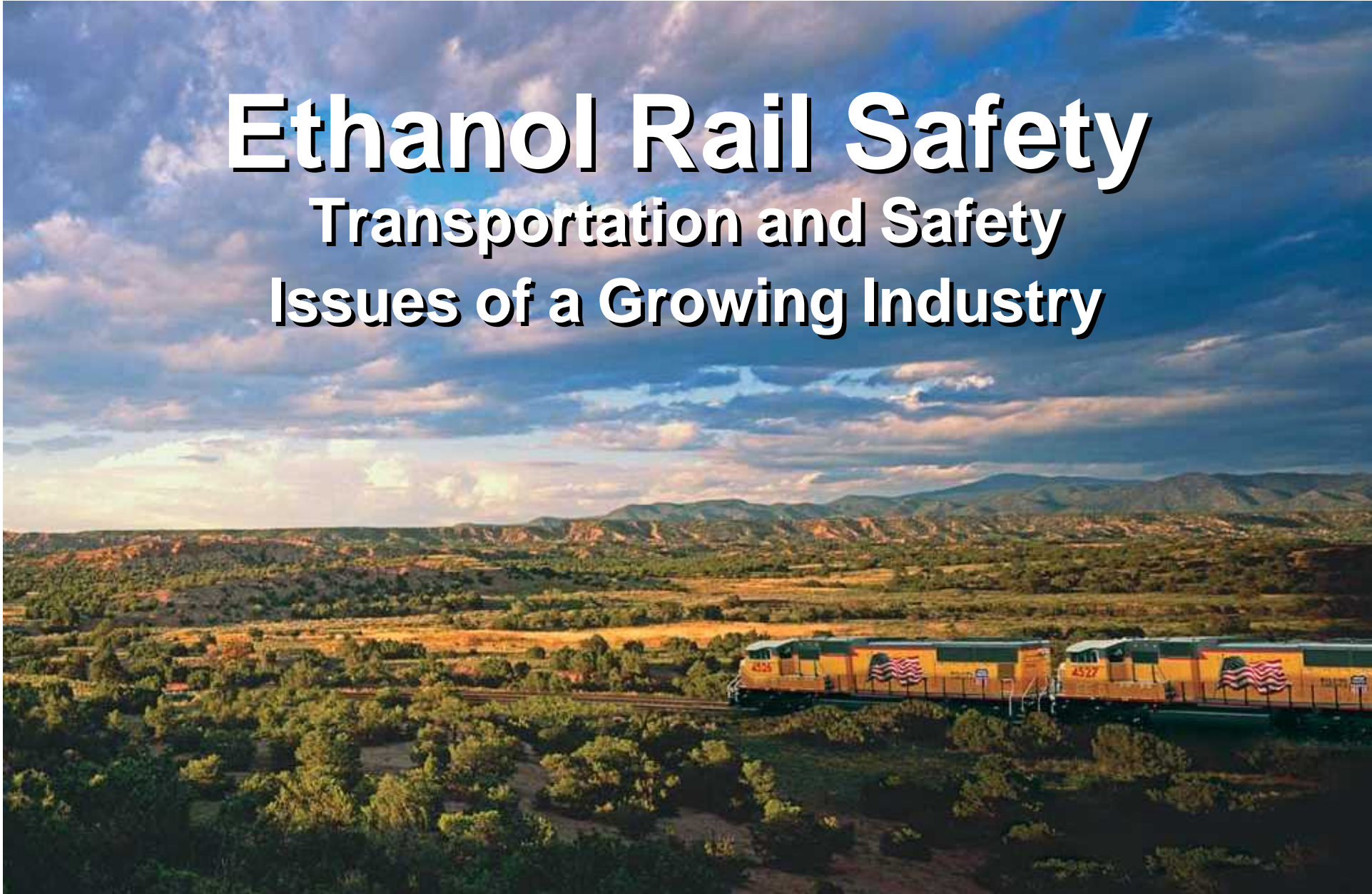


# Ethanol Rail Safety

## Transportation and Safety Issues of a Growing Industry

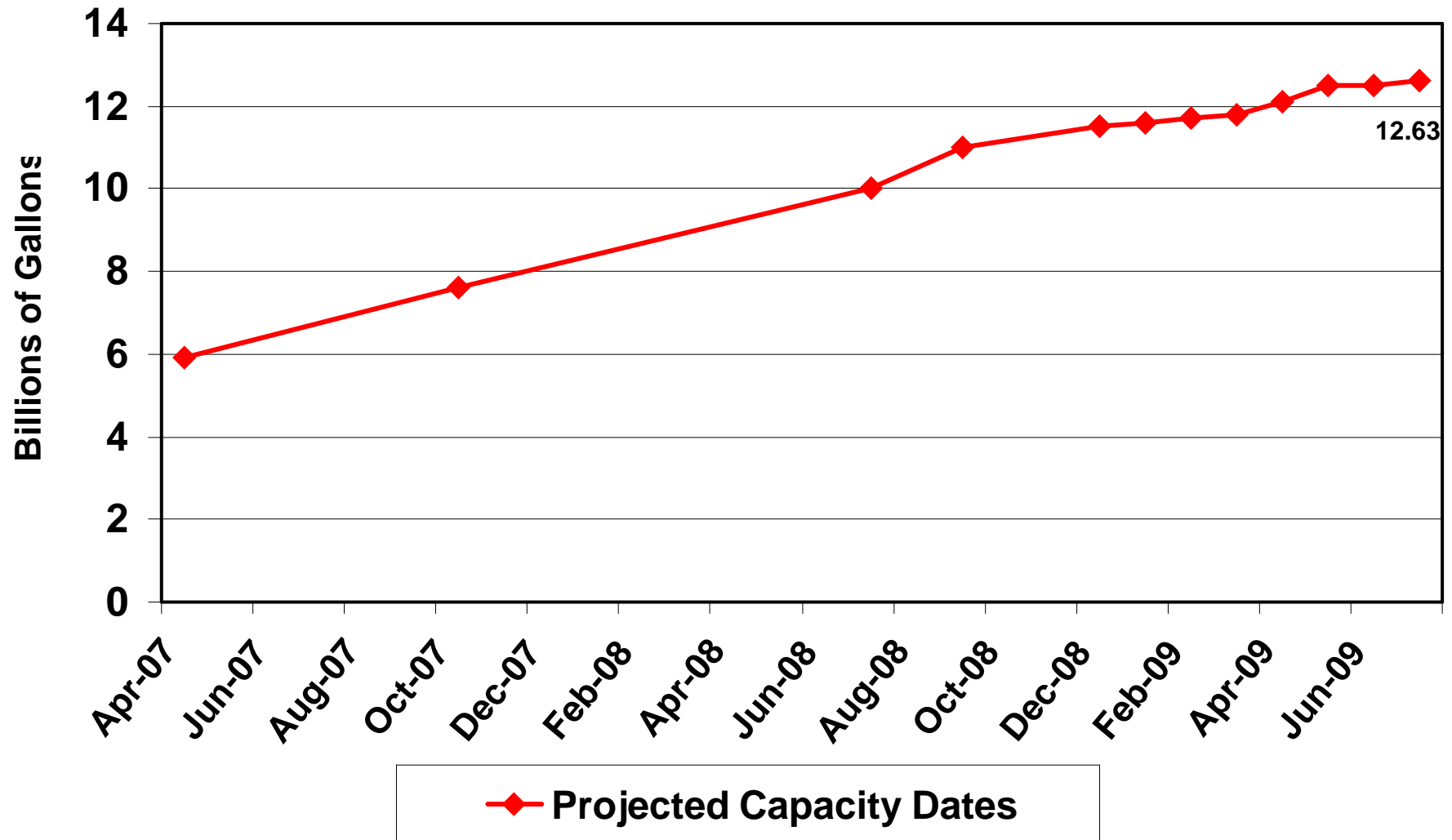


*Mark A. Maday, Mgr – Hazardous Materials Management*

BUILDING AMERICA®



# Ethanol Growth Impact On The Rail Industry





# Increased Ethanol Shipment Issues:

## Transportation Industry

- Increase in Unit Train Shipments
  - Trains containing 75 to 100 Tank Cars
  - 2.1 M to 2.8 M Gallons of Ethanol per Train
- Shipment and Securement Issues
  - Non-Accidental Releases (NAR's)
  - General Rail Safety

