

# Union Pacific Hazardous Materials Management

*“Working to keep your community and our railroad safe”*



**Mark Newton, Manager Hazardous Materials  
St. Louis, MO 702-275-4385**



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# Mark Newton, Hazardous Materials Manager, St. Louis, MO

- Union Pacific Railroad;  
Denver- Conductor, Engineer, Union Pacific Police  
Las Vegas- Union Pacific Police, hazmat responder  
St. Louis- Hazardous Materials Manager
- 22 years military, 16 years LE, 6 years FD



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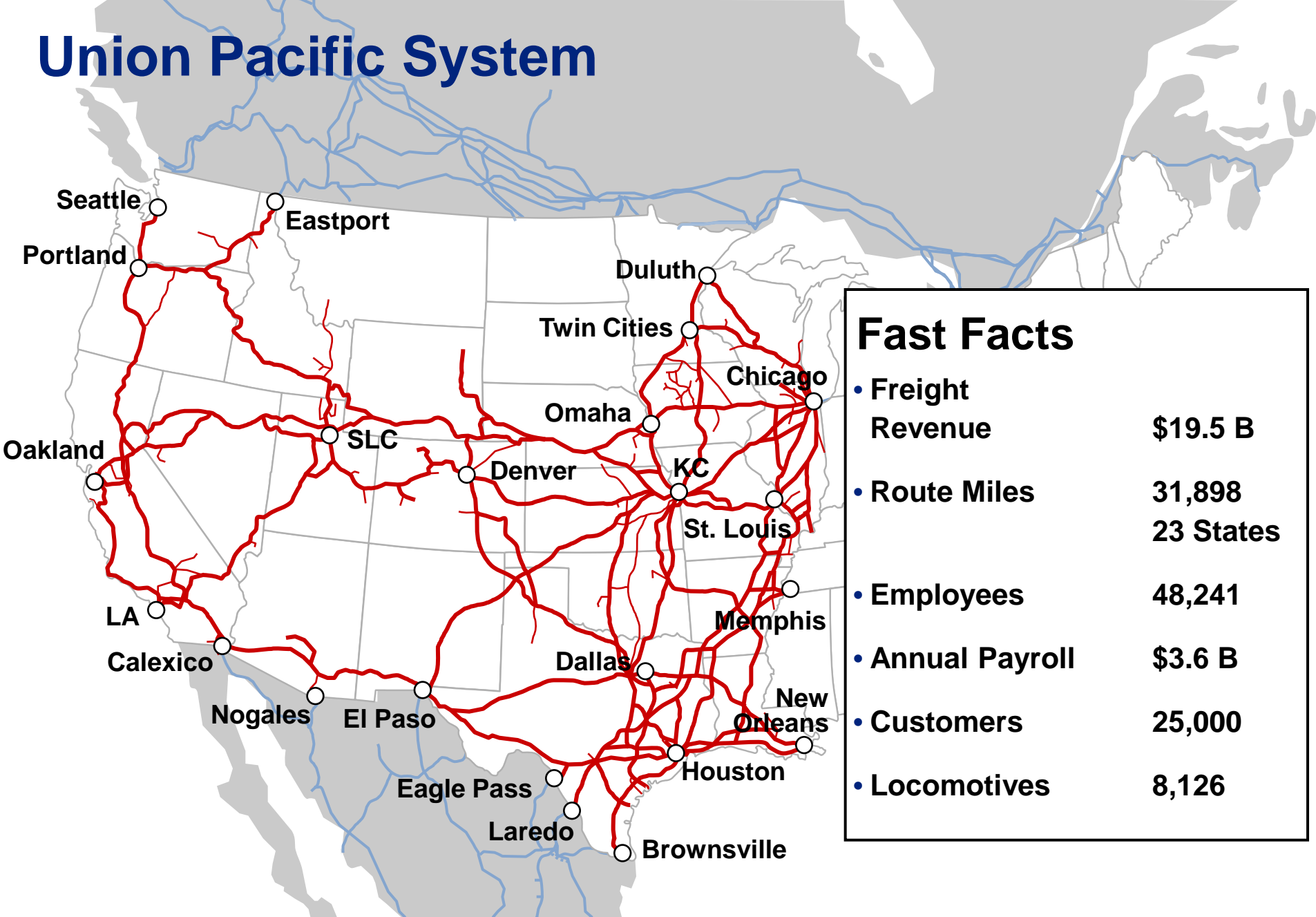


# Building America for over 150 Years



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# Union Pacific System



## Fast Facts

- Freight Revenue \$19.5 B
- Route Miles 31,898  
23 States
- Employees 48,241
- Annual Payroll \$3.6 B
- Customers 25,000
- Locomotives 8,126



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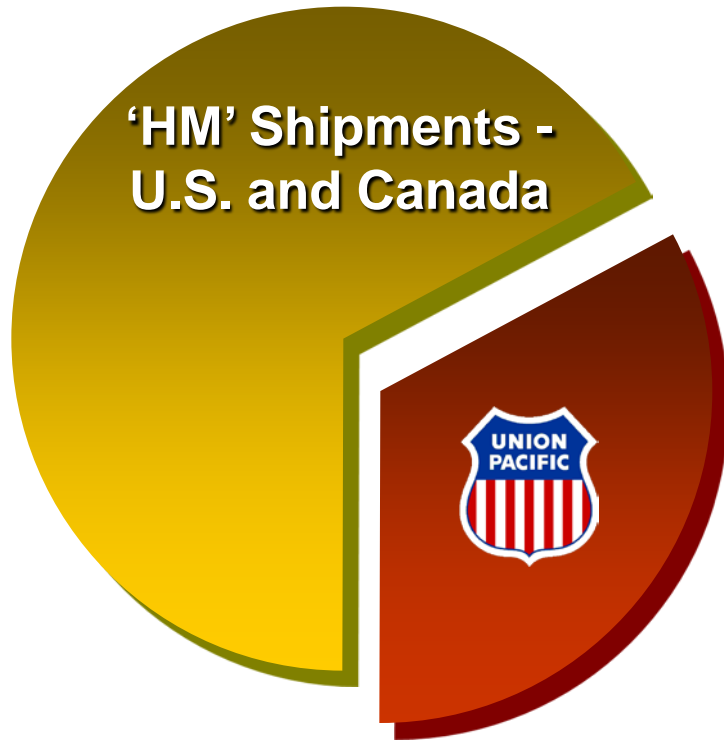


