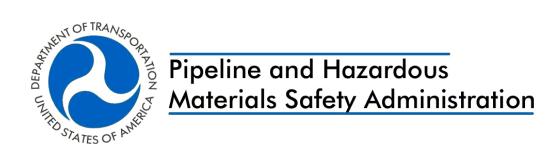


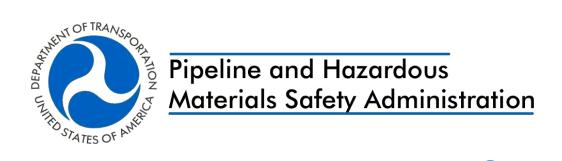
# PHMSA Guidelines for Integrity Assessment of Cased Pipe

Public Workshop Baltimore, Maryland

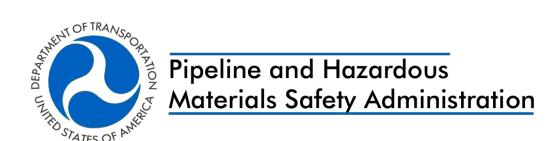
**April 28, 2010** 



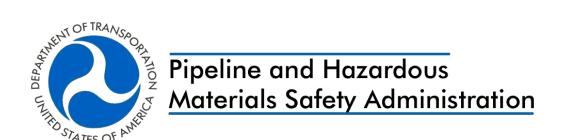
Joe Mataich PHMSA, Southern Region



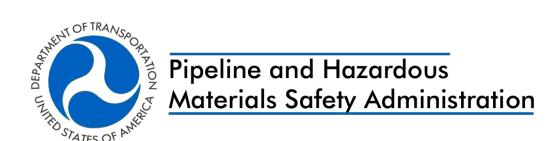
- Best Practices Review for obtaining approval for uncased crossings:
  - RR Crossings
  - Transit or Light Rail Crossings
  - Road Crossings
    - Federal
    - State or County



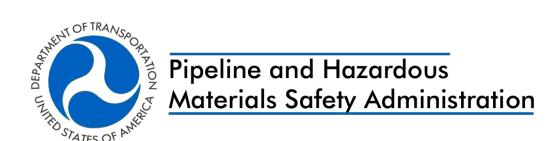
 How can authorities that have jurisdiction over railroad, highway and road crossings be persuaded that uncased pipeline crossings are safer?



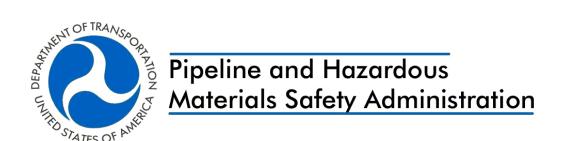
- Can PHMSA help?
- How?
  - Contact State DOT
  - Contact Railroads
  - Issue Advisory Bulletin
  - Other



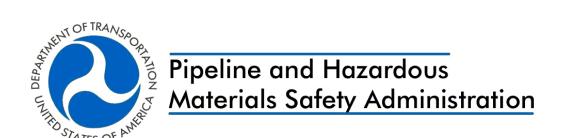
 What has been approved by jurisdictional authorities for uncased pipeline crossings?



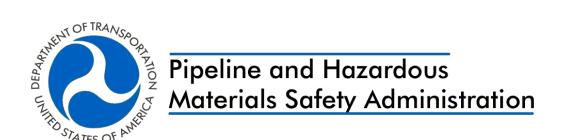
- What has been design code used for uncased pipe crossing roadways?
  - AREMA
    - American Railway Engineering and Maintenance-of-Way Association
  - State DOT requirements
  - County requirements
  - 49 CFR Parts 192 and 195
  - ASME B31.4 and B31.8



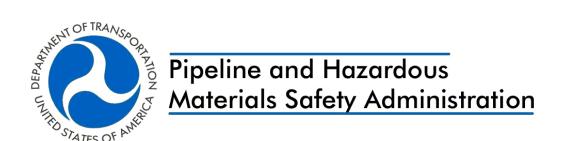
- What should be in an uncased crossing best practice?
  - Design
  - Depth of Cover
  - Girth Weld NDT
  - Coatings
  - Crossing angle
  - Hydrostatic test
  - Other