## Emergency Services

- Ethanol Response Training
- Foam Requirements/Planning for Local FD's

# What is an NAR ?



An undesired release of a  
hazardous material in  
transportation

that is NOT caused by an accident  
or derailment

Release = ANY amount of liquid, solid, or vapor

# Why Worry About NARs?

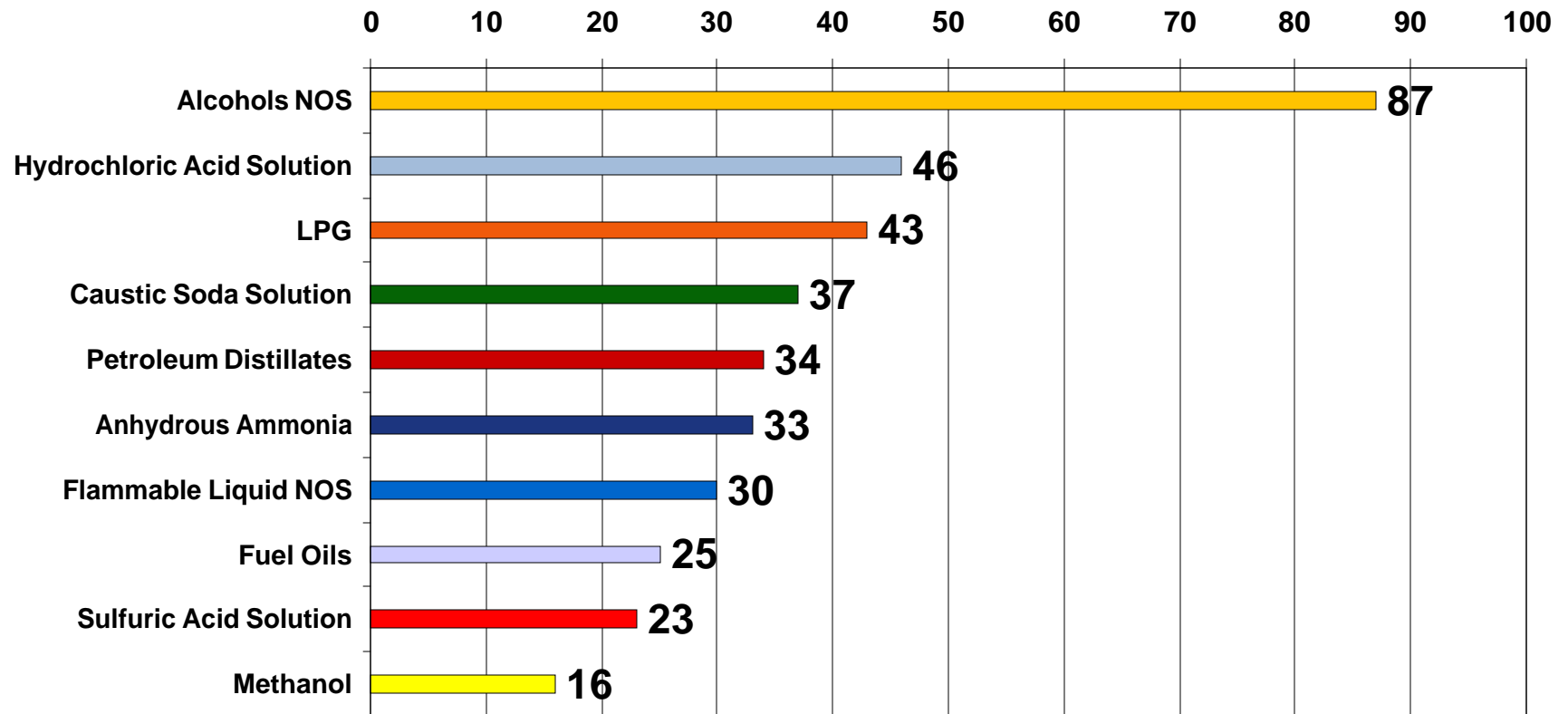


- **Employee and Public Safety**
- **Environmental Protection**
- **Customer Concerns**
- **Concerns Expressed by Regulators**
- **Cost (Response, Cleanup, Delays)**

