

Safe Communities, Norfolk Southern, and Crude Oil by Rail

Rudy Husband
Pennsylvania
Rail Freight Seminar
May 22, 2014
Pittsburgh, PA



NS links the global supply chain.

NORFOLK SOUTHERN SYSTEM

Norfolk Southern Corporation is one of the nation's premier transportation companies. NS operates approximately 20,000 route miles in 22 states and the District of Columbia, serves every major container port in the eastern United States, and provides efficient connections to other rail carriers. We operate the most extensive intermodal network in the East and are a major transporter of coal, automotive, and industrial products.



NS moves the goods that move the economy.

- 8,700 customers
- 7 million carloads of raw materials, intermediate products, and finished goods – every year
- 1,000 trains – every day
- Cleaner, more fuel efficient than trucks
- NS is a green business -- for example our “Trains to Trees” program is planting 6 million trees in the

Mississippi Delta.

6.04 MILLION TREES
WILL BE PLANTED.

For NS, that represents:



NS means jobs.

- Earliest predecessor founded in 1827
- 20,000 miles of railroad in 22 states
- 30,000 employees -- 14 percent are veterans, reservists
- Total annual payroll \$2.2 billion
- Every railroad job supports four jobs in the broader economy.
- Hired 943 new employees in 2013
- Hiring 1,275 new employees in 2014



NS invests in communities.

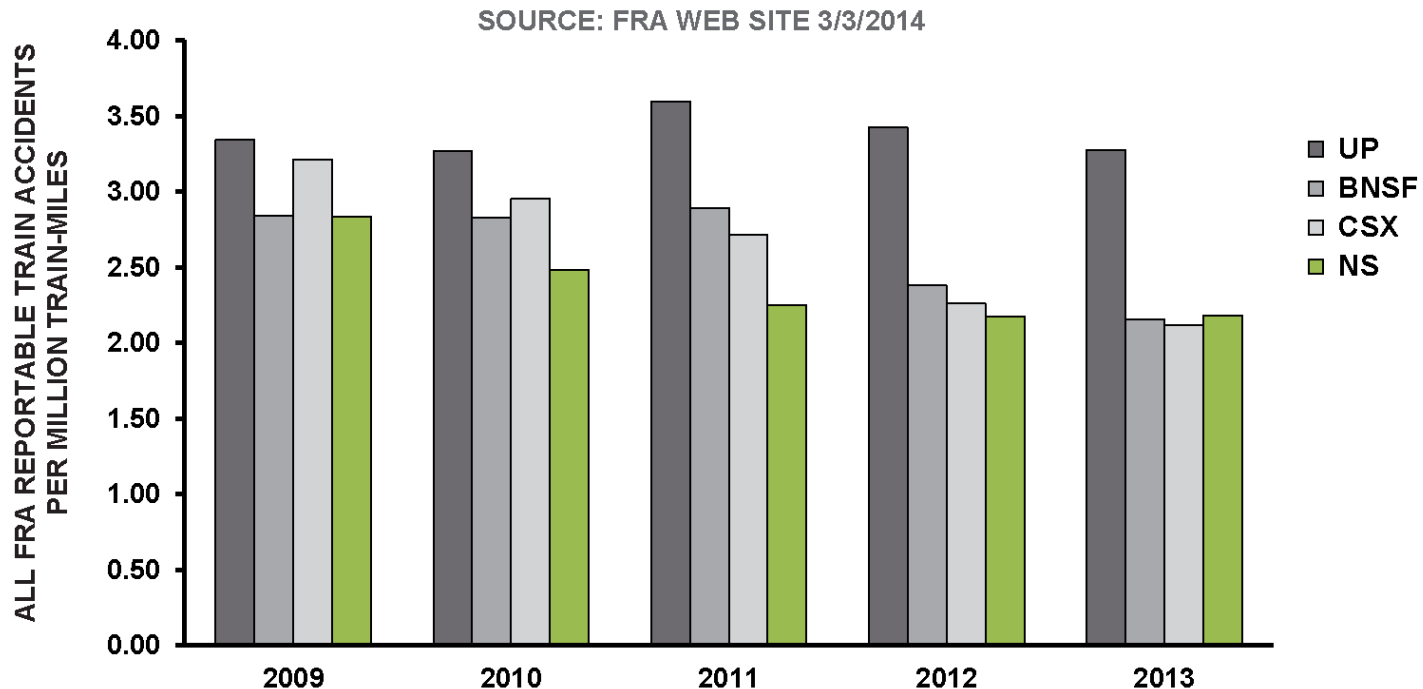
- In 2013, NS helped place and expand 92 industries along the rail lines -- a customer investment of \$2.3 billion and creating 3,100 new American jobs.
- Over the last decade, NS helped place and expand 1,024 industries – a customer investment of \$29 billion and creating 44,000 new American jobs.



