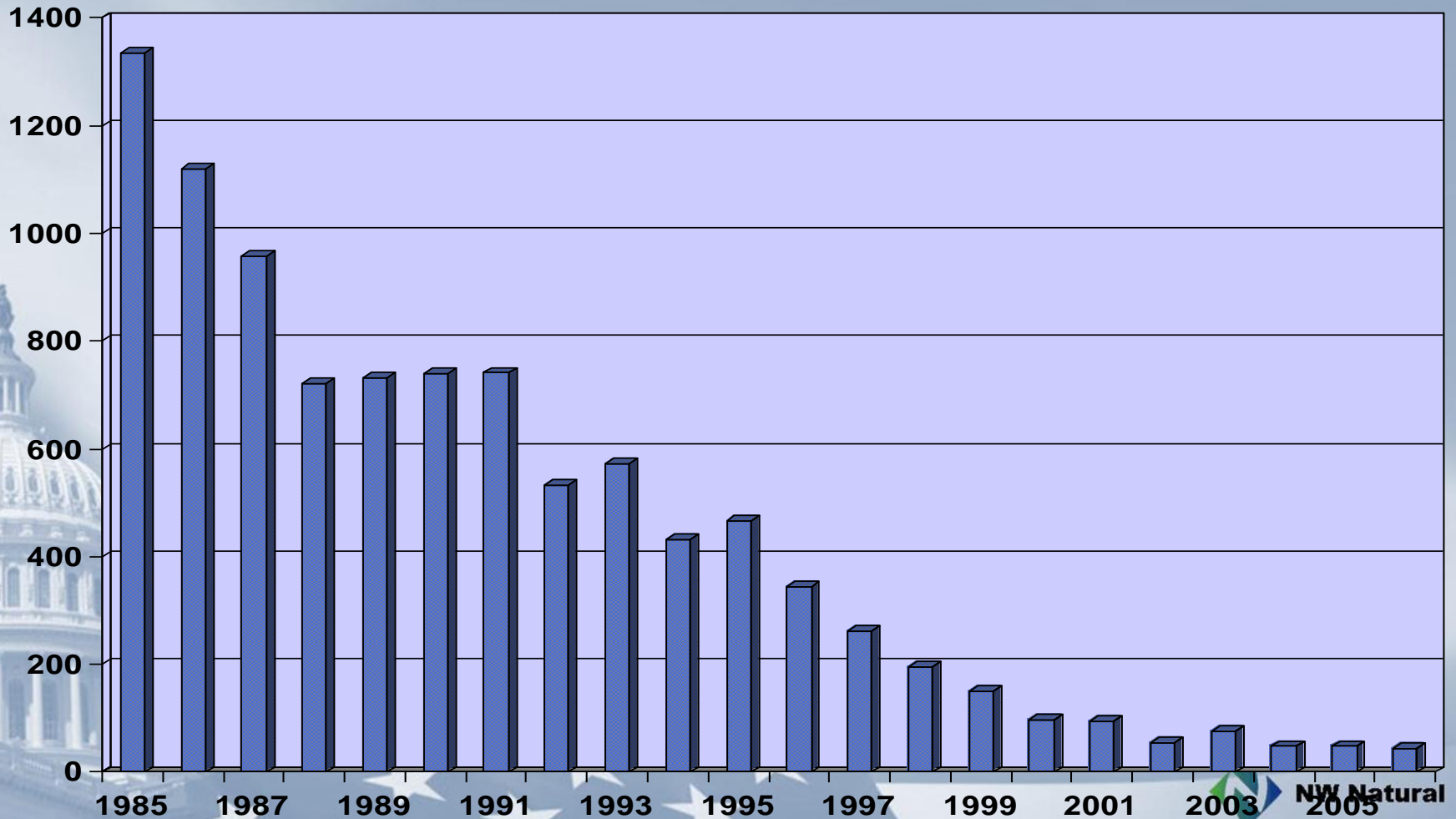
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NW Natural initiated “model” Distribution Integrity Management Program- 1983

- Company worked with Oregon PUC Staff, using DIMP principals, to initiate a Cast Iron Replacement Program
- Cast Iron Replacement Program included a rate treatment mechanism in early years
- Annual update meetings with OPUC Staff
- CI Performance Metrics showed a significant reduction in leakage
- CI Replacement Program completed in 2000

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CI Performance Metrics- Grade B Leaks Portland District



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NW Natural's Enhanced Pipeline Safety Program

- Approved in 2001
- Developed in concert with OPUC Staff
- Two Key Elements
 - Bare Steel Replacement Program
 - Natural Forces (Geo-Hazard) Program

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NW Natural's Enhanced Pipeline Safety Program

Bare Steel Replacement Program:

- Additional capital committed to accelerate the replacement of bare steel mains and services from 40 years to 20 years

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NW Natural's Enhanced Pipeline Safety Program

Natural Forces (Geo-hazard Program):

- Identification, assessment, monitoring and mitigation of threats to pipeline safety caused by geo-hazards such as landslides, earthquakes and washouts at river and stream crossings