# Hazardous Materials Management's Mission

- **Prevention** – Prevent releases of hazardous materials in transportation.
- **Preparedness** - Develop internal and external assets for response and recovery.
- **Response** – Emergency response to releases to protect health minimize impact and stabilize the incident.
- **Recovery** – Progress incident to normal operations and to the point where closure work can begin.



# Hazardous Materials 2014



- **1.41 M Total HM Loads**
- **14.6% of Total Volume**
- **260 NAR on Including 1 TIH**
- **8 Accidental Releases UP**
- **99.9998% Handled w/o Incident**



# Prevention

- Inspections

- Tank car
- Train
- Crew audits

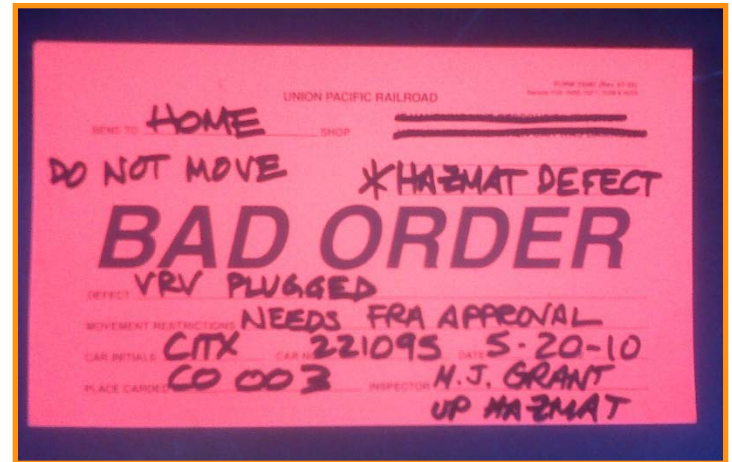


- Training

- Employees
- Customers

- Continuous Improvement

- Industry committees
- Equipment design improvements





# Prevention Activities



Prevention	YTD	Target	Prior Year
Tank Car Blitz	4	16	53
TC Inspections	715	5000	6049
Exception Ratio	11%	na	7%





# Preparedness

- Response Plans
  - HMERP
  - Community-Right-to-Know
  - OPA-90
- Training-
  - Public Responders
  - Employees
  - Private/Industry
- Drills/Exercises
- Commodity Flow Data





**Trained over 7000 Public responders and private industry in responding to railroad emergencies**

**Over 300 First Responders sent to CBR training in Pueblo, Colorado in 2014. 200 scheduled this year.**



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# TRAINS CAER



**CHEMTREC**  
1971-2011: First in Response for 40 Years

The World's Leading Resource for information on  
HAZARDOUS MATERIALS AND DANGEROUS GOODS.

[LEARN MORE TODAY](#)

**CHEMTREC**



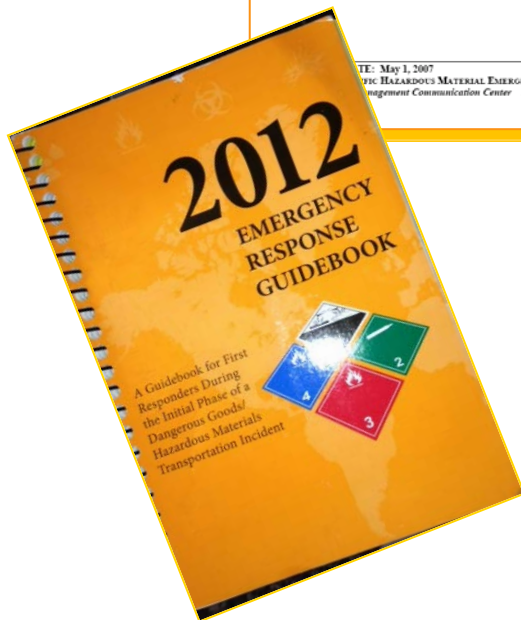
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# Preparedness - HMERP

UNION PACIFIC  
HAZARDOUS MATERIAL  
EMERGENCY RESPONSE  
PLAN



DATE: May 1, 2007  
UNION PACIFIC HAZARDOUS MATERIAL EMERGENCY RESPONSE PLAN  
Management Communication Center 1-888-877-7267 1



***To guide our actions:***  
**Hazardous Materials  
Emergency Response  
Plan  
(HMERP)**

- Company level plan
- Employee responsibilities
- Incident command system (NIMS) and responsibilities
- Emergency response personnel – roles, responsibilities & training
- Other actions





# Pre-Planning – Before an incident occurs:

- Identify RR's Operating in your area
- Obtain railroad emergency phone number(s)
- Map railroad mileposts/crossings
- Identify “At-Risk” Populations
- Understand what HM is moving through your community (Commodity Flow)





**DOT #**  
**Assigned to all**  
**crossings: at grade,**  
**over or underpasses**



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# Public Information and Preplanning