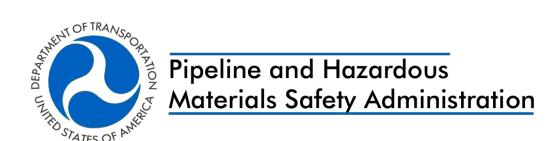
- Design
  - Higher class location design factor:
    - In Class 1 and 2 areas DF 0.50,
    - In Class 3 areas
      - DF 0.40 or 0.50 less loads
- Calculate live and passive loads
  - Fully loaded trains
  - Highway with all fully loaded trucks



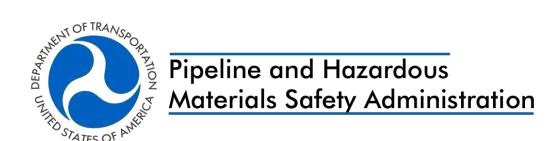
- Depth of Cover
  - Min. 10 feet under railroad tracks
    - 6 feet in other right-of-way areas
  - Min. 6 feet for under road crossings
    - 5 feet in other right-of-way areas



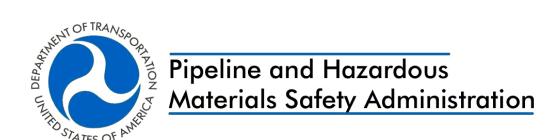
- Girth Weld NDE
  - 100% NDE of Girth Welds in Crossing Right-of-Way



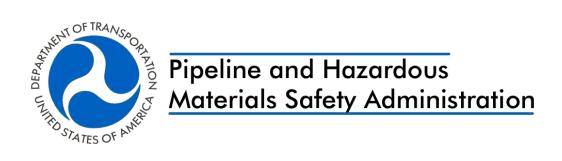
- Coatings
  - Main coating
  - Abrasive resistant coating



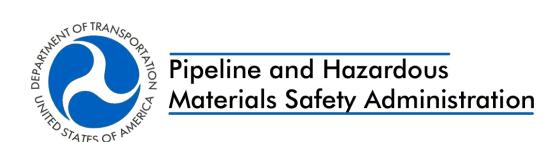
- Crossing Angle
  - Between 90 degrees to 45 degrees



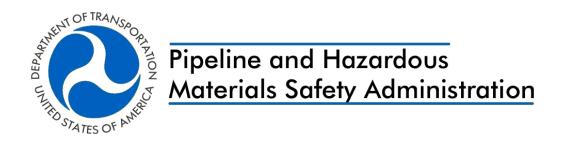
- Hydrostatic Test
  - Hydrotest to be at min. of 1.5 X MAOP and for 8 hours
  - Perform hydrotest prior to and after installation
  - Pre-installation pressures (+50 psi) over post-installation test pressure
  - Post-installation test



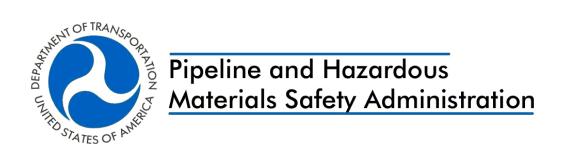
- Other
  - Boring Technique
    - Grout slurry backfill of within bore ID
  - Cathodic Protection
    - Test site at crossing



- Enhancements help justify the approval of uncased crossings
- Lessens chance for damage
  - Lessens chance for impact
  - Make more damage resistant in case of impact
  - Additional load carrying capability
  - Minimize damage to road/RR due to settling

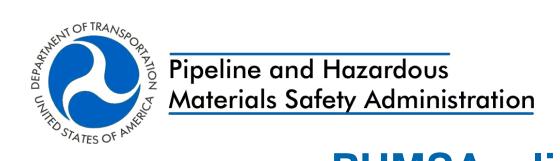


#### **Questions?**



#### Please Email any additional comments or questions to:

Max.Kieba@dot.gov



#### PHMSA - links

- Pipeline Safety Guidance Advisory Bulletins, Low Strength Pipe Guidelines, MAOP Rule FAQs
  - http://www.phmsa.dot.gov/pipeline/guidance
- Construction Workshop
  - http://primis.phmsa.dot.gov/construction/index.htm
- MAOP Rule FAQs
  - http://primis.phmsa.dot.gov/maop/index.htm
- Special Permits FAQs
  - http://primis.phmsa.dot.gov/classloc/faqs.htm



## **QUESTIONS**