# Top 10 Commodities for NARs 2006



Tank Car NARs



# Top Ethanol NAR Causes/Issues

- **Manway**
  - Loose Bolts
  - Gasket Deteriorated/Wrong Type
  - Gasket Misaligned
  - Gasket Missing
- **Bottom Outlet Valve**
  - Cap Loose – Valve Open
  - Cap Loose – Valve Closed
- **Other Valves/Fittings**
  - Liquid/Vapor Valves Not Inspected
    - Valve(s) Open – Valve Plug Open (Off)
    - Valve(s) Open – Valve Plug Loose
    - Liquid Valve - Threaded Valve Loose



# Other Ethanol NAR/Shipment Issues

## Tank Car Fill Limit:

- 1% Outage @ 115° F
  - Sufficient room for product expansion due to temperature increase must be left in car
  - Calculation must factor in adjustment for loading temperature

## Placards

- Replace When Weathered, Faded, or Torn

## Shipping Documents (Shipping Plants & Brokers):

- Total Quantity Notation: Use correct unit of measurement!
- Emergency Response Telephone Number
  - Cannot use CHEMTREC or Other Services without subscribing
  - Must be a 24/7/365 Answered Phone

# General Rail Safety Issues

- Training
  - General Awareness
  - Function Specific (Shipping Clerks/Brokers)
  - Safety
  - Security
- Track Securement
  - Switches Lined Away
  - Derail device(s)
  - Blue Flag/Sign
    - “Stop – Men at Work”
      - 4 Inch Letters
      - White Letters on Blue Background
    - Blue Strobe for Night Operations
  - Chock Wheels/Set Hand Brakes



# General Rail Safety Issues

- **Car Inspections - Checklist**

- **Pre-Load**

- **Car Issues: Damage, Safety Appliances, Placard Holders, Double-Shelf Couplers**
    - **Car Markings: Car ID, Weights, DOT Classification, Tank Test Date, Safety Valve Test Date and Rating, Capacity (Gallons/Liters)**

- **Final**

- **All Closures are Wrench Tight**
    - **Security Seals Applied**
      - **Manway Cover**
      - **Protective Housing**
      - **Bottom Outlet Cap**
      - **Bottom Outlet Handle**
    - **4 Correct Placards are Applied**

# Violations

- **\$250 - \$50,000 for EACH violation.....except**
  - **\$450 Minimum for EACH training violation**
  - **Maximum \$100,000 if violation results in death, serious illness or severe injury to any person, or substantial destruction of property**
- **EACH day of the violation constitutes a separate offense**
- **Individual Liability**

## **Ethanol - Zero Tolerance:**

**Any Non-Accidental Release (NAR) from an ethanol shipment (Load/Residue) will result in a violation, and will be assessed a civil penalty in accordance with 49 CFR, Part 209, Appendix B.**