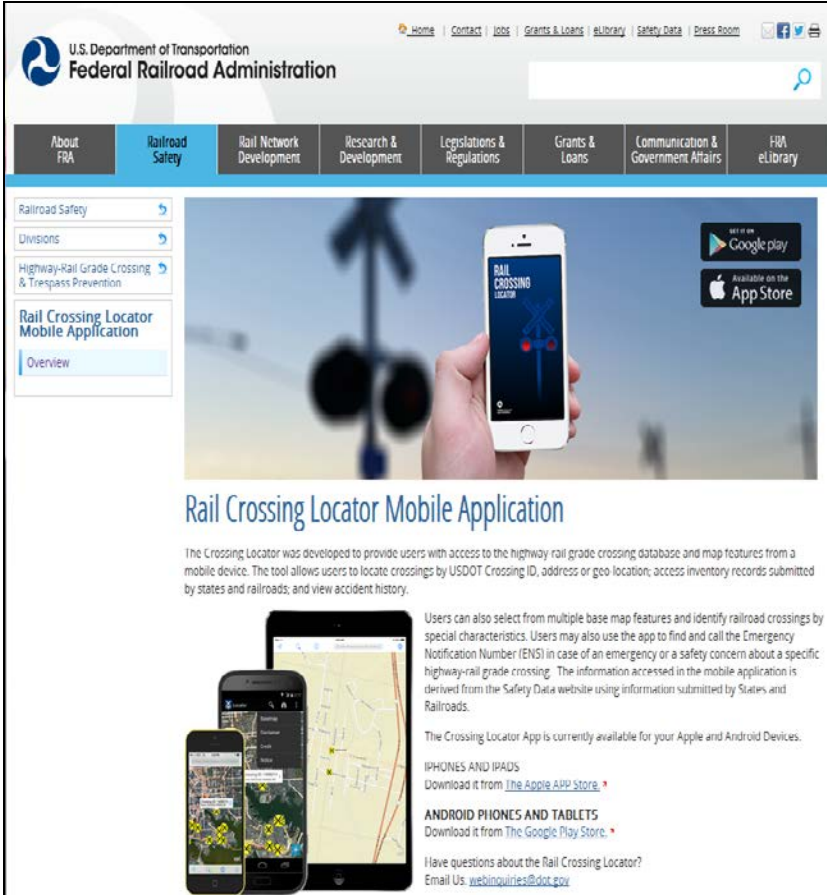
- DOT / FRA Crossing Inventory Website:

[http://safetydata.fra.dot.gov/office\\_of\\_safety/publicsite/crossing/crossing.aspx](http://safetydata.fra.dot.gov/office_of_safety/publicsite/crossing/crossing.aspx)

- DOT / FRA GIS Website:

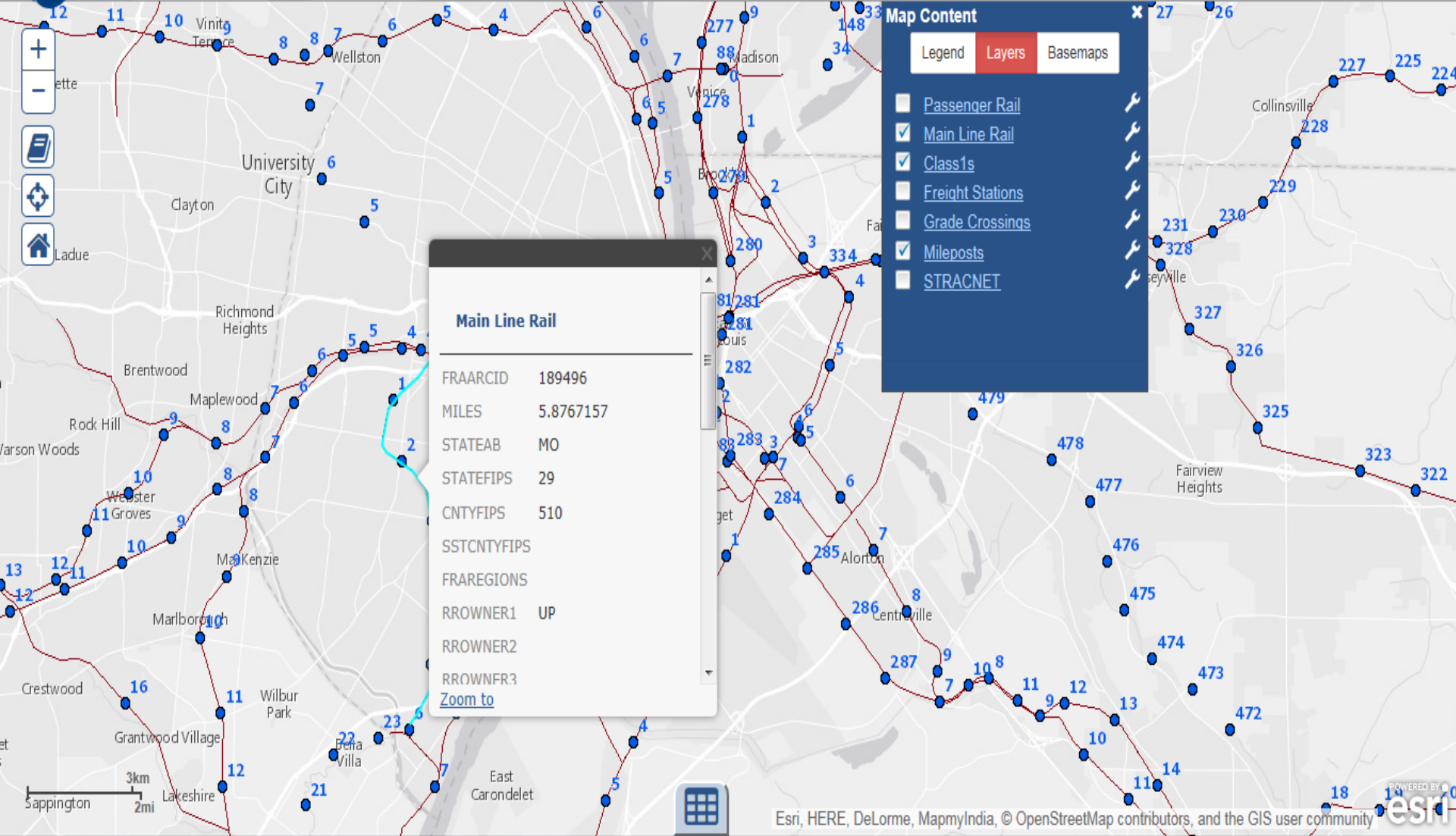
<http://fragis2.frasafety.net/GISFRASafety/default.aspx>