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NW Natural's Enhanced Pipeline Safety Program- Rate Treatment Mechanism-

- \$ 3 million threshold / fiscal year
- \$ 9 million “soft cap” / fiscal year
- Capital costs rolled in with PGA adjustment each October 1
- Tracker year from October 1- September 30
- Annual update meeting with OPUC Staff
- Annual OPUC audit, prudence review and “true-up” of costs

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NW Natural's System Integrity Program (SIP) - March 1, 2009

- Consolidated Company's Enhanced Pipeline Integrity Programs under a single pipeline safety umbrella program. Includes;
 - Bare Steel Replacement Program
 - TIMP
 - DIMP

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NW Natural's System Integrity Program (SIP) -

- Bare Steel - Accelerates the replacement of bare steel system from 40 years to 20 years
- TIMP – Comprehensive transmission integrity management program mandated by congress in 2002 PL safety reauthorization
- DIMP – Comprehensive distribution integrity management program mandated by congress in 2006 PL safety reauthorization

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NW Natural's System Integrity Program (SIP) -

- Allows financial and work force resources to be re-prioritized and re-allocated based on updated risk assessments, changing system threats, work load, permitting, project timing and other factors

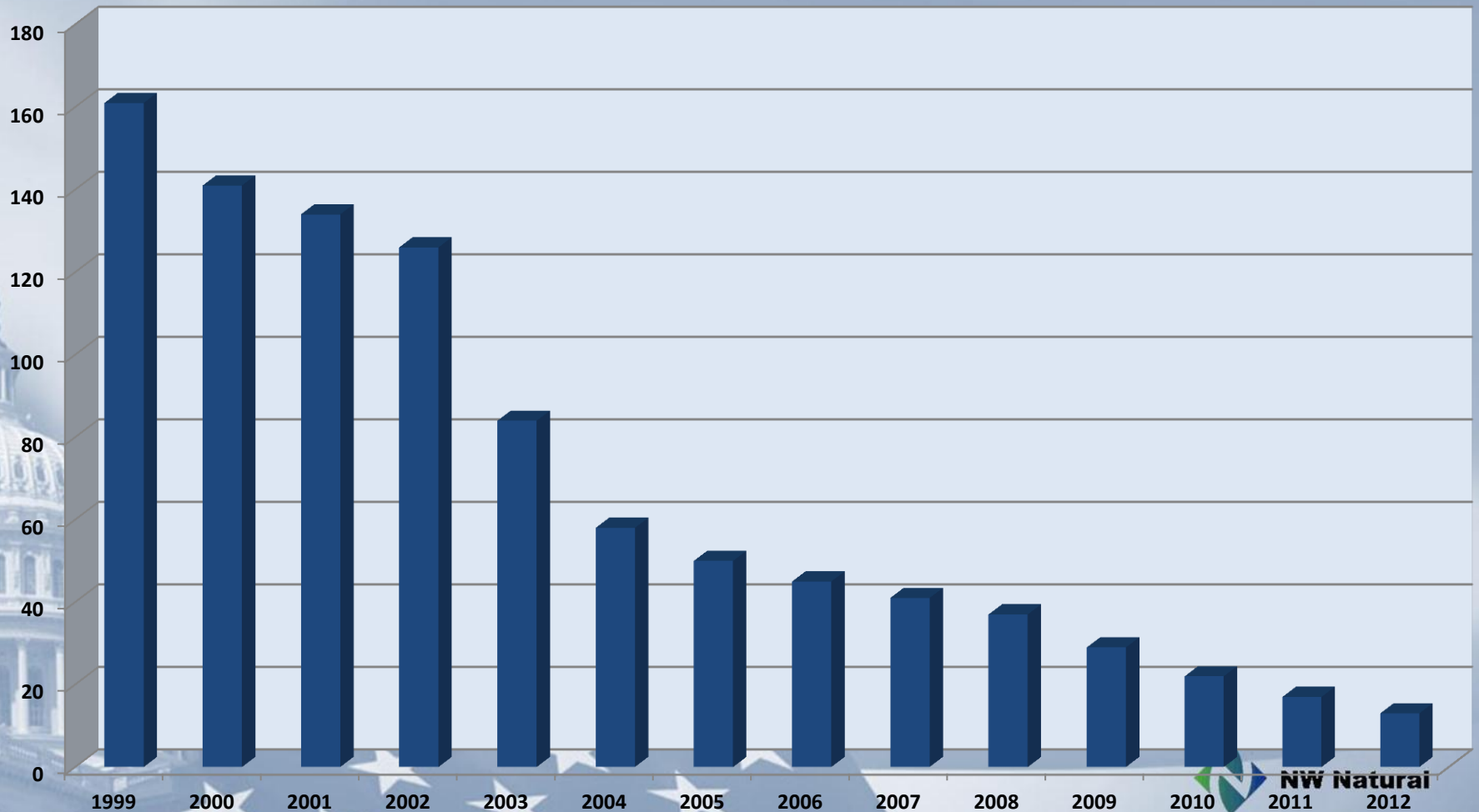
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SIP Capital Cost Rate Treatment Mechanism-