# Examples of Civil Penalty Assessments

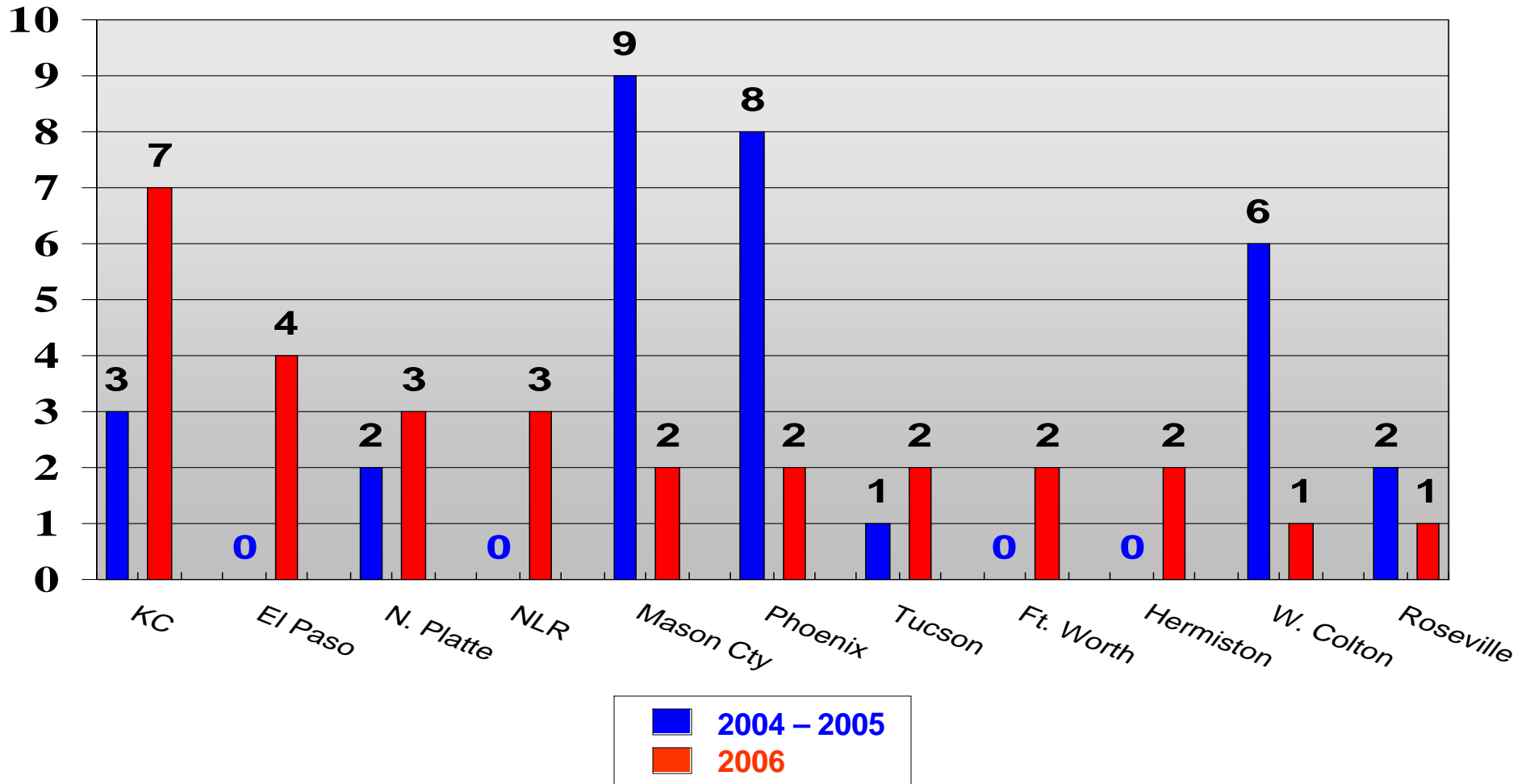
- **Hazardous Materials Registration**
  - Failure to Register or Renew Registration \$1,500
  - Offering or Accepting HM w/o Registering \$1,500
- **Shipping Papers**
  - No or Inaccurate ER Phone Number \$15,000
  - Inaccurate information (i.e.. Total Quantity) \$5,000
- **Tank Car Securement**
  - Residue \$2,000
  - Load \$5,000
- **Track/Loading Protection**
  - No Derail, Lined Away Switches, etc. \$4,000
  - No Blue Flag/Sign Protection \$2,000
  - No Wheel Chocks or Hand Brakes Set \$5,000

# Our Help in Reducing NAR's

- **Shipper Outreach**
  - Annual Plant Visits
  - Loader Training (Startup & Refresher)
  - Regional NAR Reduction Seminars
    - Mason City, IA – July 18, 2007
    - Emmetsburg, IA – July 19, 2007
  - As Needed - FRA Compliance Audits
- **Industry Outreach**
  - Association of American Railroads
    - NAR Committee – Ethanol Task Force??
  - Renewable Fuels Association
    - Fuel Ethanol Workshop – Continued Railroad Involvement
    - RFA Safety Committee
  - American Coalition for Ethanol
    - ACE Conference – St Paul, MN August 7-9, 2007
  - State Ethanol Associations

# Outreach Activities Work!!!!

## Ethanol NAR's On U.P. 2004 – 2006 By Multiple Location



# Assisting Emergency Services

- **Get Your Local Fire Departments Involved**
  - **Help them Identify Equipment, Training, and Resource Shortfalls**
  - **Help them Understand What Your Facility Can and Cannot Do For Them**
  - **Have Them Plan for (You Must INSIST on This) Training Exercises at Your Facility**
  - **Coordinate or Assist in Arranging for Specialized RR Training**
- **Take Advantage of TRANSCAER Training When Possible**
- **Provide Support to RR's on Training Other FD's**



## **Further information, contact**

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