- Rail Crossing Locator app



The screenshot shows the Federal Railroad Administration website. The header includes the U.S. Department of Transportation logo and the text "U.S. Department of Transportation Federal Railroad Administration". Navigation links include Home, Contact, Jobs, Grants & Loans, eLibrary, Safety Data, and Press Room. A search bar is located on the right. The main navigation menu includes About FRA, Railroad Safety, Rail Network Development, Research & Development, Legislations & Regulations, Grants & Loans, Communication & Government Affairs, and FRA eLibrary. The "Railroad Safety" menu is expanded, showing links to Railroad Safety, Divisions, Highway-Rail Grade Crossing & Trespass Prevention, Rail Crossing Locator Mobile Application, and Overview. The main content area features a large image of a hand holding a smartphone displaying the "RAIL CROSSING LOCATOR" app. Below the image is the heading "Rail Crossing Locator Mobile Application" and a paragraph describing the app's purpose: "The Crossing Locator was developed to provide users with access to the highway rail grade crossing database and map features from a mobile device. The tool allows users to locate crossings by USDOT Crossing ID, address or geo location; access inventory records submitted by states and railroads; and view accident history." Below this is another paragraph: "Users can also select from multiple base map features and identify railroad crossings by special characteristics. Users may also use the app to find and call the Emergency Notification Number (ENS) in case of an emergency or a safety concern about a specific highway-rail grade crossing. The information accessed in the mobile application is derived from the Safety Data website using information submitted by States and Railroads." There are also links for downloading the app: "The Crossing Locator App is currently available for your Apple and Android Devices. IPHONES AND IPADS Download it from The Apple App Store." and "ANDROID PHONES AND TABLETS Download it from The Google Play Store." At the bottom, there is a contact link: "Have questions about the Rail Crossing Locator? Email Us: [webinquiries@dot.gov](mailto:webinquiries@dot.gov)".