- Threshold of \$ 3.25 million on steel/ leakage costs/ fiscal yr.
- \$12 million “soft cap/ fiscal year
- Project costs included in rates when completed each year
- “Tracker year” November 1- October 31
- Capital costs included with PGA adjustment each Nov. 1
- Annual meeting with stakeholders to review projects, project status and costs
- Annual report to stakeholders
- Annual PUC audit, prudence review and “true-up of rates”

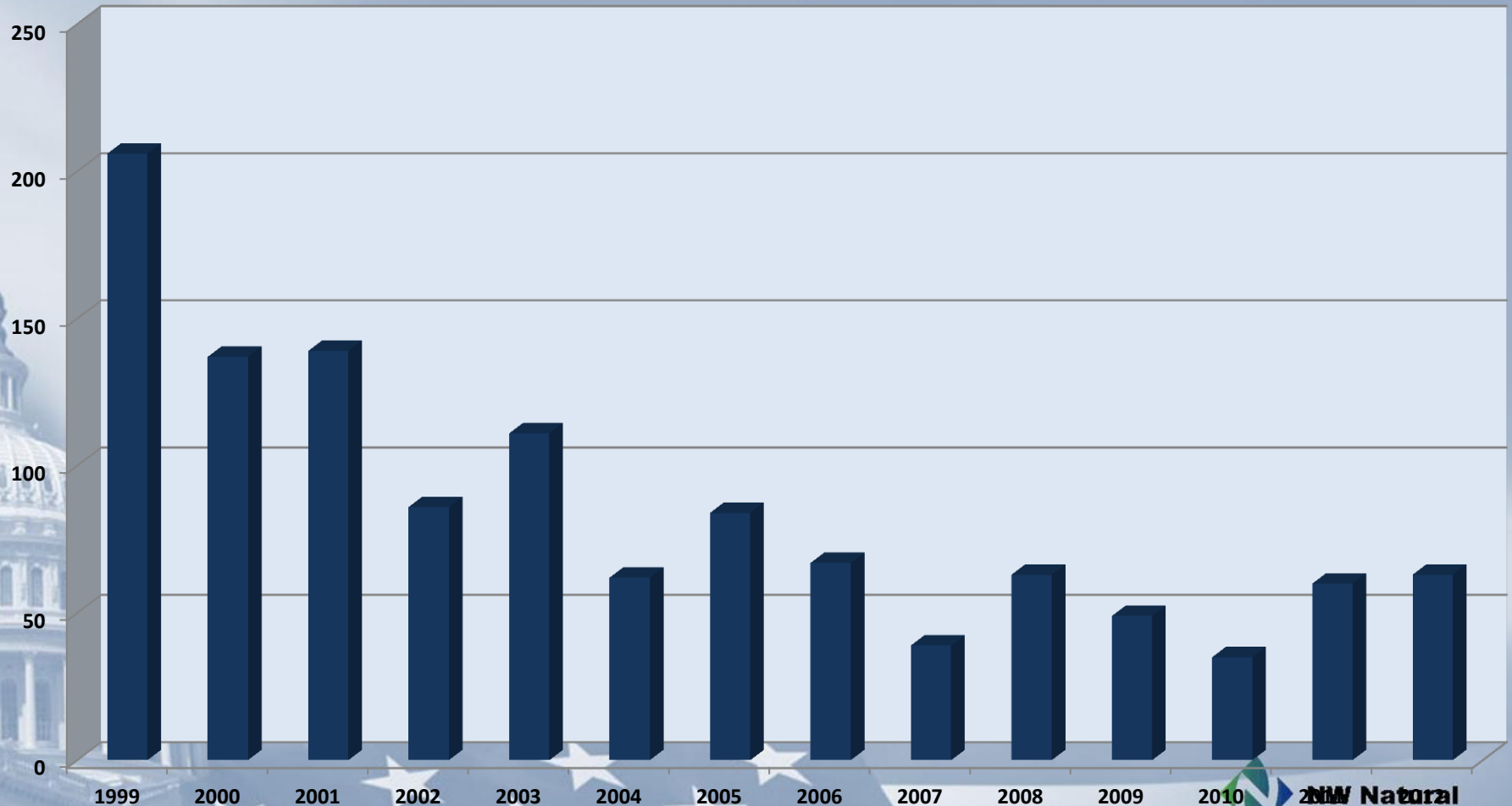
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Bare Steel Miles of Main- Oregon



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Grade B Leaks System



NW Natural Raising the Bar on Pipeline Safety - Summary

- NW Natural's Enhanced Pipeline Safety Programs have significantly improved overall pipeline safety. Benefits gas customers and the general public
- System will be 100% coated, cathodically protected steel or state-of-art PE plastic by end of 2015
- Early entry allowed NWN to spread costs over time, eliminating "rate shock" for ratepayers. Minimal rate impact
- Annual tracking mechanisms that provide for timely recovery of pipeline safety program costs facilitate operator action
- Current low commodity costs- excellent time to initiate gas distribution capital replacement programs
- Reduction in LUAF is a side benefit

Thank You!

Questions ?

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