NS is a rail safety leader.

- NS' train accident rate is consistently among the lowest.

FRA DERAILMENT COMPARISON - TRAIN ACCIDENT RATE
MAJOR CLASS 1 RAILROADS
ALL FRA REPORTABLE TRAIN ACCIDENTS



Rail is the safe way to move oil and hazmats.

- NS carried 5.3 million hazardous materials shipments (including crude oil) 2000–2013.
- 99.997 percent arrived incident free.
- For the entire rail industry, 2012 and 2013 were safest years ever.
- Rail hazmat accident rates have declined 91 percent since 1980.

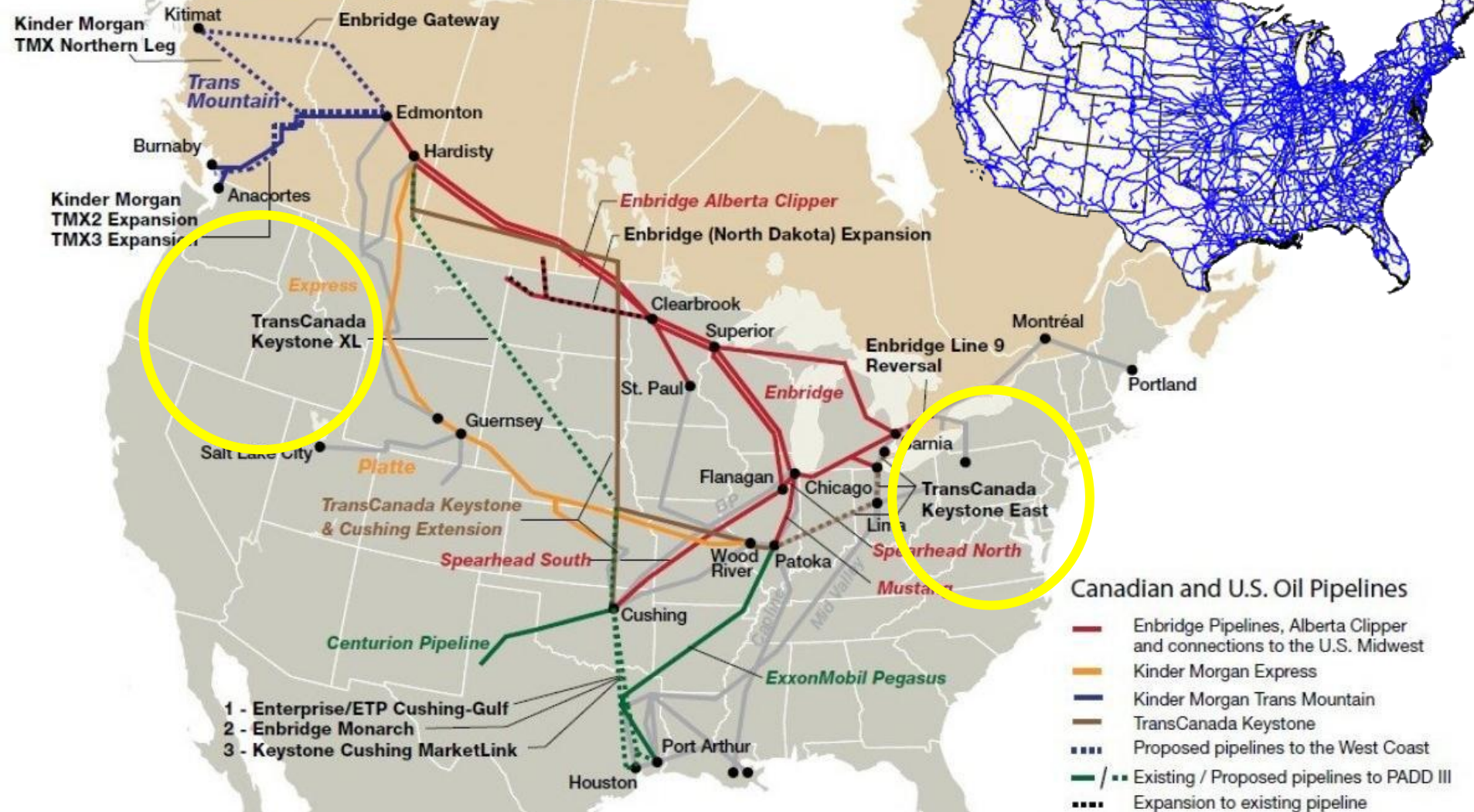


North American Crude Oil Pipelines

NS Markets Politically and Topographically Isolated from Pipeline Connectivity

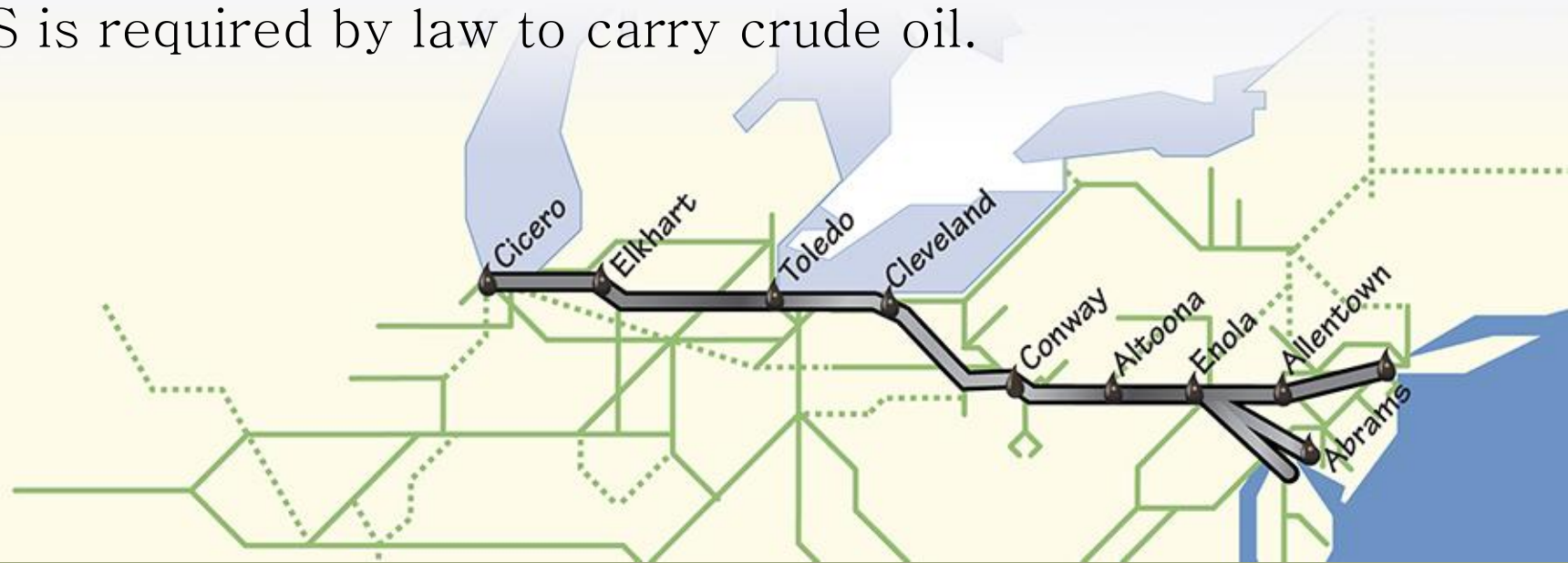
Fuel TraNS - Crude by Rail

Canadian & U.S. Crude Oil Pipelines - All Proposals



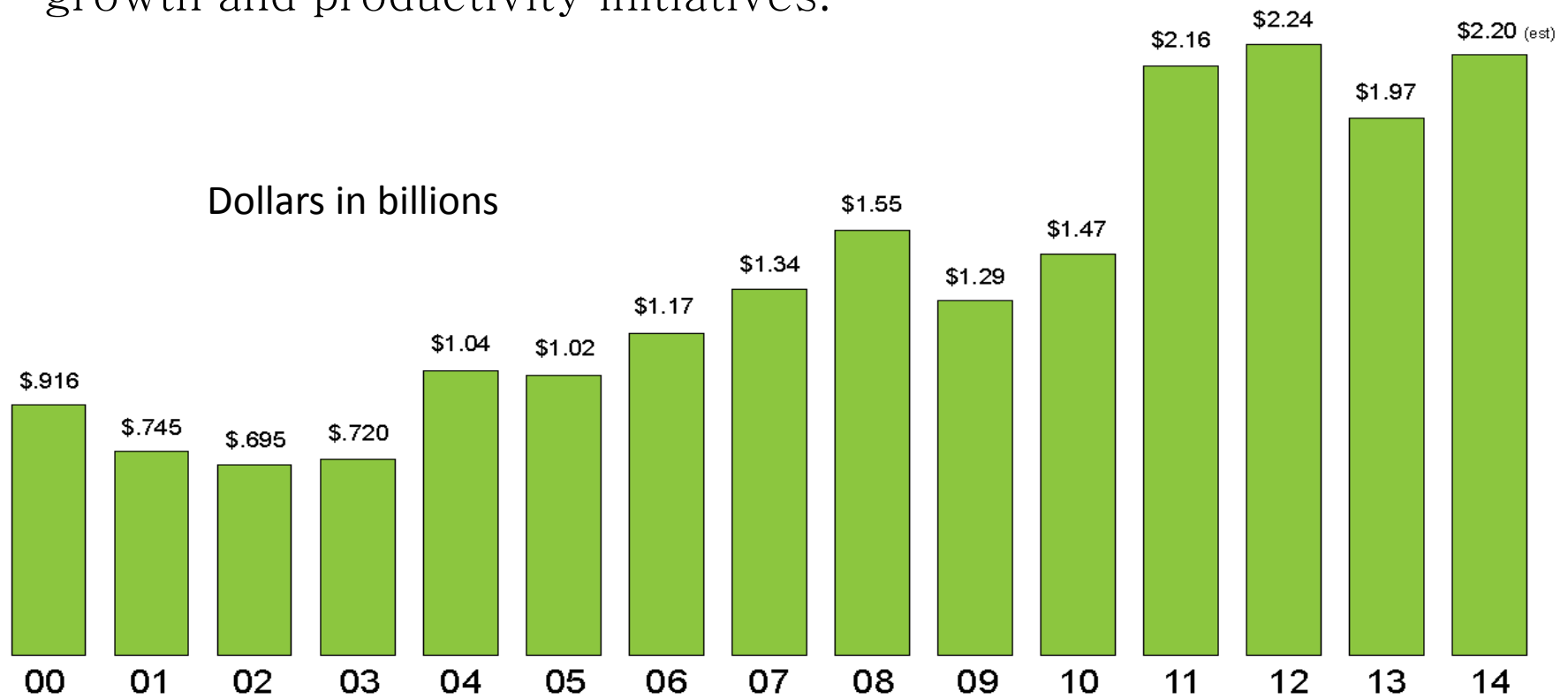
Moving crude oil is a small, growing business.

- NS transported little crude oil in 2010 and only 75,000 in 2013.
- NS also ships products for drilling – sand, cement, pipes.
- Crude oil on NS moves across our high-capacity line from Chicago to Pa., Del., N.J. – the shortest, most-direct route.
- NS is required by law to carry crude oil.



NS maintains a world-class infrastructure.

- Norfolk Southern invests billions to maintain safe railway operations, purchase locomotives and freight cars, and support growth and productivity initiatives.



NS minimizes operational risks.