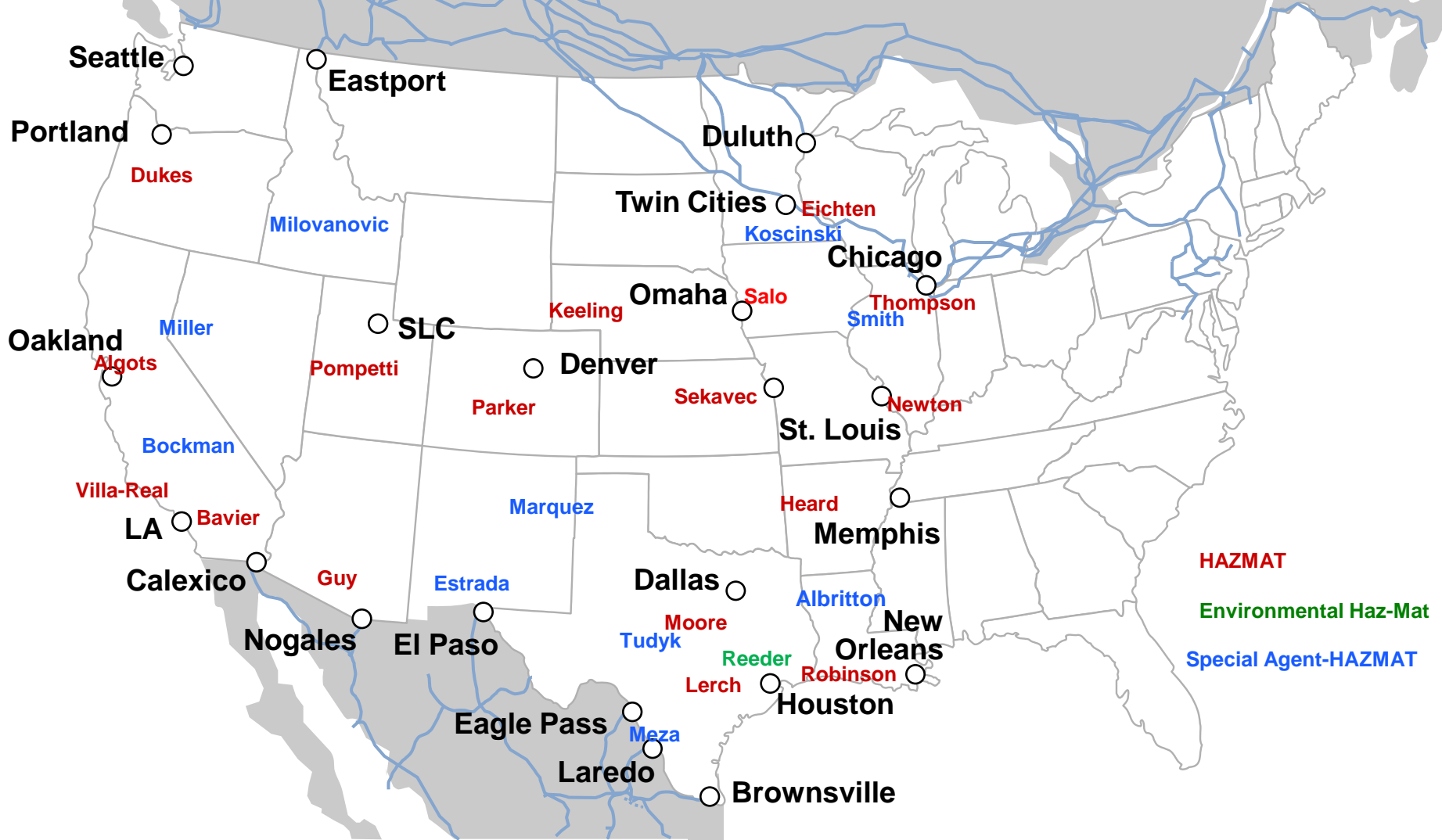
# Response

- **Safety**
  - Employees
  - Community
- **Coordination of Responders**
  - Public Responders (IC)
  - Regulatory Agencies
  - Specialized Contractors
- **Response Duties**
  - Analyze the problem
  - Plan the response
  - Implement plan
  - Evaluate & adjust





# Union Pacific Managers Hazardous Materials Emergency Responders



# Response – “It all starts here!”

## *UPRR’s Response Management Communications Center*

**1-888-UPRR-COP  
(1-888-877-7267)**

*For Emergencies Dealing with:*



- **Criminal Activities**
- **Crossing Accidents/Accidents, Not at Crossings**
- **Derailments**
- **Fires**
- **Hazardous Material Spills/Environmental Incidents**
- **Injured Parties/Fatalities**
- **Track Obstructions**



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# Railroad Resources

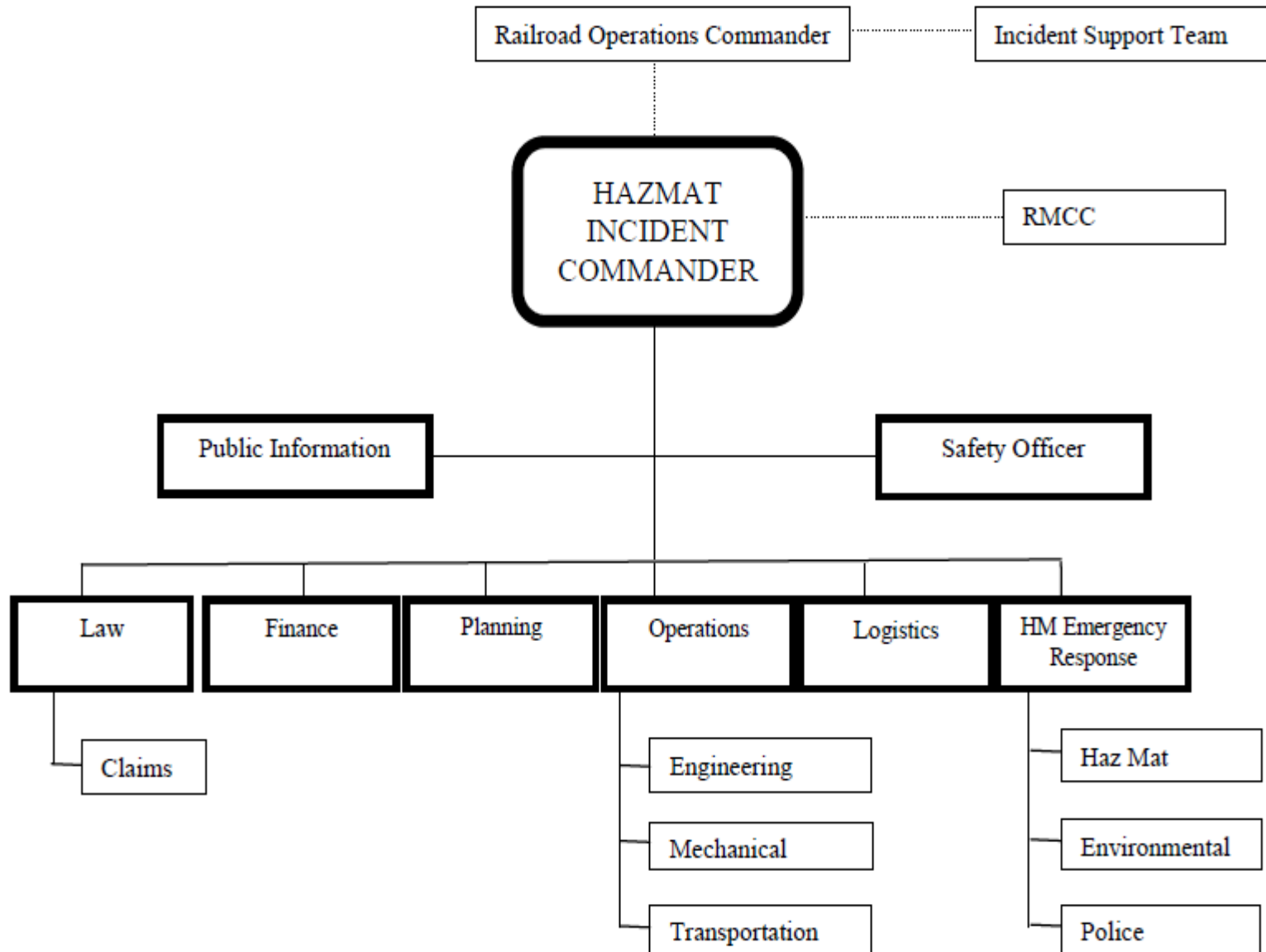
## “RMCC”

- Stay in contact with the emergency center - you are their eyes and ears.
- They are staffed 24 hrs/day.
- They make reports/calls to CHEMTREC®, National Response Center and shippers.
- They make mandatory notifications to state and federal agencies.

