



Presentation to the CSLC "Prevention First" Symposium

# Pipeline Safety

Pete Murphy, Kinder Morgan

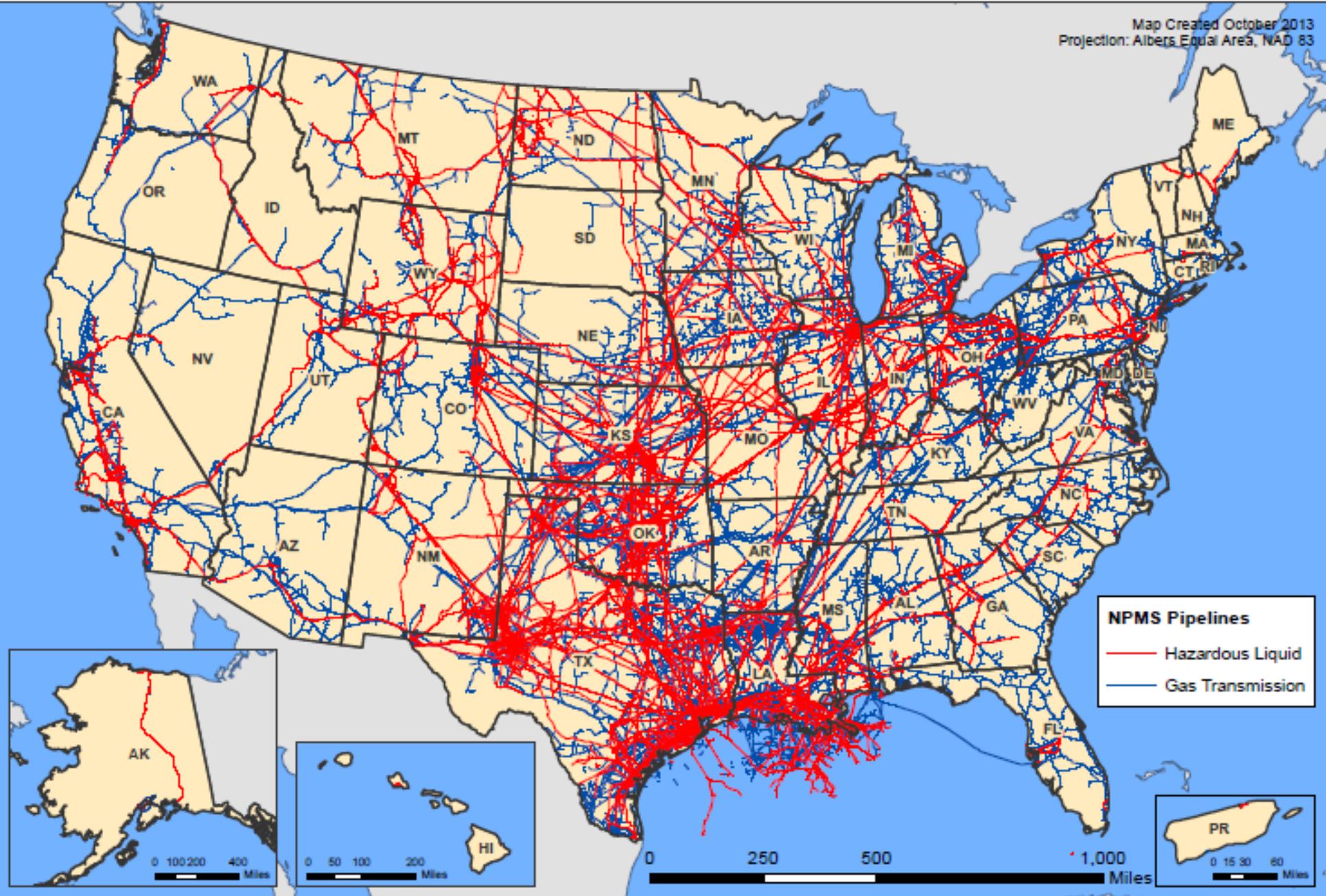
# Outline

- Pipelines Nationwide
- Pipelines in California
  - Statistics
- Regulations
- Pipeline Protection