- **Regulation:** Federal rules apply to most crude-oil trains, securement plans, and packaging.
- **People:** Training, remote monitoring, self-reporting protocol, two-person crews
- **Equipment:** Ultrasonic inspection, detector network, thermal/ infrared scanning
- **Track/signal:** Enhanced inspection training, continued elimination of joint rail, strong capital program for tie renewal, ground penetrating radar, enhanced geometry testing
- **Miscellaneous:** Weather-related operating safety practices, speed restrictions, train inspections

Special handling secures crude oil trains.

- “Key Trains” – crude oil, ethanol, and hazmat shipments – operate under long-standing best practices.
- Key Trains include:
 - 1 or more loads of toxic inhalation/poisonous inhalation (TIH/PIH) materials
 - 20 or more tank loads of any hazardous materials
- Special Handling for Key Trains:
 - Special identification and tracking
 - 50 mph max speed limit
 - Routes feature high standards for wayside wheel bearing detector spacing, frequency of track inspections, and maintenance of meet/pass tracks.
 - A Key Train is not left unattended on main line or siding tracks unless crew members and dispatcher conduct a detailed briefing re securement procedures, the reverser is removed, and the cab is

Voluntary rail/USDOT pact further reduces risk.

- Rail Corridor Risk Management System identifies safe, secure routes.
- Speed restrictions, such as 40 mph restrictions in High Threat Urban Areas (HTUA) for Key Trains meeting the agreement definition
- Additional rail inspections
- Additional advanced trackside detectors
- Training and tuition assistance for local first responders
- Creating local emergency response resource inventories

Recent USDOT Emergency Order

- May 7, 2014 – Docket DOT-OST-2014-0067
 - Within 30 days railroads operating trains transporting 1,000,000 gallons or more of Bakken crude must provide applicable State Emergency Response Commissions (PEMA) with:
 - Reasonable estimate of the number of trains implicated by this EO that are expected to travel weekly through each county within the state.
 - The routes over which the crude oil is transported
 - Identification of at least one RR point of contact

Rail customers own the tank car fleet.

- North American fleet consists of 335,000 tank cars.
- 99 percent are owned by rail customers and leasing companies.
- Modern tank car design and construction often exceed federal standards.



NS pushes for continuing car improvement.

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 1/8 inch thick steel tank for unjacketed cars and a minimum 1/4 inch thick steel tank for jacketed cars.

Latest Rail Industry Proposal:
Requires a minimum 1/4 inch thick steel tank.

HEAD SHIELDS

Current Standard:
Requires minimum 1/8 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 1/8 inch thick steel tank OR a 1/4 inch thick steel jacket.

Latest Rail Industry Proposal:
Requires the addition of both a 1/8 inch thick steel jacket around the tank car and thermal protection.

Source: Association of American Railroads, February 2014

NS keeps first responders informed.

- Helps local Emergency Planning Committees (LEPCs) assess hazmats moving through their communities
- Assists LEPCs in assessing safeguards against unintentional releases
- Provides specific commodity info to emergency response agencies
- Provides train and hazmat information to CHEMTREC for quick relay to responders in event of major incident.



NS is prepared for incidents.

- 24x7x365 hazmat, environmental operations, and industrial hygiene groups
- Certified subject matter expert employees
- More than 300 “NS Sentinels” – employees specially trained under OSHA’s Hazardous Waste Operations and Emergency Response (HAZWOPER) certification programs.
- NS Sentinels stationed on key train routes

NS supports emergency first responders.

- Training for 4,800 state, local responders at 108 locations in 2013 alone
- Scholarships for emergency management agencies to attend Security and Emergency Response Training Center in CO.
- Full-scale drills for staged accidents involving crude oil
- 14 national achievement awards from the Transportation Community Awareness and Emergency Response Program (TRANSCAER)



Additional expertise is on call.

NS brings outside resources to bear through master contracts with:

- 44 emergency response contractors throughout the rail system
- Experts in environmental remediation and ecological assessment
- Leading organizations in worker protection, exposure assessment, vapor plume modeling, air monitoring

Who to Call

RR emergency and routine contact points

CONTACTS

Any railroad emergency

NS Police 800-453-2530

NS Hazmat Training

Bill Oertly 540-524-5965

David Schoendorfer
404-582-3762

Communications

Rudy Husband
717-541-2250



THANK YOU