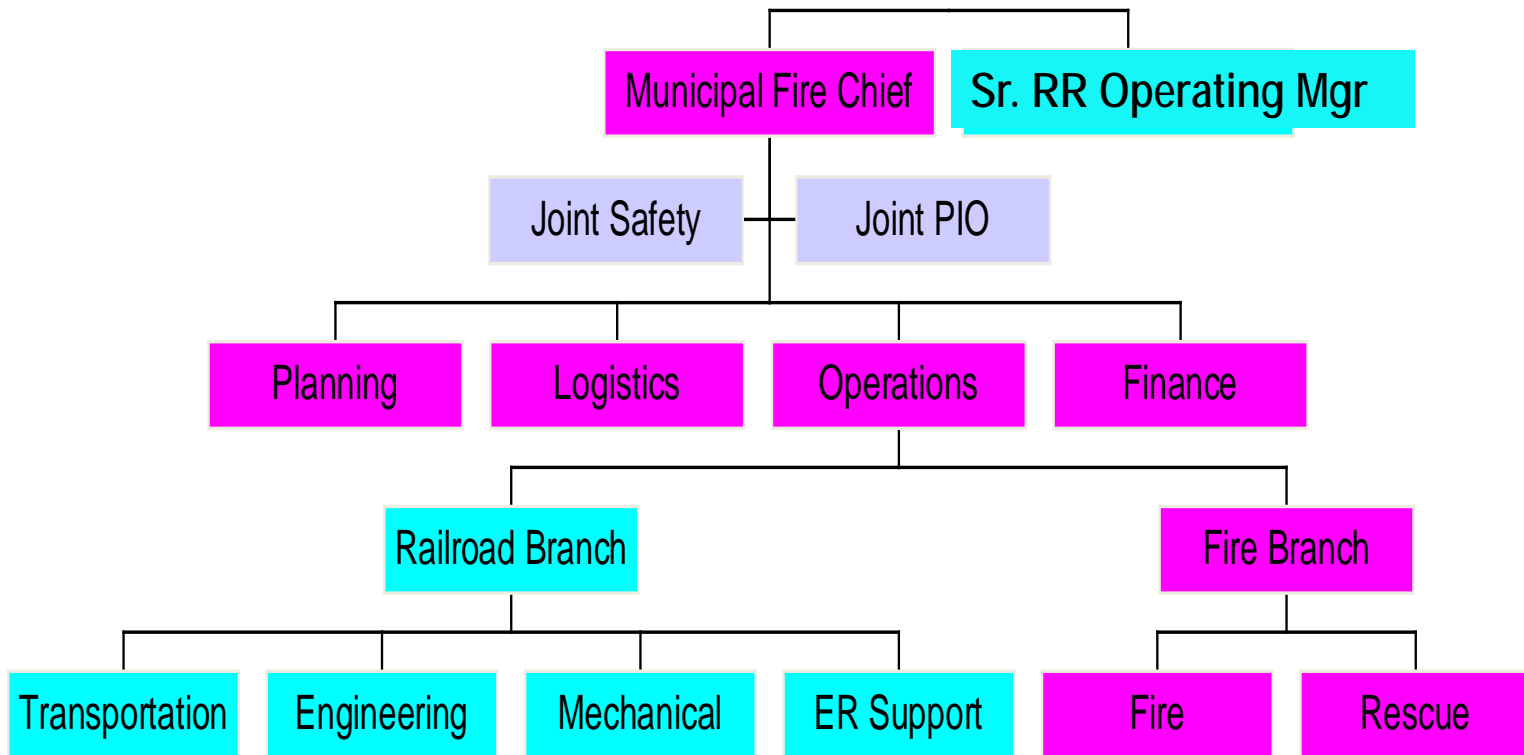




## RAILROAD INCIDENT COMMAND STRUCTURE



# Unified ICS Model



# Assets Being Deployed

- **Specialty Contractors**
  - **Hazmat Emergency Response (OSRO)**
  - **Environmental Professionals**
  - **Toxicological**
    - **Advanced air monitoring**
    - **MD's**
    - **Toxicologists**
    - **CIH's**
  - **RR Rerailing Contractors**





# Assets continued

- Fire fighting equipment / fire trailers
- Foam caches
- Chemical transfer equipment
- Hazmat specialists (tank car specialists)
- Industrial partners
- Specialty equipment
  - Air trailers, heavy equipment, frac tanks, steam units, etc