# Gas Transmission And Hazardous Liquid Pipelines

Pipeline data as of 9/29/2013

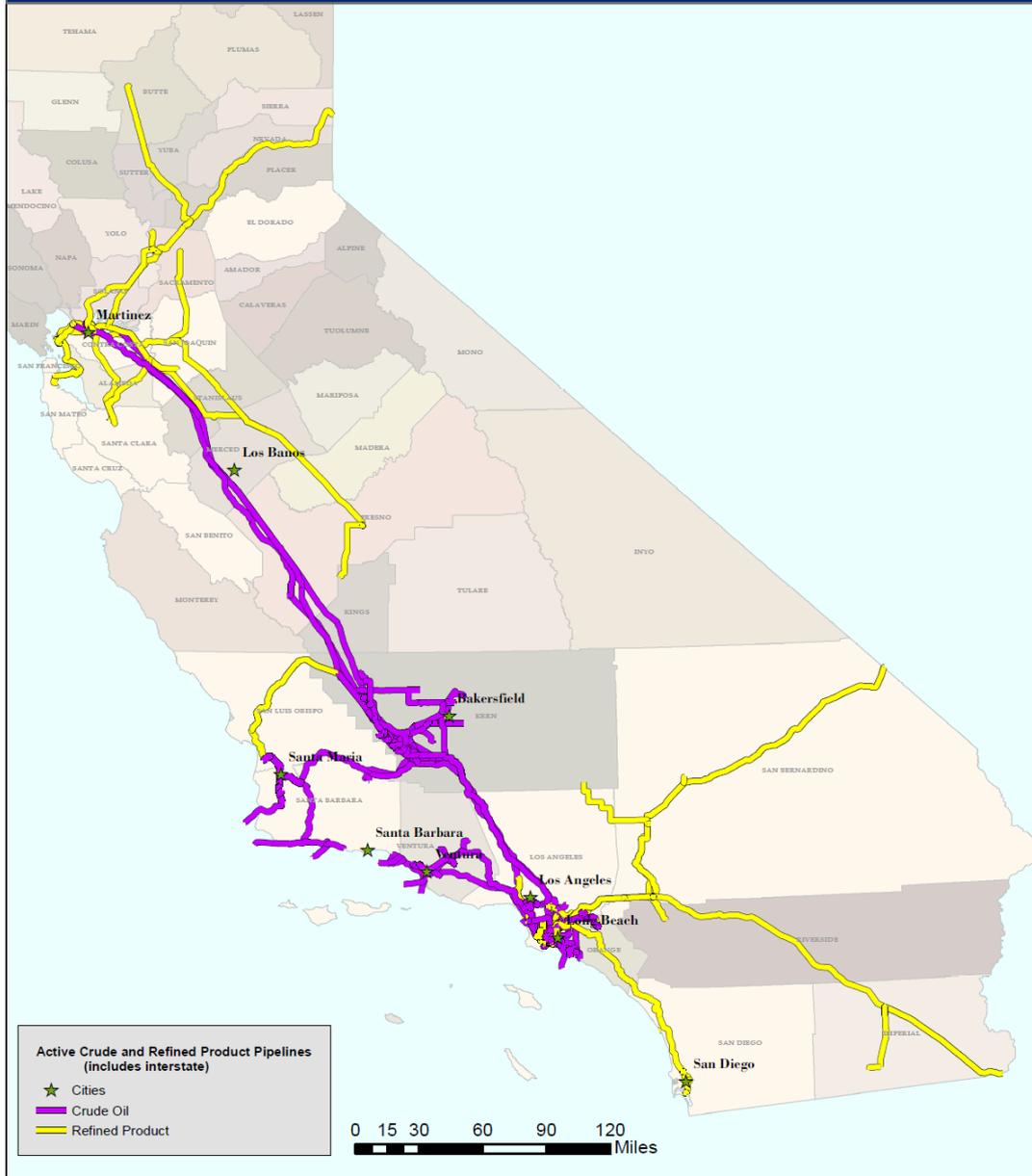
Map Created October 2013  
Projection: Albers Equal Area, NAD 83



