

# The National Pipeline Mapping System (NPMS)

A photograph of a pipeline facility. Large, dark-colored pipes are supported by a series of metal structures, including vertical posts and horizontal beams. The pipes run along a dirt road that curves to the left. The background shows a line of trees under a clear sky. The title 'The National Pipeline Mapping System (NPMS)' is overlaid in blue text on a semi-transparent grid background at the top of the image.

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# Objectives

- Explain the purpose of the NPMS and the applications that use NPMS data
- Major challenges facing the NPMS program
- Overview of PHMSA's data management systems
- Integrity Management-related issues



# Overview

- Gas transmission and hazardous liquid operators are required to make annual data submissions to the NPMS showing their pipeline location and basic attributes
- The NPMS contains 500,000+ miles of pipeline data submitted by 1,000+ operators
- There are two primary web-based GIS applications at [www.npms.phmsa.dot.gov](http://www.npms.phmsa.dot.gov):
  - The Public Viewer allows citizens to view pipelines in one county per session, with certain restrictions
  - PIMMA is available only to government officials, who can view pipelines in their area of jurisdiction



## The role of NPMS at PHMSA

- NPMS was created to help PHMSA manage its regulatory assets, to provide inspectors with information about pipelines they inspect, and to assist operators in defining Unusually Sensitive Areas along their pipelines
- When a pipeline release occurs, identifying other operators, sensitive areas, and public facilities in the area is critical. This helps PHMSA meet its mission goals of Environmental Stewardship and Preparedness and Response.
- Having accurate information about pipeline locations helps PHMSA meet its mission goal of Safety.
- The NPMS is now used for many other purposes, including decision support, pipeline risk ranking, and community planning



# NPMS Data Challenges

- Data quality: positional accuracy requirement is 500 feet
- Synchronizing NPMS submissions with Annual Reports
- Mapping tabular datasets, such as inspection reports
- Change detection/ creating history for a pipeline segment



# NPMS Data Challenges

PHMSA is meeting these challenges with

- Draft rulemaking to collect additional data and improve data accuracy
- Conversion of the NPMS data model to linear referencing
- Custom tools to facilitate tabular data mapping and perform change detection, allowing PHMSA to build pipeline history



# Collecting additional GIS data

- Data accuracy will be changed to reflect current GPS standards
- Additional data such as pump/compressor stations and operating pressure will allow PHMSA to better ensure the safety of its regulatory assets
- New data collection will likely be phased in to accommodate smaller pipeline operators



# Mapping tabular data

- Inspection units (boundaries) were mapped manually; updates to boundaries will employ a web tool
- Special permits will be mapped manually
- Accidents/incidents will become events on pipeline segments

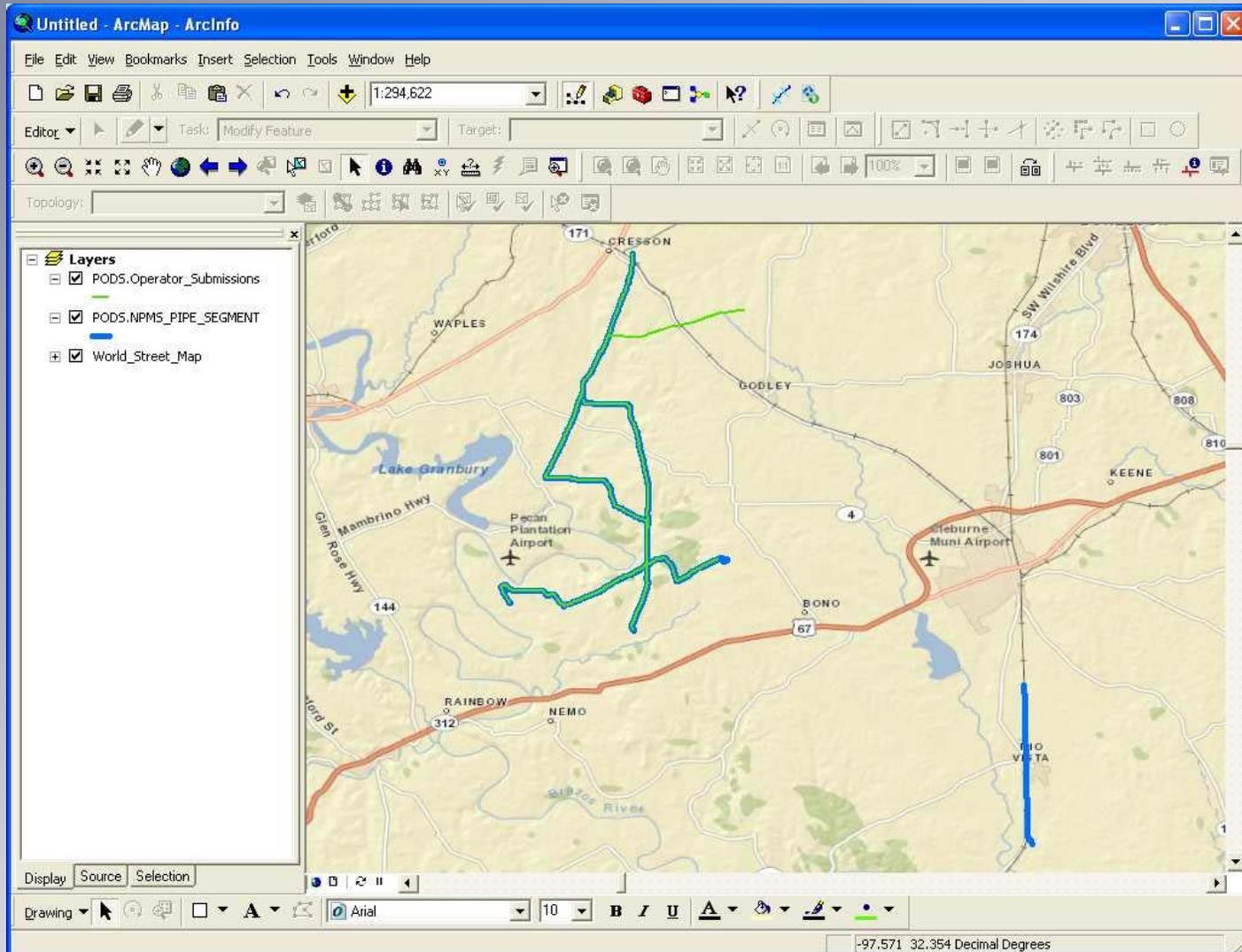


# Building pipeline history

- PHMSA desires the ability to track assets as they change operators
- All tabular data is currently tied to the operator
- The NPMS custom change detection tools allow us to track a pipeline as it changes operators, commodities, etc.
  - Accidents/incidents are now related to the pipeline, not to the operator, allowing us to differentiate pipe performance from operator performance



# Change detection







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Pipeline and Hazardous Materials  
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# Questions?

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