# UP Fire Fighting Response Trailers



# UP CAMP Locations



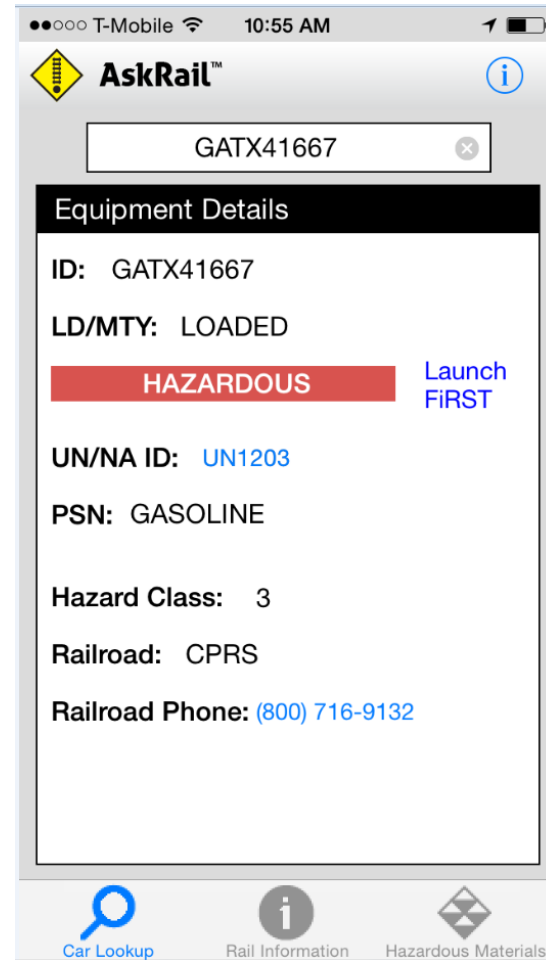
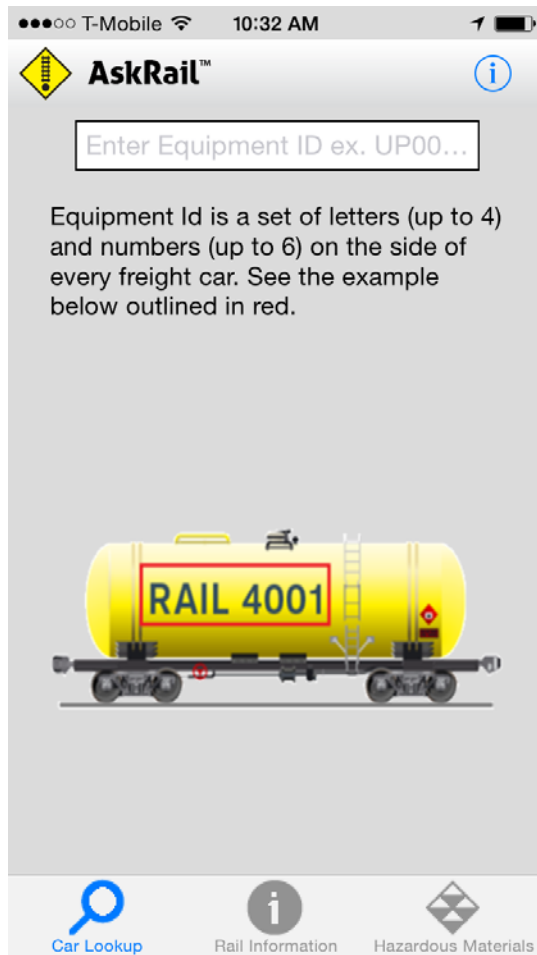
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# UP Recovery Assets



# AskRail



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# Other Types of Responses

- Responses are not always derailments
- Non-Accidental Release – NAR
- Diesel fuel release from locomotive or refrigerated cars
- Oil spill
- Crossing accidents





# Recovery

- **Product/Container Fate**
  - Product Removal/Transfer
  - Container decontamination/cleaning
- **Incident Termination**
  - Debriefing
  - Post Incident Analysis (PIA)
  - Critique
  - Required Reporting
- **Site Remediation/Restoration**