**NPMS Pipelines**

-  Hazardous Liquid
-  Gas Transmission

**CALIFORNIA OFFICE OF THE STATE FIRE MARSHAL**  
**Pipeline Safety Division**  
**Pipelines by Commodity**



**DISCLAIMER:** The State of California and the California Department of Forestry and Fire Protection make no representations or warranties regarding the accuracy of the data from which these maps were derived. Neither the State nor the Department shall be liable under any circumstances for any direct, indirect, special, incidental, or consequential damages with respect to any claim by any third party on account of or arising from the use of this map.

May 12, 2014  
 Data sources: CAL FIRE  
 Office of the State Fire Marshal  
 Pipeline Safety Division, GDT  
 ESRI Data & Maps 2013  
 ArcGIS Online Services

# Pipelines in California

- Hazardous Liquids
  - Crude Interstate Mileage: 174.74 miles
  - Crude Intrastate Mileage: 3,294.85 miles
    - Total: 3,469.59 miles
  - Refined Product Interstate Mileage: 971.84 miles
  - Refined Product Intrastate Mileage: 1,798.42 miles
    - Total: 2,770.26 miles
- Total: 6,239.85 miles

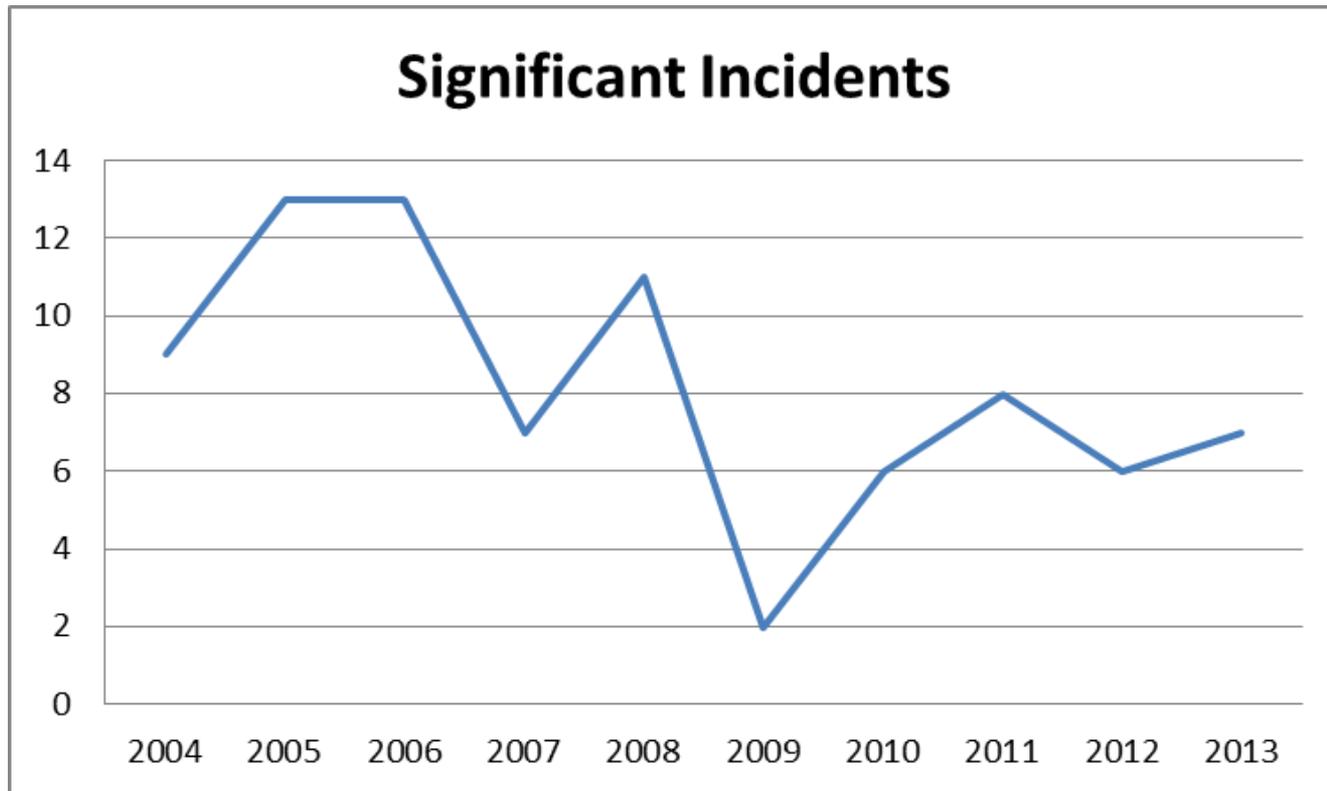
# Pipelines in California

- Daily, Kinder Morgan's Concord Station moves 151,000 barrels of product and Richmond Station moves 85,000 barrels:
  - A total of 236,000 barrels daily = 9.9 million gallons
  - Equivalent to 1,101 tanker trucks each day, running 24 hours a day



- That's one truck every one minute and 18 seconds!

# Pipelines in California



PHMSA defines Significant Incidents as those incidents reported by pipeline operators when any of the following specifically defined consequences occur:

- fatality or injury requiring in-patient hospitalization

- \$50,000 or more in total costs, measured in 1984 dollars

- highly volatile liquid releases of 5 barrels or more or other liquid releases of 50 barrels or more

- liquid releases resulting in an unintentional fire or explosion