# Crude Oil Traffic

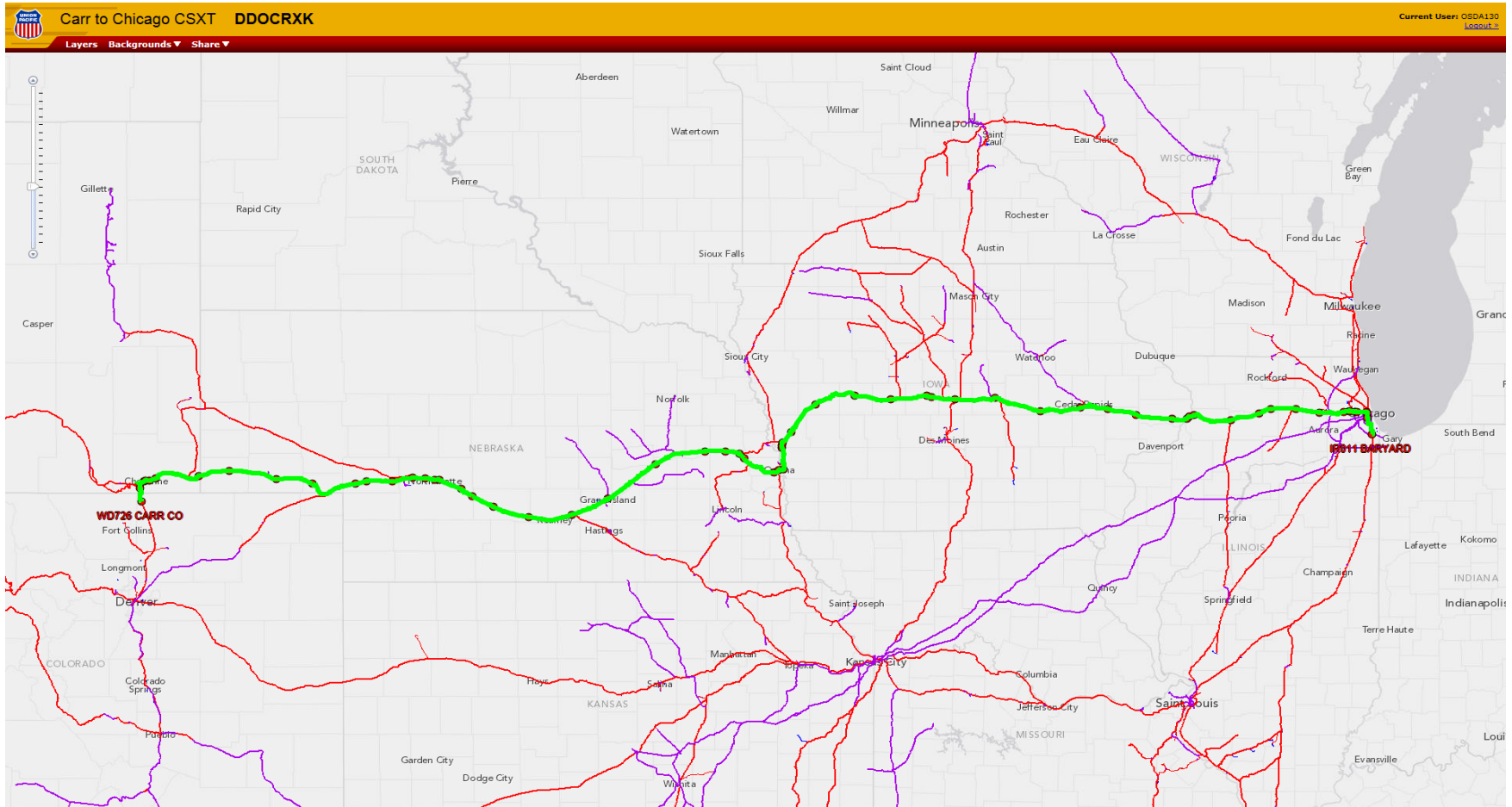


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# Crude Oil Traffic

- 13 routes –





# Crude Oil Preparedness

- **FD Inventory – Inventorying all FD's along designated route's**
- **FD Training –**
- **Contractor Preparedness – Locations**
- **UPRR Assets**
  - **FFF Trailers**
- **HMERP – provides emergency response information to personnel who may become involved in a hazardous materials incident.**





# Crude Oil by Rail

API-AAR Response Safety Course



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# Course Outline

- Why crude oil by rail?
- Recognizing the hazards
- Understanding crude oil
- Rail cars that carry crude oil
- Fire response
- Spill response
- Incident command during a rail incident





# Mitigation: Tank Car Standards

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Rail industry voluntarily adopted stronger tank car standards in Oct. 2011 & November 2013:



DOT 111

“New” 1232 Cars vs. “Old” DOT 111 Cars

- 1/2" or 7/16" jacketed shell vs. 7/16"
- 1/2" extra protective head shield
- Roll over protection (top fitting protection)
- Larger pressure release valve
- 47 - 77% better crashworthiness

# Mitigation: “Next Generation Tank Car” NGTC

## EVOLUTION OF RAIL INDUSTRY TANK CAR STANDARDS FOR CRUDE OIL

The railroad industry is proposing to increase the federal tank car design and construction standards for new tank cars used to transport crude oil. This proposal comes after a previous upgrade proposal which the industry voluntarily adopted and has been observing since October 2011. This graphic shows the additional tank car components included in the latest rail industry proposal.

### HIGH CAPACITY PRESSURE RELIEF VALVE

**Current Standard:**  
No requirement

**Latest Rail Industry Proposal:**  
Requires a high capacity pressure relief device to protect against a rise in internal pressure resulting from fire. Provides for faster release of product.

### TOP FITTINGS PROTECTION

**Current Standard:**

Requires top fittings protection to protect the integrity of valves and fittings used to load product in the event of an accident.

**Latest Rail Industry Proposal:**

Contains the same requirement.

### STEEL TANK

**Current Standard:**

Requires a minimum 1/2 inch thick steel tank for unjacketed cars and a minimum 3/8 inch thick steel tank for jacketed cars.

**Latest Rail Industry Proposal:**

Requires a minimum 3/8 inch thick steel tank.

### HEAD SHIELDS

**Current Standard:**

Requires minimum 1/2 inch thick half height head shields at both ends of the tank car to improve puncture resistance.

**Latest Rail Industry Proposal:**

Requires 1/2 inch thick full height head shields at both ends of the tank car.

### BOTTOM OUTLET HANDLES

**Current Standard:**

No requirement

**Latest Rail Industry Proposal:**

Requires bottom outlet handle reconfiguration to prevent the handle from inadvertently opening the bottom outlets in the event of an accident.

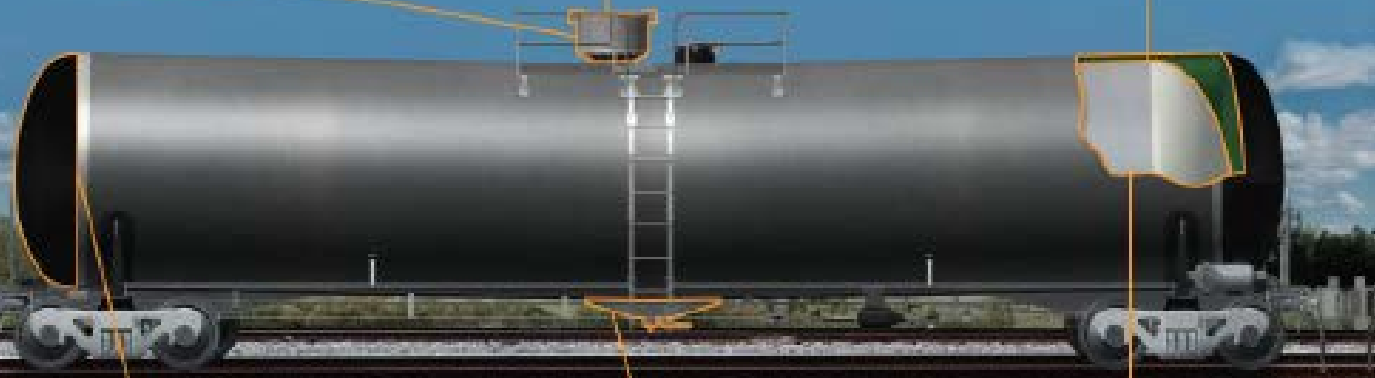
### JACKET AND THERMAL PROTECTION

**Current Standard:**

Requires a minimum 1/2 inch thick steel tank OR a 1/2 inch thick steel jacket.

**Latest Rail Industry Proposal:**

Requires the addition of both a 1/2 inch thick steel jacket around the tank car and thermal protection.



- Require jackets and thermal protection on the 1232 tank car
- BNSF NGTC RFP issued to accelerate the tank car design, production, and to bring more certainty to the crude-by-rail tank car market

Excerpt from Evolution of American Railroads, February 2014



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**Thank You!**



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