# Regulations

- Hazardous Liquids pipelines fall under the regulatory oversight of the Office of Pipeline Safety in the U.S. Department of Transportation
- Pipeline operations are governed by many agencies, including:
  - U.S. DOT 49 CFR Part 195 Construction, Operation, Maintenance, Testing, etc.
  - U.S. Environmental Protection Agency (EPA)
  - U.S. Federal Energy Regulatory Commission (FERC)
  - CARB, CA state water board, Fish & Wildlife - OSPR, CSFM
  - BAAQMD, CCCSD, local health agencies



# Pipeline Protection

- Pipeline operating conditions are monitored 24 hours a day, 7 days a week
  - Operators in control centers
  - Supervisory Control and Data Acquisition (SCADA) computer system
    - Gathers data: pipeline pressures, volume, flow rates, status of pumping equipment and valves
- Whenever operating conditions change, an alarm warns the operator on duty
- Both automated and manual valves are strategically placed along the pipeline system to enable the pipeline to be shutdown immediately and sections to be isolated quickly, if necessary

# Pipeline Protection

- Vegetation on the Right-of-Way is mowed and maintained annually by Kinder Morgan
- On private land, Kinder Morgan works with the landowner to ensure vegetation is kept at a safe level
- Aerial Patrols patrol the entire Right-of-Way every two weeks
  - All reports are fully investigated
  - Construction near the Right-of-Way is monitored
- Weekly driving patrols



# Pipeline Protection

- Anti-corrosive protective coating and a cathodic protection system is installed on the pipe
- We run tools called “smart pigs” through the pipe at regular intervals (as required by DOT)
  - Detect anomalies in the pipeline, allowing us to complete repairs and perform preventative maintenance
  - Provides GPS positioning of the pipeline



# National Pipeline Mapping System

- Available from DOT to view the general location of pipelines under DOT jurisdiction
- <http://www.npms.phmsa.dot.gov/>

# National Pipeline Mapping System

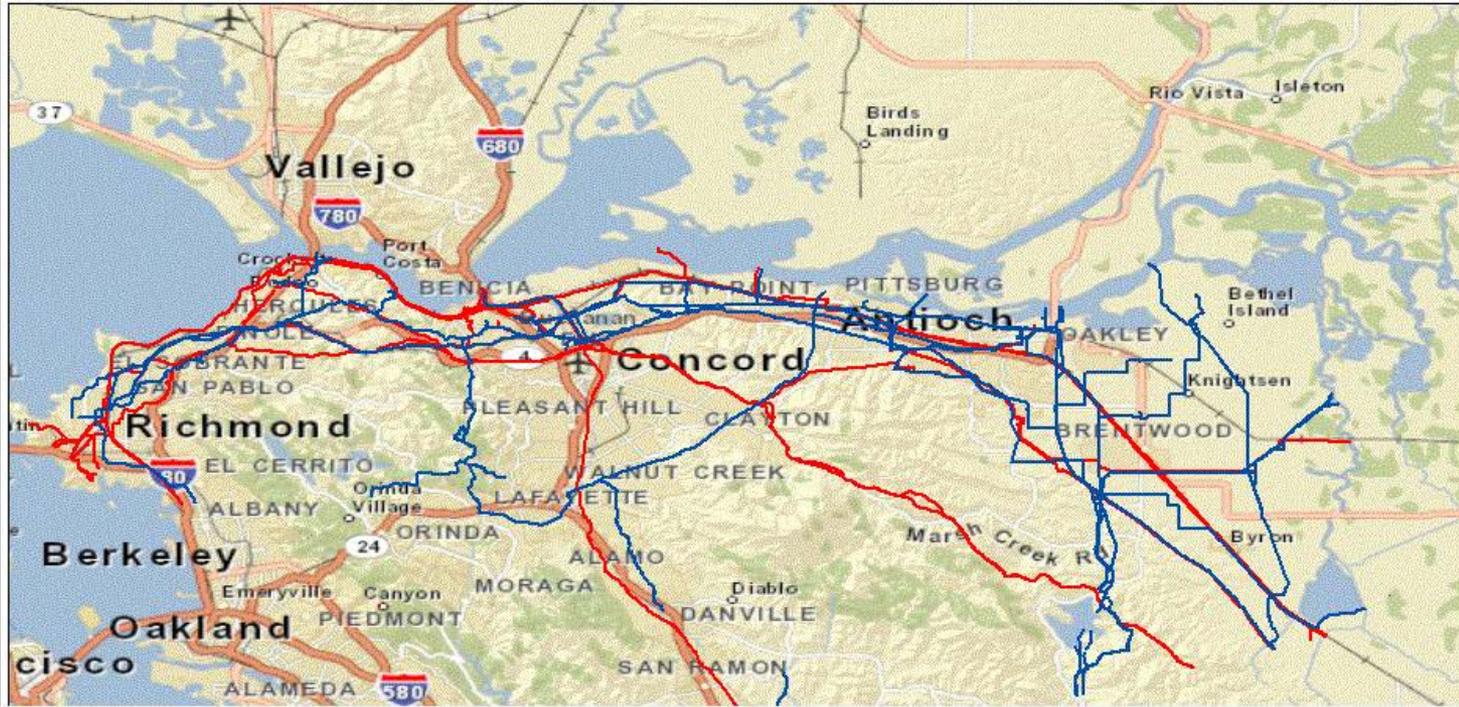
## NPMS Public Map Viewer

[Log Out](#) | [NPMS Home](#) | [About NPMS Data](#) | [View](#)

- Public Viewer Layer List**
- Gas Transmission Pipelines (scale dependent)
    - GAS
    - LIQUID
  - Hazardous Liquid Pipelines (scale dependent)
  - LNG Plants (scale dependent)
  - Breakout Tanks (scale dependent)
  - Other Populated Areas (scale dependent)
  - Highly Populated Areas (scale dependent)
  - Roads, Railroads & Airports
    - World Transportation
  - Boundary Lines & Names
    - World Boundaries and Places
  - Shaded Relief
    - World Shaded Relief
  - Aerial
    - World Imagery
  - Low Resolution 15m Imagery



View pipelines by  
.....



# Questions?

Thanks for your time!

---